

Authors	Title	Year	DOI	Abstract
Fatima N.; Saxena P.; Gupta M.	Integration of multi access edge computing with unmanned aerial vehicles: Current techniques, open issues and research directions	2022	10.1016/j.phycom.2022.101641	<p>During the last decade, research and development in the field of multi access edge computing (MEC) has rapidly risen to prominence. One of the factors propelling MEC's evolution is the ability to deploy edge servers capable of providing both communication and computational services in close proximity to the mobile user terminal. MEC has been regarded as a potentially transformative technique for fifth-generation (5G) and beyond 5G (B5G) wireless communication systems, as well as a possible complement to traditional cloud computing. Additionally, unmanned aerial vehicles (UAVs) integrated with MEC will play a critical role by introducing an additional mobility based computational layer to provide more secure, efficient and faster services. UAV enabled MEC offers seamless connectivity, fulfilling the promise of 5G's ubiquitous connectivity. Due to the enormous interest in UAV enabled MEC, there has been a tremendous increase in the number of published research articles in this domain; however, the research area still lacks a systematic study and categorization. We present a systematic literature review (SLR) on UAV enabled MEC, examining and analyzing data on the current state of the art using preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines. To streamline our assessment, this study analyzes several research papers carefully selected through a multi-stage process satisfying the eligibility criteria defined in the paper. One of the SLR's primary contributions is to broadly classify the research in the UAV enabled MEC domain into different categories including energy efficiency, resource allocation, security, architecture, and latency. We have identified key findings, technology, and pros and cons for the selected articles under each category. Additionally, we discuss the key open issues related to scalability and fairness, resource allocation and offloading optimization, service delivery with a focus on quality of experience (QoE) and quality of service (QoS), and standardization. Finally, we discuss several future research directions that would address the aforementioned issues and emerging use cases for UAV enabled MEC. © 2022 Elsevier B.V.</p>
	23rd International Conference on Enterprise Information Systems, ICEIS 2021	2022		<p>The proceedings contain 26 papers. The special focus in this conference is on Enterprise Information Systems. The topics include: Blockchain-Based Enterprise Ballots in an Oil and Gas Consortium; automated Support for Risk Management in Scrum Agile Projects; defining Digital Legacy Management Systems' Requirements; exploring Technical Debt Tools: A Systematic Mapping Study; NFR Evaluation in IoT Applications: Methods, Strategies and Open Challenges; on Persistent Implications of E2E Testing; applying Affordance Theory to Big Data Analytics Adoption; business Process Transformation During Covid-19; Self-organizing Federation of Autonomous MQTT Brokers; evaluation of Taxi Service with Regard to the Drivers Income Using Simulation Support; investigating Differential Privacy Outcomes; Eye-Tracking and Usability in (Mobile) ERP Systems; stressor Event Covid-19 Lockdown? A Multi-wave Study on Young People Starting Their Professional Careers; patterns for Using Fractal Enterprise Modelling in Operational Decision-Making; enabling Digital Twins in Industry 4.0; Dynamic Enterprise Business Development with Dual Capability EAM; adaptive Enterprise Architecture: Complexity Metrics in a Mixed Evaluation Method; an Approach to Evolution Management in Integrated Heterogeneous Data Sources; A Blockchain-Based Approach for COVID-19 Vaccine Lifecycle; a Complete Step-by-Step Methodology for Defining, Deploying and Monitoring a Blockchain Network in Industry 4.0; impact of Self-organization on Tertiary Objectives of Production Planning and Control; Application and Comparison of CC-Integrals in Business Group Decision Making; Edge Deep Learning Towards the Metallurgical Industry: Improving the Hybrid Pelletized Sinter (HPS) Process; online Algorithms for Prize-Collecting Optimization Problems.</p>
	12th International Symposium on Business Modeling and Software Design, BMSD 2022	2022		<p>The proceedings contain 21 papers. The special focus in this conference is on Business Modeling and Software Design. The topics include: An Architecture for Attesting to the Provenance of Ontologies Using Blockchain Technologies; trends for the DevOps Security. A Systematic Literature Review; errors in the Process of Modeling Business Processes; use Cases for Augmented Reality Applications in Enterprise Modeling: A Morphological Analysis; on the Context-Aware Servicing of User Needs: Extracting and Managing Context Information Supported by Rules and Predictions; towards Identification of Privacy Requirements with Systems Thinking; toward a Reference Architecture for User-Oriented Open Government Data Portals; knowGo: An Adaptive Learning-Based Multi-model Framework for Dynamic Automotive Risk Assessment; OSRM-CCTV: CCTV-Aware Routing and Navigation System for Privacy and Safety; agile Innovation Through Business Process Management: Realizing the Potential of Digital Transformation; CCTV-Exposure: System for Measuring User's Privacy Exposure to CCTV Cameras; computer Model for Assessment and Visualization of Specific Absorption Rate of Electromagnetic Field, Generated by Smartphone; requirements for Dynamic Jumps at the Execution of Business Processes; results from the Verification of Models of Spectrum Auctions; context-Aware, Intelligent Musical Instruments for Improving Knowledge-Intensive Business Processes; detecting Data Incompatibilities in Process-Driven Decision Support Systems; semantic Relations of Sub-models in an Enterprise Model; VR-EA+TCK: Visualizing Enterprise Architecture, Content, and Knowledge in Virtual Reality; a Case of Social Dynamics and Social Relativism.</p>

<p>Filho G.E.K.; Guerino G.C.; Valentim N.M.C.</p>	<p>A systematic mapping study on usability and user eXperience evaluation of multi-touch systems</p>	<p>2022</p>	<p>10.1145/3554364.3559131</p>	<p>A significant increase in multi-touch interactions is notable with the expanded use of smartphones, tablets, and tabletops. Multi-touch systems are software that uses the user's fingers to perform some action. These systems need evaluation before being available in the market to improve the interaction and general user experience. In this context, User eXperience (UX) and Usability are relevant criteria related to multi-touch systems quality. Therefore, we performed a Systematic Mapping Study (SMS) seeking to identify evaluation technologies used by professionals and researchers to evaluate the aspects of Usability and UX in multi-touch systems. After the selection process, 65 out of 622 identified papers were selected for data extraction. As a result, 29 different evaluation technologies were identified. Besides, we also obtained characteristics of these technologies, empirical studies, and the multi-touch systems presented in the papers. Our study shows a lack of evaluation technologies focused on the multi-touch context; most do not evaluate Usability and UX concepts jointly; none go under an empirical evaluation since researchers tend to create their technologies to assess their aspects. This SMS presents data about the evaluation technologies extracted and the gaps found over the researched topic, contributing to the scientific and industrial community that evaluates the Usability and UX of multi-touch systems. © 2022 ACM.</p>
<p>Shaqour A.; Hagishima A.</p>	<p>Systematic Review on Deep Reinforcement Learning-Based Energy Management for Different Building Types</p>	<p>2022</p>	<p>10.3390/en15228663</p>	<p>Owing to the high energy demand of buildings, which accounted for 36% of the global share in 2020, they are one of the core targets for energy-efficiency research and regulations. Hence, coupled with the increasing complexity of decentralized power grids and high renewable energy penetration, the inception of smart buildings is becoming increasingly urgent. Data-driven building energy management systems (BEMS) based on deep reinforcement learning (DRL) have attracted significant research interest, particularly in recent years, primarily owing to their ability to overcome many of the challenges faced by conventional control methods related to real-time building modelling, multi-objective optimization, and the generalization of BEMS for efficient wide deployment. A PRISMA-based systematic assessment of a large database of 470 papers was conducted to review recent advancements in DRL-based BEMS for different building types, their research directions, and knowledge gaps. Five building types were identified: residential, offices, educational, data centres, and other commercial buildings. Their comparative analysis was conducted based on the types of appliances and systems controlled by the BEMS, renewable energy integration, DR, and unique system objectives other than energy, such as cost, and comfort. Moreover, it is worth considering that only approximately 11% of the recent research considers real system implementations. © 2022 by the authors.</p>
<p>Mao C.; Chang D.</p>	<p>Review of cross-device interaction for facilitating digital transformation in smart home context: A user-centric perspective</p>	<p>2023</p>	<p>10.1016/j.aei.2023.102087</p>	<p>With the permeation of smart devices and connected intelligence in people's daily life, human-computer interaction is no longer between users and single products, but exists between users and complex product systems. It greatly facilitates the digitalization of user data, environment conditions, and interaction process, which makes digital transformation (DT) feasible in smart home context to help create innovative life services and additional user values. Cross-device interaction has thusly become an important measure in realizing DT in smart home areas, and related studies are growing rapidly. Unlike previous reviews, which mainly focus on the historical development, the applications and evaluation strategies of cross-device interaction, a user-centric perspective was proposed in this work to emphasize the user experience and user values. For the purpose, a systematic literature review approach was developed, and 130 articles in recent 15 years were obtained and reviewed. Through text mining and bibliometric analysis, the topics attracting higher research attention were identified. Following the identified research spots, the related works were analyzed from the aspects of (i) main services supported by cross-device interaction, (ii) common interaction configurations for different service purposes, and (iii) user-perceived values brought by cross-device interaction. Moreover, the challenges which hinder the deepened digitalization of smart home systems were discussed, including data quality, user experience and system safety issues. Accordingly, future development opportunities in the further integration of emerging digital technologies, attempts in natural interaction, and extension of smart home scenarios were suggested. This review is expected to help researchers better understand the role of cross-device interaction in digitalizing a complex smart home system, provide references on effective configuration of interaction systems for different purposes, and shed light on future development directions in this area. © 2023 Elsevier Ltd</p>

	IFIP WG 8.6 International Working Conference on Transfer and Diffusion of IT, TDIT 2022	2022		The proceedings contain 29 papers. The special focus in this conference is on Transfer and Diffusion of IT. The topics include: The DECENT Toolkit to Support Design of User Engagement of Mobile Health Technologies from a Practice Theory Perspective; Good Morning Chatbot, Do I Have Any Meetings Today? Investigating Trust in AI Chatbots in a Digital Workplace; AI/Human Augmentation: A Study on Chatbot – Human Agent Handovers; co-creating Through Robotic Process Automation – The Role of Consultants in a Public Sector Automation Journey; preface; an Interdisciplinary Review of Ephemerality for Information Systems Research; is Inner Source the Next Stage in the Agile Revolution?; open Source Software Governance: Towards a Link to the Business World; setting Goals in a Digital Transformation of Environmental Assessment: A Case Study; Reviewing Transfer and Diffusion of Climate Technology in Households: Towards a Greener IT Future; IT Diffusion in the Society: The Expansion of Smart Cities and Their Impact on the Sustainable Development; a Negotiated Public Value for Digital Entrepreneurship: A Case Study of Bahrain; contextual Use of IoT Based Water Quality Control System; working from Home Beyond Covid-19: Technology – Friend or Foe?; work-From-Home Performance During the Pandemic: How Technology Availability Moderates Job Role, Stress and Family-Work Conflict; the State of Health Information Systems Research in Africa: A Scoping Review; co-design Theory Adoptability: How Organizational Change is Co-created by Design Theorists and Theory Adopters; as Time Goes By: Temporal Characteristics of Social Media and Information Objective-Subjective Tensions in Crisis Communication; metaverses and Business Transformation.
Moscato S.; Cortelli P.; Chiari L.	Physiological responses to pain in cancer patients: A systematic review	2022	10.1016/j.c mpb.2022.1 06682	Background and objective: Pain is one of the most debilitating symptoms in persons with cancer. Still, its assessment is often neglected both by patients and healthcare professionals. There is increasing interest in conducting pain assessment and monitoring via physiological signals that promise to overcome the limitations of state-of-the-art pain assessment tools. This systematic review aims to evaluate existing experimental studies to identify the most promising methods and results for objectively quantifying cancer patients' pain experience. Methods: Four electronic databases (Pubmed, Compendex, Scopus, Web of Science) were systematically searched for articles published up to October 2020. Results: Fourteen studies (528 participants) were included in the review. The selected studies analyzed seven physiological signals. Blood pressure and ECG were the most used signals. Sixteen physiological parameters showed significant changes in association with pain. The studies were fairly consistent in stating that heart rate, the low-frequency to high-frequency component ratio (LF/HF), and systolic blood pressure positively correlate with the pain. Conclusions: Current evidence supports the hypothesis that physiological signals can help objectively quantify, at least in part, cancer patients' pain experience. While there is much more to be done to obtain a reliable pain assessment method, this review takes an essential first step by highlighting issues that should be taken into account in future research: use of a wearable device for pervasive recording in a real-world context, implementation of a big-data approach possibly supported by AI, including multiple stratification factors (e.g., cancer site and stage, source of pain, demographic and psychosocial data), and better-defined recording procedures. Improved methods and algorithms could then become valuable add-ons in taking charge of cancer patients. © 2022
Dorst L.M.; Cimonetti V.; Cardoso J.R.; Moura F.A.; Bini R.R.	Effectiveness of Lower- Cost Strategies for Running Gait Retraining: A Systematic Review	2023	10.3390/app 13031376	The effectiveness of lower-cost equipment used for running gait retraining is still unclear. The objective of this systematic review was to evaluate the effectiveness of lower-cost equipment used in running gait retraining in altering biomechanical outcomes that may be associated with injuries. The literature search included all documents from MEDLINE, Web of Science, CINAHL, SPORTDiscus, and Scopus. The studies were assessed for risk of bias using an evaluation tool for cross-sectional studies. After screening 2167 initial articles, full-text screening was performed in 42 studies, and 22 were included in the systematic review. Strong evidence suggested that metronomes, smartwatches, and digital cameras are effective in running gait retraining programs as tools for intervention and/or evaluation of results when altering step cadence and foot strike patterns. Strong evidence was found on the effectiveness of accelerometers in interventions with feedback to reduce the peak positive acceleration (PPA) of the lower leg and/or footwear while running. Finally, we found a lack of studies that exclusively used lower-cost equipment to perform the intervention/assessment of running retraining. © 2023 by the authors.

Yu J.; de Antonio A.; Villalba-Mora E.	Deep Learning (CNN, RNN) Applications for Smart Homes: A Systematic Review	2022	10.3390/computers11020026	<p>In recent years, research on convolutional neural networks (CNN) and recurrent neural networks (RNN) in deep learning has been actively conducted. In order to provide more personalized and advanced functions in smart home services, studies on deep learning applications are becoming more frequent, and deep learning is acknowledged as an efficient method for recognizing the voices and activities of users. In this context, this study aims to systematically review the smart home studies that apply CNN and RNN/LSTM as their main solution. Of the 632 studies retrieved from the Web of Science, Scopus, IEEE Explore, and PubMed databases, 43 studies were selected and analyzed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology. In this paper, we examine which smart home applications CNN and RNN/LSTM are applied to and compare how they were implemented and evaluated. The selected studies dealt with a total of 15 application areas for smart homes, where activity recognition was covered the most. This study provides essential data for all researchers who want to apply deep learning for smart homes, identifies the main trends, and can help to guide design and evaluation decisions for particular smart home services. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.</p>
Saqib M.; Moon A.H.	A Systematic Security Assessment and Review of Internet of Things in the Context of Authentication	2023	10.1016/j.comsec.2022.103053	<p>The Internet of Things is emerging globally as an intriguing trend expected to connect 15 billion devices by the end of 2022. Its ability to bring intelligence and automation to various application domains provides a plethora of opportunities while posing severe security challenges. Lack of proper authentication has been attributed to data disclosure's perils over wireless communication channels. Therefore, authentication as an essential security tenet continues to be a highly researched area, especially in resource constraint networks like IoT and IIoT. This paper constructs a comprehensive systematic literature review to identify and synthesize security issues in IoT from the perspective of authentication mechanisms. Initially, the prevalent security and privacy issues are identified, followed by the explanation of security threats across various layers of the IoT architecture. Additionally, the countermeasures available for addressing security issues are also covered. The highlight of the review is to present a literature review of various authentication mechanisms and different formal security evaluations holistically required for IoT authentication. Moreover, a comparative analysis of some of the popular existing authentication mechanisms designed for the IoT in terms of various performance parameters like computational, communication overhead, and energy consumption has also been covered. Finally, the paper discusses the typical methods for assessing network security and network simulator tools used to evaluate the performance parameters of authentication schemes. This review paper attempts to assist researchers in identifying the existing research gaps in various forms of authentication employed in a typical resource constraint network like IoT that would lead them to develop new solutions. The protocol provided by Kitchenham and Charters has been used to perform this Systematic Literature Review. © 2022</p>
Zhang N.; Zhang J.; Ying Y.; Luo C.; Li J.	Wi-Phrase: Deep Residual-Multihead Model for WiFi Sign Language Phrase Recognition	2022	10.1109/JIOT.2022.3164243	<p>Sign language (SL) is used by hearing impaired and deaf people. The WiFi-based sign language recognition (SLR) technology has attracted much attention due to its contactless nature and wide applications. Most previous SLR works are designed to recognize a single isolated sign word in data samples. However, such assumption is not realistic in practical applications, such as, in daily communication, deaf people usually express their mind through a phrase (a.k.a. a group of words) rather than an isolated word. Compared with the previous works, the sign words in a phrase have variety of length, sequential patterns, and combinations in realistic communications between deaf people. Therefore, it is challenging in exploiting the WiFi signals to accurately capture the unique patterns of SL in the previous natural setting. In this article, we propose Wi-Phrase, a multigesture context-awareness SLR system. Wi-Phrase exploits WiFi signals to translate SL to the English phrase. To achieve this, Wi-Phrase employs principal component analysis (PCA) projection to filter out the noise and convert cleaned WiFi signals to spectrogram. Then, we propose a novel Residual-MultiHead model that exploit residual learn structure to obtain local patterns of phrases and adopt multihead block to capture the global context information of phrase. To prove the advanced nature of our model, we design a WiFi-based SL phrase data set of 40 categories for experiments. Our comprehensive evaluation shows that Wi-Phrase achieves an accurate phrase recognition accuracy of 95.03%. In future, we envision Wi-Phrase could be widely used as the phrase command control system for deaf people in IoT devices. © 2014 IEEE.</p>

<p>Pacheco Rocha N.; Dias A.; Santinha G.; Rodrigues M.; Rodrigues C.; Queirós A.; Bastardo R.; Pavão J.</p>	<p>Systematic literature review of context-awareness applications supported by smart cities' infrastructures</p>	<p>2022</p>	<p>10.1007/s42452-022-04979-0</p>	<p>Since none of the existing systematic reviews of the literature related to smart cities have focused on smart cities applications using context-aware features, this study aims to provide a comprehensive view of (1) the characteristics of context-aware applications supported by smart cities' infrastructures, (2) the characteristics of the context-aware technologies being used, and (3) the maturity level of the identified applications. An electronic search was conducted on Scopus, Web of Science, and IEEE Xplore databases, combining relevant keywords. After the studies' selection, 27 studies were included. The results show the interest in using context-aware features to develop smart cities' applications targeting public health, tourism experience, urban mobility, active citizenship, shopping experience, management of urban infrastructures, public alerts, recommenders, and smart environments. Moreover, the applications reported by the included studies do not allow the execution of actions without the explicit consent of the users, and they integrate personal sensors, sensors deployed in the city and crowdsourcing mechanisms to acquire primary context attributes (i.e., location, activity, and environment) and secondary context attributes (i.e., speed, physical activity, points of interest, stress, and tourists' emotions). In addition, the included studies present scarce details about context reasoning, data privacy, integrity, and confidentiality, data aggregation and accuracy, and data interoperability. Finally, the results also indicate low maturity level of the developed applications, which is evidenced by the lack of user-centred evaluations, as well as by the difficulty in integrating important technologies being developed for smart cities. © 2022, The Author(s).</p>
<p>Nasr V.; Zahabi M.</p>	<p>Usability Evaluation Methods of Indoor Navigation Apps for People with Disabilities: A Scoping Review</p>	<p>2022</p>	<p>10.1109/ICHMS56717.2022.9980809</p>	<p>More than 25% of adults in the U.S. have one or more disabilities. These disabilities hinder one's ability to complete necessary everyday tasks such as navigating independently in indoor environments. Various tools have been designed and tested to aid disabled persons while navigating indoors including smartphone apps. However, many of the designed interfaces are not extensively researched and therefore might not meet the needs of end users. The objective of this study was to determine the types of usability evaluation methods used for indoor navigation app interfaces designed for people with disabilities and recommend a comprehensive usability method for future studies. A scoping literature review was conducted on different databases. Fifty-one articles met the inclusion criteria and were included in the analyses. Results revealed that a majority of studies used subjective data as a measure of usability, several conducted usability tests with a limited number of end users, and there was a lack of comprehensive usability evaluation methods. These limitations often led to general validations of whether the interface had acceptable usability, but they did not provide specific feedback for interface improvements. Based on these findings, a list of recommendations for future studies is provided to better assess usability of indoor navigation apps for people with disabilities. © 2022 IEEE.</p>
<p>Marengo L.L.; Barberato-Filho S.</p>	<p>Involvement of Human Volunteers in the Development and Evaluation of Wearable Devices Designed to Improve Medication Adherence: A Scoping Review</p>	<p>2023</p>	<p>10.3390/s23073597</p>	<p>Wearable devices designed to improve medication adherence can emit audible and vibrating alerts or send text messages to users. However, there is little information on the validation of these technologies. The aim of this scoping review was to investigate the involvement of human volunteers in the development and evaluation of wearable devices. A literature search was conducted using six databases (MEDLINE, Embase, Scopus, CINAHL, PsycInfo, and Web of Science) up to March 2020. A total of 7087 records were identified, and nine studies were included. The wearable technologies most investigated were smartwatches (n = 3), patches (n = 3), wristbands (n = 2), and neckwear (n = 1). The studies involving human volunteers were categorized into idea validation (n = 4); prototype validation (n = 5); and product validation (n = 1). One of them involved human volunteers in idea and prototype validation. A total of 782 participants, ranging from 6 to 252, were included. Only five articles reported prior approval by a research ethics committee. Most studies revealed fragile methodological designs, a lack of a control group, a small number of volunteers, and a short follow-up time. Product validation is essential for regulatory approval and encompasses the assessment of the effectiveness, safety, and performance of a wearable device. Studies with greater methodological rigor and the involvement of human volunteers can contribute to the improvement of the process before making them available on the market. © 2023 by the authors.</p>
<p>Wang Z.; Zhao T.; Ma J.; Chen H.; Liu K.; Shao H.; Wang Q.; Ren J.</p>	<p>Hear Sign Language: A Real-Time End-to-End Sign Language Recognition System</p>	<p>2022</p>	<p>10.1109/TMC.2020.3038303</p>	<p>Sign language recognition (SLR) bridges the communication gap between the hearing-impaired and the ordinary people. However, existing SLR systems either cannot provide continuous recognition or suffer from low recognition accuracy due to the difficulty of sign segmentation and the insufficiency of capturing both finger and arm motions. The latest system, SignSpeaker, has a significant limit in recognizing two-handed signs with only one smartwatch. To address these problems, this paper designs a novel real-time end-to-end SLR system, called DeepSLR, to translate sign language into voices to help people 'hear' sign language. Specifically, two armbands embedded with an IMU sensor and multi-channel sEMG sensors are attached on the forearms to capture both coarse-grained arm movements and fine-grained finger motions. We propose an attention-based encoder-decoder model with a multi-channel convolutional neural network (CNN) to realize accurate, scalable, and end-to-end continuous SLR without sign segmentation. We have implemented DeepSLR on a smartphone and evaluated its effectiveness through extensive evaluations. The average word error rate of continuous sentence recognition is 10.8 percent, and it takes less than 1.1s for detecting signals and recognizing a sentence with 4 sign words, validating the recognition efficiency and real-time ability of DeepSLR in real-world scenarios. © 2002-2012 IEEE.</p>

Senior C.; Temeljotov Salaj A.; Johansen A.; Lohne J.	Evaluating the Impact of Public Participation Processes on Participants in Smart City Development: A Scoping Review	2023	10.3390/buildings13061484	This paper provides an overview of the current state of research on the evaluation methods of participatory processes in smart cities. Specifically, it aims to identify and analyze existing evaluation methods and frameworks for public participation (PP) in smart city development. The study focuses on the evaluation of participatory processes to find key indicators and enable an assessment of PP from multiple perspectives. A scoping literature review was conducted to analyze the past ten years of scientific literature on the topic. Relevant literature was retrieved from Scopus, Web of Science, and Google Scholar, and articles were selected based on a set of criteria to ensure quality and relevance. We found that digital participation, also known as “e-participation”, is the most used method either exclusively or mixed with in-person methods. The level of participation achieved was mostly limited to the first two degrees of PP (i.e., information and consultation), and only a few papers addressed the highest degrees (i.e., agenda-setting and co-management). The impact on participants was mostly related to knowledge and skills, awareness raising, and satisfaction with the process and method. This paper highlights the potential to upskill citizens and enhance their understanding of sustainable urban development, fostering their commitment to achieving the United Nations’ sustainability goals for climate change mitigation in the urban context. © 2023 by the authors.
Qi J.; Gao T.; Deng X.; Zhao C.	A pseudonym-based certificateless privacy- preserving authentication scheme for VANETs	2022	10.1016/j.vehcom.2022.100535	With the rapid development of wireless communication technology, Vehicular Ad-Hoc Networks (VANETs) is gradually becoming a key component for establishing core applications such as smart cities and the Intelligent Transportation System (ITS). However, due to the wireless multi-hop communication, VANETs is vulnerable to attacks. Therefore, the implementation of legitimacy authentication and conditional privacy preserving among entities in VANETs is a necessary prerequisite to ensure the security of VANETs. This paper proposes a secure and efficient conditional privacy preserving scheme for VANETs. Under the premise of guaranteeing the conditional privacy in VANETs, the anonymous authentication scheme is constructed by combining the pseudonym-based mechanism and the certificateless signature mechanism. Moreover, the scheme has great advantages in fast revocation of vehicles, and ensures that the pseudonyms cannot be linked before being traced. Security analysis proves that the proposed scheme is able to meet the privacy protection requirements in VANETs. In addition, the performance evaluation shows that the efficiency of the proposed scheme is significantly improved compared with the state-of-art schemes. © 2022 Elsevier Inc.
Hosseinzadeh M.; Hemmati A.; Rahmani A.M.	6G-Enabled Internet of Things: Vision, Techniques, and Open Issues	2022	10.32604/comes.2022.021094	There are changes in the development of wireless technology systems every decade. 6G (sixth generation) wireless networks improve on previous generations by increasing dependability, accelerating networks, increasing available bandwidth, decreasing latency, and increasing data transmission speed to standardize communication signals. The purpose of this article is to comprehend the current directions in 6G studies and their relationship to the Internet of Things (IoT). Also, this paper discusses the impacts of 6G on IoT, critical requirements and trends for 6G-enabled IoT, new service classes of 6G and IoT technologies, and current 6G-enabled IoT studies selected by the systematic literature review (SLR) method published from 2018 to 2021. In addition, we present a technical taxonomy for the classification of 6G-enabled IoT, which includes self-organization systems, energy efficiency, channel assessment, and security. Also, according to the articles reviewed, we consider the evaluation factors in this domain, including data transmission, delay, energy consumption, and bandwidth. Finally, we focus on open issues and future research challenges in 6G-enabled IoT. To mention important future challenges and directions, we can point to migration, data storage, data resource, data security, data sharing, data offloading, availability, scalability, portability, user experience, reliability, authentication, and authorization. © 2022 Tech Science Press. All rights reserved.



DeWitt A.; Kientz J.; Coker T.R.; Liljenquist K.	mHealth Technology Design and Evaluation for Early Childhood Health Promotion: Systematic Literature Review	2022	10.2196/37718	populations have inspired researchers in medicine, computing, and health informatics to design and evaluate mobile health (mHealth) interventions, specifically for those supporting child development and growth. Although these interventions demonstrate possible effectiveness at larger scales, few of these interventions are evaluated to address racial disparities and health equity, which are known factors that affect relevance, uptake, and adherence in target populations. Objective: In this study, we aimed to identify and document the current design and evaluation practices of mHealth technologies that promote early childhood health, with a specific focus on opportunities for those processes to address health disparities and health equity. Methods: We completed a systematic literature review of studies that design and evaluate mHealth interventions for early childhood health promotion. We then analyzed these studies to identify opportunities to address racial disparities in early- and late-stage processes and to understand the potential efficacy of these interventions. Results: Across the literature from medical, computing, and health informatics fields, we identified 15 articles that presented a design or evaluation of a parent-facing health intervention. We found that using mobile-based systems to deliver health interventions was generally well accepted by parents of children aged <5 years. We also found that, when measured, parenting knowledge of early childhood health topics and confidence to engage in health-promoting behaviors improved. Design and evaluation methods held internal consistency within disciplines (eg, experimental study designs were the most prevalent in medical literature, while computing researchers used user-centered design methods in computing fields). However, there is little consistency in design or evaluation methods across fields. Conclusions: To support more interventions with a comprehensive design and evaluation process, we recommend attention to design at the intervention (eg, reporting content sources) and system level; interdisciplinary collaboration in early childhood health intervention development can lead to large-scale deployment and success among populations. © Akeiyah DeWitt, Julie Kientz, Tumaini R Coker,
Gupta K.; Roy S.	A Systematic Review on Usability of mHealth Applications on Type 2 Diabetes Mellitus	2023	10.1007/978-981-19-1412-6_10	In this present digital world, smart phones play a vital role, especially in the healthcare sector. The various mHealth applications installed in smart phones can solve primary health-related issues at a fingertip. However, the utility of those applications will increase if they meet user satisfaction and can solve the tasks effectively and efficiently. Thus, usability evaluation of mHealth applications is a matter of concern. Many usability evaluation techniques have been used till now but a majority of them are not unified and do not safeguard all usability aspects especially for mHealth applications. The purpose of this study is to recognize specific attributes that might help tremendously in assessing the usability of mHealth applications and examine the features of various usability evaluation methodologies for evaluating mHealth applications featured for diagnosing Type 2 diabetes mellitus (T2DM). © 2023, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.
	Proceedings - AiIC 2022: 2022 Applied Informatics International Conference: Digital Innovation in Applied Informatics during the Pandemic	2022		The proceedings contain 34 papers. The topics discussed include: understanding students' online learning performance during Covid-19 pandemic in Bangladesh; a prototype development and usability evaluation of an e-health system; Malaysian ethnicity classification based on face images using deep learning; a proposed implementation of internet of things as a teaching aid for learning science collaboratively; biodiversity repository and retrieval system for Malay language; real-time face mask detector using deep learning; systematic literature review of metaheuristic methodologies for high school timetabling problem; an exemplifying study of the e-learning adoption during covid-19 pandemic in Oman; news analytics to predict Malaysian telco stock price performance: dataset preparation; and mobile social media use in flooding emergencies: the impact of information seeking and sharing through social media crisis communication and resilience model.
Yin M.-Y.; Li J.-G.	A systematic review on digital human models in assembly process planning	2023	10.1007/s00170-023-10804-8	Simulating the behavior of operators through a digital human model (DHM) is an intuitive way to reflect the human factors in the assembly process, which is important for ergonomics research in Industry 4.0. The efficiency of digital human assembly simulation has become the main bottleneck restricting the application of DHMs in assembly planning for a long time. With the development of artificial intelligence algorithms, it has become more realistic and efficient to build a human-cyber-physical system (HCPS) and achieve efficient digital human assembly planning. This paper has considered the leading technologies, advanced methods, and challenges related to digital human assembly. In terms of digital human modeling, we summarized the limitations of existing construction methods and discussed the potential of innovative methods in the field of robotics and computers for digital human motion modeling to improve the efficiency of digital human posture planning. In terms of assembly ergonomics evaluation with DHMs, we reviewed the classical assembly ergonomics evaluation methods and pointed out the parts to be improved in the existing evaluation systems. In terms of digital human assembly operation planning with DHMs, we discussed and identify the limitations of existing planning methods. And in terms of human-robot collaborative assembly with DHMs, we proposed the difficulties and the future development trends at the practical application. It is foreseeable that by improving the efficiency of the digital human posture planning and the comprehensiveness of ergonomics evaluation with DHMs, DHMs will have the potential to be more in-depth to help the operators and designers in whole process of product manufacturing industry. © 2023, The Author(s), under exclusive licence to Springer-Verlag London Ltd., part of Springer Nature.

Miklautsch P.; Hoffelner M.; Woschank M.	Harmonizing "Smart" Life Cycle Assessment in Manufacturing Companies: Literature Review and Preliminary Morphological Analysis	2022	10.1016/j.ifa col.2022.09. 600	One of the major challenges for manufacturing companies is finding opportunities to implement green and transparent operational processes to meet a set of macro-economic targets which are defined in strategic initiatives such as the 2030 Agenda for Sustainable Development, the European Green Deal, and the Paris Agreement. Although, in this context, Life Cycle Assessment (LCA) has become established as a common method for assessing the environmental impact of products or processes, in practice problems often arise due to a large amount of data and information to be processed and the resources required. In this regard, recent Industry 4.0 technologies can be seen as a potential enabler of an automated "smart" life cycle assessment in manufacturing companies. Therefore, this paper systematically reviews the current literature on "smart" LCA implementations and presents a comprised overview of the generic properties of "smart" LCA implementations using a general morphological analysis. The research results of this paper can be used for the further development of a "smart" LCA for science and practical applications, as well. © 2022 The Authors. This is an open access article under the CC BY-NC-ND license ( <a href="https://creativecommons.org/licenses/by-nc-nd/4.0/">https://creativecommons.org/licenses/by-nc-nd/4.0/</a> )
Gerrans J.; Donyai P.; Finlay K.; Sherratt R.S.	An Efficient Smart Pharmaceutical Packaging Technology Framework to Assess the Quality of Returned Medication through Non-Intrusively Recording Storage Conditions after Dispensation	2023	10.3390/tec hnologies11 030075	Medicine waste is a global issue, with economic, environmental, and social consequences that are only predicted to worsen. A structured review of the literature on medicine reuse revealed that there is a lack of technological applications addressing the key concerns raised by pharmaceutical stakeholders on the safety and feasibility of redispensing medication. A basis and guidelines for solutions aiming at enabling medicine reuse were devised by exploring a conceptual model of a Circular Pharmaceutical Supply Chain (CPSC), discussing concerns raised within the literature and identifying methods to influence the public and pharmaceutical companies. SPaRAS, a novel system to validate the storage conditions and streamline the assessment of returned medicines, is proposed. The Smart Packaging System (SPS) will record the storage conditions of medication while in patient care. The companion Returns Assessment System (RAS) will efficiently communicate with the SPS through RFID, configure the sensors within the SPS to the needs of its assigned medicine and assess the returns against tailored eligibility criteria. The increased safety and efficiency provided by SPaRAS addresses the concerns of large pharmaceutical companies and the public, offering a method to reuse previously owned medication and reduce the effects of unnecessary medicine waste. © 2023 by the authors.
Shah P.; Zhao X.	Network Identification Using $\mu$ -PMU and Smart Meter Measurements	2022	10.1109/TII. 2022.31566 52	The network identification plays a very prominent role for the network operator to accomplish the various objectives such as state-estimation, monitoring, control, planning, and real-time analytics. The network structure varies from time-to-time and its details are often not available with the network operator. To address this issue, in this article, an alternating direction method of multipliers (ADMM) based framework is presented herein to identify the network topology and line parameters using smart meter and microphasor measurement unit ( $\mu$ ) measurements. The presented algorithm is divided into two sections 1) approximate parameter evaluation through regression, to extract the partial topology information and 2) complete network topology identification through the ADMM framework. This algorithm accomplishes the objectives of identifying the network configuration, branch parameters (e.g., conductance and susceptance), and change in branch parameters. Simulation results demonstrate the effectiveness of the presented algorithm on the benchmarked IEEE 13-bus and IEEE 123-bus feeders under various operating scenarios. Furthermore, the presented framework illustrates excellent network identification even with the presence of the stochastic nature of renewable power generation. The presented algorithm exhibits an excellent performance even with the consideration of noise in both measurements. In addition, the comparative performance is carried out on the benchmarked unbalanced IEEE 13-bus and balanced IEEE 33-bus feeders to highlight the efficacy of the presented framework over the state-of-art framework. © 2005-2012 IEEE.
Tyagi H.; Kumar R.; Pandey S.K.	A detailed study on trust management techniques for security and privacy in IoT: challenges, trends, and research directions	2023	10.1016/j.hc c.2023.1001 27	The Internet of Things is a modern technology that is directed at easing human life by automating most of the things used in daily life. The never-ending dependency on the network for communication is attracting adversaries to exploit the vulnerabilities of IoT. Therefore, this technology is facing some serious issues and challenges concerning security and privacy. These issues and challenges are the real motivation behind considering this study. Hence, this survey includes a discussion about security and privacy challenges as well as available solutions for IoT based wireless sensor networks. This systematic literature review (SLR) focuses particularly on a popular and applicable security approach known as Trust Management System (TMS). Firstly, all aspects of trust management, including trust indicators, trust properties, trust evaluation, trust building, trust models and the importance of those models for security and privacy, trust prediction methodologies, and ultimately trust-based attacks, are covered in this literature. Secondly, trust management schemes are classified into four groups based on the methodology used for trust-based security solutions in the IoT: cryptography-based, computational and probabilistic-based, information theory-based, and others. Then, an understanding of the problems and difficulties with current methodologies is given, along with suggestions for further research. Finally, the SLR is concluded by formulating the desirable characteristics of a trust management system in the IoT and proposing a trust model suitable for IoT networks. © 2023 The Author(s)



C.N. P.; Vimala H.S.; J. S.	A systematic survey on content caching in ICN and ICN-IoT: Challenges, approaches and strategies	2023	10.1016/j.comnet.2023.109896	Context: Data traffic increased in recent years due to the expansion of IoT (Internet of Things) applications, and most IoT applications follow a content-oriented paradigm. The host-to-host nature of the existing internet architecture makes it inefficient for handling content distribution and information sharing. ICN (Information Centric Network) is a content-centric network that offers guaranteed solutions for data transfer between consumers and producers. ICN caching enables the caching technique in available resources, which can enhance the overall network performance by enabling users to access data within the network. Objective: This study aims to review the literature on caching approaches and strategies in ICN-IoT to identify areas that need more attention in current and future research directions. Method: A systematic mapping study was conducted to identify the relevant literature, and 88 publications that are categorized as caching approaches and caching strategies were chosen as the most relevant studies. Result: Based on caching approaches and caching strategies, the articles are grouped. Edge caching (50%), in-network caching (25%), and hybrid caching (25%) represent the majority of the articles on caching approaches. Popularity based caching (26%), cooperative caching (17%), collaborative caching (17%), machine learning-based caching (19%), and probabilistic caching (7%) represent the majority of the articles in caching strategies. This study further presents the simulators, performance metrics, parameters and performance evaluation of the existing literature. Conclusion: The results confirm that ICN is a futuristic internet architecture that assigns a content name to each content in the network and enables in-network caching; it is a superior technique for resolving IoT challenges and increases the overall network efficiency. © 2023 Elsevier B.V.
Desmal A.J.; Hamid S.; Othman M.K.; Zolait A.	A user satisfaction model for mobile government services: a literature review	2022	10.7717/PEERJ-CS.1074	User satisfaction is essential for the success of an organisation. With the development of government service delivery through mobile platforms, a compatible measurement model must be found to measure user satisfaction with performing such services through a mobile government portal. Measuring user satisfaction with mobile government services is necessary nowadays due to the increasing popularity of smart devices. Research on mGovernment users' satisfaction is lacking, leading to difficulties in understanding users' expectations. In the present study, systematic literature reviews have been used to analyze users' satisfaction with mGovernment portals and propose a comprehensive model compatible with such contexts. The results show that government agencies can evaluate users' satisfaction using the proposed model of six quality constructs: usability, interaction, consistency, information, accessibility, and privacy and security. The study recommends improving the evaluation strategies of mGovernment portals regularly to ensure they fit with challenges. Measuring user satisfaction at mGovernment services encourages the user to perform the transactions through such online platforms, increasing the digitalization process and reducing the cost and efforts for both the service provider and end-users. © 2022 Desmal et al.
Paiva J.O.V.; Andrade R.M.C.; Carvalho R.M.	NFR Evaluation in IoT Applications: Methods, Strategies and Open Challenges	2022	10.1007/978-3-031-08965-7_15	Internet of Things (IoT) is a paradigm that allows physical objects to interact and work together over the Internet. IoT applications will be increasingly common in our lives and influence the way we perform daily activities in the near future. This type of application has particular characteristics, such as context awareness, interconnectivity, and heterogeneity, and it presents a new type of interaction, the interaction between devices (called thing-thing interaction). These characteristics represent the expectation around the system and are also known as Non-Functional Requirements (NFRs). However, these NFRs often increase the complexity of IoT application development and evaluation. Then, this paper aims to identify, through a literature review, how the scientific community has addressed the evaluation of NFRs for IoT applications, how these evaluations have been performed, what artifacts have been used, which NFRs are considered during these evaluations, and what are the main challenges faced by evaluators. We use a systematic mapping methodology to provide a comprehensive overview of the subject and we strengthen the results by conducting a snowballing procedure (backward and forward). As a result, we identified a set of 48 NFRs for IoT applications as well as seven tools, six approaches, four methods and one process that can be considered for evaluating IoT applications. Furthermore, we list the main challenges related to the evaluation of NFRs for IoT applications and provide a summary of the scientific community's view on the topic. © 2022, Springer Nature Switzerland AG.
Unhelkar B.; Joshi S.; Sharma M.; Prakash S.; Mani A.K.; Prasad M.	Enhancing supply chain performance using RFID technology and decision support systems in the industry 4.0—A systematic literature review	2022	10.1016/j.jm.2022.100084	Supply Chain processes are continuously marred by myriad factors including varying demands, changing routes, major disruptions, and compliance issues. Therefore, supply chains require monitoring and ongoing optimization. Data science uses real-time data to provide analytical insights, leading to automation and improved decision making. RFID is an ideal technology to source big data, particularly in supply chains, because RFID tags are consumed across supply chain process, which includes scanning raw materials, completing products, transporting goods, and storing products, with accuracy and speed. This study carries out a systematic literature review of research articles published during the timeline (2000-2021) that discuss the role of RFID technology in developing decision support systems that optimize supply chains in light of Industry 4.0. Furthermore, the study offers recommendations on operational efficiency of supply chains while reducing the costs of implementing the RFID technology. The core contribution of this paper is its analysis and evaluation of various RFID implementation methods in supply chains with the aim of saving time effectively and achieving cost efficiencies. © 2022

Olorunfemi B.O.; Ogbolumani O.A.; Nwulu N.	Solar Panels Dirt Monitoring and Cleaning for Performance Improvement: A Systematic Review on Smart Systems	2022	10.3390/su1 41710920	The advancement in technology to manage energy generation using solar panels has proved vital for increased reliability and reduced cost. Solar panels emit no pollution while producing electricity as a renewable energy source. However, the solar panel is adversely affected by dirt, a major environmental factor affecting energy production. The intensity of light falling on the solar panel is reduced when dirt accumulates on the surface. This, in turn, lowers the output of electrical energy generated by the solar panel. Since cleansing the solar panel is essential, constant monitoring and evaluation of these processes are necessary to optimize them. This emphasizes the importance of using smart systems to monitor dirt and clean solar panels to improve their performance. The paper tries to verify the existence and the degree of research interest in this topic and seeks to evaluate the impact of smart systems to detect dirt conditions and clean solar panels compared to autonomous and manual technology. Research on smart systems for addressing dirt accumulation on solar panels was conducted taking into account efficiency, accuracy, complexity, and reliability, initial and running cost. Overall, real-time monitoring and cleaning of the solar panel improved its output power with integrated smart systems. It helps users get real-time updates of the solar panel's condition and control actions from distant locations. A critical limitation of this research is the insufficient empirical analysis of existing smart systems, which should be thoroughly examined to allow further generalization of theoretical findings. © 2022 by the authors.
Jin R.; Zhou J.; Hu J.; Guo P.; cai C.; Wu Y.	Towards Practical Lightweight Passive Human Tracking Using WiFi Sensing	2023	10.1109/JIO T.2023.3262 960	With the wide adoption of versatile IoT devices, device providers may desire to locate users around those devices to plan context-aware intelligence, which may improve the quality of daily life. As most IoT devices are Wi-Fi enabled, the Wi-Fi-based indoor positioning system is supposed to achieve this future scene. However, the state-of-art Wi-Fi indoor positioning systems face challenges when being practically deployed as they may have to trade-off between, say accuracy and computational overhead. In light of this, this article mainly introduces PLP-Track, a Practical Lightweight Passive indoor tracking system based on CSI (channel state information) fingerprints. To settle the low granularity of fingerprints in distinguishing different positions, we propose a fingerprint preprocessing algorithm based on unsupervised learning and incorporate this algorithm with a state-space model to enable lightweight real-time tracking. Our implementation and evaluation of commodity WiFi devices demonstrate that PLP-Track can achieve indoor localization with high accuracy and low computation cost. IEEE
da Costa V.B.F.; de Doile G.N.D.; Troiano G.; Dias B.H.; Bonatto B.D.; Soares T.; de Freitas Filho W.	Electricity Markets in the Context of Distributed Energy Resources and Demand Response Programs: Main Developments and Challenges Based on a Systematic Literature Review	2022	10.3390/en1 5207784	grids. Consequently, electricity markets are expected to undergo changes and become more complex. However, while there are many scientific publications on the topic, a broader discussion is still necessary. Therefore, a systematic literature review on electricity markets in the context of distributed energy resources integration was conducted in this paper to present in-depth discussions on the topic, along with shedding light on current perspectives, the most relevant sources, authors, papers, countries, metrics, and indexes. The software R and its open-source tool Bibliometrix were used to perform the systematic literature review based on the widely recognized databases Web of Science and Scopus, which led to a total of 1685 articles after removing duplicates. The results demonstrate that demand response, renewable energy, uncertainty, optimization, and smart grid are the most-used keywords. By assessing highly impactful articles on the theme, emphasis on energy storage systems becomes clear compared to distributed generation and electric vehicles. However, electric vehicles draw attention in terms of citations. Furthermore, multi-level stochastic programming is the most-applied methodology among highly impactful articles. Due to the relevance of the demand response keyword, this paper also conducts a specific review on the topic aligned with electricity markets and distributed energy resources (296 articles). The results demonstrate that virtually all high-impact publications on the topic address day-ahead or real-time pricing. Based on the literature found, this paper presents a discussion on the main challenges and future perspectives related to the field. The complexity of electrical power systems and electricity markets is increasing substantially according to what this study found. Distributed generation development is already advanced, while energy storage systems and electric vehicles are limited in many countries. Peer-to-peer electricity trading and virtual power plant are newer concepts that are currently incipient, and DR programs showcase an intermediate stage of evolution. A particular lack of research on social issues is verified, and also a lack of all-encompassing studies that address multiple interconnected topics, which should be better addressed in

Gupta A.; Patil J.; Soni S.; Rajan A.	Email Spam Detection Using Multi-head CNN- BiGRU Network	2023	10.1007/978-3-031-28180-8_3	Spam emails refer to unsolicited email messages, usually sent in bulk to a large list of recipients with the purpose of marketing, or luring individuals to download malware or click on phishing links. Although much research has been done on this topic, our study reveals that less attention is given to combatting the tactics used by spammers, like purposely forging spellings and the usage of smart sentence structuring. This work attempts to fill this void by using sub-wording and context-based methods. The sub-wording method is used to combat the usage of forged spellings while the context-based method is used to counter smart sentence structuring tactics used by spammers. Also, most of the prevalent methods have been evaluated only for one class weight. As the models' performance can vary over class weights, we have used two class weights i.e., balanced and unbalanced for evaluation. The proposed model is designed by using a multi-head approach integrated with the Convolutional Neural Network and Bidirectional Gated Recurrent Unit network. The proposed model has been evaluated on the Lingspam and Spamttext datasets. Another issue neglected in prevalent methods is catastrophic forgetting, to consider it we have used a combination of the two datasets. The evaluation is done in terms of f1_score, accuracy, and receiver operator characteristic curve. The proposed model performs well, giving 99.75% accuracy for the Spamttext dataset and 99.79% accuracy for the Lingspam dataset. Obtained results are compared with state of art models available in the previous literature works. © 2023, The Author(s), under exclusive license to Springer Nature Switzerland AG.
Rahardja U.; Ngadi M.A.; Sutarman A.; Apriani D.; Nabila E.A.	A Mapping Study Research on Blockchain Technology in Education 4.0	2022	10.1109/ICCIT55355.2022.10119064	Decentralized transactions and transaction management in the form of the Bitcoin cryptocurrency are part of Blockchain Technology. This Blockchain idea was created in 2008 by Satoshi Nakamoto. The attributes of Blockchain contain the importance of providing security, anonymity and integrity of transactions without third-party companies, which makes an exciting area due to Blockchain's general and decentralized nature. In this study, systematic mapping observations were used to collect all applicable studies on Blockchain generation. This goal is supported by understanding Blockchain research topics, situations that demand development, and future guidance on technicalities in the Blockchain era. The author has successfully researched forty-one major papers from several scientific paper publishers. The results of this study show that more than 80% of Blockchain papers use Bitcoin and the rest check other Blockchain attributes such as security using smart contracts. In this study, the authors specialize in reducing the limitations of using Blockchain from a privacy and security perspective. However, among the solutions presented, there is a lack of concrete evaluations of their effectiveness. This research produces a novelty in the form of suggestions for the use of Blockchain that can be used by leading to Education 4.0. © 2022 IEEE.
Martinho V.J.P.D.; Cunha C.A.D.S.; Pato M.L.; Costa P.J.L.; Sánchez- Carreira M.C.; Georgantzís N.; Rodrigues R.N.; Coronado F.	Machine Learning and Food Security: Insights for Agricultural Spatial Planning in the Context of Agriculture 4.0	2022	10.3390/app122211828	Climate change and global warming interconnected with the new contexts created by the COVID-19 pandemic and the Russia-Ukraine conflict have brought serious challenges to national and international organizations, especially in terms of food security and agricultural planning. These circumstances are of particular concern due to the impacts on food chains and the resulting disruptions in supply and price changes. The digital agricultural transition in Era 4.0 can play a decisive role in dealing with these new agendas, where drones and sensors, big data, the internet of things and machine learning all have their inputs. In this context, the main objective of this study is to highlight insights from the literature on the relationships between machine learning and food security and their contributions to agricultural planning in the context of Agriculture 4.0. For this, a systematic review was carried out based on information from text and bibliographic data. The proposed objectives and methodologies represent an innovative approach, namely, the consideration of bibliometric evaluation as a support for a focused literature review related to the topics addressed here. The results of this research show the importance of the digital transition in agriculture to support better policy and planning design and address imbalances in food chains and agricultural markets. New technologies in Era 4.0 and their application through Climate-Smart Agriculture approaches are crucial for sustainable businesses (economically, socially and environmentally) and the food supply. Furthermore, for the interrelationships between machine learning and food security, the literature highlights the relevance of platforms and methods, such as, for example, Google Earth Engine and Random Forest. These and other approaches have been considered to predict crop yield (wheat, barley, rice, maize and soybean), abiotic stress, field biomass and crop mapping with high accuracy ( $R^2 \approx 0.99$ and $RMSE \approx 1\%$ ). © 2022 by the authors.

<p>Maranur J.R.; Mathapati B.</p>	<p>ARPVP: Attack Resilient Position-Based VANET Protocol Using Ant Colony Optimization</p>	<p>2023</p>	<p>10.1007/s11277-022-09997-0</p>	<p>The position-based routing of Vehicular Ad hoc Network (VANET) vulnerable to various security attacks because of dependency on computing, control, and communication technologies. The Internet of Things (IoT)-enabled VANET application leads to the challenges such as integrity, access control, availability, privacy protection, non-repudiation, and confidentiality. Several security solutions have been introduced for two decades in two categories as cryptography-based and trust-based. Due to the high computation complexity, cryptography-based solutions are outperformed by recent intelligent trust-based mechanisms. The trust-based techniques are lightweight and effective against the well-known security threats in VANET. The objective of this paper has to design a novel position-based routing in which the conduct of vehicles assessed to accomplish reliable VANET communications. Attack Resilient Position-based VANET Protocol (ARPVP) proposed to detect and prevent malicious vehicles in the network using the trust evaluation technique and artificial intelligence (AI). In the first phase of ARPVP, the periodic self-trust assessment algorithm has designed using various trust parameters to detect unreliable vehicles in the network. In the second phase of ARPVP, the position-based route formation algorithm has designed using the AI technique Ant Colony Optimization (ACO). ACO solves the problem of reliable route formation by neglecting the attacker's using a trust-based fitness function. The trust parameters of each vehicle as mobility, buffer occupancy, and link quality parameters had measured in both phases of ARPVP. Simulation outcomes of the proposed model outperformed state-of-art protocols in terms of average throughput, communication delay, overhead, and Packet Delivery Ratio (PDR). © 2022, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.</p>
<p>Manghisi V.M.; Wilhelm M.; Uva A.; Engelmann B.; Fiorentino M.; Schmitt J.</p>	<p>Towards gestured-based technologies for human-centred Smart Factories</p>	<p>2023</p>	<p>10.1080/0951192X.2022.2121424</p>	<p>Despite the increasing degree of automation in industry, manual or semi-automated are commonly and inevitable for complex assembly tasks. The transformation to smart processes in manufacturing leads to a higher deployment of data-driven approaches to support the worker. Upcoming technologies in this context are oftentimes based on the gesture-recognition, – monitoring or–control. This contribution systematically reviews gesture or motion capturing technologies and the utilization of gesture data in the ergonomic assessment, gesture-based robot control strategies as well as the identification of COVID-19 symptoms. Subsequently, two applications are presented in detail. First, a holistic human-centric optimization method for line-balancing using a novel indicator–ErgoTakt–derived by motion capturing. ErgoTakt improves the legacy takt-time and helps to find an optimum between the ergonomic evaluation of an assembly station and the takt-time balancing. An optimization algorithm is developed to find the best-fitting solution by minimizing a function of the ergonomic RULA-score and the cycle time of each assembly workstation with respect to the workers' ability. The second application is gesture-based robot-control. A cloud-based approach utilizing a generally accessible hand-tracking model embedded in a low-code IoT programming environment is shown. © 2022 The Author(s). Published by Informa UK Limited, trading as Taylor &amp; Francis Group.</p>
	<p>3rd International Conference on Society 5.0, 2023</p>	<p>2023</p>		<p>The proceedings contain 22 papers. The special focus in this conference is on Society 5.0. The topics include: A Cyberattack Simulation for Teaching Cybersecurity; uncovering Cross-Platform Spreading Patterns of Fake News about Covid-19; persona-oriented Data Protection Impact Assessment for Small Businesses; selecting a knowledge management methodology in Society 5.0; Exploring the social and technical factors in organisational AI adoption: A systematic literature review; game-based learning - Teaching Artificial Intelligence to play Minecraft: a systematic literature review; combating Hate: How Multilingual Transformers Can Help Detect Topical Hate Speech; society 5.0-Inspired Digitalization Framework for Resilient and Sustainable Agriculture; revitalizing Public Trust through Efficient Complaint Management: A Comprehensive Study on the Impact and Effectiveness of Public Complaint Management System in Malaysia; managing the work-life balance when working from home: the experience of Flemish parents; a Systematic Literature Review on Cybersecurity Threats to Healthcare Data and Mitigation Strategies; disruptive innovation in Small and Medium Enterprises: a key factors checklist; agile Management in Cybersecurity; playWithUnicam: An extensible platform for serious games; systemic risk enacted by emotionally driven client behaviour on South African mobile banking systems: A structured literature review through the theoretical lens of interpersonal behaviour; emotionally driven fake news in South Africa; analysing Barriers in the Business Ecosystem of European MaaS Providers: An Actor-Network Approach; a First Step Towards a "Smart City Brain" for Sustainable Development – Turning the Experiences of Two Cities into Replicable Processes.</p>

Jayawardana J.; Kulatunga A.K.; Jayasinghe J.A.S.C.; Sandanayake M.; Zhang G.	Environmental Sustainability of Off-Site Construction in Developed and Developing Regions: A Systematic Review	2023	10.1061/JA EIED.AEEN G-1420	Off-site construction (OSC) methods have captured significant recognition during the last decade due to a range of benefits offered, from reduced construction time and cost to improved efficiency and environmental savings. OSC is proven to have enhanced performance in environmental issues such as waste generation and carbon emissions. However, even with well-documented benefits, by 2018, no major market has yet exceeded 20% of OSC penetration. Thus, identifying factors that advanced and enhanced the environmental performance of OSC from current research to understand the learnings and strategies is timely. A systematic literature review on the role of developed and developing economies in the environmental sustainability of off-site constructed buildings and identifying critical success factors (CSFs) is a novel research opportunity in the current literature. Thus, this research presents a systematic review of the environmental sustainability of OSC (ESOSC) with a clear focus on comparing OSC and its advancements in developed and developing countries. The research methodology involves a bibliometric analysis (BA) followed by an in-depth qualitative discussion. The BA identified key research trends, gaps, and governing countries in ESOSC research. The critical review has significantly focused on comparing the ESOSC studies in developed and developing countries to understand the differences, similarities, CSFs, and future opportunities. The outcomes of BA and critical discussion suggested that further research is required in the following topic areas: comprehensive sustainability assessments, smart/computerized technology integration, prefabrication rate-related research, integration of circular economy/sustainable development goals, and developing region-specific research. The theoretical value of the paper is in facilitating a solid basis for future investigations into the role of these economies in the triple bottom line of sustainability. The practical contribution of the study is to guide OSC stakeholders to increase the rate of OSC adoption and boost environmental performance. © 2023 American Society of Civil Engineers.
Nguyen T.; Duong Q.H.; Nguyen T.V.; Zhu Y.; Zhou L.	Knowledge mapping of digital twin and physical internet in Supply Chain Management: A systematic literature review	2022	10.1016/j.ijp e.2021.1083 81	Physical Internet (PI) is an open global logistics system of which components are hyperconnected for increased efficiency and sustainability. Digital twin (DT), referring to the virtual representation of a physical object, is well-perceived as a key driver in the development of PI-based Supply Chain Management (SCM). Due to the capabilities of real-time monitoring and evaluation of large-scale complex systems, significant research efforts have been made to exploit values of PI/DT in SCM. Despite this, the current literature remained largely unstructured and scattered due to a lack of systematic literature reviews to synergise research findings, analyse the evolution of research fronts and extract emerging trends in the field. To address this issue, the paper deploys a bibliometric knowledge mapping approach to provide a bird's eye view of the current research status in the PI/DT-SCM area. Using CiteSpace's keyword co-occurrence network, 518 journal articles are clustered into 10 key research streams on PI/DT applications in: job shop scheduling, smart manufacturing design, PI-based SCM, manufacturing virtualisation, information management, sustainability development, data analytics, manufacturing operations management, simulation and optimisation, and assembly process planning. Based on citation burst rate, keywords representing research frontiers of the PI/DT are detected and their temporal evolutions are discussed. Likewise, some identified emerging research trends are production process and system, robotics, computer architecture, and cost. Finally, seven future research directions are suggested, which emphasise on several PI/DT-related issues, including business ecosystem, sustainability development, SC downstream management, cognitive thinking in Industry 5.0, citizen twin in digital society, and SC resilience. © 2021 Elsevier B.V.
Terenti M.; Vatavu R.-D.	VIREO: Web-based Graphical Authoring of Vibrotactile Feedback for Interactions with Mobile and Wearable Devices	2022	10.1080/104 47318.2022. 2109584	We introduce VIREO, a web-based software tool for graphical authoring of vibrotactile feedback for mobile and wearable applications. VIREO enables flexible specification of vibrotactile patterns with model-based and free-draw input, and is compatible with devices that run JavaScript, either natively or in a web browser. We demonstrate VIREO with applications developed for smartphones, smartwatches, armbands, and smartglasses, and we present the results of a usability evaluation study with sixteen participants represented by coders with various programming experience. We discuss our contributions in the context of the results of a Systematic Literature Review conducted on the topic of software tools, editors, and platforms developed in the scientific community for authoring vibrotactile feedback. Given that one finding of our review is the little availability of such contributions, we release VIREO as a free resource on the web for researchers and practitioners to author and integrate vibrotactile feedback in mobile and wearable applications. © 2022 Taylor & Francis Group, LLC.

Tsang Y.P.; Lee C.K.M.	Artificial intelligence in industrial design: A semi-automated literature survey	2022	10.1016/j.engappai.2022.104884	<p>In the era of industry 4.0, artificial intelligence (AI) may potentially be used to provide reasoning and decision support on engineering and technical challenges. The role of AI in industrial design, which is the practice of improving the function, value and aesthetics of products to optimise customer satisfaction, has not yet been extensively explored. To effectively synthesise the existing literature, an unsupervised learning-enabled review methodology is proposed in this study. Important journals and articles are identified by using k-means clustering, and the relevant articles are analysed by using co-citation, bibliographic coupling, and co-occurrence analyses. Six clusters of the body of knowledge are then extracted, and naming of the clusters is assisted by using document summarisation and evaluation. Consequently, six intellectual cores related to AI in industrial design are formulated: (i) supply chain perspectives on product design and innovation, (ii) manufacturability and performance of new product development, (iii) intelligent tools and systems for industrial design and engineering, (iv) applied intelligence for product and service innovation, (v) industry 4.0 technologies for design and manufacturing, and (vi) blockchain-enabled artificial intelligence in industry 4.0. Future research trends on sustainable design, trust in AI, and emerging technology integration towards the next-generation AI in industrial design are discussed. © 2022 Elsevier Ltd</p>
Renukappa S.; Mudiya P.; Suresh S.; Abdalla W.; Subbarao C.	Evaluation of challenges for adoption of smart healthcare strategies	2022	10.1016/j.smhl.2022.100330	<p>Smart healthcare strategies have been identified as a potential solution to address the growing challenges faced by the healthcare sector. The ability of smart healthcare strategies to improve efficiency, patient's outcomes and delivery of quality healthcare has motivated and committed governments and policy makers to invest in this innovation. However, uptake and usage of smart healthcare strategies has not been successful as anticipated, and this is due to a number of challenges faced by different stakeholders during the adoption of these strategies. The objective of this paper is to systematically check published literature to identify and compile a comprehensive list of challenges of adopting smart healthcare strategies. Knowledge of these potential challenges gives stakeholders awareness and better prospects of dealing with the challenges of adopting smart healthcare strategies. A systematic literature review was conducted. EBSCOhost, PubMed, Scopus and Science Direct were searched for full text, peer reviewed, English language articles that reported the challenges for successful adoption of smart healthcare management strategies. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis guidelines were used to select eligible articles. After the full screening, 26 articles that met the criteria were analysed and reported. Three main themes of challenges that affect the adoption of smart healthcare strategies have been identified based on technology-organisation-environment (TOE) framework. The findings of this study demonstrate that different TOE challenges affect smart health strategies adoption by healthcare sector. This study, therefore, proposes a differentiated approach to policies and practices to effectively scale up adoption of smart health and reduce failure rates of smart health projects. It is concluded that future research is needed in identifying key change management strategies to successfully manage the identified challenges to improve the prospects of successful adoption of smart healthcare strategies. © 2022 The Authors</p>
Sneel R.; Jusoh Y.Y.; Jabar M.A.; Abdullah S.	Revising Technology Adoption Factors for IoT-Based Smart Campuses: A Systematic Review	2022	10.3390/su14084840	<p>Smart education and the sustainable development of smart campuses have drawn significant research attention. This is enabled by intelligent devices that are widely attracting massive applicability in personal and big business contexts and can increase efficiency and convenience. This paper aims to present a solution to address the lack of a proper adoption model for smart campus initiatives. The evaluation and synthesis of the literature were conducted by following the systematic literature review (SLR) procedure. The study's findings revealed the taxonomy and IoT technologies leading to the wide adoption of IoT-based smart campuses. The technology adoption models and their corresponding variables help the authors identify and classify a suitable adoption framework for smart campuses. The limitations and challenges of adoption theories as they pertain to smart campuses are discussed. Finally, the study adapts perceived scalability, perceived replicability, perceived reliability, perceived privacy and security, perceived trust, the cost of deployment, use-fulness, enjoyment, and technicality as adoption factors of sustainable smart campuses. This study offers practical and theoretical implications regarding the adoption and propagation of emerging smart campuses. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.</p>



Bertini A.; Gárate B.; Pardo F.; Pelicand J.; Sobrevia L.; Torres R.; Chabert S.; Salas R.	Impact of Remote Monitoring Technologies for Assisting Patients With Gestational Diabetes Mellitus: A Systematic Review	2022	10.3389/fbioe.2022.819697	has gestational diabetes mellitus (GDM), and in general, 5–10% of women with GDM develop type 2 diabetes after giving birth. Recently, various technological tools have emerged to assist patients with GDM to meet glycemic goals and facilitate constant glucose monitoring, making these tasks more straightforward and comfortable. Objective: To evaluate the impact of remote monitoring technologies in assisting patients with GDM to achieve glycemic goals, and know the respective advantages and disadvantages when it comes to reducing risk during pregnancy, both for the mother and her child. Methods: A total of 188 articles were obtained with the keywords “gestational diabetes mellitus,” “GDM,” “gestational diabetes,” added to the evaluation levels associated with “glucose level,” “glycemia,” “glycemic index,” “blood sugar,” and the technological proposal to evaluate with “glucometerm” “mobile application,” “mobile applications,” “technological tools,” “telemedicine,” “technovigilance,” “wearable” published during the period 2016–2021, excluding postpartum studies, from three scientific databases: PUBMED, Scopus and Web of Science. These were managed in the Mendeley platform and classified using the PRISMA method. Results: A total of 28 articles were selected after elimination according to inclusion and exclusion criteria. The main measurement was glycemia and 4 medical devices were found (glucometer: conventional, with an infrared port, with Bluetooth, Smart type and continuous glucose monitor), which together with digital technology allow specific functions through 2 identified digital platforms (mobile applications and online systems). In four articles, the postprandial glucose was lower in the Tele-GDM groups than in the control group. Benefits such as improved glycemic control, increased satisfaction and acceptability, maternal confidence, decreased gestational weight gain, knowledge of GDM, and other relevant aspects were observed. There were also positive comments regarding the optimization of the medical team’s time. Conclusion: The present review offers the opportunity to know about the respective advantages and disadvantages of remote monitoring technologies when it comes to reducing risk during pregnancy. GDM centered technology may
	2023 9th International Conference on eDemocracy and eGovernment, ICEDEG 2023	2023		The proceedings contain 20 papers. The topics discussed include: sentiment analysis techniques for peer feedback: a review; automotive aftermarket goes smart: a system dynamics approach to innovation the business model in the Ecuadorian industry; digitalized co-production of emergency response: to make local initiatives national; platform economy employment opportunities for youth in the global south; how trust in authority and trust in networks relates to verification and sharing behaviors: COVID-19 health information sharing on WhatsApp; detection of educational influencers and communities on TikTok; digital transformation of the public sector in the Americas: an empirical analysis to identify leap-froggers and trends since 2003; design and implementation of hospital online services: in-depth assessment of Greece; towards smart citizen control in public procurement: Ecuador’s case study; enhancing dynamic profiles on voting advice applications using social media analysis; designing a framework for explainable health recommender system based on the Ecuadorian data protection regulations; a systematic literature review on South African government to harness software as a service for enhanced e-government; and building cognitive cities in developing countries: Ecuador case study.
Cao J.; Lam K.-Y.; Lee L.-H.; Liu X.; Hui P.; Su X.	Mobile Augmented Reality: User Interfaces, Frameworks, and Intelligence	2023	10.1145/3557999	Mobile Augmented Reality (MAR) integrates computer-generated virtual objects with physical environments for mobile devices. MAR systems enable users to interact with MAR devices, such as smartphones and head-worn wearables, and perform seamless transitions from the physical world to a mixed world with digital entities. These MAR systems support user experiences using MAR devices to provide universal access to digital content. Over the past 20 years, several MAR systems have been developed, however, the studies and design of MAR frameworks have not yet been systematically reviewed from the perspective of user-centric design. This article presents the first effort of surveying existing MAR frameworks (count: 37) and further discusses the latest studies on MAR through a top-down approach: (1) MAR applications; (2) MAR visualisation techniques adaptive to user mobility and contexts; (3) systematic evaluation of MAR frameworks, including supported platforms and corresponding features such as tracking, feature extraction, and sensing capabilities; (4) and underlying machine learning approaches supporting intelligent operations within MAR systems. Finally, we summarise the development of emerging research fields and the current state-of-the-art and discuss the important open challenges and possible theoretical and technical directions. This survey aims to benefit both researchers and MAR system developers alike. © 2023 Copyright held by the owner/author(s).

<p>Veera Manikandan S.; Abilash Y.; Hari Prasanth S.; Alfred Daniel J.; Santhosh R.</p>	<p>Internet of Things Enabled ML for Air Quality Assessment: Systematic Review</p>	<p>2023</p>	<p>10.1109/ICICCS56967.2023.10142745</p>	<p>A severe and pervasive environmental problem that affects the entire planet is Air Pollution (AP). Numerous researchers have focused on these issues while keeping human health in mind. One of the best methods to educate people about major health issues and safeguard human health from air pollution is through information about air quality predictions. Air pollution is one of the most difficult environmental issues, and it affects many major cities. Real-time monitoring of pollution data can help local officials assess the present state of the city's traffic and reach well-informed decisions. In order to correctly estimate the pollutant concentrations, it is necessary to have an early system for monitoring and measuring the amount of AP using the Air Quality Index. Incorporating Internet of Things (IoT)-based devices may significantly change the AQ forecast dynamically, hence enhancing the AQ forecast. The accuracy and cost of the Both the AP prediction that is mentioned and the evaluation of it using various known methodologies are quite low. While AP prediction is still permitted in some sectors, machine learning (ML) algorithm development is expanding swiftly and looking into almost all fields and applications. This paper highlights numerous ML research projects related to AP monitoring and prediction using IoT sensor data in the context of diverse cities. This paper also summarizes historical and current data based on AQ prediction models, methods, and methodologies, examines current research methodology, the advantages and disadvantages of AQ prediction, as well as the challenges related to real-time AQ monitoring and prediction. © 2023 IEEE.</p>
<p>Gao J.; Sun Y.; Rameezdeen R.; Chow C.</p>	<p>Understanding data governance requirements in IoT adoption for smart ports—a gap analysis</p>	<p>2022</p>	<p>10.1080/03088839.2022.2155318</p>	<p>Maritime shipping is considered the backbone of the global supply chain. It is expected that future fully automated smart ports will be data-driven, harvesting power from advanced analytics and artificial intelligence. Under the hood, Internet of Things (IoT) technologies are considered as an enabling foundation of new data sources for innovations and high-level automation. Thus, enterprise data management becomes critical when implementing IoT projects. However, the implementation of data management needs to be governed. Although the IoT adoption in smart ports receives significant interest from the port authority, the effectiveness of the IoT adoption lacks proper evaluation and support of comprehensive data management policy and guidelines. By using the systematic literature review and a case study to analyze the current gaps in IoT data governance research, this research shows that IoT data governance still needs to catch up in smart ports. In particular, compared to other industries, data lifecycle management and data quality management are two key data governance areas that should receive increasing attention from the port authorities. It is believed that with adequate data governance, smart ports can truly harvest the power of IoT to improve operational efficiency and sustainability with an increasing level of automation. © 2022 Informa UK Limited, trading as Taylor &amp; Francis Group.</p>
<p>Salinas-Herrera F.; Moeini A.; Kamwa I.</p>	<p>Survey of Simulation Tools to Assess Techno-Economic Benefits of Smart Grid Technology in Integrated T&amp;D Systems</p>	<p>2022</p>	<p>10.3390/su14138108</p>	<p>more flexible in order to enable the economical hosting of more intermittent distributed energy resources (DER) and smart grid technologies. New technical solutions, generally based on the connection of various components coupled to the power system via smart power electronic converters or through ICT, can help to take up these challenges. Such innovations (e.g., decarbonization technologies and smart grids) may reduce the costs of future power systems and the environmental footprint. In this regard, the techno-economic assessment of smart grid technologies is a matter of interest, especially in the urge to develop more credible options for deep decarbonization pathways over the long term. This work presents a literature survey of existing simulation tools to assess the techno-economic benefits of smart grid technologies in integrated T&amp;D systems. We include the state-of-the-art tools and categorize them in their multiple aspects, cover smart grid technology, approach methods, and research topics, and include (or complete) the analysis with other dimensions (smart-grid related) of key interest for future power systems analysis such as environmental considerations, techno-economic aspects (social welfare), spatial scope, time resolution (granularity), and temporal scope, among others. We surveyed more than 40 publications, and 36 approaches were identified for the analysis of integrated T&amp;D systems. As a relatively new research area, there are various promising candidates to properly simulate integrated T&amp;D systems. Nevertheless, there is not yet a consensus on a specific framework that should be adopted by researchers in academia and industry. Moreover, as the power system is evolving rapidly towards a smart grid system, novel technologies and flexibility solutions are still under study to be integrated on a large scale. This review aims to offer new criteria for researchers in terms of smart-grid related dimensions and the state-of-the-art trending of simulation tools that holistically evaluate techno-economic aspects of the future power systems in an integrated T&amp;D systems environment. As an imperative research matter for future energy systems, this article seeks to contribute to the discussion of which pathway the scientific community should focus on for</p>

<p>Onwuchekwa D.; Dasandhi M.; Alshaer S.; Obermaisser R.</p>	<p>Evaluation of AI-based Meta-scheduling Approaches for Adaptive Time-triggered System</p>	<p>2023</p>	<p>10.1109/ICS CA57840.20 23.1008744 6</p>	<p>Adaptation in time-triggered systems is motivated by the need to attain higher energy efficiency, carry out fault recovery functions, and adapt to changing environmental conditions. Adaptation can also be attained by modifying the allocation of services to resources, substituting failed resources or transitioning into a degraded service mode. Time-triggered systems can deploy meta-scheduling to enhance adaptation. Nevertheless, state-of-art meta-schedulers suffer state explosion, and pose storage constraints for cyber-physical systems. This work proposes an architecture that uses machine learning to infer new schedules at run-time, thus eliminating the need to store the large schedule sets generated by a meta-scheduler. It investigates the performance of three machine learning models, Random Forest Classifier(RFC), Artificial Neural Network (ANN), and Encoder/Decoder Neural Network (E/D NN). It is observed that the performance of models are dependent on the complexity of the scheduling problem. The E/D NN model performed better than the ANN and RFC for all job sizes. The resulting accuracies for 15 jobs are 98.39%, 95.33%, 86.86% for E/D NN, RFC, and ANN, respectively. The resulting accuracies for 60 jobs are 87.67%, 60.94%, 81.05% for E/D NN, RFC, and ANN, respectively. The implication of this work is that the proposed approach provides a means to compensate for the trade-off between storage capacity of a CPS and the number of schedules for each adaptation scenario. The proposed machine learning based architecture is able to capture more scenarios without the need to store schedules. © 2023 IEEE.</p>
<p>López-Castro B.; Haro-Baez A.G.; Arcos-Aviles D.; Barreno-Riera M.; Landázuri-Avilés B.</p>	<p>A Systematic Review of Structural Health Monitoring Systems to Strengthen Post- Earthquake Assessment Procedures</p>	<p>2022</p>	<p>10.3390/s22 239206</p>	<p>Structural health monitoring (SHM) is vital to ensuring the integrity of people and structures during earthquakes, especially considering the catastrophic consequences that could be registered in countries within the Pacific ring of fire, such as Ecuador. This work reviews the technologies, architectures, data processing techniques, damage identification techniques, and challenges in state-of-the-art results with SHM system applications. These studies use several data processing techniques such as the wavelet transform, the fast Fourier transform, the Kalman filter, and different technologies such as the Internet of Things (IoT) and machine learning. The results of this review highlight the effectiveness of systems aiming to be cost-effective and wireless, where sensors based on microelectromechanical systems (MEMS) are standard. However, despite the advancement of technology, these face challenges such as optimization of energy resources, computational resources, and complying with the characteristic of real-time processing. © 2022 by the authors.</p>
<p>Li X.; Zhou Z.; He Q.; Shi Z.; Gaaloul W.; Yangui S.</p>	<p>Re-Scheduling IoT Services in Edge Networks</p>	<p>2023</p>	<p>10.1109/TN SM.2023.32 42937</p>	<p>With the explosive growth of the Internet of Things (IoT) devices deployed in edge networks, the functionalities of IoT devices are typically encapsulated as IoT services, and user requests can be achieved through the composition of data and/or computation-intensive IoT services. Considering the prediction-uncertainty of forthcoming requests, certain IoT services may (i) not be hosted currently by appropriate IoT devices, or (ii) such an IoT service exists, but its non-functional properties may hardly be satisfied with respect to certain constraints prescribed by requests. To address this challenge, this paper proposes an efficiency-aware service Migration Scheduling (denoted eMS) mechanism in edge networks, in order to migrate IoT services on-demand, and thus, to optimally settle non-satisfiable constraints. Specifically, IoT services are re-scheduled, such that certain IoT services are migrated from their hosting IoT devices to neighboring ones, while minimizing the energy consumption and average delay caused by this service re-scheduling operation. We formulate this service re-scheduling as a multi-objective and multi-constraint optimization problem, which is solved through integrating the greedy algorithm into the fast non-dominated sorting and crowded-comparison operators as the hybrid genetic algorithm (G-NSGA-II). Based on real-life datasets provided by an oil pipeline monitoring project, extensive experiments are conducted, and evaluation results show that our eMS is promising in reducing the energy consumption and average delay of service re-scheduling in comparison with the state-of-art's techniques. IEEE</p>

<p>Aspnes E.; Bergschold J.; Charness N.; Fang M.L.; Gutman G.; Hsu Y.; Kearns W.; Kort H.S.M.; Raymundo T.M.; Nap H.; Zandi D.; Zhang W.</p>	<p>WHO-ISG collaboration on assistive technologies for healthy ageing-in-place: A round table discussion</p>	<p>2022</p>	<p>10.4017/GT.2022.21.S.721.SP7</p>	<p>those coping with either short-term or long-term impairments, which can involve living with chronic conditions and/or comorbidities. In the case of older adults, AT can support or compensate for the functional or cognitive declines that they are likely to face in later life. AT can be integrated as part of smart homes (see Figure 1 from van Dijken et al, 2006); and should be safe to use, effective, easy to access, affordable, and not seen as stigmatising. In addition, AT should support older adults to have a meaningful life while building self-esteem, and autonomy and promoting social participation and community engagement. For this roundtable discussion, we present and discuss a WHO-ISG collaborative project focused on Assistive Technology for Healthy Ageing. For this project, we consider applications and use AT not only from a medical standpoint but also situated within a social perspective in the context of Gerontechnology. Results and propositions according to the WHO-UNICEF global report on assistive technology were applied as a starting point for this project (WHO, 2022), prioritising the potential benefits to individuals, their communities, and society and with a focus on identifying potential barriers that may occur and how to mitigate them. Methods Operationalisation of the project is organised into three pillars and applies a mixed-methods research approach. Pillar I focusses on developing assessment criteria/evaluation metrics for safety and effectiveness of technology (i.e. acceptability, accessibility, integration and appropriate use) to support active living and ageing-in-place by conducting a scoping review. Pillar II builds on findings from Pillar 1 and categorises available AT for ageing-in-place, evaluates existing evidence on their implementation and use, and identifies gaps where further research and innovation are required, with a focus on emerging technologies. Pillar III is dedicated to promoting better international cultural and scientific exchanges between clinicians, scientists, technologists/engineers, and allied professionals on the development and use of AT (including digital assistive technologies) for healthy ageing with a focus on ageing-in-place. Results and Discussion AT is accessed and applied on an individual, community and societal level. At the individual level, AT can</p>
<p>Saleemi M.; Anjum M.; Rehman M.</p>	<p>Ubiquitous healthcare: a systematic mapping study</p>	<p>2023</p>	<p>10.1007/s12652-020-02513-x</p>	<p>technologies to enable technology oriented environment for healthcare professionals for provision of efficient and effective healthcare services. In past years, research community has proposed various technological solutions in different healthcare areas such as chronic disease monitoring, gait analysis, mood and fall detection, neuropathic monitoring, physiological and vital signs monitoring, pulmonological monitoring, etc. However, in-depth analysis of these proposed solutions is required to analyze the form of proposed ubiquitous healthcare solutions; the extent ubiquitous technologies are integrated in these solutions; the type of real problem addressed; and how far these solutions are evaluated in real world settings? The addressal of these questions is critical to understand and evaluate the progress made in the area of ubiquitous healthcare and identify the challenges that are hindering the progress in this area. Therefore, in this research, a systematic research technique in the form of mapping study (also known as scoping study) is employed for in-depth analysis of evidences available on ubiquitous healthcare. The mapping study adopts a systematic approach to construct chain of evidences related to a particular topic and is a well-defined research technique in evidence based software engineering. This study identified a total of 103 primary studies, published between 2007 and 2018, for analysis of area under investigation. The study findings reveal that research trend in ubiquitous healthcare is horizontally spread by involving broad range of healthcare areas. The proposed solutions largely fall under the category of validation studies where experiments are conducted in laboratory settings rather real world environment. Another interesting finding is the lack of involvement of relevant healthcare community in proposed solution design. The challenges such as context awareness, data ownership, privacy and security, usability and trust are limiting the adoption of proposed solutions. Therefore, more extensive studies are required to first evaluate the applicability of proposed solutions in their respective environment, second, engagement and ownership of relevant community in solution design need to be considered. Third, the broad coverage of healthcare areas does not</p>
<p>Govindan K.; Arampatzis G.</p>	<p>A framework to measure readiness and barriers for the implementation of Industry 4.0: A case approach</p>	<p>2023</p>	<p>10.1016/j.elerap.2023.101249</p>	<p>Large businesses perceive the vital usefulness of Industry 4.0. They recognize how beneficial its implementation is to reinforce business competitiveness and to conserve, or even better, to increase their market share. Hence, top business management has embraced the challenge of the time: to evaluate the current level of digitization with the objective of proceeding to a full digitization phase in the future. With this concern, this paper proposes a framework to assist industries in promoting Industry 4.0 through two phases. In the initial phase, the case company's level of readiness is evaluated, and in the second phase, the barriers that exist within the implementation of Industry 4.0 (based on the company's readiness, obtained from the previous phase) are analyzed. Both phases have been carried out at a Danish case industry which is a third-tier supplier of anti-noise shims and back plates for manufacturers of disc brake linings. In the first phase, the assessment of readiness for Industry 4.0 demonstrates that the case industry is not fully ready; instead, they reside in the position of Industry 3.5 (in the middle of 3.0 and 4.0 revolutions). The limiting barriers to change for Industry 4.0 implementation are identified during the systematic literature review and analyzed using the DEMATEL method based on the industrial decision-makers' responses in the second phase. Moreover, the analysis demonstrates the most influential barrier category is the policy &amp; organization category. The barrier "leadership" is considered the greater influencer of all since it responds in some way to almost all 21 barriers. Thus, leadership is the most significant barrier a company must overcome to adopt the Industry 4.0 concept. In addition, firms are challenged by the organizational changes that the adoption of Industry 4.0 will bring, and the tool of organizational change management will be handy. © 2023</p>

	9th International Conference on Computational Science and Technology, ICCST 2022	2023		The proceedings contain 53 papers. The special focus in this conference is on Computational Science and Technology. The topics include: Smart Cattle: Cattle Live Weight Estimation Based on a Deep Learning Approach; The Design of a New IT Governance Framework to Optimize the Utilization of Information Technology for MSME; a Safe Box Safety System with Facial Authentication for Multiple Users; depression Detection Based on Features of Depressive Behaviour Through Social Media Analytic: A Systematic Literature Review; movies and Learning: Does Watching Movies Help Students Improve Learn English?; analyzing the Financial Performance of Transportation Companies with Goal Programming Model; Virtual Reality Vehicle Inspection Routine (VR-VIR): Evaluation of Technology Acceptance; attendance Management System with Half-Covered and Full-Facial Recognition Feature; employing Smart Educational Aids and Multimedia to Teach Reading Skill to Students with Specific Learning Difficulty: Effectiveness Identification and Task Specificity; malay Fake News Classification Using a Deep Learning Approach; educational Video Production: Literature Review on Issues and Challenges of Digital Video Composition; fitweet: Arduino-Based Smartwatch for Early Anticipatory Anxiety Notification System; Student's Mental Health Diagnostic Expert System Using DASS Analysis and Rule-Based Reasoning: A Proposal; Complementary Preparation for Frame Alignment Algorithms Using PYNQ-Z2 FPGA; identification and Analysis of Maize Leaf Diseases and Insect Pests Based on Machine Learning; information Technology Model for Health Sector in Oman; a Simulation Approaches in Modelling the Assessment for Evacuation Model; gamified Augmented Reality Mobile Application for Tourism in Kuching; Prediction of CO2 Breakthrough Time in Packed Bed Adsorption Column Using Artificial Neural Network.
	8th International Conference on Technologies and Innovation, CITI 2022	2022		The proceedings contain 19 papers. The special focus in this conference is on Technologies and Innovation. The topics include: Data Stream Processing Method for Clustering of Trajectories; Low-Cost Energy Consumption Monitoring System Using NodeMCU; trend of the Use and Investment of Blockchain Technology in the Banking Sector in Ecuador; effectiveness of Monitoring Indicators in the Architecture of a Collaborative System; IoT Monitoring for Real-Time Control of Industrial Processes; metric Identification Evaluating Security Information: A Systematic Literature Review; Evaluation of User Interface (UI) and User Experience (UX) for Web Services of a Weather Data Monitoring Platform; Comparison of Free Android Mobile 3D Modeling Tools for AR Apps; a Web App for Teaching Specialized English Vocabulary – Case of Study: Computer Sciences; predicting Academic Performance in Mathematics Using Machine Learning Algorithms; analysis of Classification Algorithms for the Prediction of Purchase Intention in Electronic Commerce; alignment Techniques in Domain-Specific Models; IVRMaker, An Interactive and Customizable Telephone Chatbot Services Platform; digital Transformation of Health Care Services: Médikal Case Study; texture and Color-Based Analysis to Determine the Quality of the Manila Mango Using Digital Image Processing Techniques; Detection of Motorcyclists Without a Safety Helmet Through YOLO: Support for Road Safety; computer Vision-Based Ovitrap for Dengue Control.
Wang B.; Zheng P.; Yin Y.; Shih A.; Wang L.	Toward human-centric smart manufacturing: A human-cyber-physical systems (HCPS) perspective	2022	10.1016/j.jm sy.2022.05.005	Advances in human-centric smart manufacturing (HSM) reflect a trend towards the integration of human-in-the-loop with technologies, to address challenges of human-machine relationships. In this context, the human-cyber-physical systems (HCPS), as an emerging human-centric system paradigm, can bring insights to the development and implementation of HSM. This study presents a systematic review of HCPS theories and technologies on HSM with a focus on the human-aspect is conducted. First, the concepts, key components, and taxonomy of HCPS are discussed. HCPS system framework and subsystems are analyzed. Enabling technologies (e.g., domain technologies, unit-level technologies, and system-level technologies) and core features (e.g., connectivity, integration, intelligence, adaptation, and socialization) of HCPS are presented. Applications of HCPS in smart manufacturing are illustrated with the human in the design, production, and service perspectives. This research offers key knowledge and a reference model for the human-centric design, evaluation, and implementation of HCPS-based HSM. © 2022 The Society of Manufacturing Engineers

	24th International Conference on Human-Computer Interaction, HCII 2022	2022		The proceedings contain 121 papers. The special focus in this conference is on Human-Computer Interaction. The topics include: Foreword; knowledge Creation in Co-design Activities - Business-Driven Collaboration in the Development of a Digital Communication Tool; Leveraging Design Thinking Towards the Convergence of AI, IoT and Blockchain: Strategic Drivers and Human-Centered Use Cases; rethinking Mobile Interaction Design Within Service; on the Transformation of Audience-Designer Relationship from the Perspective of Speculative Design; AI-Based Emotion Recognition to Study Users' Perception of Dark Patterns; defining an A/B Testing Process for Usability and User Experience Evaluation Through the Analysis of the Results of a Literature Review; AnyMApp Framework: Anonymous Digital Twin Human-App Interactions; construction of an Instrument for the Quantitative Assessment of Experience in the Use of Conversational Agents; to Discover Novice Expert Paradigm: Sequence-Based Time-Domain and Graph-Based Frequency-Domain Analysis Method of Eye Movement; evaluation of a Virtual Working Environment via Psychophysiological Indices; towards a Methodology to Evaluate User Experience with Personalized Questionnaires for the Developments of Custom Systems; holistic Multimodal Interaction and Design; emoFrame: Prototype of a Framework to Assess Users' Emotional Responses; a Systematic Mapping Study of Emotional Response Evaluation Instruments; Developing a Framework for Trustworthy AI-Supported Knowledge Management in the Governance of Risk and Change; end-User Adoption of Cryptocurrency: A Literature Review; a Study on User Experience of Non-linguistic Communication: Focusing on the Interactive Emojis in On-line Meeting Platforms; remote Workers' Perceptions on Employee Monitoring; usability Evaluation Towards a Cultural Perspective: Design Guidelines for Peruvian Government Websites; identifying Requirements and Quality Attributes from the Point of View of Users of Mobile Digital Libraries; a Survey on the Usability and User Experience of the Open Community Web Portals.
Awaji B.; Solaiman E.	Design, Implementation, and Evaluation of Blockchain-based Trusted Achievement Record System for Students in Higher Education	2022	10.5220/0011044200003182	With a growing number of institutions involved in the global education market, it has become increasingly challenging to verify the authenticity of academic achievements such as CVs and diplomas. Blockchain is an enabling technology that can play a key role in solving this problem. This study introduces a blockchain-based achievement record system that produces a verifiable record of achievements. The proposed system aims to facilitate the process of authentication and validation of certificates reliably, easily and quickly, leveraging the unique capabilities offered through Blockchain technology (public Ethereum Blockchain) and smart contracts. We present the design and implementation of the system and its components and tools. We then evaluate the system through a number of studies to measure the system's; usability, effectiveness, performance, and cost. A System Usability Scale (SUS) test gave a scale of 77.1. Through a literature survey we demonstrate that this system is a significant improvement on legacy systems, being both more user-friendly and more efficient. We also conduct a detailed cost analysis and discuss the positives and limitations of alternative blockchain solutions. Copyright © 2022 by SCITEPRESS – Science and Technology Publications, Lda. All rights reserved.
Hsieh H.-P.; Lai B.-H.; Chen Y.-W.; Chang Y.-E.	Multi-Performance Estimation for Deploying Bank Branches Based on a Multi-Task Attentive Tree-Enhanced Model	2023	10.1109/TECI.2022.3214576	Selecting the optimal location for a new bank branch is challenging but worth studying due to its importance to growing a successful business. Bankers have been devoting a lot of effort to this issue. In recent years, the proliferation of multisource data in smart cities has called for more need for data-driven optimal location selection. Previous studies usually focus on mining different features and processing these data through domain expert knowledge. However, they fail to discover potential complicated factors interactions. Besides, most of these studies only use a single indicator to evaluate the candidate locations, which overlooks a lot of information, resulting in an inaccurate evaluation. In this study, we propose MATE, a Multi-task Attentive Tree-Enhanced model, to simultaneously predict multiple performance indicators of a bank branch's location. Our model takes advantage of the tree-based model, which can effectively extract cross features and provide interpretability according to inferred decision rules. In addition, we designed the financial embedding module and attentive interaction blocks, allowing MATE to obtain more complex and diverse features. Finally, extensive experiments on real-world bank datasets demonstrate the effectiveness of our method, which outperforms baseline and state-of-art methods from 17% to 41%. © 2017 IEEE.
Putra B.D.; Munadi R.; Walidainy H.; Syahril; Arif T.Y.; Putra A.T.	Smart University Development Challenges using Lora or Sigfox technology: A Systematic Literature Review	2022	10.1109/FO RTEI-ICEE57243.2022.9972910	Efficiency and effectiveness are important keywords in regulating the governance of a work unit entity. In a specific scope, including management of resources in the university environment to provide efficient services. For this reason, the role of IoT technology is an appropriate alternative to be implemented on campus. To operate IoT technology, two communication technology, Low Power Wide Area Network (LPWAN) Technology, namely Lorawan and Sigfox, are examined in this study with a systematic literature study approach. Through this study approach, several relevant and successful studies have been carried out and will be evaluated based on parameters, mechanisms, test settings, and quality. The expected results of this evaluation can be the basis for the application of LPWAN technology for the development of systems that integrate IoT technology to become a smart campus. © 2022 IEEE.



<p>Xu Q.; Goh H.C.; Mousavi E.; Rafsanjani H.N.; Varghese Z.; Pandit Y.; Ghahramani A.</p>	<p>Towards Personalization of Indoor Air Quality: Review of Sensing Requirements and Field Deployments</p>	<p>2022</p>	<p>10.3390/s22093444</p>	<p>As humans spend more time indoors, ensuring acceptable indoor air quality (IAQ) through ubiquitous sensing systems has become a necessity. Although extensive studies have been conducted on the IAQ sensing systems, a holistic review of the performance and deployment of Ubiquitous IAQ Sensing (UIAQS) systems with associated requirements in IAQ sensing standards is still lacking. In this study, we first reviewed IAQ pollutants and other IAQ-related factors and the associated requirements in the prominent IAQ sensing standards. We found that while non-pollutant factors are influential on occupants' perception of IAQ and their satisfaction, they do not have evaluation metrics in the IAQ standards. Then, we systematically reviewed field studies on UIAQS technologies in the literature. Specific classes of information were recorded and analyzed further. We found that the majority of the UIAQS systems did not meet the requirements of the prominent IAQ sensing standards and identified four primary research gaps. We concluded that a new holistic and personalized approach that incorporates UIAQS measurements and subjective feedback is needed. This study provides valuable insights for researchers and policymakers to better improve UIAQS technologies by developing personalized IAQ sensors and sensing standards. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.</p>
	<p>Federated learning-based IoT: A systematic literature review</p>	<p>2022</p>		<p>The proceedings contain 121 papers. The special focus in this conference is on Human-Computer Interaction. The topics include: Foreword; knowledge Creation in Co-design Activities - Business-Driven Collaboration in the Development of a Digital Communication Tool; Leveraging Design Thinking Towards the Convergence of AI, IoT and Blockchain: Strategic Drivers and Human-Centered Use Cases; rethinking Mobile Interaction Design Within Service; on the Transformation of Audience-Designer Relationship from the Perspective of Speculative Design; AI-Based Emotion Recognition to Study Users' Perception of Dark Patterns; defining an A/B Testing Process for Usability and User Experience Evaluation Through the Analysis of the Results of a Literature Review; AnyMApp Framework: Anonymous Digital Twin Human-App Interactions; construction of an Instrument for the Quantitative Assessment of Experience in the Use of Conversational Agents; to Discover Novice Expert Paradigm: Sequence-Based Time-Domain and Graph-Based Frequency-Domain Analysis Method of Eye Movement; evaluation of a Virtual Working Environment via Psychophysiological Indices; towards a Methodology to Evaluate User Experience with Personalized Questionnaires for the Developments of Custom Systems; holistic Multimodal Interaction and Design; emoFrame: Prototype of a Framework to Assess Users' Emotional Responses; a Systematic Mapping Study of Emotional Response Evaluation Instruments; Developing a Framework for Trustworthy AI-Supported Knowledge Management in the Governance of Risk and Change; end-User Adoption of Cryptocurrency: A Literature Review; a Study on User Experience of Non-linguistic Communication: Focusing on the Interactive Emojis in On-line Meeting Platforms; remote Workers' Perceptions on Employee Monitoring; usability Evaluation Towards a Cultural Perspective: Design Guidelines for Peruvian Government Websites; identifying Requirements and Quality Attributes from the Point of View of Users of Mobile Digital Libraries; a Survey on the Usability and User Experience of the Open Community Web Portals.</p>
<p>Hosseinzadeh M.; Hemmati A.; Rahmani A.M.</p>	<p>CD/CV: Blockchain-based schemes for continuous verifiability and traceability of IoT data for edge-fog-cloud</p>	<p>2022</p>	<p>10.1002/dac.5185</p>	<p>The Internet of Things (IoT) has a significant impact on our daily lives as applications, services, devices, and industries become more intelligent. Artificial intelligence (AI) is expected to significantly influence machine learning training on IoT devices without data sharing. Federated learning (FL) is a distributed machine learning method used in many IoT smart devices; however, FL ensures IoT security and privacy. The systematic literature review (SLR) method is used in this paper to review recently published articles in the FL-based IoT domain. We analyzed 39 papers that were published between 2018 and March 2022. According to the evaluation factors, the accuracy factor has a high percentage in the FL-based IoT domain by 29%, and the epoch has 23%, the time has 18%, the energy consumption has 9%, the delay has 9%, the communication overhead has 6%, and the privacy has 6%. Finally, we discuss future research challenges and open issues in the context of FL-based IoT. © 2022 John Wiley &amp; Sons Ltd.</p>
<p>Martinez-Rendon C.; González-Compeán J.L.; Sánchez-Gallegos D.D.; Carretero J.</p>	<p>A systematic review on performance evaluation metric selection method for IoT-based applications</p>	<p>2023</p>	<p>10.1016/j.ipm.2022.103155</p>	<p>This paper presents a continuous delivery/continuous verifiability (CD/CV) method for IoT dataflows in edge-fog-cloud. A CD model based on extraction, transformation, and load (ETL) mechanism as well as a directed acyclic graph (DAG) construction, enable end-users to create efficient schemes for the continuous verification and validation of the execution of applications in edge-fog-cloud infrastructures. This scheme also verifies and validates established execution sequences and the integrity of digital assets. CV model converts ETL and DAG into business model, smart contracts in a private blockchain for the automatic and transparent registration of transactions performed by each application in workflows/pipelines created by CD model without altering applications nor edge-fog-cloud workflows. This model ensures that IoT dataflows delivers verifiable information for organizations to conduct critical decision-making processes with certainty. A containerized parallelism model solves portability issues and reduces/compensates the overhead produced by CD/CV operations. We developed and implemented a prototype to create CD/CV schemes, which were evaluated in a case study where user mobility information is used to identify interest points, patterns, and maps. The experimental evaluation revealed the efficiency of CD/CV to register the transactions performed in IoT dataflows through edge-fog-cloud in a private blockchain network in comparison with state-of-art solutions. © 2022 Elsevier Ltd</p>

Patel K.; Mistry C.; Gupta R.; Tanwar S.; Kumar N.	Sustainable Paradigm for Computing the Security of Wireless Internet of Things: Blockchain Technology	2023	10.1016/j.micpro.2023.104894	<p>Internet of Things (IoT) has evolved many day-to-day objects into smart objects, which humans can control when they are connected via Internet. Its practical implementation came into existence a few years back. Since the advent of IoT, it has tackled many challenges such as management, tracking, observation, etc. It has contributed to various fields such as Healthcare 4.0, smart grid, smart agriculture, Intelligent Transportation Systems (ITS), smart cities, smart homes, smart cars, and many more. It has applications through almost all domains, but the question arises: the performance evaluating parameters about specific IoT applications to consider to detect flaws in it. As per literature, there exist no such article helps beginners in selecting performance evaluation parameters for IoT-enabled applications. Motivated from the aforementioned facts, this paper presents a survey on performance evaluation metrics' systematic study for various IoT applications. We then graphically present the comparison of multiple parameters of domains security, energy efficiency, data storage, and network performance. From the analysis, we can infer that, in the smart city, latency is the most usable parameter, i.e., 77%. In contrast, in Healthcare 4.0, equal importance is given to latency and network bandwidth, which is 50%. Also, in Industry 4.0, scalability is the most opted performance parameter by the researchers, which is 100%. The smart grid application uses latency and delay are the most valuable parameters, i.e., 60%. © 2023 Elsevier B.V.</p>
	A robust and trusted framework for IoT networks	2022		<p>The proceedings contain 121 papers. The special focus in this conference is on Human-Computer Interaction. The topics include: Foreword; knowledge Creation in Co-design Activities - Business-Driven Collaboration in the Development of a Digital Communication Tool; Leveraging Design Thinking Towards the Convergence of AI, IoT and Blockchain: Strategic Drivers and Human-Centered Use Cases; rethinking Mobile Interaction Design Within Service; on the Transformation of Audience-Designer Relationship from the Perspective of Speculative Design; AI-Based Emotion Recognition to Study Users' Perception of Dark Patterns; defining an A/B Testing Process for Usability and User Experience Evaluation Through the Analysis of the Results of a Literature Review; AnyMApp Framework: Anonymous Digital Twin Human-App Interactions; construction of an Instrument for the Quantitative Assessment of Experience in the Use of Conversational Agents; to Discover Novice Expert Paradigm: Sequence-Based Time-Domain and Graph-Based Frequency-Domain Analysis Method of Eye Movement; evaluation of a Virtual Working Environment via Psychophysiological Indices; towards a Methodology to Evaluate User Experience with Personalized Questionnaires for the Developments of Custom Systems; holistic Multimodal Interaction and Design; emoFrame: Prototype of a Framework to Assess Users' Emotional Responses; a Systematic Mapping Study of Emotional Response Evaluation Instruments; Developing a Framework for Trustworthy AI-Supported Knowledge Management in the Governance of Risk and Change; end-User Adoption of Cryptocurrency: A Literature Review; a Study on User Experience of Non-linguistic Communication: Focusing on the Interactive Emojis in On-line Meeting Platforms; remote Workers' Perceptions on Employee Monitoring; usability Evaluation Towards a Cultural Perspective: Design Guidelines for Peruvian Government Websites; identifying Requirements and Quality Attributes from the Point of View of Users of Mobile Digital Libraries; a Survey on the Usability and User Experience of the Open Community Web Portals.</p>
Zeba S.; Amjad M.; Rizvi D.R.	Literature Review on Recent Trends and Perspectives of Collaborative Robotics in Work 4.0	2022	10.1002/9781119682554.ch3	<p>Advanced computerization, emerging paradigm, and expeditious growth of the wireless Internet of Things (IoT) system functions with the use of sensors, actuators, and translators. The IoT network is an illustration of innovative automation and rapid growth wireless systems which exploit sensing, actuating, Artificial Intelligence, Blockchain Technology, and networking technologies for achieving the aims of the systems. Resources or constraints of the IoT objects explain the working of smart IoT systems. The expeditious growth and regular assessment of the IoT environment, increased security issues, and problems of the system are due to its wireless connectivity and cloud-based centralized architectures, etc. Security and threats can become a crucial problem in any wireless networking system like the IoT, which hamper the computing power of the system and also reduce its efficiency. Various security threats to the IoT system include Signal or Radio Jamming, Spoofing, Malicious attacks, Denial of Service (DoS) attacks, Distributed Denial of Service (DDoS) attacks, Black Hole attacks, Sybil attacks, Data tampering, Tag cloning, etc. To address these threats, risks, and challenges, researchers have implemented many solutions with latest technologies such as Blockchain technology, IOTA, etc. In the current potential situation, Blockchain technology is the most recent, sustainable, and growing technology to deal with the security and threats to IoT applications, because of its peer-to-peer, immutable, and decentralized nature. The distributed behavior of Blockchain makes it compatible to integrate Blockchain with the IoT system. There is the need for further study to recognize more secure IoT systems which can overcome the numerous threats to security. In this chapter, our goal is to perform a systematic review of summarized existing problems and solutions related to security in the Blockchain-based Internet of Things (BloT) and the Internet of Things (IoT) systems. In this chapter, research questions (RQ) are used to illustrate the problems. Through the contribution of research questions and literature surveys we conclude with the potential security problems of the IoT as well as solutions using Blockchain. © 2022 John Wiley &amp; Sons Ltd.</p>

Joshi G.; Sharma V.	Smart Inspection; Conceptual Framework, Industrial Scenarios, and Sustainability Perspectives	2023	10.1007/s12652-022-04403-w	In the optimistic era of the internet, connected devices have the capability to communicate and share information with each other. The implementation of the Internet of Things (IoT) is not possible until the security-related issues of managing a huge amount of data with reduced latency have been resolved. In contrast to traditional cryptographic techniques, trust establishment schemes among sensor nodes are found to be secure, reliable, and easily manageable. Therefore, in this paper, we propose a novel hybrid trust estimation approach that calculates the trust value of devices both at the device layer (Short-Term Trust) and at the edge layer (Long-Term Trust) depending upon their resource capabilities. Short-Term Trust (STT) uses the Markov model and considers only the current trust state for the evaluation of trust value whereas Long-Term Trust (LTT) uses the voluminous historical data for trust value prediction. Further, both LTT and STT are then alternatively referred to after every periodic interval leading to the evolution of the hybrid trust model. The healthcare simulation of the proposed work when compared with the available state of arts viz. ConTrust, BTEM, and Entropy gained a 17%, 10%, and 11% increase in the level of trustworthiness respectively. In addition, on average; the simulation results provide a 7% higher detection rate and 36% lower false-positive rate when compared to BTEM and Entropy trust models presented in the literature. Besides, the proposed scheme scores only 0.69% of computational overhead; which is observed to be suitable for resource constraint IoT devices. © 2022, The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.
Weidemann C.; Mandischer N.; van Kerkom F.; Corves B.; Hüsing M.; Kraus T.; Garus C.	Thermal comfort practices for precast concrete building construction projects: towards BIM and IOT integration	2023	10.3390/robotics12030084	This literature review presents a comprehensive analysis of the use and potential application scenarios of collaborative robots in the industrial working world, focusing on their impact on human work, safety, and health in the context of Industry 4.0. The aim is to provide a holistic evaluation of the employment of collaborative robots in the current and future working world, which is being increasingly driven by the automation and digitization of production processes, and which can be outlined using the term Work 4.0. In this context, the forms of work organization, and the demands and impacts on humans are changing profoundly. Collaborative robots represent a key technology to aid the transition. The review utilizes expert interviews for identifying relevant keywords, and follows the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) framework to evaluate peer-reviewed literature between 2002 and January 2022. The analysis includes forms of interaction, and the distribution of roles, control interfaces, safety procedures, and ergonomics and health. In addition, the review offers a heatmap displaying the research topics of 715 publications for each year, and a database of these publications in BibTeX format that is publicly accessible. The review highlights the challenges, potential benefits, and trends of using collaborative robots in the industrial working world, emphasizing the importance of a careful evaluation of their impact on human work, safety, and health. It offers a tool set for researchers and practitioners to further explore and evaluate the employment of collaborative robots in Work 4.0. © 2023 by the authors.
Houban I.; Aminzadeh A.; Sattarpanah Karganroudi S.; Barka N.	Adaptive Configuration of Service-Based Smart Sensors in Edge Networks	2023	10.1007/978-981-19-7218-8_7	Nowadays, computer-aided inspection (CAI) is used to cope with increasing complexity in part manufacturing and the difficulty of physical access to certain workplaces. Therefore, manufacturing companies adopt automated CAI methods to increase the efficiency of the control quality activities. This study aims to capture the current state of the art of literature related to rigid and non-rigid inspection with a focus on the intelligent factory based on CAI. This investigation is a road map of different methods developed and how precise this kind of inspection can be. This paper presents a systematic literature review in the computer-aided inspection field with an extensive assessment of the included studies. After analyzing the relevant papers and industrial documents in detail, we derive deep insights into the different methods developed to inspect parts based on their physical aspects. This study will contribute to the computer-aided inspection field providing methodologies that will make the human intervention useless at one point. Finally, the digital twins' model has been proposed for an industrial application based on Industry 4.0. © The Editor(s)(if applicable) and The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2023.
Ismail Z.-A.B.	A systematic literature review on attacks defense mechanisms in RPL-based 6LoWPAN of Internet of Things	2022	10.1108/ECAM-09-2020-0767	Purpose: Improper evaluation and information mismanagement concerning thermal comfort appears to negatively affect occupants' satisfaction and building energy consumption in precast concrete (PC) building contexts. Predictive models are particularly problematic in PC building construction projects where natural ventilation levels do not coincide with occupants' thermal comfort and thermal sensation specifications. Design/methodology/approach: A systematic literature review is undertaken to explore the viability and benefits of a new ICT-based approach for meeting social and environmental objectives. Findings: Sophisticated thermal comfort system solutions are essential for optimising thermal comfort and saving energy in PC building construction projects. Originality/value: It is imperative that designers and manufacturers are kept up-to-date with the possibilities and potentials associated with new and nascent technologies so that building projects can meet key sustainability criteria. © 2021, Emerald Publishing Limited.

Sun M.; Zhou Z.; Xue X.; Zhang W.; Gaaloul W.	Cost-effectiveness of using chatbots in healthcare: a systematic review	2022	10.1109/TII. 2021.30745 13	Edge computing promises to facilitate the collaboration of smart sensors at the network edge, in order to satisfy the delay constraints of certain requests, and decrease the transmission of large-volume sensory data from the edge to the cloud. Generally, the functionalities provided by smart sensors are encapsulated as services, and the satisfaction of certain requests is reduced to the composition of services configured upon smart sensors in edge networks. Considering the dynamics and nonpredictability of incoming requests, an adaptive and online service configuration mechanism is essential, especially when various temporal constraints are prescribed by requests and satisfied by configured services. In this article, we formulate this problem in terms of a continuous-time Markov decision process model based on the state-action-reward mechanism. A temporal-difference learning approach is developed to optimize the service configuration while taking long-term delay sensitivity and energy efficiency into consideration. Extensive experiments are conducted, and evaluation results show that our approach outperforms the state-of-art's techniques for achieving close-to-optimal service configuration, and improving the temporal satisfaction of user requests. © 2005-2012 IEEE.
Al-Amiedy T.A.; Anbar M.; Belaton B.; Bahashwan A.A.; Hasbullah I.H.; Aladaileh M.A.; Mukhaini G.A.	19th International Conference on Augmented Intelligence and Intelligent Tutoring Systems, ITS 2023	2023	10.1016/j.ijot. .2023.10074 1	The Internet of Things (IoT) is one of the most rapidly evolving networking concepts, offering various applications for human benefit. Advances in embedded system architecture and compressed IPv6 have enabled IP stack functionality in resource-constrained heterogeneous smart devices. The IETF Routing Over Low power and Lossy network (ROLL) Working Group (WG) devised IPv6 Routing Protocol for Low Power and Lossy Networks (RPL) to enable the communication between network nodes in IPv6 over Low-power Wireless Personal Area Network (6LoWPAN). The limited resources and heterogeneity of 6LoWPAN nodes make it challenging to design a security solution for Low Power and Lossy Networks, making them vulnerable to various security threats and attacks. Numerous security mechanisms based on trust, threshold, secure routing, authentication, and encryption have shown promising results in detecting anomalous activities in RPL-based 6LoWPAN. As a result, this study systematically examines and critically analyses the existing research domain on RPL security mechanisms. This research presents a comprehensive analysis of demographic characteristics, existing and new attacks, simulation programmes, network configuration, and evaluation measures in RPL-based 6LoWPAN. In addition, it proposes a thorough discussion of current issues, research challenges, and suggestions for future research avenues. This study reveals that most of the studies are published in IEEE Xplore® database and mainly comprises journal articles. Furthermore, the trust-based mechanism is the most used security mechanism for securing RPL-based 6LoWPAN. Finally, the Version Number, BlackHole, and Sybil attacks are the most discussed attacks in the selected studies. © 2023 Elsevier B.V.
Fgaier M.; Zrubka Z.	Particle Swarm Optimization Algorithm and Its Applications: A Systematic Review	2022	10.1109/CIN TI- MACRo579 52.2022.100 29478	Chatbots are automated conversation agents which are initiated through text and/ or voice messages using smartphones, computers, or other connected devices. The implementation of chatbot technology in healthcare has been growing during the recent years and chatbots are increasingly used in diagnostic tools or for patient management. Through the years, a moderate amount and mixed quality evidence has been generated on the efficacy and safety of healthcare chatbots, and despite their cost-saving potential, research on their cost-effectiveness has been scarce. The aim of this paper is to systematically review the methods and results of cost-effectiveness studies involving healthcare chatbots. Literature search was executed via PubMed and Web of Science. Two studies fulfilled the inclusion criteria and were included in this systematic review. A descriptive summary was performed. The reporting quality of both studies was poor. Both studies indicated that their cost-effectiveness measurements were study-based but only one study reported actual costs. Cost effectiveness referred to resource savings on healthcare processes, but patients' health outcomes were not measured, and incremental cost-effectiveness ratios were not reported. Therefore, the cost-effectiveness of healthcare chatbots should be further assessed by formal health economic evaluations. © 2022 IEEE.

	Digital Twin for Fault Detection and Diagnosis of Building Operations: A Systematic Review	2023		on Augmented Intelligence and Intelligent Tutoring Systems. The topics include: Automated Extraction of Domain Models from Textbook Indexes for Developing Intelligent Tutoring Systems; Teaching Cardiovascular Physiology with a Minigame-Based ITS; expert-Centered Design Recommendations to Promote Engagement in Authoring Activities of Adaptive Learning Technologies; towards a Chatbot-Based Learning Object Recommendation: A Comparative Experiment; development of a Conversational Agent for Tutoring Nursing Students to Interact with Patients; Integrating an Ontological Reference Model of Piloting Procedures in ACT-R Cognitive Architecture to Simulate Piloting Tasks; generating Pedagogical Questions to Help Students Learn; attention Assessment of Aircraft Pilots Using Eye Tracking; KEMMRL: Knowledge Extraction Model for Morphologically Rich Languages; recommending Mathematical Tasks Based on Reinforcement Learning and Item Response Theory; synthesizing Didactic Explanatory Texts in Intelligent Tutoring Systems Based on the Information in Cognitive Maps; Using the ITS Components in Improving the Q-Learning Policy for Instructional Sequencing; stargazing Live! Inspiring with Real Data in a Mobile Planetarium and Learning Through Conceptual Modelling; A GPT-Based Vocabulary Tutor; ETHOSCHOOL: An Artificial Moral Agent Model for Collaborative Learning; toward a Smart Tool for Supporting Programming Lab Work; towards Embodied Wearable Intelligent Tutoring Systems; iQUIZ!: A Collaborative Online Learning System that Promotes Growth Mindset Using Persuasive Feedback; helping Teachers to Analyze Big Sets of Concept Maps; Learning Engagement and Peer Learning in MOOC: A Selective Systematic Review; automatic Execution of the Ontological Piloting Procedures; personalized Study Guide: A Moodle Plug-in Generating Personal Learning Path for Students; learning by Building Chatbot: A System Usability Study and Teachers' Views About the Educational Uses of Chatbots; towards Integrating Learnersourcing, Microlearning and Gamification in Moodle; functional Programming of Intelligent Systems.
Gad A.G.	Conceptual Framework to Support Personalized Indoor Space Design Decision-Making: A Systematic Literature Review	2022	10.1007/s11831-021-09694-4	Throughout the centuries, nature has been a source of inspiration, with much still to learn from and discover about. Among many others, Swarm Intelligence (SI), a substantial branch of Artificial Intelligence, is built on the intelligent collective behavior of social swarms in nature. One of the most popular SI paradigms, the Particle Swarm Optimization algorithm (PSO), is presented in this work. Many changes have been made to PSO since its inception in the mid 1990s. Since their learning about the technique, researchers and practitioners have developed new applications, derived new versions, and published theoretical studies on the potential influence of various parameters and aspects of the algorithm. Various perspectives are surveyed in this paper on existing and ongoing research, including algorithm methods, diverse application domains, open issues, and future perspectives, based on the Systematic Review (SR) process. More specifically, this paper analyzes the existing research on methods and applications published between 2017 and 2019 in a technical taxonomy of the picked content, including hybridization, improvement, and variants of PSO, as well as real-world applications of the algorithm categorized into: health-care, environmental, industrial, commercial, smart city, and general aspects applications. Some technical characteristics, including accuracy, evaluation environments, and proposed case study are involved to investigate the effectiveness of different PSO methods and applications. Each addressed study has some valuable advantages and unavoidable drawbacks which are discussed and has accordingly yielded some hints presented for addressing the weaknesses of those studies and highlighting the open issues and future research perspectives on the algorithm. © 2022, The Author(s).
Hodavand F.; Ramaji I.J.; Sadeghi N.	22nd International Multidisciplinary Conference on Reliability and Statistics in Transportation and Communication, RelStat 2022	2023	10.3390/buildings13061426	Intelligence in Industry 4.0 has led to the development of smart buildings with various control systems for data collection, efficient optimization, and fault detection and diagnosis (FDD). However, buildings, especially with regard to heating, ventilation, and air conditioning (HVAC) systems, are responsible for significant global energy consumption. Digital Twin (DT) technology offers a sustainable solution for facility management. This study comprehensively reviews DT performance evaluation in building life cycle and predictive maintenance. 200 relevant papers were selected using a systematic methodology from Scopus, Web of Science, and Google Scholar, and various FDD methods were reviewed to identify their advantages and limitations. In conclusion, data-driven methods are gaining popularity due to their ability to handle large amounts of data and improve accuracy, flexibility, and adaptability. Unsupervised and semi-supervised learning as data-driven methods are important for FDD in building operations, such as with HVAC systems, as they can handle unlabeled data and identify complex patterns and anomalies. Future studies should focus on developing interpretable models to understand how the models made their predictions. Hybrid methods that combine different approaches show promise as reliable methods for further research. Additionally, deep learning methods can analyze large and complex datasets, indicating a promising area for further investigation. © 2023 by the authors.

Lee K.-T.; Im J.-B.; Park S.-J.; Kim J.-H.	Are Active and Assisted Living applications addressing the main acceptance concerns of their beneficiaries? Preliminary insights from a scoping review	2022	10.3390/buildings12060716	COVID-19 has forced people to spend more time indoors due to lockdown and social distancing, and clients demand personalized indoor spaces designed to increase individual satisfaction indoors. Consequently, various fourth industrial revolution technologies have been applied to support construction spaces to satisfy those clients lacking architectural knowledge and experience by reflecting individual tendencies and perceptions to build personalized indoor spaces. Therefore, it is crucial to understand how users evaluate the space according to behaviors and emotions felt in the space. A systematic review is performed to integrate significant categories from multiple disciplines to investigate the various decision-making aspects. In this study, 124 papers were selected, applying the PRISMA checklist to conduct a systematic literature review with scientometric analysis to propose a conceptual framework by reflecting the research trend related to indoor space decision-making. Accordingly, research on indoor space decision-making is increasing with pursuing convergence with various fields of study. The research is focused on the following four clusters: indoor space components, human tendencies, technology, and spatial evaluation. The framework proposed by integrating these trends could be utilized by clients as a practical tool to support people-centered indoor space decision-making post-COVID-19. Moreover, a framework should be developed to expand effectiveness in indoor spaces through convergence and collaboration research with psychology, physiology, and the medical field. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.
	State-of-the-Art Review of Blockchain-Enabled Construction Supply Chain	2023		The proceedings contain 47 papers. The special focus in this conference is on Reliability and Statistics in Transportation and Communication. The topics include: Classification of Inventory Management Methods Based on Demand Analysis in Supply Chains; stakeholder-Oriented Investment Activities for Sustainable Supply Chain Management; use of Operational Research in Car Transport Logistics; reduction of Supply Chain Risks by Using Blockchain Technology; efficiency Assessment System Based on Analytical Approach for Sustainable Development of Transport Logistics; smart Process Observer for Crane Automation; analysis of Air Pollution Monitoring System in Lithuania; piezoelectric Films Application for Vibration Diagnostics; autonomous Mobile Robot Study in the Context of Maintenance 4.0; Contribution Determination of the Statistical Loading of the Crossroads by Means of the YOLO5 Neural Network; improvement of the Feature Selection Method for Network Attacks Classification Using Machine Learning in Digital Forensics; optimisation of Quay Crane Scheduling Problem at the Port of Algeria; scripting Complex Events and Behaviors in Computer Simulation of a Security Monitored Area; avatar: A Telepresence System for the Participation in Remote Events; anomaly Detection for Predictive Maintenance on the Example of an Induced Draft of a Waste Power Plant; development of a Reliable and Offline Capable Hard- and Software Technology for Long-Term Machine Data Acquisition, Data Storing and Data Exportation; cargoTube: Next Generation Sustainable Transportation by Hyperloop Technologies; training Environment for Rare Events Learning a Feasibility Study; comparison Analysis Between Pneumatic and Airless Tires by Computational Modelling for Avoiding Road Traffic Accidents; attention-Based Spatio-Temporal Graph Convolutional Networks – A Systematic Review.
Colantonio S.; Jovanovic M.; Zdravevski E.; Lameski P.; Tellioglu H.; Kampel M.; Florez-Revuelta F.	An Insight on Optimization Techniques for Uncertain and Reliable Routing in Wireless Body Area Networks	2022	10.1145/3529190.3534753	Active and Assisted Living (AAL) technologies stand as a promising mean to respond to the big societal challenges related to health and social care. Nevertheless, despite their great potential and the recent boost ensured by the advances in Artificial Intelligence for data processing, the uptake in real-life settings of AAL technologies is still in its infancy. Several concerns seem to hinder the willingness of the targeted beneficiaries to integrate such technologies in their routines and living settings. Some studies and surveys have tried so far to identify and analyze these concerns and the factors that affect the immediate acceptance and long-term usage of AAL technologies, thus identifying accessibility, usability, privacy, safety, security and reliability as the core ones. Nevertheless, no attempts have been done yet to verify the reception of these analyses from a technological and implementation standpoint. This paper fills this gap by reporting the preliminary results of a scoping review of the AAL literature. The review investigates the solutions developed in the last five years that address various groups of beneficiaries and their concerns with respect to technology adoption. The results obtained aim to aid researchers, social and health care professionals, end users and technology providers understand the state of play of technological solutions, evaluation studies and the overall discussions that are appearing in the literature to address and respond to the end-users' concerns. © 2022 ACM.



<p>Yoon J.H.; Pishdad-Bozorgi P.</p>	<p>A novel-cascaded ANFIS-based deep reinforcement learning for the detection of attack in cloud IoT-based smart city applications</p>	<p>2022</p>	<p>10.1061/(ASCE)CO.1943-7862.0002235</p>	<p>This paper aims to highlight the critical problems associated with the construction supply chain (CSC) by analyzing the literature and shedding light on the existing research limitations and gaps. Moreover, this research aims to explore the applications of emerging blockchain technology in addressing the identified CSC issues and initiating the process of bridging the body of knowledge gap by proposing future research directions. The review demonstrates that the critical problems in the CSC are related to sustainability, collaboration, and information sharing. Existing CSC studies focus on each individual issue, and they have not yet tackled these key intertwined issues through a holistic system view approach. This research put into context the intertwined relationship of these key issues and proposes a supply chain management system coupled with emerging blockchain technology to enhance sustainability, promote collaboration, and facilitate information sharing. These findings are synthesized with different reviews of the literature on the use of blockchain applications in supply chains to propose a blockchain-enabled CSC that can fill the research gaps. The proposed blockchain applications in the CSC involve establishing a blockchain-enabled supplier selection and assessment, blockchain-assisted claims auditing, forensic analysis and dispute resolution, and smart contract-based governance to enforce a reward and punishment system that can facilitate information sharing, and thus promote collaboration. The integration of the two different literature reviews contributes to the body of knowledge by highlighting the research gaps in the existing CSC studies and providing opportunities for improvement through the use of an emerging state-of-art technology: blockchain. Furthermore, the construction industry can enhance its sustainability and promote collaboration and information sharing in its supply chains by leveraging the proposed applications. © 2021 American Society of Civil Engineers.</p>
<p>Sakthivel K.; Ganesan R.</p>	<p>17th Annual Scientific International Conference for Business on Digital Economy and Business Analytics, SICB 2021</p>	<p>2023</p>	<p>10.53759/7669/jmc202303013</p>	<p>In recent times, Wireless Body Area Networks a subsection of Wireless Sensor Network is a promising technology for future healthcare realm with cutting-edge technologies that can assist healthcare professionals like doctors, nurses and biomedical engineers. Machine Learning and Internet of Things enabled medical big data is the future of healthcare sector and Medical Technology-based industries leading to applications in other sectors such as fitness tracking for commercial purposes, Sportsperson health monitoring to track their day-to-day activities and wearable devices for critical and emergency care. This comprehensive review article addresses Wireless Body Area Network state-of-art and the dependence of Optimization Techniques and Meta-heuristic Algorithms for an efficient routing path between two sensor nodes: source node and destination node and it plays an effective role in optimizing the network parameters such as radio range, energy consumption, throughput, data aggregation, clustering and routing. Designing of energy-efficient routing for wireless body are network is such a challenging task due to uncertainty in dynamic network topology, energy constraints and limited power consumption. Optimization Techniques can help the researchers to achieve the drawbacks mentioned above and energy-efficiency of the network can be improved. In this article, we focus majorly on the efficiency of usage of optimization algorithms for Wireless Body Area Network routing mechanisms and a summary of its earlier studies during 2012-2023 epoch. Genetic Algorithm, Particle Swarm Optimization, Ant Colony Optimization, Artificial Bee Colony and Firefly Optimization algorithms were discussed on achieving local optima for better results through optimization. This article provides an insight into existing gaps and further modifications to the researchers in WBAN that can motivate them to propose new ideas for reliable solutions. Performance comparison and evaluation of different bio-inspired optimization algorithms has been discussed for further improvement in optimized routing algorithms. © 2023 The Authors. Published by AnaPub Publications.</p>
<p>Almasri M.M.; Alajlan A.M.</p>	<p>Superelastic and shape memory equi-atomic nickel-titanium (Ni-Ti) alloy in dentistry: A systematic review</p>	<p>2023</p>	<p>10.1002/cpe.7738</p>	<p>Vast usages of Internet of Things (IoT) devices in various smart applications have laid a foundation for the evolution of modern smart cities. The increasing dependency of smart city applications on communication and information technologies enhances operational efficiency, sustainability, and automation of city services. However, due to the heterogeneous nature of IoT devices, the network faces critical security issues while executing continued network operations and services, particularly by cyber-attacks. One of the predominant and rampant cyber-attacks in smart city applications is botnet attacks. Therefore, a novel deep learning model for the detection and isolation of cyber-attacks is proposed in the cloud IoT-based smart city applications to protect against such cyber-attacks. The proposed framework utilizes two different modules to automatically detect and isolate the malicious traffic emanating from compromised IoT devices with more efficiency. Here, two different datasets namely the IoT network intrusion and the ISCX 2012 IDs datasets are utilized for the evaluation of the proposed framework. In the first phase, the compromised device which communicates malicious network traffics through the network is identified using a cascaded adaptive neuro-fuzzy inference system (CANFIS). After detection, IP address of abnormal traffic is recorded and informed to the system administrator. In the second phase, communication pathways of compromised devices with other normal devices are blocked and the compromised devices are isolated from the network using the modified deep reinforcement learning (MDRL) approach. The analytic result shows that the proposed framework achieves a greater accuracy rate of about 98.7% as compared to other state-of-art methods. © 2023 John Wiley &amp; Sons, Ltd.</p>

	Smartphone applications for informal caregivers of chronically ill patients: a scoping review	2022		<p>The proceedings contain 121 papers. The special focus in this conference is on Human-Computer Interaction. The topics include: Foreword; knowledge Creation in Co-design Activities - Business-Driven Collaboration in the Development of a Digital Communication Tool; Leveraging Design Thinking Towards the Convergence of AI, IoT and Blockchain: Strategic Drivers and Human-Centered Use Cases; rethinking Mobile Interaction Design Within Service; on the Transformation of Audience-Designer Relationship from the Perspective of Speculative Design; AI-Based Emotion Recognition to Study Users' Perception of Dark Patterns; defining an A/B Testing Process for Usability and User Experience Evaluation Through the Analysis of the Results of a Literature Review; AnyMApp Framework: Anonymous Digital Twin Human-App Interactions; construction of an Instrument for the Quantitative Assessment of Experience in the Use of Conversational Agents; to Discover Novice Expert Paradigm: Sequence-Based Time-Domain and Graph-Based Frequency-Domain Analysis Method of Eye Movement; evaluation of a Virtual Working Environment via Psychophysiological Indices; towards a Methodology to Evaluate User Experience with Personalized Questionnaires for the Developments of Custom Systems; holistic Multimodal Interaction and Design; emoFrame: Prototype of a Framework to Assess Users' Emotional Responses; a Systematic Mapping Study of Emotional Response Evaluation Instruments; Developing a Framework for Trustworthy AI-Supported Knowledge Management in the Governance of Risk and Change; end-User Adoption of Cryptocurrency: A Literature Review; a Study on User Experience of Non-linguistic Communication: Focusing on the Interactive Emojis in On-line Meeting Platforms; remote Workers' Perceptions on Employee Monitoring; usability Evaluation Towards a Cultural Perspective: Design Guidelines for Peruvian Government Websites; identifying Requirements and Quality Attributes from the Point of View of Users of Mobile Digital Libraries; a Survey on the Usability and User Experience of the Open Community Web Portals.</p>
	HO-DQLN: Hybrid optimization-based deep Q-learning network for optimizing QoS requirements in service oriented model	2022		<p>The proceedings contain 57 papers. The special focus in this conference is on Business on Digital Economy and Business Analytics. The topics include: Knowledge Management by Firms: A Systematic Review; deep Neural Network to Forecast Stock Market Price; A VBA-Module for Converting Integrated Variables into Negative and Positive Cumulative Partial Sums; optimistic Retention Contract Evaluation; Cloud ERP Systems and Firm Performance; Analysis of Business Challenges and Opportunities Within the Era of COVID: Strategies for Sustainable Business; Understanding User Acceptance of IoT Based Healthcare in Jordan: Integration of the TTF and TAM; Digital Healthcare Provision Policies in United Arab Emirates (UAE) Amid COVID-19; opportunities and Challenges of Applying Electronic Human Resources Management in Business Organizations an Applied Study in the Telecommunications Sector, Jordan; image Segmentation Techniques to Support Manual Chest X-Ray Interpretation; an Investigation the Factors Affecting Towards Adoption of Digital Wallets in Iraq; predictive Analysis of Energy Use Based on Some Forecasting Models; big Data Analytics and Audit Quality: Evidence from Canada; continuance Intention to Use YouTube Applying the Uses and Gratifications Theory; assessing Service Quality and Customers Satisfaction Using Online Reviews; factors Affecting Student Satisfaction Towards Online Teaching: A Machine Learning Approach; effect of Implementing Building Information Modelling in Infrastructure Management of Smart Cities; revisiting the Concept of Consumer Ethnocentrism After the Plague: Why Buying Local Matters; The Determinants of Community Involvement Information Disclosure on Social Media by Malaysian PLCs; cultural Value Orientations Among Managers of Travel Agencies; determinants of Brand Switching in Cellular Networks in Pakistan.</p>
Maroof M.; Sujithra R.; Tewari R.P.	An efficient artificial rabbits optimization-based user association problems in ultradense network using deep learning model	2022	10.1016/j.mtcmm.2022.104352	<p>According to the Global Burden of Disease (GBD) 2015, around 3.5 billion people suffer from dental diseases. The treatment of these disease requires either a specific dental device or a material which are usually subjected to stress and corrosion of the oral environment due to varying temperature, pH, occlusion, and masticatory forces. Various smart materials have emerged in the biomedical field because of their superior properties compared to conventional alloys. However, Nickel-Titanium (Ni-Ti) alloys with nearly equi-atomic composition have a long-standing history of successful use in dentistry because of their shape memory (SM) and superelastic (SE) properties with excellent cytocompatibility and corrosion resistance. The SM property offers preferable control of the transition temperature range (TTR) near the oral temperature providing multiple actuation. The SE property has revolutionized orthodontic treatment by delivering light and continuous physiological forces to the teeth, thereby improving patient comfort. The SE property of Ni-Ti alloy has been extensively used to produce orthodontic archwires and endodontic files as they exhibit higher flexibility compared to conventional stainless-steel alloy. However, the duration and type of heat treatment performed on these devices have been reported to modify their thermo-mechanical properties, producing adverse effects. Besides this, the devices are also subjected to short-term cooling or heating, sterilization, and disinfection protocols that creates a corrosive environment. Thus, thermo-mechanical properties and the influence of oral environment on various commercially available Ni-Ti alloy dental devices have been briefly explored and discussed. Besides orthodontic archwire and endodontic files, other Ni-Ti alloy-based dental devices are also reviewed, such as Shape memory Ni-Ti alloy sleeve for Abutment System, SM Ni-Ti alloy palatal expander, and SM Ni-Ti alloy porous dental implant. Thus, this manuscript aims to provide a concise assessment of the properties of SE and SM Ni-Ti alloys and their evolution in the field of dentistry. © 2022 Elsevier Ltd</p>

Guessi Margarido M.; Shah A.; Seto E.	Towards A Systematic Literature Review for Evaluating Smart Home Environments using light bulb sensors	2022	10.1038/s41746-022-00567-z	<p>Mobile-health applications can be used to deliver timely and personalized health information to family and friends of chronically ill adults living in the community. This scoping review aims to investigate the nature and extent of native smartphone applications for informal caregivers. Six databases were searched for articles on applications across ten chronic conditions, namely heart disease, stroke, cancer, chronic obstructive respiratory disease, asthma, diabetes, Alzheimer's disease or other dementia, rheumatoid arthritis, hypertension, and mood or anxiety disorders. In total, 36 articles were included, encompassing 26 applications. Of these, smartphone applications were designed for use only by caregivers (n = 15), with a few applications also intended to be used with patients (n = 5), healthcare providers (n = 4), or all three roles (n = 2). Most applications targeted a single chronic condition (n = 25), with Alzheimer's and other dementia being the most common (n = 18). Only one application was designed for management of multiple chronic conditions. Long-term evaluation methods are needed to continually assess the impact of applications on a range of process and health outcomes, such as usability, caregiver burden, and quality of life. Additional directions to advance native smartphone applications for caregivers are discussed, including personalization and expansion of eligibility criteria. © 2022, The Author(s).</p>
K V.; S J.; Karupiah S.V.	Energy Efficient Dynamic Sink Multi Level Heterogeneous Extended Distributed Clustering Routing for Scalable WSN: ML-HEDEEC	2023	10.1016/j.eswa.2023.120188	<p>The user demand increment and resource restrictions in IoT can provide efficient services without considering the service cost and service quality. Nowadays various computing technologies like fog, cloud, and edge computing and their confluence of IoT are required. The standard IoT services can be transformed into composite services via the incorporation of cloud computing with IoT. These IoT composite services are not suitable for various QoS scenarios which results in performance degradation and exhibited real-time adaptive sensing issues. Therefore, a novel Deep Q-learning Network-based Hybrid Enhanced Chimp Artificial Hummingbird (DQN-Hybrid ECAH) approach is proposed to overcome the state-of-art approach problems. The DQN-Hybrid ECAH approach represents a significant novelty in the field of IoT, as it utilizes a combination of advanced techniques to overcome the challenges posed by composite services in IoT. In particular, the use of deep Q-learning networks allows for the optimization of composite service quality, while the enhanced chimp artificial hummingbird techniques ensure that the approach is both efficient and effective. From the experimental evaluation, it is evident that the proposed approach is superior to other state-of-the-art methods. Specifically, the packet delivery ratio (PDF) and throughput rate obtained were high, with minimum jitter and average end-to-end delay. This demonstrates the effectiveness of the DQN-Hybrid ECAH approach in enhancing composite service quality in IoT applications. Overall, the proposed DQN-Hybrid ECAH approach represents a significant contribution to the field of IoT, providing a novel solution to the challenges associated with composite services in IoT. The approach has the potential to significantly improve the performance of IoT applications, while also reducing the real-time adaptive sensing issues that are often encountered in this context. © 2023</p>
Phemina Selvi M.; Shobanadevi N.	Modeling of Organizational Influencing Factors for Smart Manufacturing in the Indian Context by Using the DEMATEL Method	2023	10.1002/dac.5455	<p>The ability of high splitting gain of dense small cells contributed to the rapid establishment of ultradense networks (UDNs). Its higher efficiency to deal with high traffic data demand made UDN a most-promising technology for the future 5G environment. However, the UDN creates concern about user association, which causes more complexities in providing a high data transmission rate and low latency rate. To tackle these complexities, in this paper, the ambient intelligence exploration multi-delay deep deterministic policy gradient-based artificial rabbits optimization (AEMDPG-ARO) algorithm is proposed for resolving data rate and the issues of latency in the small base station (SBS) and macro base station (MBS) of the wireless sensor network. The complexity in attaining lower latency and higher data rate is achieved through a novel technique AEMDPG-ARO. The ambient intelligence exploration multi-delay (AIEM) is combined with deep deterministic policy gradient (DDPG) for overcoming the local optimum and diversity issues of DDPG. The data sample for this study is obtained through the WINNER channel model. The proposed AEMDPG-ARO algorithm's efficiency is compared to varied state of art methods. The performance evaluation is carried out with regard to network lifetime, end-to-end delay, packet delivery ratio, sum rate overall energy consumption, latency, and minimum rate and maximum rate of the network. The proposed AEMDPG-ARO algorithm gives better performance with reduced time complexity and better metrics rate in the result analysis. The minimum latency achieved by the proposed AEMDPG-ARO algorithm is about 0.1 s. © 2023 John Wiley &amp; Sons Ltd.</p>

Biggs R.; Thorpe S.	Imagination on Interactive Installations: A Systematic Literature Review	2023	10.1109/SoutheastCon51012.2023.10115135	As more homes become digitally connected the use of assistive technologies to support the operation in the home environment especially when one thinks of the elderly and the sick, our research shows that there is a gap in the literature with respect to the measure of the effectiveness of the use of these assistive technologies to support the home as a smart home. We conduct quantitative usability experiments supported by a conceptual human interaction framework to assess this effectiveness. We conduct as proof of concept these experiments with the use of a Google mini automated assistant and an internet ready light bulb sensor , to determine the responsiveness to the human voice, at different location proximities around the home, and the correctness to these responses to qualify the effectiveness argument. In this study the authors use their primary residence amidst the COVID19 pandemic to demonstrate the type of concerns. Our explicit contributions in this study are (i) A systematic review of the literature in this area (ii) the design of the smart home network environment with the google mini assistant and light ulb sensor that supports the human voice interactions (iii) Identify a suitable conceptual human interaction framework to support the use of the smart devices connected within the home users environment to support our experiments (iv) Provide critical case evaluation of the measure of effectiveness of the usability experiments supported by this conceptual framework. © 2023 IEEE.
Gupta S.K.; Singh S.	2023 Future of Educational Innovation-Workshop Series Data in Action, FEIWS 2023	2023	10.1007/s11277-022-09967-6	The size of the wireless sensor network (WSN) is extending continually with use of IOT networks. The main difficulty for design wide area WSN is to maintain the higher stability period and energy efficiency (EE) for the routing protocols. The creation of clustering-based routing protocols was applied to the optimization of overall network energy. But, traditional clustering methods were unable to produce improved node heterogeneity, and extended network lifetime. Distributed clustering-based routing protocols are specially designed for enhancing the EE of the networks. In addition, EE can be improved by enhancing the heterogeneity of the node distribution. This paper aims to design the extended distributed clustering-based EE routing protocol. The heterogeneity of nodes is improved by introducing the additional intermediate advanced nodes layer in the network. Therefore, paper proposed to design the Multi-Level Heterogynous EDEEC rousing protocol called ML-HEDEEC by adapting optimum energy enhancing parameters. The notes are divided to normal, advance, advance-interdicted and supper nodes based on the energy allocated to them. The probability of nodes is modified for better clustering and cluster head election by introducing additional energy enhancement parameter. In addition, it is proposed to automatically adopt the network initial energy based on the scaling of network dimensions. This may lead to enhance EE of the network and may improve stability period. Finally, the results are evaluated for a case of WSN routing under the dynamic sink locations. Performance is compared for various distributed clustering protocols and other state of art protocols viz. LEACH, SEP, zonal- SEP, DEC considering the network scaling. Various performances of the network stability, packets sent to base station, and lifetime, are defined for result evaluation. The network dimensions are scaled up to four times and proposed protocol is tested under scaling consideration. In addition, sink locations are also varied for dynamic sink locations performance evaluation. Overall paper efficiently designed and test heterogeneous improved routing protocol with extended lifetime and stability. © 2022, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.
Gaur T.S.; Yadav V.	Research and Innovation Forum, Rii Forum 2023	2023	10.1109/DELCON57910.2023.10127381	Smart Manufacturing comes with several advantages, such as increased productivity, improved efficiency, and long-term cost savings. Adopting a new technology/concept is always a challenging task and even in the pilot stage, industries are facing many issues in the adoption of SM. This study intended to identify and model the influencing factors to adopt SM in the Indian context. To complete the purpose of the current study, the influencing factors are found by a literature survey and validated by a team of experts. Organizational factors that influence SM adoption are considered in this study. A total of 6 influencing factors are identified that are Uncertainty in Management, Skilled workers, Investment issues, Implementation, Laws & Regulations, and Transparency. After the finalization of influencing factors, Decision Making Trial and Evaluation Laboratory is selected to model them. Based on the results of the study the important factors to be considered before implementing Organizational factors such as laws and regulations, implementation, and uncertainties in management are the most influencing. This study provides the necessary guidelines for the industry to adopt SM. © 2023 IEEE.
De Queiroz M.J.N.; Duarte E.F.; Dos Reis J.C.; De Oliveira Gaia Pimenta J.R.	Internet-of-Things Curriculum, Pedagogy, and Assessment for STEM Education: A Review of Literature	2022	10.5220/0011040100003179	Imagination plays a key role in human development as a natural process between the individual and their surroundings, including environmental possibilities. Today, these surroundings often include ubiquitous and pervasive technologies that enable new interaction possibilities. Although imagination is an important aspect in the theory of enactivism, it remains unclear whether it has been investigated within the context of interactive installations, ubiquitous computing, or other kind of application that emphasizes embodiment. This article presents a systematic literature review investigating if and how imagination has been explored in ubiquitous scenarios of interactive installations. We found that ubiquitous technologies can play an important role in enabling imagination in interactive installations. There is, however, a need for more specific design and evaluation methods and theory adoption to support imagination in the design of interactive systems. On this need, we contribute with a research agenda for further study on this subject. Copyright © 2022 by SCITEPRESS – Science and Technology Publications, Lda. All rights reserved.

	Machine Learning in Precision Agriculture: A Survey on Trends, Applications and Evaluations over Two Decades	2023		The proceedings contain 29 papers. The topics discussed include: comparing the use of virtual models vs. fieldwork in developing geomatics skills in undergraduate engineering education during the COVID-19 pandemic; factors to improve online education: a study on the impact of COVID-19 on Delhi students; experimental survey's results for IoT projects with Tinkercad circuits prototypes for virtual classes; towards assessment and attainment of engineering graduate attributes in outcome based education (OBE); emerging perspectives on sustainability in business schools: a systematic literature review of pedagogical tools in teaching sustainability; students' satisfaction and recommendation of Sostek application based on sustainable development learning in higher education; expanding the concept of learning space in biomedical engineering education using wearable devices and cloud-based collaborative programming environments; and improving learning experiences of business students in the classroom through emotions in higher education.
	UX Evaluation with Standardized Questionnaires in Ubiquitous Computing and Ambient Intelligence: A Systematic Literature Review	2023		The proceedings contain 73 papers. The special focus in this conference is on Research and Innovation. The topics include: Impact of 5S Method in Apparel Industry; an Interactive Augmented Reality Tool to Enhance the Quality Inspection Process in Manufacturing—Pilot Study; power Quality Disturbances Classification Based on the Machine Learning Algorithms; getting Things Right: Ontology and Epistemology in Smart Cities Research; livable City: Broadening the Smart City Paradigm, Insights from Saudi Arabia; green Sustainable Urban Systems: The Case of Jeddah; the Need for Green Software in Smart Cities; smart Mobility in Smart City: A Critical Review of the Emergence of the Concept. Focus on Saudi Arabia; how About Value Chain in Smart Cities? Addressing Urban Business Model Innovation to Circularity; design Thinking Innovation and Trends Foresighting; the Role of Social Platform in the Constitution of Smart Cities: A Systematic Literature Review; smart Cities at Risk: Tech Breakthrough or Social Control. Chinese Case Study; COVID-19 and Smart City in the Context of Tourism: A Bibliometric Analysis Using VOSviewer Software; Augmented Reality (AR) for Urban Cultural Heritage Interpretation: A User Experience Evaluation; protecting Video Streaming for Automatic Accident Notification in Smart Cities; creating a Smart Transit Option for a Car-Dependent City: The Case of Jeddah City; smart Urban Planning and Videogames: The Value of Virtualization as Prognosis of Urban Scenes; al-Based Remoted Sensing Model for Sustainable Landcover Mapping and Monitoring in Smart City Context; higher Education in the Face of Educational Paradigm Shifts—From Face-to-Face to Distance Learning; holocaust Education in Digital Media.
Abichandani P.; Sivakumar V.; Lobo D.; Iaboni C.; Shekhar P.	17th International Conference on Advanced Data Mining and Applications, ADMA 2021	2022	10.1109/ACCESS.2022.3164709	The exponentially growing Internet of Things (IoT) market presents compelling opportunities for innovators to develop and create meaningful applications affecting everyday life. This shifting IoT paradigm is placing new demands on educational institutions to train students with IoT-relevant skills. Numerous education researchers continue to document the implementation of IoT-based curriculum, pedagogy, and assessment techniques for STEM education. In this paper, we systematically reviewed this literature and identified 60 journal articles and conference papers that have reported implementing IoT curriculum and associated instructional approaches, educational technologies, and assessment strategies for K-12 and university students. The curriculum, pedagogy, and assessment strategies presented in these studies were analyzed in the context of the sensing, networking, services, and interface layers of the IoT technology paradigm. The review identifies best educational practices and synthesizes actionable strategies for educators to implement effective IoT learning experiences for students. These strategies leverage low-cost IoT hardware, open-source IoT software, active learning-based instructional approaches, and direct/indirect assessment methods. As IoT education becomes increasingly pervasive, the review and strategies provided in this paper may serve as a guide for future educational efforts. © 2013 IEEE.
Condran S.; Bewong M.; Islam M.Z.; Maphosa L.; Zheng L.	Blockchain and IoT in developing Fintech Ecosystem- An assistance to Insurance Industry	2022	10.1109/ACCESS.2022.3188649	Precision agriculture represents the new age of conventional agriculture. This is made possible by the advancement of various modern technologies such as the internet of things. The unparalleled potential for data collection and analytics has resulted in an increase in multi-disciplinary research within machine learning and agriculture. However, the application of machine learning techniques to agriculture seems to be out of step with core machine learning research. This gap is further exacerbated by the inherent challenges associated with agricultural data. In this work, we conduct a systematic review of a large body of academic literature published between 2000 and 2022, on the application of machine learning techniques to agriculture. We identify and discuss some of the key data issues such as class imbalance, data sparsity and high dimensionality. Further, we study the impact of these data issues on various machine learning approaches within the context of agriculture. Finally, we identify some of the common pitfalls in the machine learning and agriculture research including the misapplication of machine learning evaluation techniques. To this end, this survey presents a holistic view on the state of affairs in the cross-domain of machine learning and agriculture and proposes some suitable mitigation strategies to address these challenges. © 2013 IEEE.

<p>Diáz-Oreiro I.; López G.; Quesada L.; Guerrero L.A.</p>	<p>14th International Conference on the Quality of Information and Communications Technology, QUATIC 2021</p>	<p>2021</p>	<p>10.1155/2021/5518722</p>	<p>inexpensive instruments to evaluate user experience (UX). Although the structure, content, and application procedure of the three most recognized questionnaires (AttrakDiff, UEQ, and meCUE) are known, there is no systematic literature review (SLR) that classifies how these questionnaires have been used in primary studies reported academically. This SLR seeks to answer five research questions (RQs), starting with identifying the uses of each questionnaire over the years and by geographic region (RQ1) and the median number of participants per study (how many participants is considered enough when evaluating UX?) (RQ2). This work also aims to establish whether these questionnaires are combined with other evaluation instruments and with which complementary instruments are they used more frequently (RQ3). In addition, this review intends to determine how the three questionnaires have been applied in the fields of ubiquitous computing and ambient intelligence (RQ4) and also in studies that incorporate nontraditional interfaces, such as haptic, gesture, or speech interfaces, to name a few (RQ5). Methods. A systematic literature review was conducted starting from 946 studies retrieved from four digital databases. The main inclusion criteria being the study describes a primary study reported academically, where the standardized questionnaire is used as a UX evaluation instrument in its original and complete form. In the first phase, 189 studies were discarded by screening the title, abstract, and keyword list. In the second phase, 757 studies were full-text reviewed, and 209 were discarded due to the inclusion/exclusion criteria. The 548 resulting studies were analyzed in detail. Results. AttrakDiff is the questionnaire that counts the most uses since 2006, when the first studies appeared. However, since 2017, UEQ has far surpassed AttrakDiff in uses per year. The contribution of meCUE is still minimal. Europe is the region with the most extended use, followed by Asia. Within Europe, Germany greatly exceeds the rest of countries (RQ1). The median number of participants per study is 20, considering the aggregated data from the three questionnaires. However, this median rises to 30 participants in journal studies while it stays in 20 in conference studies (RQ2).</p>
	<p>Deep learning for language and vision tasks in surveillance applications</p>	<p>2022</p>		<p>The proceedings contain 61 papers. The special focus in this conference is on Advanced Data Mining and Applications. The topics include: Recommendation for Higher Education Candidates: A Case Study on Engineering Programs; UQ-AAS21: A Comprehensive Dataset of Amazon Alexa Skills; are Rumors Always False?: Understanding Rumors Across Domains, Queries, and Ratings; a Green Pipeline for Out-of-Domain Public Sentiment Analysis; profiling Fake News: Learning the Semantics and Characterisation of Misinformation; mining Social Networks for Dissemination of Fake News Using Continuous Opinion-Based Hybrid Model; Predicting Network Threat Events Using HMM Ensembles; group Trip Planning Queries on Road Networks Using Geo-Tagged Textual Information; deep Reinforcement Learning Based Iterative Participant Selection Method for Industrial IoT Big Data Mobile Crowdsourcing; An Empirical Study on Human Flying Imagery Using EEG; know Your Limits: Machine Learning with Rejection for Vehicle Engineering; towards Generalizable Machinery Prognostics; A Trust Management-Based Route Planning Scheme in LBS Network; freeSee: A Parameter-Independent Pattern-Based Device-Free Human Behaviour Sensing System with Wireless Signals of IoT Devices; PS-QMix: A Parallel Learning Framework for Q-Mix Using Parameter Server; A Comprehensive Feature Importance Evaluation for DDoS Attacks Detection; adaptive Fault Resolution for Database Replication Systems; an Adjustable Diversity Metric for Multimodal Multi-objective Evolutionary Algorithms; cybersecurity Analysis via Process Mining: A Systematic Literature Review; identification of Stock Market Manipulation with Deep Learning; network Graph Analysis of Hospital and Health Services Functional Structures; fuzzy Kolmogorov Complexity Based on Fuzzy Decompression Algorithms and Its Application to Fuzzy Data Mining: (Preliminary Report); hand Bone Age Estimation Using Deep Convolutional Neural Networks.</p>



<p>Chauhan R.; Chirputkar A.; Pathak P.</p>	<p>18th International Road Federation World Meeting and Exhibition, 2021</p>	<p>2022</p>	<p>10.1109/DA SA54658.2022.9765026</p>	<p>PURPOSE- The Covid Pandemic has coerced the insurers to determine how best to meet the demands of their customers, provide service with minimal effort, and achieve their cost efficiency objective. The cost-efficiency objective of the insurance industry should also be aimed at freeing up funds to invest in new technologies and not lose sight of the transformation imperative. The insurance business, despite its size, is underrepresented in the literature. As a result, this paper explains how blockchain technology and IoT might benefit the insurance business. We go over the fundamentals of blockchain and IoT, the most prominent platforms already in use, and a short theoretical description of the insurance sub-processes that both the technologies can positively alter. We also go over the roadblocks that must be overcome in order to properly utilize blockchain technology in the insurance industry. RESEARCH METHODOLOGY- This study provides a qualitative assessment and analysis of journals, articles, and white papers on the implementation of Blockchain and IoT in the Insurance industry, as well as research trends. In addition, the study attempts to identify potential opportunities in the insurance business. The systematic review aims to bring together findings from several fields of study. The goal of this review article is to analyze both the literature sources to comprehend the actual levels of implementation and use cases, as well as to determine the direction in which the insurance industry is now heading in terms of technological adoption. ORIGINALITY- It also covers a wide range of study topics, as well as the most significant articles from the best journals. This paper also covers book chapters, conference papers, journal articles, review papers, white papers, and reports from various organizations. IMPLICATION- The research can prove to be a useful beginning point for new researchers looking for interesting and relevant research on the application and implementation of blockchain and IoT in general insurance. © 2022 IEEE.</p>
	<p>Feasibility of retrieving effective reflector height using GNSS-IR from a single-frequency android smartphone SNR data</p>	<p>2021</p>		<p>The proceedings contain 39 papers. The special focus in this conference is on Quality of Information and Communications Technology. The topics include: Empirical Evaluation of Agile Teamwork; STAMP 4 NLP – An Agile Framework for Rapid Quality-Driven NLP Applications Development; evaluating Predictive Business Process Monitoring Approaches on Small Event Logs; analyzing a Process Core Ontology and Its Usefulness for Different Domains; towards Understanding Quality-Related Characteristics in Knowledge-Intensive Processes - A Systematic Literature Review; KDM to UML Model Transformation for Quantum Software Modernization; hybrid Classical-Quantum Software Services Systems: Exploration of the Rough Edges; towards a Set of Metrics for Quantum Circuits Understandability; a Critique on the Use of Machine Learning on Public Datasets for Intrusion Detection; mutation Subsumption as Relative Incorrectness; a Comparison of Different Source Code Representation Methods for Vulnerability Prediction in Python; threat Modeling of Edge-Based IoT Applications; enforcing Mutual Authentication and Confidentiality in Wireless Sensor Networks Using Physically Unclonable Functions: A Case Study; GRADUATION: A GDPR-Based Mutation Methodology; a Proposal for the Classification of Methods for Verification and Validation of Safety, Cybersecurity, and Privacy of Automated Systems; risk Identification Based on Architectural Patterns; expressing Structural Temporal Properties of Safety Critical Hierarchical Systems; facing Many Objectives for Fairness in Machine Learning; a Streaming Approach for Association Rule Analysis of Spanish Politics on Twitter; on the Trade-off Between Robustness and Complexity in Data Pipelines; what We Talk About When We Talk About Software Test Flakiness; big Data Quality Models: A Systematic Mapping Study; KNN-Averaging for Noisy Multi-objective Optimisation.</p>
<p>López-Monroy A.P.; Elías-Miranda A.A.; Vallejo-Aldana D.; García-Carmona J.M.; Pérez-Espinosa H.</p>	<p>Monitoring real time security attacks for IoT systems using devsecops: A systematic literature review</p>	<p>2021</p>	<p>10.13053/CyS-25-2-3867</p>	<p>The keyword spotting and handgun detection tasks have been widely used to manipulate devices and monitor surveillance systems in a more efficient manner. In spite of the advances of deep learning approaches dominating those tasks, the effectiveness of them is mostly tested and evaluated in datasets of exceptional qualities. This paper aims to analyze the performance of these tools when information captured by common devices is used, for example; commercial surveillance systems based on standard resolution cameras or microphones from smartphones. For this, we propose to build an audio dataset consisting of speech commands recorded from mobile devices and different users. In the audio section, we evaluate and compare some state of art keyword spotting techniques with our own model, which outperforms the baselines and reference approaches. In this evaluation we obtained an accuracy of 83%. For the handgun detection, we did a fine tuning of YOLOv5 to adapt the model and perform the detection of handguns in images and videos. This model was tested on a new dataset that uses labeled images from commercial security cameras. © 2021 Instituto Politecnico Nacional. All rights reserved.</p>

	Energy management solutions in the Internet of Things applications: Technical analysis and new research directions	2022		The proceedings contain 86 papers. The special focus in this conference is on Road Federation World Meeting and Exhibition. The topics include: Damage Inspection, Structural Evaluation and Rehabilitation of a Balanced Cantilever Bridge with Center Hinges; reinforcement of Scoured Pile Group Bridge Foundations with Spun Micro Piles; repair of Settled Pile Bent Bridge Foundations with Spun Micro Piles; overview of Integral Abutment Bridge Applications in the United States; pacemaker Lighting Application to Prevent Traffic Congestion in a V-Shaped Tunnel and Provide Sustainable Operation: A Case Study: Eurasia Tunnel; real Time Multi Object Detection & Tracking on Urban Cameras; effective Advanced Warning for Connected Safety Applications - Supplementing Automated Driving Systems for Improved Vehicle Reaction; a Study into the Benefit and Cost-Effectiveness of Using State-of-the-Art Technology for Road Network Level Condition Assessment; a Case Study of Rural Freight Transport – Two Regions in North Carolina; traffic Delay Evaluation and Simulating Sustainable Solutions for Adjacent Signalized Roundabouts; a Comparative Evaluation of the Safety Performance of Median Barriers on Rural Highways; A Case-Study; ascendi's Safety Barriers Upgrading Program; effectiveness of Cable Median Barriers in Preventing Cross Median Crashes and Related Casualties in the United States - A Systematic Review; transforming Infrastructure Projects Using Agile; Savings Potential in Highway Planning, Construction and Maintenance Using BIM - German Experience with PPP; Demonstrating Connectivity and Exchange of Data Between BIM and Asset Management Systems in Road Infrastructure Asset Management; road Construction Using Locally Available Materials; road Roughness Estimation Using Acceleration Data from Smartphones.
Altuntas C.; Tunalioglu N.	16th Multidisciplinary International Congress on Science and Technology, CIT 2021	2021	10.1016/j.ds.p.2021.103011	Global Navigation Satellite Systems (GNSS) have been routinely used for geodetic-based survey and mapping studies such as precise point positioning, landslide, earthquake and crustal deformation monitoring, engineering surveys, in short, where accurate positioning is required. To do that, the GNSS observables should be eliminated from the error sources. Among the error sources affected to GNSS data, multipath stands for one of the largest error sources and should be removed. This multipath affects the strength of received microwave signal or signal-to-noise ratio (SNR), which is recorded at the GNSS antenna. As of now, many studies are successfully conducted to retrieve reflector height from signal-to-noise ratio (SNR) data gathered with a geodetic GNSS receiver. However, GNSS SNR data collected from a smartphone may also show a pattern for interferences of the direct and reflected signals from where the aforementioned heights are retrieved. In this study, an experimental site was setup to retrieve effective reflector height from a permanent mast attaching both smartphone with single frequency and geodetic GNSS receiver. The GNSS SNR data were gathered by the same time interval for a specific vertical height from the ground for three days and for approximately 5-h daily observation durations. The validation of the estimated reflector heights was performed by the root mean square error (RMSE) analysis. The RMSEs of estimated reflector heights for Xiaomi Mi 8 Lite and Trimble NetR9 geodetic receiver are computed as 1.9 and 3.7 cm, respectively. The initial results show that the outcomes of the analysis agree well with whether the in-situ measurements or the mean values via RMSEs. According to the performance assessments for accurate height detection and cost efficiency, single-frequency smartphones can be used to extract the reflector height from the collected raw SNR data. © 2021 Elsevier Inc.
Bahaa A.; Abdelaziz A.; Sayed A.; Elfangary L.; Fahmy H.	ImpulsePal: The systematic development of a smartphone app to manage food temptations using intervention mapping	2021	10.3390/info12040154	In many enterprises and the private sector, the Internet of Things (IoT) has spread globally. The growing number of different devices connected to the IoT and their various protocols have contributed to the increasing number of attacks, such as denial-of-service (DoS) and remote-to-local (R2L) ones. There are several approaches and techniques that can be used to construct attack detection models, such as machine learning, data mining, and statistical analysis. Nowadays, this technique is commonly used because it can provide precise analysis and results. Therefore, we decided to study the previous literature on the detection of IoT attacks and machine learning in order to understand the process of creating detection models. We also evaluated various datasets used for the models, IoT attack types, independent variables used for the models, evaluation metrics for assessment of models, and monitoring infrastructure using DevSecOps pipelines. We found 49 primary studies, and the detection models were developed using seven different types of machine learning techniques. Most primary studies used IoT device testbed datasets, and others used public datasets such as NSL-KDD and UNSW-NB15. When it comes to measuring the efficiency of models, both numerical and graphical measures are commonly used. Most IoT attacks occur at the network layer according to the literature. If the detection models applied DevSecOps pipelines in development processes for IoT devices, they were more secure. From the results of this paper, we found that machine learning techniques can detect IoT attacks, but there are a few issues in the design of detection models. We also recommend the continued use of hybrid frameworks for the improved detection of IoT attacks, advanced monitoring infrastructure configurations using methods based on software pipelines, and the use of machine learning techniques for advanced supervision and monitoring. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

Wang D.; Zhong D.; Souril A.	6th World Conference on Qualitative Research, WCQR 2022	2021	10.1016/j.cogsys.2020.12.009	By advancement of Internet of Things (IoT) technology in smart life such as smart city, smart home, smart healthcare and smart transportation, interconnections between smart things are growing that complicate evaluation of efficiency factors on the intelligent systems. Energy consumption as one of the most challenging issues is increasing with the growing IoT devices and existing interconnections between cloud data centers, mobile applications and human activities. Managing energy efficiency and power consumption is one of the important issues in green IoT-enabled technologies. This paper presents an overview on the energy management solutions in the IoT based on Systematic Literature Review (SLR). The main goal of this SLR-based overview is to recognize significant research trends in the field of energy management and power consumption techniques which need additional consideration to highlight more efficient and effective methods in IoT. Also, a taxonomy is proposed to categorize the existing research studies on energy management solutions. A statistical and technical analysis of reviewed existing papers are provided, and evaluation factors and attributes are discussed. We observed that variety of published research papers in smart home have highest percentage to evaluate energy management in the IoT. Also, deep learning and clustering methods are most popular techniques that were applied to evaluate the energy management in IoT case studies. Finally, new challenges and forthcoming issues of the energy management and efficient power consumption methods are presented. © 2021 Elsevier B.V.
	2nd International Conference on Design, Operation and Evaluation of Mobile Communications, MOBILE 2021, Held as Part of the 23rd HCI International Conference, HCII 2021	2022		The proceedings contain 64 papers. The special focus in this conference is on Science and Technology. The topics include: Lifelong Learning as a Strategy for Digital Literacy in University Teachers; simulation System of a Tomato Sorting Process Using Artificial Vision; Analysis of a Network Implementing ROIP Technology; computerized Tomography Images Processing Using Artificial Intelligence Techniques; Digital Model to Predict Failures of Porous Structures in DLP-Based Additive Manufacturing; Optimization of an Autonomous Learning Model for Detection COVID-19 Using Medical Images; an Implementation of an Algorithm for Information Theft Using Deep Learning Techniques: An Ethical Hacking Event; Quality in Use Evaluation of a GraphQL Implementation; MESH Networks to Optimize the Quality of Internet Service via WiFi in University Institutions; modeling Wireless Propagation Channel: A Traditional Versus Machine Learning Approach; Design of an Academic CSIRT – A Proposal Based on Strategic Planning Principles; educational Programming as a Strategy for the Development of Logical-Mathematical Thinking; neurotoxic Effects on Banana Workers Exposed to Agrochemicals: Ecuador Case Study; behavior of Reinforced Concrete Column Specimens Under Blast Loading Produced by Pentolite Charge; augmented Reality in Determining the Cognitive Load of Blind Users During Navigation Process; machine Algorithm-Based Web Prototype for Crop Pest Detection; use of Blockchain in IoT Devices Security: A Systematic Mapping Study; proposal of Sensor-Based System to Control the Store Capacity for Prevent Infection by Covid-19; yaatree: A Mobile Application for Transportation Request Focused on People with Disabilities; robust System for Crowd Counting and Estimation Using Multi-column Filters on Unmanned Platforms.
van Beurden S.B.; Greaves C.J.; Abraham C.; Lawrence N.S.; Smith J.R.	A review on diagnostic autism spectrum disorder approaches based on the Internet of Things and Machine Learning	2021	10.1177/20552076211057667	Background: Impulsive processes driving eating behaviour can often undermine peoples' attempts to change their behaviour, lose weight and maintain weight loss. Aim: To develop an impulse management intervention to support weight loss in adults. Methods: Intervention Mapping (IM) was used to systematically develop the "ImpulsePal" intervention. The development involved: (1) a needs assessment including a qualitative study, Patient and Public advisory group and expert group consultations, and a systematic review of impulse management techniques; (2) specification of performance objectives, determinants, and change objectives; (3) selection of intervention strategies (mapping of change techniques to the determinants of change); (4) creation of programme materials; (5) specification of adoption and implementation plans; (6) devising an evaluation plan. Results: Application of the IM Protocol resulted in a smartphone app that could support reductions in unhealthy (energy dense) food consumption, overeating, and alcoholic and sugary drink consumption. ImpulsePal includes inhibition training, mindfulness techniques, implementation intentions (if-then planning), visuospatial loading, use of physical activity for craving management, and context-specific reminders. An "Emergency Button" was also included to provide access to in-the-moment support when temptation is strong. Conclusions: ImpulsePal is a novel, theory- and evidence-informed, person-centred app that aims to support impulse management for healthier eating. Intervention Mapping facilitated the incorporation of app components that are practical operationalisations of change techniques targeting our specific change objectives and their associated theoretical determinants. Using IM enabled transparency and provided a clear framework for evaluation, and enhances replicability and the potential of the intervention to accomplish the desired outcome of facilitating weight loss through dietary change. © The Author(s) 2021.

	Ux in ar-supported industrial human–robot collaborative tasks: A systematic review	2022		<p>The proceedings contain 23 papers presented at a virtual meeting. The special focus in this conference is on Qualitative Research. The topics include: Studying Inclusion in Music Education - An Integrative Literature Review as a Support in the Choice of Methodology, Using WebQDA; how to Operate Literature Review Through Qualitative and Quantitative Analysis Integration?; Review of Scope on the Patient Safety in the Radiodiagnosis Area Supported by Software webQDA®; analysis of Discrimination and Denial of the Rights of Women with Disabilities with the Help of the Nvivo Software; a Qualitative Study and Analysis on the Use, Utility, and Emotions of Technology by the Elderly in Spain; giving Voice to Colorectal Cancer Patient About the Use of Communication Technology with Nurse Navigator; The Reshuffle of the United Arab Emirates Government in 2020 and the New Context of Happiness as a Government Policy - Content Analysis with WebQDA; Work Changes Due to COVID-19: Exploring Portuguese Workers' Expectations Using IRaMuTeQ; Social Network Analysis and Its Applicability by Means of NVivo Software; network-Based Participatory Evaluation Methodology; Online Problem-Based Learning During the Pandemic: SWOT Analysis of the Nursing Student's Opinion; methodological Reflections on Construction of Knowledge About Rural Women; The Role and Potential of Information Communication Technology (ICT) in Early Childhood Education in South Africa: A Theoretical Perspective; analysis of the Use, Knowledge and Problems of E-learning in a Distance Learning Master's Programme; smart Speakers and Functional Diversity: A Scoping Review; Risk Communication During COVID-19: What Can We Learn from New Zealand?; preface.</p>
	1st International Conference on Pervasive Computing and Social Networking, ICPCSN 2021	2021		<p>The proceedings contain 28 papers. The special focus in this conference is on Design, Operation and Evaluation of Mobile Communications. The topics include: Accessibility Challenges of Video Conferencing Technology; technology Craving and Withdrawal: Exploring Compulsive Mobile App Use; The Use of mPOS in Mexico; augmented Reality-Based Dance Training System: A Study of Its Acceptance; The Evaluation Framework for Wearable Devices Service Quality Based on SERVQUAL Model; Stakeholder Perceptions in the Context of Community Risk Reduction (CRR): Self-reported Hazards as Two-Way Communication Between First Responders and the Communities They Serve; global Challenges of Mobile Communication; The Impact of Mobile IT on the Service Innovation Performance of Manufacturing; user Co-creation Value of Short-Video Platform from the Perspective of Interactivity: The Mediating Role of Psychological Attachment; bibliometric Structured Review of Mobile Information Systems; analysis of Malaria Information on a Social Media Platform; the Influence and Prospect of Mobile Communication Technology on Advanced Manufacturing Industry; learners' Perception on Integration of Human Personality Types on Mobile Learning Platform; customer Satisfaction Evaluation Method Based on Big Data; investigation of Information Requirements for Smartwatch-Based Evacuation Support System; Application of Improved DTW Algorithm in Smart Home Industry; research on Risk Management of Digital Currency Based on Blockchain Technology in Mobile Commerce; developing a Mobile Learning Application for Preschooler; transformation the Business of eCommerce Through Blockchain; task Characteristics and Participants' Creative Performance in Crowdsourcing Contexts; correction to: Learners' Perception on Integration of Human Personality Types on Mobile Learning Platform (Design, Operation and Evaluation of Mobile Communications, 10.1007/978-3-030-77025-9_27); foreword.</p>
Hosseinzadeh M.; Koohpayehzadeh J.; Bali A.O.; Rad F.A.; Soury A.; Mazaherinezhad A.; Rezapour A.; Bohlouli M.	Smart airport: Evaluation of performance standards and technologies for a smart logistics zone	2021	10.1007/s11227-020-03357-0	<p>Children with autism spectrum disorders (ASDs) have some disturbance activities. Usually, they cannot speak fluently. Instead, they use gestures and pointing words to make a relationship. Hence, understanding their needs is one of the most challenging tasks for caregivers, but early diagnosis of the disease can make it much easier. The lack of verbal and nonverbal communications can be eliminated by assistive technologies and the Internet of Things (IoT). The IoT-based systems help to diagnose and improve the patients' lives through applying Deep Learning (DL) and Machine Learning (ML) algorithms. This paper provides a systematic review of the ASD approaches in the context of IoT devices. The main goal of this review is to recognize significant research trends in the field of IoT-based healthcare. Also, a technical taxonomy is presented to classify the existing papers on the ASD methods and algorithms. A statistical and functional analysis of reviewed ASD approaches is provided based on evaluation metrics such as accuracy and sensitivity. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.</p>

Khamaisi R.K.; Prati E.; Peruzzini M.; Raffaelli R.; Pellicciari M.	Evolution of IoT-enabled connectivity and applications in automotive industry: A review	2021	10.3390/app112110448	The fourth industrial revolution is promoting the Operator 4.0 paradigm, originating from a renovated attention towards human factors, growingly involved in the design of modern, human-centered processes. New technologies, such as augmented reality or collaborative robotics are thus increasingly studied and progressively applied to solve the modern operators' needs. Human-centered design approaches can help to identify user's needs and functional requirements, solving usability issues, or reducing cognitive or physical stress. The paper reviews the recent literature on augmented reality-supported collaborative robotics from a human-centered perspective. To this end, the study analyzed 21 papers selected after a quality assessment procedure and remarks the poor adoption of user-centered approaches and methodologies to drive the development of human-centered augmented reality applications to promote an efficient collaboration between humans and robots. To remedy this deficiency, the paper ultimately proposes a structured framework driven by User eXperience approaches to design augmented reality interfaces by encompassing previous research works. Future developments are discussed, stimulating fruitful reflections and a decisive standardization process. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.
	Trust-Aware sensing Quality estimation for team Crowdsourcing in social IoT	2022		The proceedings contain 56 papers. The special focus in this conference is on Pervasive Computing and Social Networking. The topics include: A Comparative Analysis of Energy Consumption in Wireless Sensor Networks; Performance Evaluation Among ID3, C4.5, and CART Decision Tree Algorithm; human Face Recognition Applying Haar Cascade Classifier; A Novel Simon Light Weight Block Cipher Implementation in FPGA; Assisting the Visually Challenged People Using Faster RCNN with Inception ResNet V2 Based Object Detection Model; analysis of Kidney Ultrasound Images Using Deep Learning and Machine Learning Techniques: A Review; big Data Mining—Analysis and Prediction of Data, Based on Student Performance; a Survey Paper on Characteristics and Technique Used for Enhancement of Cloud Computing and Their Security Issues; audio Classification for Melody Transcription in the Context of Indian Art Music; analysing Microsoft Teams as an Effective Online Collaborative Network Model Among Teaching and Learning Communities; MQTT Attack Detection Using AI and ML Algorithm; high Level Identification Using Palm Vein Based on Deep Neural Network; inventory Control with Machine Learning Approach: A Bibliometric Analysis; ROS-Based Robot for Health Care Monitoring System; iot-Based Fleet Tracking with Engine Control for Automobiles; A Skip-Connected CNN and Residual Image-Based Deep Network for Image Splicing Localization; A Comparative Study of Seasonal-ARIMA and RNN (LSTM) on Time Series Temperature Data Forecasting; Design and Implementation of Photovoltaic Powered SEPIC DC-DC Converter Using Particle Swarm Optimization (PSO) Technique; a Systematic Review on Background Subtraction Model for Data Detection; a Survey on Trust-Based Node Validation Model in Internet of Things; exploration on Content-Based Image Retrieval Methods.
	International Conference on Intelligent and Fuzzy Systems, INFUS 2021	2022		The proceedings contain 61 papers. The special focus in this conference is on Advanced Data Mining and Applications. The topics include: Recommendation for Higher Education Candidates: A Case Study on Engineering Programs; UQ-AAS21: A Comprehensive Dataset of Amazon Alexa Skills; are Rumors Always False?: Understanding Rumors Across Domains, Queries, and Ratings; a Green Pipeline for Out-of-Domain Public Sentiment Analysis; profiling Fake News: Learning the Semantics and Characterisation of Misinformation; mining Social Networks for Dissemination of Fake News Using Continuous Opinion-Based Hybrid Model; Predicting Network Threat Events Using HMM Ensembles; group Trip Planning Queries on Road Networks Using Geo-Tagged Textual Information; deep Reinforcement Learning Based Iterative Participant Selection Method for Industrial IoT Big Data Mobile Crowdsourcing; An Empirical Study on Human Flying Imagery Using EEG; know Your Limits: Machine Learning with Rejection for Vehicle Engineering; towards Generalizable Machinery Prognostics; A Trust Management-Based Route Planning Scheme in LBS Network; freeSee: A Parameter-Independent Pattern-Based Device-Free Human Behaviour Sensing System with Wireless Signals of IoT Devices; PS-QMix: A Parallel Learning Framework for Q-Mix Using Parameter Server; A Comprehensive Feature Importance Evaluation for DDoS Attacks Detection; adaptive Fault Resolution for Database Replication Systems; an Adjustable Diversity Metric for Multimodal Multi-objective Evolutionary Algorithms; cybersecurity Analysis via Process Mining: A Systematic Literature Review; identification of Stock Market Manipulation with Deep Learning; network Graph Analysis of Hospital and Health Services Functional Structures; fuzzy Kolmogorov Complexity Based on Fuzzy Decompression Algorithms and Its Application to Fuzzy Data Mining: (Preliminary Report); hand Bone Age Estimation Using Deep Convolutional Neural Networks.

Göcxmen E.	International Conference on Information Technology and Systems, ICITS 2022	2021	10.1177/03611981211019740	Owing to the current context of Industry 4.0, the importance of smart technologies in airport systems have increased substantially. State-of-art applications for transportation planning incorporating baggage services, routing, security, and safety are an evolving domain for both practitioners and researchers dealing with aviation applications. In this context, this paper seeks to answer these questions: Which standards are aimed at a smart airport to make the transportation planning sound? Which propositions are made based on the obtained prioritized standards? This study deals with standards including Environmental Effects, Docking & Navigation, Object Detection & Protection, Communications & Integration, and Terminology using a practical decision support system based on an analytical hierarchy process (AHP) and fuzzy inference system (FIS). Computational results reveal that the Object Detection & Protection standard has an effect on a safe and smart system. To give an overview of this standard for a smart logistics zone (SLZ), an architecture of autonomous robot units and a baggage handling system is proposed in this study. The suggested approach analyzes the obstacle photos obtained by cameras and allows the end-user to control the calculations visually. This research could provide advice to airport planners about smart policies and improving operations. © National Academy of Sciences.
Rahim M.A.; Rahman M.A.; Rahman M.M.; Asyhari A.T.; Bhuiyan M.Z.A.; Ramasamy D.	Performance Evaluation and Energy Efficient VM Placement for Fog-Assisted IoT Environment	2021	10.1016/j.vehcom.2020.100285	Emerging Internet of Things (IoT) is considered as blessings for the automotive industry to offer vast opportunities to inventively create, develop, and enhance seamless services for the comfort of the users. Over time, IoT has significantly expanded and evolved in a numerous variety of automotive applications. Motivated by this growing importance of automotive IoT, this paper presents a critical literature survey on the utilization of IoT technology in the automotive industry, emphasizing the evolution of technology-enabling connectivity and applications. Initially, a review of the transformation and development of IoT-enabled smart systems for the vehicle is presented along with an extensive evaluation of the evolution of technology enabling IoT connectivity and applications. This then follows by the formulation of a comprehensive application scope of IoT technology and a general conceptual framework of IoT applications in the automotive industry. Detailed investigation of the benefits and challenges associated with deploying IoT applications is subsequently discussed together with proper identification of current and future technological challenges in the automotive industry. Furthermore, this study also focuses on assessing various connectivity types embedded in the sensor node functionalities and linked them with associated applications to reveal technical challenges for future automotive IoT advancement. This work is envisaged to shape the future perspectives of IoT technology in the automotive industry and impact the development of IoT platforms devised by the automotive industry-academia community. The promise of this technology will be realized through addressing new research challenges in the vehicular IoT paradigm, and the design of highly-efficient communication technology with minimum cost and efforts. © 2020 Elsevier Inc.
Liu X.; Fu J.; Chen Y.; Luo W.; Tang Z.	SQBS 2020 - Proceedings of the 19th Brazilian Symposium on Software Quality	2021	10.1016/j.comnet.2020.107695	In the Internet of Things (IoT), the mobile smart devices with powerful sensing capability help mobile crowdsourcing become an important paradigm to sense environment information. The social Internet of Things paradigm can be exploited for complex task crowdsourcing by forming a collaborative team of socially connected nodes (i.e., smart devices). Few existing team crowdsourcing studies have ever satisfied requirements of trustworthy sensing data and collaborative communication among team members. In this paper, we design TAQ-Crowd (Trust-Aware sensing Quality estimation for team Crowdsourcing), a social team crowdsourcing framework for Social Internet of Things systems. Within TAQ-Crowd, we first incorporate the consideration of trustworthy relationships between nodes into sensing data quality evaluation for TAQ model design. Then, we design a task assignment algorithm CS-Selection, in which the sensing quality guides the participant selection to maximize the overall task valuation under a budget constraint. Meanwhile, we consider a variant of the classic Traveling Salesman Problem (TSP) to extract a tree-structured routing network for team communication. Solving the team crowdsourcing problem concerns participating device selection and task cooperation, which involves two coupling NP-hard problems. The two coupling problems can be transformed into an essentially submodular cost submodular knapsack problem to be solved by the greedy task assignment strategy. Finally, extensive simulation experiments are conducted. The results show that TAQ-Crowd significantly outperforms state-of-art approaches in team formation with at least $(1 - 1/e)^2$ approximation ratio. Furthermore, the achieved superior performance can validate our proposed trust-aware sensing quality estimation. © 2020

	Literature Review: Overview of Cancer Treatment and Prediction Approaches Based on Machine Learning	2022		The proceedings contain 212 papers. The special focus in this conference is on Intelligent and Fuzzy Systems. The topics include: Preface; smart Digital Twin-Based Bearing Fault Pattern Recognition; Fuzzy Matrix Aggregate Calculator (MAC) as a Tool for Economic Systems Express Evaluation; picture Fuzzy Edas Method for Team Leader Selection in International Audit Firm; picture Similarity Measures and Their Application to Medical Diagnosis; an Analysis of Data Production Based on the Consistency of Decision Matrices; rules Induced Using Possible Coverings from Incomplete Data Sets; development and Implementation of an Algorithm for Processing Fuzzy Queries to Relational Databases; investigation of Turkish Literary Poetry by Unsupervised Text Mining Methods; systematic Literature Review for Data-Driven Security Solutions of Self Scanning Applications in Retail Sector; sales Promotion Effectiveness: The Impact of Category – Brand Level Price Promotions on Sales Performance of a Large Retailer; Enabling Big Data Analytics and AI Solutions for Smart Warehouse; fuzzy Spatio-Temporal Data Analysis on Disease Outbreaks and Air Transportation; fraud Detection Using Fuzzy C Means; an Approach Based on Feature Selection for Missing Value Imputation; a Credibilistic Real Options Model with an Optimism-Pessimism Measure Using Trapezoidal Fuzzy Numbers; the Economic Resilience Evaluation Using Fuzzy Sets and Soft Computing; A Novel 2-Tuple SAW-MAIRCA Method for Partner Evaluation for Circular Economy; determination of the Level of Development of Commodity Markets by Segmentation of Economic Regions Based on the Theory of Fuzzy Sets; application of the Fuzzy Inference System to Evaluate the Quality of Air Textured Warp Yarn; fuzzy Logic Beyond Traditional “And”-Operations.
	Towards a Roadmap for Developing Digital Work Practices: A Maturity Model Approach	2022		The proceedings contain 61 papers. The special focus in this conference is on Information Technology and Systems. The topics include: User Experience in Communication and Collaboration Platforms: A Comparative Study Including Discord, Microsoft Teams, and Zoom; Assistive Technologies to Locate COVID-19 Care Centers; Using GIS Tools to Assess the Land-Use Changes in Artificial and Agriculture Areas in the Azores Region: Studying the Period of 1990 to 2018; Digital Transformation of Development NGOs: The Case of Transitioning Northern-Based Development NGOs; design Systems Implementation for Digital Transformation: A Case Study; the Attitude of University Students About Advertising on Facebook in the Category of Clothing and Accessories; independent Films and Streaming Platforms: Access Difficulties for Peruvian Filmmakers; aiding the Digital Creation of Physical Resources: Card Sets for The Gamers4Nature Toolkit to Game Design; Conversational Design Patterns for a UX Evaluation Instrument Implemented by Voice; Comparing Written and Voice Captured Responses of the User Experience Questionnaire (UEQ); user-Centred Usability Evaluation of Embodied Communication Agents to Support Older Adults: A Scoping Review; the Role of Second Life Games in Promoting Cultural Heritage; development of Audio-Visual Content to Promote the Adoption of the Gamers4Nature Toolkit; IoT Sensors and Capacitive Sensing Applied to the Development of a 3D Interaction Device; teaching “Gen Z”. A Study of the Media Competencies of International Baccalaureate Teachers in Loja-Ecuador; flipped Classroom Methodology in English Language Learning in Higher Education; DIA4K12: Framework for Managing then Teaching-Learning of Artificial Intelligence at Early Ages; The Use of Mobile Learning in Higher Education: A Study on the MOOC of Cadi Ayyad University; preface.
Patra S.S.; Mittal M.; Jude Hemantha D.; Ahmad M.A.L.; Barik R.K.	A systematic review of IoT in healthcare: Applications, techniques, and trends	2022	10.1007/978-981-16-3448-2_7	The uses of Internet of Things (IoT) devices and sensors have been increasing day by day. In order to provide storage and computational needs for time-sensitive applications low powered end devices which use IoT devices and sensors, a new computing paradigm “Fog Computing” has come into the picture. Virtual machines (VMs) inside the fog nodes are responsible for immediate processing and analyzing the IoT workloads. One of the open research problems is to efficiently scalable the fog centers so that a minimum number of client requests can be renege from the fog system. The service providers are intended to retain the client requests in the fog system by providing efficient services. In this chapter, a multi-server queuing system having renegeing with retention policy is modeled to measure the several performance measures of the fog system. The profit and revenue of the system are analyzed. Further, an efficient greedy-based VM placement scheme GVMP is proposed to optimize the energy consumption of the fog centers. The efficiency of the algorithm GVMP is compared with the state of art algorithms such as FFD, BFD, RR and MBFD. © 2022, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.
	1st International Virtual Conference on Industry 4.0, IVC14.0 2020	2020		The proceedings contain 45 papers. The topics discussed include: a repository to support software process reuse based on process lines; a survey research on the use of mobile applications in software project management; a systematic mapping on energy efficiency testing in android applications; a technology to support the building of requirements documents for IoT software systems; abandonment of a software process improvement program: insights from case studies; an empirical-informed work process model for a combined approach of agile, user-centered design, and lean startup; an instrument to assess the organizational climate of agile teams - a preliminary study; applying coupling and cohesion concepts in object-oriented software: a controlled experiment; assessment models for evaluating the combined use of agile, user-centered design and lean startup in the context of software development: a grey literature review; and evaluating the understandability and expressiveness of simulation executable models with professionals: obtaining perceptions from researchers and practitioners for improving quality of models.



Maalel A.; Hattab M.	Conceptualizing smart government implementation in smart city context: A systematic review	2021	10.1007/978-3-030-14939-0_10	<p>overview of the research fields relevant to cancer treatment and prediction approaches based on machine learning. The past few years have witnessed an exponential growth in databases and repositories due to the increase in scientific knowledge and the massive data production. Biomedical domain represents one of the rich data domains. An extensive amount of biomedical data is currently available with wealth of information, ranging from details of clinical symptoms to various types of biochemical data and outputs of imaging devices El Houby (J Appl Biomed, 2018 [1]). One of the important biomedical research domains, epidemiological cancer research, who is of high priority across the world. Cancer has been characterized as a heterogeneous disease consisting of many different subtypes. Every sixth death in the world is due to cancer, making it the second-leading cause of death (second only to cardiovascular diseases) Schutte (Global, regional, and national age-sex specific mortality for 264 causes of death, 1980–2016: a systematic analysis for the Global Burden of Disease Study, 2017 [2]). The early diagnosis and prognosis of a cancer type have become a necessity in cancer research, as it can facilitate the subsequent clinical management of patients. The vast amount of hidden data in huge databases related to cancer with all his variability has created tremendous interests in the field of data mining. While data mining is a discipline resulting from the combination of classical statistics and computer science algorithms, such as machine learning, aim to the extraction of new and useful knowledge from a large amount of data, it has become a useful instrument in bioinformatics. It can depict variation of cancer incidence and mortality by region, ethnicity, gender and socioeconomic factors that contribute to the assessment of population health needs, while it can contribute to the study of cancer burden. Furthermore, in-depth analysis of the patient's profile using data mining methods may uncover hidden, previously unknown relations between patient profile, cancer treatment and surveillance. This chapter will present recent approaches and works related to this context. It presents also a synthesis of current and future trends for smart systems for E-health. © 2021, Springer Nature Switzerland AG.</p>
Jafari P.	Metrics development and modelling the mixed reality and digital twin adoption in the context of Industry 4.0	2022	10.1007/978-3-031-05760-1_54	<p>The digital economy brings us a wide range of services and products assisted by emerging technologies in Industry 4.0. Nevertheless, already since the 1990s and early 2000s, IT has had a huge impact on the digitalization and digitization of businesses. This phenomenon of advancing in digital-oriented work practices is not only affecting the customer side, but is also changing the way of working within organizations. Although employees are one of the crucial elements in each organization and their level of work satisfaction is critical to the efficiency of a business, their work impression is still undergoing scrutiny when it gets to digital process innovations. Moreover, organizations still benefit from assistance in their adoption of digital-oriented work practices, for which a related maturity model (MM) can be one of the solutions. The current Ph.D. plan consists of three research projects that follow a mixed-method approach with a combination of quantitative and qualitative designs, within an overall design of Design-Science Research (DSR). Project 1 has two subprojects (i.e., a Systematic Literature Review (SLR) and a data-driven analysis). It starts with analyzing the relevant literature from a people–process–technology (PPT) perspective to extract relevant factors when digitalizing business processes. Afterwards, it investigates a representative set of European employee data using statistical data analysis (e.g., factor analysis and ANOVA) and data mining (e.g., clustering) techniques to delve into the impact of digital-oriented work practices on work satisfaction. After this artefact identification, we continue with Project 2 (i.e., expert panel, case study) to add evidence for a maturity-based gradation along with the identified clusters of digital-oriented work practices. Finally, Project 3 helps concretize the intended MM by focusing on the relationships with employee satisfaction and the relevant factors. Our findings will assist organizations to upgrade their work practices (i.e., including assessment and improvement advice), while simultaneously empowering their employees. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.</p>
Haghi Kashani M.; Madanipour M.; Nikravan M.; Asghari P.; Mahdipour E.	Hearables, in-ear sensing devices for bio-signal acquisition: a narrative review	2021	10.1016/j.jnca.2021.103164	<p>Internet of Things (IoT) is an ever-expanding ecosystem that integrates software, hardware, physical objects, and computing devices to communicate, collect, and exchange data. The IoT provides a seamless platform to facilitate interactions between humans and a variety of physical and virtual things, including personalized healthcare domains. Lack of access to medical resources, growth of the elderly population with chronic diseases and their needs for remote monitoring, an increase in medical costs, and the desire for telemedicine in developing countries, make the IoT an interesting subject in healthcare systems. The IoT has a potential to decrease the strain on sanitary systems besides providing tailored health services to improve the quality of life. Therefore, this paper aims to identify, compare systematically, and classify existing investigations taxonomically in the Healthcare IoT (HIoT) systems by reviewing 146 articles between 2015 and 2020. Additionally, we present a comprehensive taxonomy in the HIoT, analyze the articles technically, and classify them into five categories, including sensor-based, resource-based, communication-based, application-based, and security-based approaches. Furthermore, the benefits and limitations of the selected methods, with a comprehensive comparison in terms of evaluation techniques, evaluation tools, and evaluation metrics, are included. Finally, based on the reviewed studies, power management, trust and privacy, fog computing, and resource management as leading open issues; tactile Internet, social networks, big data analytics, SDN/NFV, Internet of nano things, and blockchain as important future trends; and interoperability, real-testbed implementation, scalability, and mobility as challenges are worth more studying and researching in HIoT systems. © 2021 Elsevier Ltd</p>

	7th Iberoamerican Workshop on Human-Computer Interaction, HCI-COLLAB 2021	2021		The proceedings contain 39 papers. The special focus in this conference is on Industry. The topics include: Intelligent Self-Protection Solution Against COVID-19; detecting Suicidal Ideation from Online Texts; Novel Drug Discovery Using Generative Model for COVID-19; structural Strength Improvement of 3D Printing Parts from Topology Optimised Design Using Anisotropic Material Modelling; uncovering of Depression Through User Profiling; a Study on Work–Life Balance and Marital Satisfaction of Faculty Members; evolutionary Computing-Based Feature Selection for Cardiovascular Disease: A Review; readiness and Maturity Assessment Model to Measure the Industry 4.0 Ecosystem; An Insight on Context-Aware Mobile Application Execution in Mobile Cloud IoT (MCloT); breast Cancer Detection in Histology Images Using Convolutional Neural Network; A Novel Approach on Auto-Scaling for Resource Scheduling Using AWS; A Blockchain-Based COVID-19 Protection Framework; preface; pre-diagnosis, Prediction and Report Generation of a Disease; a State of Art of Machine Learning Algorithms Applied Over Language Identification and Speech Recognition Models; feedback-Based Real—Time Surveillance for MidDay Meal Scheme; compact Planar Retrodirective Antenna with a Rat-Race Coupler for Autonomous Car Applications; digital Watermarking Technique in Transform Domain Using Meta-Heuristic Algorithm; centralized Smart Air Purifier System for Industrial Applications; rapid Forest Cover Detection Using Ensemble Learning; analysis of Connectivity Model to Study the Neurophysiological Process for Autism Detection; an Image Processing Based American Sign Language Fingerspelling Interpreter; security for User Profile Matching in Social Networks; AI and ML-Based Crop Detection Application; an Audio-Aided Face and Text Recognition System for Visually Impaired; decentralized Classroom Using Blockchain; application of Neuroevolution in Autonomous Cars.
Fu'Adi D.K.; Arief A.; Sensuse D.I.; Syahrizal A.	Lean manual assembly 4.0: A systematic review	2020	10.1109/ICI C50835.2020.9288656	As one of the smart city domains, the smart government becomes a vast area to study. Research in developing new ideas in technology, new ideas relating to the smart government with policy, environment, society are a few implementations of the smart government concept. The smart government's application has different specifications to solve each study's problem. The study aims to understand the implementation of smart government areas. It brings a review of the application of smart government from many previous studies using the PRISMA protocol. The systematic review result found 18 final articles to specify and elaborate on the smart government's implementation areas. The implementations and issues are divided into six areas: data analysis, operation, planning, collaboration, assessment, and energy management. The most recent topic in smart government studies is analyzing data and getting citizen engagement, using data mining techniques from social media and government websites to understand the citizens' needs and problems in the city. © 2020 IEEE.
Sepasgozar S.M.E.; Ghobadi M.; Shirowzhan S.; Edwards D.J.; Delzendeh E.	AIOps, CFTIC, STRAPS, AI-PA, AI-IOTS, and Satellite Events held in conjunction with 18th International Conference on Service-Oriented Computing, ICSOC 2020	2021	10.1108/ECAM-10-2020-0880	model (TAM) in the field of mixed reality and digital twin (MRDT) and identify key factors affecting users' intentions to use MRDT. The factors are used as a set of key metrics for proposing a predictive model for virtual, augmented and mixed reality (MR) acceptance by users. This model is called the extended TAM for MRDT adoption in the architecture, engineering, construction and operations (AECO) industry. Design/methodology/approach: An interpretivist philosophical lens was adopted to conduct an inductive systematic and bibliographical analysis of secondary data contained within published journal articles that focused upon MRDT acceptance modelling. The preferred reporting items for systematic reviews and meta-analyses (PRISMA) approach to meta-analysis were adopted to ensure all key investigations were included in the final database set. Quantity indicators such as path coefficients, factor ranking, Cronbach's alpha (α) and chi-square (χ <sup>2</sup> ) test, coupled with content analysis, were used for examining the database constructed. The database included journal papers from 2010 to 2020. Findings: The extant literature revealed that the most commonly used constructs of the MRDT–TAM included: subjective norm; social influence; perceived ease of use (PEOU); perceived security; perceived enjoyment; satisfaction; perceived usefulness (PU); attitude; and behavioural intention (BI). Using these identified constructs, the general extended TAM for MRDT in the AECO industry is developed. Other important factors such as “perceived immersion” could be added to the obtained model. Research limitations/implications: The decision to utilise a new technology is difficult and high risk in the construction project context, due to the complexity of MRDT technologies and dynamic construction environment. The outcome of the decision may affect employee performance, project productivity and on-site safety. The extended acceptance model offers a set of factors that assist managers or practitioners in making effective decisions for utilising any type of MRDT technology. Practical implications: Several constraints are apparent due to the limited investigation of MRDT evaluation matrices and empirical studies. For example, the research only covers technologies which have been

Ne C.K.H.; Muzaffar J.; Amlani A.; Bance M.	23rd International Conference on Human- Computer Interaction, HCII 2021	2021	10.1080/174 34440.2021. 2014321	Introduction: Hearables are ear devices used for multiple purposes including ubiquitous/remote monitoring of vital signals. This can support early detection, prevention, and management of urgent/non-urgent healthcare needs. This review therefore seeks to analyze the challenges and capabilities of hearables used to monitor human physiological signals. Areas covered: Studies were identified via search (Medline, Embase, Web of Science, Cochrane Library, Scopus) and conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Bias assessment used the Mixed Methods Appraisal Tool 2018 and Quality Assessment of Diagnostic Accuracy Studies 2nd Edition. 92/631 studies met the inclusion criteria and were qualitatively analyzed. The outcomes, applications, advantages, and limitations were discussed according to the vital signal measured. The bias risk ranged from low to high, with most studies facing moderate-to-high risk in subject selection due to small sample sizes. Expert opinion: Most studies reported good outcomes for ear signal acquisition compared to reference devices. To improve practicability and implementation, wireless connectivity, battery life, impact of motion/environmental artifacts and comfort need to be addressed going forward. Hearable technologies have also shown potential synergies with hearing aids. In future, multimodal ear-sensing devices opens the possibility of comprehensive health monitoring within daily life. © 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.
	Public displays and citizen participation: a systematic literature review and research agenda	2021		The proceedings contain 19 papers. The special focus in this conference is on Human-Computer Interaction. The topics include: Gamified Model to Support Shopping in Closed Spaces Aimed at Blind People: A Systematic Literature Review; interface Analysis Criteria for Mobile Devices: A Systematic Mapping; preface; Combining Two Inspection Methods: Usability Heuristic Evaluation and WCAG Guidelines to Assess e-Commerce Websites; Iepi-Board: An Infrastructure for the Development of Digital Storytelling Games by Blind-Users; modeling and Evaluating Personas with Software Explainability Requirements; project-Based Learning Focused on Professional Skills: An Approach Applied on Human-Computer Interaction and Software Requirements Under-Graduation Courses; Proposal for a Serious Game to Assist in the Daily Care of Children with ASD Before Covid-19; specified Ontologies in User Tags to Graphical User Interface Hedonistic Type Based on Sentiment Analysis; towards a Definition of a Learning Model of Business Simulation Games Based on the Analysis of Response from Physiological Devices; User Experience Evaluation in MOOC Platforms: A Hybrid Approach; user Interface Adaptation through Ontology Models and Code Generation; user-Centered Design Approach for a Machine Learning Platform for Medical Purpose; virtual Reconstruction of Objects by Point Cloud Capture to Measurement of Density Parameters Using Low Cost Device; considering the Older Adults' Perceptions of IoT for Designing IoT Technologies; control of a Robotic Hand Through Voice Commands and Biosignals; Desktop Application for Water Quality Prediction and Monitoring System Using ISO 9241-210 and Machine Learning Techniques.
Miqueo A.; Torralba M.; Yagüe-Fabra J.A.	11th International Conference on Innovations in Bio- Inspired Computing and Applications, IBICA 2020 and 10th World Congress on Information and Communication Technologies, WICT 2020	2020	10.3390/app 10238555	In a demand context of mass customization, shifting towards the mass personalization of products, assembly operations face the trade-off between highly productive automated systems and flexible manual operators. Novel digital technologies—conceptualized as Industry 4.0—suggest the possibility of simultaneously achieving superior productivity and flexibility. This article aims to address how Industry 4.0 technologies could improve the productivity, flexibility and quality of assembly operations. A systematic literature review was carried out, including 234 peer-reviewed articles from 2010–2020. As a result, the analysis was structured addressing four sets of research questions regarding (1) assembly for mass customization; (2) Industry 4.0 and performance evaluation; (3) Lean production as a starting point for smart factories, and (4) the implications of Industry 4.0 for people in assembly operations. It was found that mass customization brings great complexity that needs to be addressed at different levels from a holistic point of view; that Industry 4.0 offers powerful tools to achieve superior productivity and flexibility in assembly; that Lean is a great starting point for implementing such changes; and that people need to be considered central to Assembly 4.0. Developing methodologies for implementing Industry 4.0 to achieve specific business goals remains an open research topic. © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

	Smart City Assessment for Sustainable City Development on Smart Governance: A Systematic Literature Review	2021		<p>The proceedings contain 55 papers. The special focus in this conference is on Service-Oriented Computing. The topics include: AuraEN: Autonomous Resource Allocation for Cloud-Hosted Data Processing Pipelines; performance Diagnosis in Cloud Microservices Using Deep Learning; anomaly Detection at Scale: The Case for Deep Distributional Time Series Models; A Systematic Mapping Study in AIOps; an Influence-Based Approach for Root Cause Alarm Discovery in Telecom Networks; localization of Operational Faults in Cloud Applications by Mining Causal Dependencies in Logs Using Golden Signals; using Language Models to Pre-train Features for Optimizing Information Technology Operations Management Tasks; towards Runtime Verification via Event Stream Processing in Cloud Computing Infrastructures; hybrid Context-Aware Method for Quality Assessment of Data Streams; decentralized Federated Learning Preserves Model and Data Privacy; online Memory Leak Detection in the Cloud-Based Infrastructures; Multi-source Anomaly Detection in Distributed IT Systems; TELESTO: A Graph Neural Network Model for Anomaly Classification in Cloud Services; discovering Alarm Correlation Rules for Network Fault Management; resource Sharing in Public Cloud System with Evolutionary Multi-agent Artificial Swarm Intelligence; SLMAD: Statistical Learning-Based Metric Anomaly Detection; software Reliability Engineering for Resilient Cloud Operations; The Future of Robotic Process Automation (RPA); adaptive Summaries: A Personalized Concept-Based Summarization Approach by Learning from Users' Feedback; container-Based Network Architecture for Mobility, Energy and Security Management as a Service in IoT Environments; TAP: A Two-Level Trust and Personality-Aware Recommender System; am I Rare? an Intelligent Summarization Approach for Identifying Hidden Anomalies; on How Cognitive Computing Will Plan Your Next Systematic Review; stage-Based Process Performance Analysis; peer-to-Peer Application Threat Investigation.</p>
	Formal Methods to Analyze Energy Efficiency and Security for IoT: A Systematic Review	2021		<p>The proceedings contain 44 papers. The special focus in this conference is on Human-Computer Interaction. The topics include: Teaching Tablet Technology to Older Adults; a Qualitative Usability Evaluation of Tablets and Accessibility Settings by Older Adults; research on the Application of Role Theory in Active Aging Education Service System Design; ACF: An Autistic Personas' Characteristics Source to Develop Empathy in Software Development Teams; a Quantitative Study on Awareness, Usage and Reservations of Voice Control Interfaces by Elderly People; the Investigation into Design Elements of Auditory Pleasure Experience for the Elderly Based on a Testing Tools Development; a Research on the Correlation Between Tactile Perception Characteristics and Aging-Suitable Design in the Elderly Based on a Testing Tools Development; use of a Video Game with Tangible Interfaces to Work Emotions in Children with Autism; research on the Design of Smart Bracelets for the Elderly Based on Maslow's Hierarchy of Needs; human-Human Communication in Cyber Threat Situations: A Systematic Review; exploring Effectiveness of Absorbing Health Knowledge by the Middle-Aged and Elderly Using Chatbots; a Study into Accessibility and Usability of Automated Teller Machines for Inclusiveness; The Annual BUILD Snapshot: Tracking Alumni Outcomes; Using Self-developed Mobile APP and Arduino to Provide Integrated Multimedia for Lower Graders' English Vocabulary Learning; using Cobots, Virtual Worlds, and Edge Intelligence to Support On-line Learning; developing Academic Engagement Through a Virtual Week of Research, Scholarly, and Creative Activity: Rethinking Collaboration; heightmap Examiner. A Descriptive Tool for Education in Digital Cartography; sketchMeHow: Interactive Projection Guided Task Instruction with User Sketches.</p>
Clarival A.; Simonofski A.; Vanderose B.; Dumas B.	Risk Management of Port Operations: a Systematic Literature Review and Future Directions	2021	10.1108/TG-12-2019-0127	<p>Purpose: The purpose of this research is to study how current research reports reflect on using public displays in the smart city. In particular, it looks at the state-of-the-art of this domain from two angles. On the one hand, it investigates the participation of citizens in the development of public displays. On the other hand, it aims at understanding how public displays may foster citizen participation in addressing urban issues. Its goal is to provide a literature review of this field, and a research agenda.</p> <p>Design/methodology/approach: A systematic literature review (SLR) was conducted following a thoroughly detailed protocol. It surveys 34 recent papers through multiple aspects, including interaction modality, level of participation, socio-demographics of participating citizens, topic of participation, evaluation of the display and participation of end-users in the early development stages of the display. Then, a research agenda informed by the results of the SLR is discussed in light of related literature. Findings: The SLR showed that further research is needed to improve the involvement of citizens in the early stages of the development of public displays, broaden the spectrum of citizen participation achieved through public displays, integrate public displays with other means of participation and handle the changing urban context to improve the participation experience.</p> <p>Originality/value: Previous literature reviews have been conducted in the field of public displays, including one specifically related to citizen participation. However, they have emphasized the technological aspects of public displays and omitted other essential aspects. This article aims at addressing this gap by conducting a literature review, including also non-technological perspectives such as socio-demographics and participation in development, complementing other works. © 2020, Emerald Publishing Limited.</p>

	Digital Twins: A Maturity Model for Their Classification and Evaluation	2021		The proceedings contain 51 papers. The special focus in this conference is on Innovations in Bio-Inspired Computing and Applications. The topics include: Grey Wolf Optimization Model for the Best Mean-Variance Based Stock Portfolio Selection; Modelling and Performance Evaluation of IoT Network During the COVID-19 Pandemic; meta-heuristic Based Multi Objective Supply Chain Model for the Oil Industry in Conditions of Uncertainty; effective Machine Learning Approaches for Credit Card Fraud Detection; Scheduling Activities of Smart Phone and Smart Watch Based on Optimal Pattern Model (SA-OPM); literature Survey: Application of Machine Learning Techniques on Static Sign Language Recognition; EECT: Energy Efficient Clustering Technique Using Node Probability in Ad-Hoc Network; a System to Detect the Faces in Unconstrained Environment; Machine Learning for Intrusion Detection: Design and Implementation of an IDS Based on Artificial Neural Network; an Evolutionary Approach for Solving the Minimum Volume Ellipsoid Estimator Problem; Avoiding Wormhole Attack in MANET Using an Extending Network Knowledge; analysis of Socio-cognitive Skills Among 90's and 2k's Generations Using Machine Learning Techniques; particulate Matter Forecasting Using Neural Networks: A Case Study of Delhi; security Challenges of Blockchain; blockchain Transforming Cyber-Attacks: Healthcare Industry; effectiveness of Ensemble Machine Learning Algorithms in Weather Forecasting of Bangladesh; significance of the Internet of Things to the Covid-19 Pandemic in the Philippines; relationship Between the Monopoly of Tobacco Law and Lung Cancer Using the Theory of Dynamic Systems; comparative Analysis of Cellular Automata Based Multilingual Encryption Using Syndicate Rules for Data Security; analysis of Papers Based on Sentiment Analysis Applications on E-Commerce Data.
Ependi U.; Rochim A.F.; Wibowo A.	Systematic Mapping Study on Energy Optimization Solutions in Smart Building Structure: Opportunities and Challenges	2022	10.1109/DA SA54658.2022.9765192	smart city is a concept in the sustainable development of cities. Smart city assessment measures smartness based on various smart city indicators. One of the indicators in a smart city is smart governance which aims to provide public services through ICT support. Various phenomena and issues in smart city assessment (smart governance) are crucial for exploration, especially in indicators, capabilities, stakeholders, weaknesses, and factors influencing smart governance. A literature review is an analysis model used for exploring smart city assessment. The phases performed consist of three main steps. The first phase of preparation consists of identifying requirements and developing a review protocol. The second implementation phase consists of searching, selecting, and extracting materials. The third phase is reporting (dissemination of results). This study reviews the SCA to answer various phenomena, especially indicators, capabilities, stakeholders, weaknesses, and smart governance factors. The review results show various issues and phenomena in the smart city assessment. The issue in the indicator aspect is the first step that needs to be fixed. The issue in the capability aspect lies in the characteristics of the city to be measured. The stakeholder aspect has a problem in involving various stakeholders to get the assessment results from multiple points of view. At the same time, the issue on the weakness aspect is paying attention to smart city goals and world standards. Stakeholders require more pay attention to the issue of smart city assessment. Therefore, the process and implementation adhere to the smart city's standards and its objectives. Influences have been identified, namely policy domain, Trust, political & institutional environment, internet reach and use, and spatial characteristics. © 2022 IEEE.
Oliveira L.P.; da Silva A.W.N.; de Azevedo L.P.; da Silva M.V.L.	Blockchain technology for secured healthcare data communication among the non-terminal nodes in iot architecture in 5g network	2021	10.1007/978-3-030-75078-7_28	Typically, third parties must not capture the data transmitted in IoT (Internet of Things) constituted of the devices with limited capacities and different configurations. Hence, proposals for safety communications are analyzed to identify if it consumes lower energy through formal methods, simulations and measurements. However, the two last limit the evaluation with a finite set of scenarios. For this reason, this study used a systematic methodology to investigate formal methods used by articles in the context of the low-power security solution for IoT. The results correspond to a diversity of mathematics tools, research topics, analytical strategies, and other information to motivate the use of formal methods to generalize the evaluation of new research with an unambiguous description in all potential scenarios. © 2021, The Author(s), under exclusive license to Springer Nature Switzerland AG.

He R.; Wan C.; Jiang X.	AI-Driven Multiobjective Scheduling Algorithm of Flood Control Materials Based on Pareto Artificial Bee Colony	2021	10.1109/ICTIS54573.2021.9798532	<p>With the continuous development of world economy, the trade and connection between countries are getting closer, in which ports are playing an increasingly important role. However, due to the inherent complexity of port operational environment, ports are exposed to various types of hazards and more likely to encounter risks with high frequency and serious consequences. Therefore, proper and effective risk management of ports is particularly essential and necessary. In this research, literature from three aspects including risk assessment of port operations and service, safety management of dangerous goods, and port supply chain risk management was collected and investigated, in order to put forward the future research direction related to the risk management of port operations. The research results show that, firstly, most of the current research mainly focuses on the operational risk of traditional ports and a lot of relevant achievements have been seen. However, few scholars have studied the risk issues of smart ports which are believed to be the trend of future with the rapid development and application of high and new technologies. Thus, it is suggested that more attention should be shifted to the identification and assessment of operational risks of smart ports considering their characteristics. Secondly, although the risk evaluation systems of port operational safety have been established and widely studied, more efforts are still needed in terms of the suitability and effectiveness of the proposed indicators, especially when dangerous goods are involved. Thirdly, risk management of port supply chain is another popular topic, in which, one of the main difficulties lies on the collection of risk related statistics data due to the fact that port supply chain systems are usually huge and complex. It is inevitably that the evaluation results will lack objectivity to some extent. Therefore, it calls for more research on the risk assessment of port supply chains in a quantitative manner. In addition, resilience, as an emerging concept in the transportation field, will provide a new angle on the risk management of port supply chains. © 2021 IEEE.</p>
Uhlenkamp J.-F.; Hauge J.B.; Broda E.; Lutjen M.; Freitag M.; Thoben K.-D.	Smart Traffic Control in Vehicle Ad-Hoc Networks: A Systematic Literature Review	2022	10.1109/ACCESS.2022.3186353	<p>Digital Twins represent a powerful tool for transforming production and logistics towards Industry 4.0. They mirror physical assets in the digital world, enriching them with additional capabilities and features such as decision-making or lifecycle management. Due to the diverse possibilities associated with the Digital Twin, their design and implementation are also wide-ranging. This paper aims to contribute to the formalization and standardization of the description of Digital Twins. It presents a method for evaluating them through their lifecycle, from design to operation. The paper is based on an overview of their potential functionalities and properties with ranked stages of development. This method allows for an application-specific evaluation of Digital Twins and describes how they can be improved to suit the application better. The maturity model development follows the procedure for developing maturity models for IT management. Relevant capabilities and features were identified with a systematic literature review following the PRISMA guidelines. The results of this review were ranked and categorized and constitute the core of the maturity model, which was validated on five use-cases from different domains in production and logistics. The maturity model assesses Digital Twins in seven categories (context, data, computing capabilities, model, integration, control, human-machine interface) with 31 ranked characteristics. It evaluates existing solutions for potential improvements for a given application or the transfer to a new use-case. The resulting method and a supplementary web service present a generalized model for the evaluation of Digital Twins. Based on a description of a potential application, this is the first step towards a systematic evaluation, improving the structured development of such applications © 2013 IEEE.</p>
Aliero M.S.; Qureshi K.N.; Pasha M.F.; Ghani I.; Yauri R.A.	Objective and automated assessment of surgical technical skills with IoT systems: A systematic literature review	2021	10.1007/s11277-021-08316-3	<p>Currently building structure sector takes lead in energy consumption across the globe and is expected to increase by 2% every year. Consequently, being a major energy consumer, it's required to make effort for energy conservation as well. However, this energy conservation has to be in line with occupant thermal comfort. Recent advancement in the Internet of Things concepts attempts to transform residential areas into an energy-aware environment with aimed to reduce energy waste and automate home activities. To identify research trends and challenges in this area the study adopted the Kincham approach to performing review analysis. Our study reveals despite the benefit of this innovation, only resident with two or more unit building structure is mostly benefiting from this opportunity. Out of 94 studies considered 67 are proposed solutions. To find the trend of the research we classified the proposed solution into the topic domain (architecture, algorithm, platform, framework, and model) and it shows that trends moving toward proposing an algorithm to optimize energy consumption in the smart building structure. The study also performed an analytical evaluation on a proposed solution to assess their quality attributes and our evaluation reveals none of the studies considered security in their solution. Finally, the study identifies challenges that bottleneck the development and acceptance of this innovation into societies. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.</p>

Srinivasu P.N.; Bhoi A.K.; Nayak S.R.; Bhutta M.R.; Woźniak M.	2021 International Conference on Cyber Situational Awareness, Data Analytics and Assessment, CyberSA 2021	2021	10.3390/electronics10121437	In the contemporary world, with ever-evolving internet models in the process of automating and digitalizing various industrial and domestic implementations, the Internet of Things (IoT) has made remarkable advancements in sharing the healthcare data and triggering the associated necessary actions. Healthcare-related data sharing among the intermediate nodes, privacy, and data integrity are the two critical challenges in the present-day scenario. Data needs to be encrypted to ensure the confidentiality of the sensitive information shared among the nodes, especially in the case of healthcare-related data records. Implementing the conventional encryption algorithms over the intermediate node may not be technically feasible, and too much burden on the intermediate nodes is not advisable. This article has focused on various security challenges in the existing mechanism, existing strategies in security solutions for IoT driven healthcare monitoring frameworks and proposes a context-aware state of art model based on Blockchain technology that has been deployed for encrypting the data among the nodes in the architecture of a 5G network. The proposed strategy was examined through various performance evaluation metrics, and the proposed approach had outperformed compared to its counterparts. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.
Liu B.; Lu J.; Chen Y.; Sun P.; Zhao K.; Han M.; Zhang R.; Yin Z.	Applying advanced technologies to improve clinical trials: a systematic mapping study	2021	10.1155/2021/5557543	Considering the competition between rescue points, we use artificial intelligence (AI) driven Internet of Thing (IoT) and regional material storage data to propose a multiobjective scheduling algorithm of flood control materials based on Pareto artificial bee colony (MSA_PABC). To address the scheduling of flood control materials, the multiple types of flood control materials, the multiple disaster sites, and entertain both emergency and fairness of rescue need to be considered comprehensively. The MSA_PABC has the constraints such as storage quantity constraint of warehouse materials, material demand constraint, and maximum transportation distance of flood control materials. We establish the scheduling optimization model of flood control materials for each disaster rescue point and the total scheduling optimization model for all flood control materials. Then, MSA_PABC uses the modified Pareto artificial bee colony algorithm to solve the multiobjective models. Three types of initialization strategies are proposed to calculate the fitness of each rescue point and the overall evaluation value of the food source. We propose the employ bee operations such as niche technology and local search of the variable neighborhood, the onlooker bee operations such as Pareto nondominated sorting and crossover operation, the scout bee operations such as maximum evolutionary threshold, and end elimination mechanism. Finally, our proposed solution obtains the nondominated solution set and its optimal solution. The experimental results show that no matter how the number of rescue points changes, MSA_PABC can find the nondominated solution set and optimal solution quickly. It improves the convergence rate of MSA_PABC and material satisfaction rate. Our solution also reduces the average maximum transportation distance, the standard deviation of maximum transportation distance, and the standard deviation of material satisfaction rate. The evaluation also demonstrates MSA_PABC outperforms the state-of-arts such as ABC (artificial bee colony), NSGA2 (nondominated sorting genetic algorithm 2), and MOPSO (multiobjective particle swarm optimization). © 2021 Banteng Liu et al.
Cunha B.; Brito C.; Araújo G.; Sousa R.; Soares A.; Silva F.A.	Older Adults and Games from a Perspective of Playability, Game Experience and Pervasive Environments: A Systematics Literature Review	2021	10.1007/s10776-021-00517-8	Vehicle traffic in large cities is increasing every day. Despite the significant development of telecommunications, communication between such vehicles must still evolve to make mobility smarter. Many studies have been carried out to enable a network between vehicles and computational infrastructures, called Vehicular Ad-Hoc Networks (VANETs). Within the context of VANETs, traffic lights can play an important role in exchanging information with vehicles to reduce congestion. Intelligent traffic lights aim to manage intersections in urban traffic and avoid idle roads. Several research topics have already been explored related to smart traffic control such as network latency, people safety, driver assistance, among others. However, given the variety of problems and solutions, it is complex to identify research trends and gaps related to smart traffic field without a systematic review. This paper presents a systematic review of smart traffic in the context of VANETs. The paper selection was started with 1117 works followed with three processes of refinement wherein 115 papers were selected to thorough revision. The remaining 115 papers were cataloged and classified according to three criteria general focus, evaluation method, and communication type. The review revealed research gaps and trends in the area of smart traffic. This work provides a list of references to find the mapped papers, thus being able to guide more reliable research studies. Besides, we identify research challenges and directions based on the set of papers that were studied. The research challenges are presented according to the main topics explored in this systematic review: security, physical safety of people and protocols. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.



Castillo-Segura P.; Fernández-Panadero C.; Alario-Hoyos C.; Muñoz-Merino P.J.; Delgado Kloos C.	Issues of Development of Smart Transport Assessment Indicators	2021	10.1016/j.artmed.2020.102007	The assessment of surgical technical skills to be acquired by novice surgeons has been traditionally done by an expert surgeon and is therefore of a subjective nature. Nevertheless, the recent advances on IoT (Internet of Things), the possibility of incorporating sensors into objects and environments in order to collect large amounts of data, and the progress on machine learning are facilitating a more objective and automated assessment of surgical technical skills. This paper presents a systematic literature review of papers published after 2013 discussing the objective and automated assessment of surgical technical skills. 101 out of an initial list of 537 papers were analyzed to identify: 1) the sensors used; 2) the data collected by these sensors and the relationship between these data, surgical technical skills and surgeons' levels of expertise; 3) the statistical methods and algorithms used to process these data; and 4) the feedback provided based on the outputs of these statistical methods and algorithms. Particularly, 1) mechanical and electromagnetic sensors are widely used for tool tracking, while inertial measurement units are widely used for body tracking; 2) path length, number of sub-movements, smoothness, fixation, saccade and total time are the main indicators obtained from raw data and serve to assess surgical technical skills such as economy, efficiency, hand tremor, or mind control, and distinguish between two or three levels of expertise (novice/intermediate/advanced surgeons); 3) SVM (Support Vector Machines) and Neural Networks are the preferred statistical methods and algorithms for processing the data collected, while new opportunities are opened up to combine various algorithms and use deep learning; and 4) feedback is provided by matching performance indicators and a lexicon of words and visualizations, although there is considerable room for research in the context of feedback and visualizations, taking, for example, ideas from learning analytics. © 2021 Elsevier B.V.
	Outcomes-based appropriation of context-aware ubiquitous technology across educational levels	2021		The proceedings contain 34 papers. The topics discussed include: navigation anomaly detection: an added value for maritime cyber situational awareness; file slack handling tool; feature vulnerability and robustness assessment against adversarial machine learning attacks; intelligent intrusion detection system for smart grid applications; secure (S)hell: introducing an SSH deception proxy framework; energy efficiency in low power and lossy networks; the cybersecurity (CSEC) questionnaire: individual differences in unintentional insider threat behaviors; evaluating threat modeling tools: Microsoft TMT versus OWASP threat dragon; and revolution and stability in the study of the human factor in the security of information systems field. a systematic literature review over 30 years of publication.
Ngayua E.N.; He J.; Agyei-Boahene K.	Biomedical signals and machine learning in amyotrophic lateral sclerosis: a systematic review	2021	10.1007/s11192-020-03774-1	The increasing demand for new therapies and other clinical interventions has made researchers conduct many clinical trials. The high level of evidence generated by clinical trials makes them the main approach to evaluating new clinical interventions. The increasing amounts of data to be considered in the planning and conducting of clinical trials has led to higher costs and increased timelines of clinical trials, with low productivity. Advanced technologies including artificial intelligence, machine learning, deep learning, and the internet of things offer an opportunity to improve the efficiency and productivity of clinical trials at various stages. Although researchers have done some tangible work regarding the application of advanced technologies in clinical trials, the studies are yet to be mapped to give a general picture of the current state of research. This systematic mapping study was conducted to identify and analyze studies published on the role of advanced technologies in clinical trials. A search restricted to the period between 2010 and 2020 yielded a total of 443 articles. The analysis revealed a trend of increasing research interests in the area over the years. Recruitment and eligibility aspects were the main focus of the studies. The main research types were validation and evaluation studies. Most studies contributed methods and theories, hence there exists a gap for architecture, process, and metric contributions. In the future, more empirical studies are expected given the increasing interest to implement the AI, ML, DL, and IoT in clinical trials. © 2020, The Author(s).
Cardona J.S.; Lopez J.A.; Vela F.L.G.; Moreira F.	A Novel Integrated Framework Approach for TEBC Technologies in Distributed Manufacturing Systems: A Systematic Review and Opportunities	2022	10.1007/978-3-031-04819-7_42	Games have had a growth and have been applied in different areas other than fun or entertainment. In the case of older adults, they are used as a mechanism to increase physical activity or improve cognitive training. Traditionally, games generate entertainment through consoles with motion sensors, traditional digital games or mobile devices. These initiatives can be improved when used in older adults considering the particularities of these people. Improvements can focus on both the gameplay and the design of the experience offered to the player as well as their subsequent evaluation. For this reason, we conducted a systematic review of the literature to identify the actual advances in these areas. Also, through the review it was possible to identify that games have been used to generate deeper and more complete experiences such as those offered by pervasivity in a variety of contexts. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

Gutman S.; Vorontsova P.	Digital sustainability: how information and communication technologies (ICTs) support sustainable development goals (SDGs) assessment in municipalities	2020	10.1145/3446434.3446438	This paper considers the existing theoretical and methodological approaches to the assessment of the concept of "smart transport" from the perspective of normative, scientific, terminological aspects and practical application of technologies inherent to it. In the framework of the digital economy or Industry 4.0, the problems of digital transformation of industries are particularly interesting in terms of the economic and management processes and results of this transformation. Transport industry is the circulatory system of the economy and therefore its transformation is a complex and important task. The purpose of this study is to provide a systematic literature review of works on the matter of "smart transport". On the basis of this review we compiled a preliminary system of indicators to study effectiveness of "smart transport" for the conditions of Russia. The paper is a systematized literature review of the existing scientific papers on this matter in SCOPUS and Research Gate systems. © 2020 ACM.
Lin V.; Liu G.-Z.; Hwang G.-J.; Chen N.-S.; Yin C.	23rd International Conference on Human-Computer Interaction , HCII 2021	2022	10.1080/10494820.2019.1703012	This review study investigates the appropriation of sensing technology in context-aware ubiquitous learning (CAUL) in the fields of sciences, engineering, and humanities. 40 empirical studies with concrete learning outcomes across mandatory and higher education have been systematically reviewed and thematically analyzed with an outcomes-based teaching and learning approach. Four derived themes have been found to describe the design and implementation of CAUL, including learner-centeredness, technological facilitation, learning ecology, and research evaluation. The learning processes enabled by context-aware sensing technology have been explicated, revealing specific ways to apply new technologies in formal and informal environments. The analysis based on intended learning outcomes suggest that more efforts should be directed to fostering competence in analyzing and creating in mandatory education, and to creating in tertiary settings. Finally, unequal distribution of CAUL implementation across world regions calls for more technological appropriation in Southeast Asia and Africa. Specific suggestions on how to improve CAUL are also provided to better prepare learners in the twenty-first century. © 2019 Informa UK Limited, trading as Taylor & Francis Group.
Fernandes F.; Barbalho I.; Barros D.; Valentim R.; Teixeira C.; Henriques J.; Gil P.; Dourado Júnior M.	A critical review of smart manufacturing and industry 4.0 maturity manufacturing & industry 4.0 maturity upstream industry	2021	10.1186/s12938-021-00896-2	Introduction: The use of machine learning (ML) techniques in healthcare encompasses an emerging concept that envisages vast contributions to the tackling of rare diseases. In this scenario, amyotrophic lateral sclerosis (ALS) involves complexities that are yet not demystified. In ALS, the biomedical signals present themselves as potential biomarkers that, when used in tandem with smart algorithms, can be useful to applications within the context of the disease. Methods: This Systematic Literature Review (SLR) consists of searching for and investigating primary studies that use ML techniques and biomedical signals related to ALS. Following the definition and execution of the SLR protocol, 18 articles met the inclusion, exclusion, and quality assessment criteria, and answered the SLR research questions. Discussions: Based on the results, we identified three classes of ML applications combined with biomedical signals in the context of ALS: diagnosis (72.22%), communication (22.22%), and survival prediction (5.56%). Conclusions: Distinct algorithmic models and biomedical signals have been reported and present promising approaches, regardless of their classes. In summary, this SLR provides an overview of the primary studies analyzed as well as directions for the construction and evolution of technology-based research within the scope of ALS. © 2021, The Author(s).
Ramakurthi V.; Manupati V.; Varela M.L.R.; Putnik G.	Systematic mapping review of context-aware analysis and its approach to mobile learning and ubiquitous learning processes	2022	10.1007/978-3-030-79165-0_10	Distributed manufacturing systems have become consensus, particularly networked manufacturing systems (NMS) owing to its flexible and adaptable nature in response to customized requirements. Highlighting of functions in NMS and their integration with recent key enabling technologies i.e., Artificial intelligence, Machine learning, Internet of Things, Block chain technology, and Agent-based techniques, etc. are of utmost importance to identify problems and increase its efficiency. Hence, besides the above-mentioned approaches, this paper surveyed and analysed various articles systematically related to networked manufacturing in the context of knowledge creation and information, security, interoperability, and reliability. To identify the most related papers, the search has been conducted with Web of Science and Scopus databases. Subsequently, after evaluation 30 most related papers were selected and analyzed that further extended by identifying the issues and gaps in the existing empirical knowledge. Finally, the paper presents a roadmap for future research directions and developments. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

<p>Mantovani Ribeiro D.M.N.; Hourneaux Junior F.; Lara Cunha C.L.; Kaetsu P.T.; Dionizio-Leite P.F.; Machado Junior C.</p>	<p>Sustainable Manufacturing Systems: An Energy Perspective</p>	<p>2021</p>	<p>10.1108/DP- RG-11-2020- 0159</p>	<p>Purpose: This paper aims to discuss the role of information and communication technologies (ICTs) in the effective assessment of the sustainable development goals (SDGs) related to smart and sustainable city initiatives. Design/methodology/approach: The study is based on a systematic review of the literature within the Web of Science and Scopus databases, comprising the studies about ICTs related to smart and sustainable city initiatives and sustainable assessment. Findings: The main results point out that there are several different ways of assessing SDGs performance related to ICTs use in smart and sustainable city initiatives. However, the effectiveness of these assessments can be questioned. The intensive use of technology understood as the core of smart and sustainable cities does not imply an improvement in sustainability unless these technologies are strategically addressed to underpin those objectives. Moreover, not all SDGs have considered the use of ICTs in their targets. Research limitations/implications: The scope of the study is limited to “how” the information is used and managed, rather than analysing the sustainable performance itself. As a limitation, the findings and conclusions do not consider other sources of studies, such as grey literature. Practical implications: This study suggests some requirements for providing better and more reliable sustainable assessment, making smart and sustainable city initiatives more correlated with the SDGs. Social implications: By acknowledging the difficulties associated with SDGs assessment, concerning the municipal level, the study offers valuable insights into the effectiveness of public policies and public management. Besides, the findings shed some light on if and how the use of ICTs can effectively enhance sustainable development issues. Originality/value: This study offers valuable contributions to the literature by providing a collection of insights regarding how the ICTs may genuinely lead to a sound assessment of sustainable development, especially regarding the SDGs. © 2021, Emerald Publishing Limited.</p>
	<p>Evidence of the Effectiveness of Cyclic Technical Safety Mechanisms</p>	<p>2021</p>		<p>The proceedings contain 42 papers. The special focus in this conference is on Human-Computer Interaction. The topics include: Suggestions for Online User Studies: Sharing Experiences from the Use of Four Platforms; the Hidden Cost of Using Amazon Mechanical Turk for Research; research on Service Experience Design Framework Based on Semantics to Improve the Enterprise Service Capability; expectation, Perception, and Accuracy in News Recommender Systems: Understanding the Relationships of User Evaluation Criteria Using Direct Feedback; partial Consent: A Study on User Preference for Informed Consent; UI Development of Hardcore Battle Royale Game for Novice Users; the Reaches of Crowdsourcing: A Systematic Literature Review; a Bibliometric Analysis on Cybercrime in Nigeria; differences in Product Selection Depend on Situations: Using Eyeglasses as an Example; interaction Design for the Next Billion Users; Identifying Early Opinion Leaders on COVID-19 on Twitter; Impact of the Cyber Hygiene Intelligence and Performance (CHIP) Interface on Cyber Situation Awareness and Cyber Hygiene; the Effect of Social Media Based Electronic Word of Mouth on Propensity to Buy Wearable Devices; applying Exploratory Testing and Ad-Hoc Usability Inspection to Improve the Ease of Use of a Mobile Power Consumption Registration App: An Experience Report; euros from the Heart: Exploring Digital Money Gifts in Intimate Relationships; impact of Social Media Marketing on University Students - Peru; dynamic Difficulty Adjustment Using Performance and Affective Data in a Platform Game; exploring the Effect of Resolution on the Usability of Locimetric Authentication; usability Assessment of the GoPro Hero 7 Black for Chinese Users; usability Assessment of Xiaomi Smart Band 4.</p>
<p>Onyeme C.; Liyanage K.</p>	<p>Blockchain application in internet of vehicles: Challenges, contributions and current limitations</p>	<p>2021</p>	<p>10.3233/AT- DE210060</p>	<p>The shift towards Industry 4.0 is a fundamental driver of improved changes observed in today's business organizations. The difficulties in adapting to this new approach pose challenges for many companies especially in the oil and gas (O&amp;G) upstream sector. To make this path much feasible for companies in this industry, Maturity Models (MMs) are very useful tools in achieving this following their use in evaluation of the initial state of a company for planned development journey towards Industry 4.0 (I4.0) readiness and implementation. Study shows that only a limited number of O&amp;G specific roadmaps, MMs, frameworks and readiness assessments are available today. This paper aims to review the currently available Industry 4.0 MMs for manufacturing industries and analyze their applicability in the O&amp;G upstream sector using the systematic literature review (SLR) methodology, recognizing the specific requirements of this industry. The study looks at the key characteristic for O&amp;G sector in relation to the manufacturing sector and identifies research gaps needed to be addressed to successfully support the O&amp;G sector in readiness for Industry 4.0 implementation. An Industry 4.0 maturity model that reflects the industrial realities for the O&amp;G upstream sector more accurately from insights drawn from the reviews of existing MMs is proposed. This reduces the challenges of the transition process towards Industry 4.0 and provides support for the critical change desired for improved efficiency in the sector. © 2021 The authors and IOS Press.</p>

Vallejo-Correa P.; Monsalve-Pulido J.; Tabares-Betancur M.	10th International Conference on New Trends in Model and Data Engineering, MEDI 2021 held with 4th International Workshop on Modeling, Verification and Testing of Dependable Critical Systems, DETECT 2021, Symposium on Intelligent and Autonomous Systems, SIAS 2021, 1st Workshop on Control Software: Methods, Models, and Languages, CSMML 2021, Workshop on Blockchain for Inter-Organizational Collaboration, BIOC 2021 and 1st International Health Data Workshop, HEDA 2021	2021	10.1016/j.covers.2020.100335	In the last ten years, it was observed that the continuous upgrades in mobile device's technology have increased and demonstrated their great potential in various learning environments. Besides, it has motivated researchers to apply more innovative computational techniques regarding context-aware and a set of variables that have been used at different virtual learning proposals. This paper presents a Systematic Mapping Review that focuses on context-aware analysis and its approach to learning processes in mobile learning (m-learning) and ubiquitous learning (u-learning). Furthermore, the study identifies variables that have been used in the past decade for context-awareness analytics and that have been applied to those learning processes. Especially at systems' adaptations to learning styles and student-specific characteristics. A methodological process was applied to address problems through identification, critical evaluation, and integration of the most relevant works, where high-quality individual studies address one or several research questions. Results show that external variables, including location, time, and software, are the most used variables in the context-aware analysis, with 52.25% prevalence in research papers. Internal variables, including personal information, learning styles, and teaching styles, had a prevalence of 33.33%; variables less frequently used in the research included socioeconomic information and emotional content. The remaining 14.41% represents academic activities. These findings provide a basis for future research and development in the field of m-learning. © 2021 Elsevier Ireland Ltd. All rights reserved.
Li L.; Zhou M.	Smart escape rooms for cultural heritage: A systematic review	2021		traditional and advanced manufacturing settings with this leading and authoritative resource Sustainable Manufacturing Systems: An Energy Perspective delivers a comprehensive analysis of energy efficiency in sustainable manufacturing. The book presents manufacturing modeling methods and energy efficiency evaluation and improvement methods for different manufacturing systems. It allows industry professionals to understand the methodologies and techniques being embraced around the world that lead to advanced energy management. The book offers readers a comprehensive and systematic theoretical foundation for novel manufacturing system modeling, analysis, and control. It concludes with a summary of the insights and applications contained within and a discussion of future research issues that have yet to be grappled with. Sustainable Manufacturing Systems answers the questions that energy customers, managers, decision makers, and researchers have been asking about sustainable manufacturing. The book's release coincides with recent and profound advances in smart grid applications and will serve as a practical tool to assist industrial engineers in furthering the green revolution. Readers will also benefit from: • A thorough introduction to energy efficiency in manufacturing systems, including the current state of research and research methodologies • An exploration of the development of manufacturing methodologies, including mathematical modeling for manufacturing systems and energy efficiency characterization in manufacturing systems • An analysis of the applications of various methodologies, including electricity demand response for manufacturing systems and energy control and optimization for manufacturing systems utilizing combined heat and power systems • A discussion of energy efficiency in advanced manufacturing systems, like stereolithography additive manufacturing and cellulosic biofuel manufacturing systems Perfect for researchers, undergraduate students, and graduate students in engineering disciplines, especially for those majoring in industrial, mechanical, electrical, and environmental engineering, Sustainable Manufacturing Systems will also earn a place in the libraries of management and business students interested
Kohler A.; Bertsche B.	Review on self-regulated learning in smart learning environment	2021	10.1109/ACCESS.2021.3085662	At the vehicle powernet level, technical safety mechanisms, e.g., smart switching modules, mainly operate in a discrete-time or cyclic manner. In accordance with the functional safety standard ISO 26262, safety-related E/E systems require a safety validation process. Therefore, evidence of the effectiveness of technical safety mechanisms shall be made available. Particularly for cyclic safety mechanisms (cyclic regarding their fault handling performance), this is an open issue. In this regard, a novel modeling approach for cyclic safety mechanisms is introduced to provide evidence of their effectiveness. Thus, cyclic diagnoses, e.g., vehicle start-up checks, or new dedicated measures could be utilized in the quantitative validation of residual faults. The novel approach enhances the current state of research in a way that makes the interpretation of a piecewise constant failure rate irrelevant. In addition, this approach is not solely based on the exponential distribution; therefore, it is universally adaptable, and it is demonstrated for the use case of alternating safety mechanisms. This degree of freedom is accompanied by more conservative quantitative results in comparison to those obtained in recent studies. Nevertheless, the current state-of-the-art method totally excludes the evaluation of cyclic safety mechanisms because of a lack of evidence of effectiveness. This elementary concept is based on the derivation, elaboration, and separation of time dependencies in a safety scenario while extracting and evaluating the partial system states with effective continuous behavior. The derived mathematical model and its approximation are based on fundamental statistics and are indicated as the final recommended cyclic approach. CCBY

<p>Kapassa E.; Themistocleous M.; Christodoulou K.; Iosif E.</p>	<p>Systematic review of contextual suggestion and recommendation systems for sustainable e-tourism</p>	<p>2021</p>	<p>10.3390/fi13120313</p>	<p>provides several other potential use cases, related to energy and sustainability, Internet of Things (IoT), smart cities, smart mobility and more. Blockchain can offer security for Electric Vehicle (EV) transactions in the Internet of Vehicles (IoV) concept, allowing electricity trading to be performed in a decentralized, transparent and secure way. Additionally, blockchain provides the necessary functionalities for IoV decentralized application development, such as data exchange, personal digital identity, sharing economy and optimized charging pattern. Moreover, blockchain technology has the potential to significantly increase energy efficiency, decrease management costs and guarantee the effective use of the energy resources. Therefore, its application in the IoV concept provides secure, autonomous and automated energy trading between EVs. While several studies on blockchain technology in smart grids have been conducted, insufficient attention has been given to conducting a detailed review and state-of-the-art analysis of blockchain application in the IoV domain. To this end, this work provides a systematic literature review of blockchain-based applications in the IoV domain. The aim is to investigate the current challenges of IoV and to highlight how blockchain characteristics can contribute to this emerging paradigm. In addition, limitations and future research directions related to the integration of blockchain technology within the IoV are discussed. To this end, this study incorporates the theoretical foundations of several research articles published in scientific publications over the previous five years, as a method of simplifying our assessment and capturing the ever-expanding blockchain area. We present a comprehensive taxonomy of blockchain-enabled applications in the IoV domain, such as privacy and security, data protection and management, vehicle management, charging optimization and P2P energy trading, based on a structured, systematic review and content analysis of the discovered literature, and we identify key trends and emerging areas for research. The contribution of this article is two-fold: (a) we highlight the limitations presented in the relevant literature, particularly the barriers of blockchain technology and how they influence its integration into the IoV and</p>
	<p>Deep learning techniques to detect DoS attacks on industrial control systems: A systematic literature review</p>	<p>2021</p>		<p>The proceedings contain 24 papers. The special focus in this conference is on New Trends in Model and Data Engineering. The topics include: Record Linkage for Auto-tuning of High Performance Computing Systems; protecting Sensitive Data in Web of Data; COVID-DETECT: A Deep Learning Based Approach to Accelerate COVID-19 Detection; time Insertion Functions; static Checking Consistency of Temporal Requirements for Control Software; visual Language for Device Management in Telecommunication Product Line; Using Process-Oriented Structured Text for IEC 61499 Function Block Specification; the DibiChain Protocol: Privacy-Preserving Discovery and Exchange of Supply Chain Information; towards a Resource-Aware Formal Modelling Language for Workflow Planning; Development of Critical Systems with UML/OCL and FoCaLiZe; systematic Literature Review of Methods for Maintaining Data Integrity; medical Data Engineering – Theory and Practice; querying Medical Imaging Datasets Using Spatial Logics (Position Paper); evaluation of Anonymization Tools for Health Data; usages of the ContSys Standard: A Position Paper; systematic Assessment of Formal Methods Based Models Quality Criteria; deriving Interaction Scenarios for Timed Distributed Systems by Symbolic Execution; energy Efficient Real-Time Calibration of Wireless Sensor Networks for Smart Buildings; edge-to-Fog Collaborative Computing in a Swarm of Drones; Coverage Maximization in WSN Deployment Using Particle Swarm Optimization with Voronoi Diagram; EPSAAV: An Extensible Platform for Safety Analysis of Autonomous Vehicles; bridging Trust in Runtime Open Evaluation Scenarios.</p>
<p>Karageorgiou Z.; Michalakis K.; Konstantakis M.; Alexandridis G.; Caridakis G.</p>	<p>BD-Trust: behavioural and data trust management scheme for internet of things</p>	<p>2021</p>	<p>10.34190/GBL.21.104</p>	<p>The intelligent age and smart culture era provide a new environment where everything, including artifacts, is tagged with devices to capture and provide the required information. Organizations, game designers, educators and other stakeholders can utilize these technological opportunities to create extreme immersive and interactive experiences. They look forward to examining the combination of new methods and tools during in-site or outdoor visits, in order to intrigue and attract visitors and provide opportunities to experience emotional involvement and dominance feelings. Alike cities, heritage sectors all over the world envision to connect artifacts and other objects, so to urge smartness in their environments, and integrate Internet of Things (IoT) and other technologies, in order to uplift visitor's involvement and interest for cultural collections. In addition, serious games development and their evolution enhance mental or physical engagement and broaden knowledge and skills in an entertaining and exciting way. This paper presents a systematic review that focuses on the use of escape rooms in the context of serious games, in museums or other places of cultural interest. Technological tools, platforms, tangible or digital objects, IoT elements, evaluation methods and their results and limitations are organized and mapped through a number of literature publications over the last 5 years. Seven qualified studies fulfilled specific criteria and PRISMA have been used as a guideline. The analysis indicates that IoT-escape room type of games can provide an enjoyable experience and immerse visitors as active learners who creatively use unknown tools, decision-making, communication and critical thinking during their play in a cultural/historic environment. These games refer to any type of visitor's group, affect traffic time and uplift cultural interest. Apart from that, they are also important to anyone who desires to promote and create motivational projects with cultural content using the escape room game mechanics and IoT elements. To the best of our knowledge, this review is among the first to provide a structured study with closely considered data collection and analysis. © The Authors, 2021. All Rights Reserved.</p>

Gambo Y.; Shakir M.Z.	Contextual dimensions for cache replacement schemes in informationcentric networks: a systematic review	2021	10.1186/s40561-021-00157-8	<p>Despite the increasing use of the self-regulated learning process in the smart learning environment, understanding the concepts from a theoretical perspective and empirical evidence are limited. This study used a systematic review to explore models, design tools, support approaches, and empirical research on the self-regulated learning process in the smart learning environment. This review revealed that there is an increasing body of literature from 2012 to 2020. The analysis shows that self-regulated learning is a critical factor influencing a smart learning environment's learning process. The self-regulated learning components, including motivation, cognitive, metacognitive, self-efficiency, and metacognitive components, are most cited in the literature. Furthermore, self-regulated strategies such as goal setting, helping-seeking, time management, and self-evaluation have been founded to be frequently supported in the literature. Besides, limited theoretical models are designed to support the self-regulated learning process in a smart learning environment. Furthermore, most evaluations of the self-regulated learning process in smart learning environment are quantitative methods with limited mixed methods. The design tools such as visualization, learning agent, social comparison, and recommendation are frequently used to motivate students' learning engagement and performance. Finally, the paper presents our conclusion and future directions supporting the self-regulated learning process in the smart learning environment. © 2021, The Author(s).</p>
Rehman Khan H.U.; Kim Lim C.; Ahmed M.F.; Tan K.L.; Mokhtar M.B.	Web Service Clustering Technique based on Contextual Word Embedding for Service Representation	2021	10.3390/su13158141	<p>recognizes tourism as one of the central industries to global development to tackle global challenges. With the transformation of information and communication technologies (ICT), e-tourism has evolved globally to establish commercial relationships using the Internet for offering tourism-related products, including giving personalised suggestions. The contextual suggestion has emerged as a modified recommendation system that is integrated with information-retrieval techniques within large databases to provide tourists with a list of suggestions based on contexts, such as location, time of day, or day of the week (weekdays or weekends). This study surveyed literature in the field of contextual suggestion and recommendation systems with a focus on e-tourism. The concerns linked with approaches used in contextual suggestion and recommendation systems are highlighted in this systematic review, while motivations, recommendations, and practical implications in e-tourism are also discussed in this paper. A query search using the keywords "contextual suggestion system", "recommendation system", and "tourism" identified 143 relevant articles published from 2012 to 2020. Four major repositories are considered for searching, namely, (i) Science Direct, (ii) Scopus, (iii) IEEE, and (iv) Web of Science. This review was carried out under the protocols of four phases, namely, (i) query searching in major article repositories, (ii) removal of duplicates, (iii) scan of title and abstract, and (iv) complete reading of articles. To identify the gaps in current research, a taxonomy analysis was exemplified into categories and subcategories. The main categories were highlighted as (i) review articles, (ii) model/framework, and (iii) applications. Critical analysis was carried out on the basis of the available literature on the limitations of approaches used in contextual suggestion and recommendation systems. In conclusion, the approaches used are mainly based on content-based filtering, collaborative filtering, preference-based product ranking, and language modelling. The evaluation measures for the contextual suggestion system include precision, normalized discounted cumulative, and mean reciprocal rank, while test collections comprise Internet resources. Given that the tourism industry</p>
	Smart city's trends, architectures, components, and challenges: A systematic review and building an initial model for indonesia	2022		<p>The proceedings contain 212 papers. The special focus in this conference is on Intelligent and Fuzzy Systems. The topics include: Preface; smart Digital Twin-Based Bearing Fault Pattern Recognition; Fuzzy Matrix Aggregate Calculator (MAC) as a Tool for Economic Systems Express Evaluation; picture Fuzzy Edas Method for Team Leader Selection in International Audit Firm; picture Similarity Measures and Their Application to Medical Diagnosis; an Analysis of Data Production Based on the Consistency of Decision Matrices; rules Induced Using Possible Coverings from Incomplete Data Sets; development and Implementation of an Algorithm for Processing Fuzzy Queries to Relational Databases; investigation of Turkish Literary Poetry by Unsupervised Text Mining Methods; systematic Literature Review for Data-Driven Security Solutions of Self Scanning Applications in Retail Sector; sales Promotion Effectiveness: The Impact of Category – Brand Level Price Promotions on Sales Performance of a Large Retailer; Enabling Big Data Analytics and AI Solutions for Smart Warehouse; fuzzy Spatio-Temporal Data Analysis on Disease Outbreaks and Air Transportation; fraud Detection Using Fuzzy C Means; an Approach Based on Feature Selection for Missing Value Imputation; a Credibilistic Real Options Model with an Optimism-Pessimism Measure Using Trapezoidal Fuzzy Numbers; the Economic Resilience Evaluation Using Fuzzy Sets and Soft Computing; A Novel 2-Tuple SAW-MAIRCA Method for Partner Evaluation for Circular Economy; determination of the Level of Development of Commodity Markets by Segmentation of Economic Regions Based on the Theory of Fuzzy Sets; application of the Fuzzy Inference System to Evaluate the Quality of Air Textured Warp Yarn; fuzzy Logic Beyond Traditional "And"-Operations.</p>

Seyam A.R.; Nassif A.B.; Nasir Q.; Al Blooshi B.; Talib M.A.	15th International Conference on Blended Learning, ICBL 2022	2021	10.1145/348 5557.34855 77	Cyber Physical Systems (CPS) security is crucial demand within industrial fields. The deployment of these systems within critical infrastructure is increasing day by day. CPS applications include smart grid, Industrial Control Systems (ICS), Aerial Systems and Intelligent Transportation Systems (ITS). The complexity, heterogeneity, and diversity evolved with these CPS systems. In addition, the inter-connectivity of these systems over cyberspace has increased their attack surface. This research paper provides a survey on deep learning detection techniques for the Denial of Service (DoS) attack, which is considered the most critical and major attack on CPS. Moreover, the survey study demonstrates the most used deep learning techniques in the research articles of traditional IT networks and ICS networks. It also explains their used datasets as training sources and their most common evaluation matrix that is used to benchmark their performance against each other. In addition, the research gaps that are related to classifier efficiency are identified, while considering modern datasets related to ICS protocols. Moreover, consider the actual cyberspace attack traffic collected from passive monitoring sensors. This would resolve the need for using less features provided over outdated and publicly available dataset. © 2021 Association for Computing Machinery.
Sharma A.; Pilli E.S.; Mazumdar A.P.	Application of a validated innovative smart wearable for performance analysis by experienced and non-experienced athletes in boxing	2022	10.1007/s12 652-022- 03841-w	The emergence of Internet of Things (IoT) has paved the way to realize ubiquitous access to manifold services and applications. Effective utilization of these services vitally demands secure deployment of IoT systems where data or information can be transmitted without worrying about the uncertainty of different devices in the system. Trust Management Systems (TMS) have proved themselves as impressive solutions to attain this security requirement where entities are judged based on their behavior. For IoT, influential deployment of TMS requires coping with characteristics of IoT systems such as device heterogeneity, context-awareness, dynamicity, etc. Paying attention to the quality of received data for reliable service composition and accurate assessment is also a matter of concern. This paper presents a direct observation-based distributed trust management scheme, called BD-Trust, in which trust is measured by integrating behavioral trust of devices with the data trust. For evaluation of behavioral trust, BD-Trust reckons on three trust parameters, namely success rate, satisfaction level, and credibility. Data trust is measured considering consistency in received data values for the successful interaction responses. BD-Trust employs a trust update mechanism to alleviate the effect of malicious devices that try to disrupt the process of trust management. An adaptive decay factor has been designed to reflect previously observed trust value in recent computation while updating trust scores. The effectiveness of BD-Trust has been validated through simulation experiments and results have been compared with two state-of-art schemes for trust convergence, assessment accuracy, and resilience against attacks, considering a dynamic environment. © 2022, The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.
Pires S.; Ziviani A.; Sampaio L.N.	Understanding Wearable Device Adoption: Review on Adoption Factors and Directions for Further Research in Smart Healthcare	2021	10.7717/pee rj-cs.418	In recent years, information-centric networks (ICNs) have gained attention from the research and industry communities as an efficient and reliable content distribution network paradigm, especially to address content-centric and bandwidth-needed applications together with the heterogeneous requirements of emergent networks, such as the Internet of Things (IoT), Vehicular Ad-hoc Network (VANET) and Mobile Edge Computing (MEC). In-network caching is an essential part of ICN architecture design, and the performance of the overall network relies on caching policy efficiency. Therefore, a large number of cache replacement strategies have been proposed to suit the needs of different networks. The literature extensively presents studies on the performance of the replacement schemes in different contexts. The evaluations may present different variations of context characteristics leading to different impacts on the performance of the policies or different results of most suitable policies. Conversely, there is a lack of research efforts to understand how the context characteristics influence policy performance. In this direction, we conducted an extensive study of the ICN literature through a Systematic Literature Review (SLR) process to map reported evidence of different aspects of context regarding the cache replacement schemes. Our main findings contribute to the understanding of what is a context from the perspective of cache replacement policies and the context characteristics that influence cache behavior. We also provide a helpful classification of policies based on context dimensions used to determine the relevance of contents. Further, we contribute with a set of cache-enabled networks and their respective context characteristics that enhance the cache eviction process. © 2021 Pires et al. All Rights Reserved.



Agarwal N.; Sikka G.; Awasthi L.K.	22nd IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2021	2021	10.1109/ICTAI53825.2021.9673426	Due to extensive use of Internet and IoT, the demand Web services and APIs are increasing day by day and there is a proliferation of services on internet in terms of quality and quantity both. It raises the need of service management. Web service clustering plays a vital role in service management as it reduces the search space and time. Word2vec word embedding is highly demanded in these days as it can capture the semantic similarity but it does not bother the context and it effects the clustering performance. In this paper, Sentence-BERT (Sentence Bidirectional Encoder Representations from Transformers) embedding is used in the vector space representation of services so that with the semantic meaning, context of the features can be also analyzed and services can be efficiently mapped in vector space. To analyze the performance of embedding, K-Means clustering is applied and results are compared with the different state-of-art techniques based on standard evaluation measures. The experimental results shows that accuracy of the proposed model is increased by approximately 49% in comparison of a model in which word2vec model is utilized. © 2021 IEEE.
Arief A.; Sensuse D.I.; Mursanto P.	Smart home and communication technology for people with disability: a scoping review	2022	10.14456/ea sr.2022.28	Smart cities are faced with the challenges of systematically initiating the strategies needed to implement predetermined goals according to their plan. Therefore, this study aims to identify smart cities components and build an initial model that can be used for smart cities initiatives in Indonesia. The systematic review methods were used to overview research trends, architecture, components, and challenges to build an initial model for Indonesia. The systematic review results show popular topics, such as the standardization of a smart city and the strategies used to determine relevant models in each city's uniqueness and context. The results also identified thirteen smart city components and their challenges. Furthermore, this study's novelty is proposed the smart city's initial models with the smart government as a key component and to be a centre of other smart city components. The triangulation method determined the research validation using systematic review finding, expert judgment, and a questionnaire for collecting random data from 66 respondents from various cities in Indonesia. The collected survey data and initial models were validated by expert judgment, which showed that the proposed smart city's initial model component's agreement is 90%. In future, these results may be used to develop an assessment in smart cities implementation. © 2022, Paulus Editora. All rights reserved.
	2nd International Conference on Applied Technologies, ICAT 2020	2022		The proceedings contain 31 papers presented at a virtual meeting. The special focus in this conference is on Blended Learning. The topics include: Automatic Coding of Collective Creativity Dialogues in Collaborative Problem Solving Based on Deep Learning Models; collaborative Virtual Environment for Distant and Blended Learning in the Higher Education Setting; A Systematic Review; effects of Scaffolded Peer Assessment on Students' Holistic Critical Thinking in Academic Writing; understanding Classroom Interaction Using Epistemic and Social Network Analysis; utilization of Selected Social Media in University Setting with Focus on Communication and Revision – Longitudinal Case Study; designing a Recommendation Approach to Scaffold Self-regulated Learning in Fully Online Flipped Classroom; research on the Influencing Factors and Mechanisms of Math Learning Motivation on Online Learning Engagement; online Distance Instruction in the Czech Republic During Covid-19 Pandemic: Students' Feedback on Courses in Autumn 2021; a Blended Learning Model: Results of Young Learners; transitioning eLearning in a Transitioning Instructional World; towards HyFlex (Hybrid-Flexible) Implementation: The Optimal Synchronous and Asynchronous Ratio Under the Pandemic; investigating the Effects of Scaffolding Adaptiveness and Frequency for Asynchronous Online Discussion: An Experimental Study; COVID-19 Pandemic and University Students' Use and Acceptance of Online Learning; evaluation of Hybrid Teaching Effectiveness: The Perspective of Academics; towards the Teaching of Computational Thinking: A New Curriculum in the Czech Republic; adding 'Reinforcement' to the Involvement Load Hypothesis Improves Students' Productive Vocabulary Performance; the Construction and Application of the "Double Teacher" Classroom Teaching Model Based on Smart Environment; gamified Project-Based Learning: A Systematic Review.
Menzel T.; Potthast W.	Migration-Based Service Allocation Optimization in Dynamic IoT Networks	2021	10.3390/s21237882	An athlete's sporting performance depends to a large extent on the technical execution of the athletic motion in order to achieve maximum effectiveness in physical performance. Performance analysis provides an important means of classifying and quantifying athletic prowess in terms of the significant performance aspects of the sport to provide objective feedback. This study aimed to analyze technical execution in terms of punch trajectory, force, velocity and time, considering the expert-novice paradigm by investigating the technical execution of 31 experienced and non-experienced athletes for the four main punching techniques of the cross, jab, uppercut and hook strike. The kinetic and kinematic data were collected by means of a boxing monitoring system developed and validated for in-field use. The research revealed significant correlation for executed punching trajectory and punch force in intragroup comparison and significant differences in intergroup comparison. No significant differences were detected for punch velocity in either inter-or intra-group paradigms. This study, through use of the sensor system, aligns with the results of existing publications conducted in laboratory conditions, in the assessment of punch force, punch speed and punch time and thus extends the state of research by use of a smart wearable in field method. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

Hossain M.I.; Yusof A.F.; Shanmugam M.	Gait and Balance Assessments using Smartphone Applications in Parkinson's Disease: A Systematic Review	2022	10.1007/978-3-030-98741-1_54	This paper analyses prior literature that identify adoption model for smart wearable healthcare devices. This assessment aims to contribute and identify factors that enable users to adopt wearable devices in the Internet of Things (IoT) based healthcare to monitor blood glucose measuring. This study has set off in quest of research in IoT smart healthcare focusing on blood glucose monitoring based on previous studies on wearable devices for smart healthcare. The key aim of this paper is to provide a summary of published articles and to find the current factors leading to the adoption of wearable devices for smart healthcare. The authors guided a systematic review of wearable devices in smart healthcare to explore the factors of adopting smart healthcare devices. 55 studies were analyzed where 21 studies directly address wearable devices, adoption models, and also IoT systems. Most of the studies covered a few factors; namely Interpersonal Influence, Self-efficiency, Individual Innovativeness, Attitude toward wearable devices, Self-interest, Perceived Expensiveness, and Perceived Usefulness in a wearable fitness tracker or monitoring. Findings show that the effect of trustworthiness has a very extensive potential to be explored to improve the model prediction to measure the adoption of IoT wearable devices in smart healthcare as well as blood glucose monitoring. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.
	Mobile Application Software Usability Evaluation: Issues, Methods and Future Research Directions	2021		The proceedings contain 76 papers. The special focus in this conference is on Virtual Enterprises. The topics include: Collaborative Plan to Reduce Inequalities Among the Farms Through Optimization; working Beside Robots: A Glimpse into the Future; supporting Predictive Maintenance in Virtual Factory; reconfigurable Supply Chain Performance: A Bibliometric Analysis; A MILP Model for Reusable Containers Management in Automotive Plastic Components Supply Chain; end-of-Life Product Recovery Optimization of Disassembled Parts Based on Collaborative Decision-Making; analysis Model to Identify the Regional "Strategic Bets" of Startup Porto's Network; behavior Data Collection in Collaborative Virtual Learning Environments; collaborative Trusted Digital Services for Citizens; a Systematic Review of Sustainable Supply Chain Management Practices in Food Industry; Collaborative Safety Requirements Engineering: An Approach for Modelling and Assessment of Nuclear Safety Requirements in MBSE Context; a Model to Manage Organizational Collaborative Networks in a Pandemic (Covid-19) Context; measuring Complexity for Collaborative Business Processes Management; research on Configuration Framework of Simulation Rules Based on Existing Simulation Teaching Platform; a Federated Simulation Framework for Cross-organisational Processes; robust Optimization for Collaborative Distribution Network Design Problem; simulating Impact of Smart Product-Service Systems; compliance Checking of Collaborative Processes for Sustainable Collaborative Network; identification of Service Platform Requirements from Value Propositions: A Service Systems Engineering Method; a Modular Ontology Framework for Building Renovation Domain; getting Collaborative Networks Sustainable: Drivers and Barriers Within a Digital Laboratories Network; value Co-creation in the Context of Digitally-Enabled Product-Service Systems; selling the Value of Complex Data-Based Solution for Industrial Customers; towards Sustainable Manufacturing Through Collaborative Circular Economy Strategies.
Jamwal R.; Jarman H.K.; Roseingrave E.; Douglas J.; Winkler D.	Gap, techniques and evaluation: traffic flow prediction using machine learning and deep learning	2022	10.1080/17483107.2020.1818138	restriction are well established. Recent and continued advancement of technology, particularly smart home and communication technologies, presents new ways in which some of the limitations and restrictions experienced by people with disabilities can be overcome. The aim of this scoping review was to explore the impact of smart home and communication technology on the outcomes of people with disabilities and complex needs. Method: This review involved systematic searching of four databases, hand searches and data extraction. Eligibility criteria included [1] participant outcomes of [2] technology used within the home [3] among adults with a disability and complex needs. Results: Of the 2400 studies identified, 21 met our inclusion criteria. Studies were characterized by significant diversity in relation to disability and type of technology. Overall, technology appeared to improve independence, participation and quality of life among people with a disability and complex needs. Despite this, ethical considerations were raised given the vulnerability of this population, including potential risks through social participation and privacy concerns of using monitoring technology. Conclusions: Smart home and communication technology can improve outcomes for people living with disabilities and complex needs. However, a number of factors impact the successful implementation of technology, including personalization, flexibility and ongoing support to the person with a disability and their close others. Future research should utilize high-quality study designs and established measures of important outcomes for this group. IMPLICATIONS FOR REHABILITATION There is a broad range of smart home and communication technology devices and systems available that may support the independence and participation of people with disabilities and complex needs; however, high-quality evidence documenting the impact of technology is lacking. Soft-technology supports, including assessment, training and evaluation of technology implementation, may play just as important a role in shaping outcomes as the technology itself. Systematic research is required to ensure there is quality evidence to inform investment in both technologies, and the soft-technology supports that

	Grid management system through functionalities and potentialities of an Energy Blockchain	2021		The proceedings contain 52 papers. The special focus in this conference is on Applied Technologies. The topics include: Gamification Within the Learning Evaluation Process Using Ardora at the Salesian Polytechnic University (Guayaquil, Ecuador); storytelling Digital: Experience and Technology in Designs of Tele-Collaborative Projects in Higher Education; Metrics Design of Usability and Behavior Analysis of a Human-Robot-Game Platform: HRG Metrics for LOLY-MIDI; an Electronic Equipment with Face Recognition Capacity Oriented to Measuring the Alcoholic Level in People; A Comparison of Linear and Nonlinear PID Controllers Reset-Based for Nonlinear Chemical Processes with Variable Deadtime; Comparison of Infinite Impulse Response (IIR) and Finite Impulse Response (FIR) Filters in Cardiac Optical Mapping Records; construction of a Low-Cost Semi-automatic Machine for Tensile Testing; carwash Station Prototype with Automatic Payment Using Intelligent Control Systems; distribution Networks with Distributed Generation and Electric Vehicles; user Affective Experience into a Scope of Conversational Artificial Intelligence; machine Learning Model for the Prediction of Emotions in a Mobile Application; is It Intelligent? A Systematic Review of Intelligence in the Most Cited Papers in IoT; detection and Fault Prediction in Electrolytic Capacitors Using Artificial Neural Networks; constraint Programming for the Pandemic in Peru; detecting Xenophobic Hate Speech in Spanish Tweets Against Venezuelan Immigrants in Ecuador Using Natural Language Processing; sentiment Analysis Related of International Festival of Living Arts Loja-Ecuador Employing Knowledge Discovery in Text; Data Mining to Predict COVID-19 Patients' Recovery on a Balanced Dataset; topic Identification from Spanish Unstructured Health Texts; autonomous Intelligent Navigation for Mobile Robots in Closed Environments.
Sun M.; Zhou Z.; Xue X.; Gaaloul W.	MTD, Where Art Thou? A Systematic Review of Moving Target Defense Techniques for IoT	2021	10.1007/978-3-030-91431-8_24	Considering the resource-hungry and capability-constraint of Internet of Things (IoT) nodes, their functionalities, which are encapsulated as containerized IoT services, are composed to satisfy user requests. IoT nodes are usually duty-cycled and energy-awareness. Therefore, IoT service allocation to respective IoT nodes should be re-calibrated on-demand through migrating certain IoT services from their hosted IoT nodes to the others, in order to satisfy the functionally diversity of requests. To solve this problem, this paper proposes a Distributed Migration-based Service Allocation (DMSA) mechanism in dynamic IoT networks, where a game-theoretic approach is adopted to achieve the Nash equilibrium of IoT service allocation optimization. Extensive experiments are conducted, and evaluation results demonstrate that our DMSA performs better than the state of art's techniques in reducing the response latency of requests and improving the resource utilization efficiency. © 2021, Springer Nature Switzerland AG.
Abou L.; Peters J.; Wong E.; Akers R.; Dossou M.S.; Sosnoff J.J.; Rice L.A.	Evaluation of Non-Functional Requirements for IoT Applications	2021	10.1007/s10916-021-01760-5	Gait dysfunctions and balance impairments are key fall risk factors and associated with reduced quality of life in individuals with Parkinson's Disease (PD). Smartphone-based assessments show potential to increase remote monitoring of the disease. This review aimed to summarize the validity, reliability, and discriminative abilities of smartphone applications to assess gait, balance, and falls in PD. Two independent reviewers screened articles systematically identified through PubMed, Web of Science, Scopus, CINAHL, and SportDiscuss. Studies that used smartphone-based gait, balance, or fall applications in PD were retrieved. The validity, reliability, and discriminative abilities of the smartphone applications were summarized and qualitatively discussed. Methodological quality appraisal of the studies was performed using the quality assessment tool for observational cohort and cross-sectional studies. Thirty-one articles were included in this review. The studies present mostly with low risk of bias. In total, 52% of the studies reported validity, 22% reported reliability, and 55% reported discriminative abilities of smartphone applications to evaluate gait, balance, and falls in PD. Those studies reported strong validity, good to excellent reliability, and good discriminative properties of smartphone applications. Only 19% of the studies formally evaluated the usability of their smartphone applications. The current evidence supports the use of smartphone to assess gait and balance, and detect freezing of gait in PD. More studies are needed to explore the use of smartphone to predict falls in this population. Further studies are also warranted to evaluate the usability of smartphone applications to improve remote monitoring in this population. Registration: PROSPERO CRD 42020198510 © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

<p>Attah B.I.; Alhassan J.K.; Oyefolahan I.O.; Bashir S.A.</p>	<p>lot usage on smart campus: A systematic literature review</p>	<p>2021</p>	<p>10.1007/978-3-030-69143-1_43</p>	<p>Recently, the growth and advancement in mobile technology (such as mobile devices, smartphones, mobile wireless networks) have cushioned everyday lives of peoples across the globe. Interestingly, this can be attributed to the greater ease of developing mobile applications for diverse usages such as healthcare, finance, and agriculture. Another reason for this is that, there is the quest to rollout mobile device tailored application software having lower budget, quicker time of delivery, and top-quality product from the developers and the end-user's perspectives. The challenges of appropriate designs frameworks; and the understanding of the needs of users (that is, the end users) have persisted long after their eventual rollouts. The concept of mobile app usability and accessibility evaluation were developed to enable developers to ascertain the level of usages and relevance of mobile applications in-use or prior release under diverse criteria such as maintainability, understandability, comprehensibility, as well as parameters specified by Usability Standards of ISO 9241-11 (that is, effectiveness, efficiency, and satisfaction). This study undertakes a systematic literature review (SLR) to discuss the subject of mobile application software usability under the specific scope of issues, methods and future research directions. To achieve these, a total of forty (40) peer-reviewed articles from diverse databases/sources of records were selected. The outcomes of this study revealed that, mobile applications usability evaluations and processes are domain-specific (or locality-dependent). Also, there are no generic approaches identified or developed for performing usability and accessibility of mobile applications due to the non-deterministic nature of the domain, and context-of-use. © 2020, Springer Nature Switzerland AG.</p>
<p>Razali N.A.M.; Shamsaimon N.; Ishak K.K.; Ramli S.; Amran M.F.M.; Sukardi S.</p>	<p>9th International Conference on Distributed, Ambient and Pervasive Interactions, DAPI 2021, held as part of the 23rd International Conference, HCI International 2021</p>	<p>2021</p>	<p>10.1186/s40537-021-00542-7</p>	<p>solutions, such as smart cities, which enable humans to have a more efficient, convenient and smarter way of life. The Intelligent Transportation System (ITS) is part of several smart city applications where it enhances the processes of transportation and commutation. ITS aims to solve traffic problems, mainly traffic congestion. In recent years, new models and frameworks for predicting traffic flow have been rapidly developed to enhance the performance of traffic flow prediction, alongside the implementation of Artificial Intelligence (AI) methods such as machine learning (ML). To better understand how ML implementations can enhance traffic flow prediction, it is important to inclusively know the current research that has been conducted. The objective of this paper is to present a comprehensive and systematic review of the literature involving 39 articles published from 2016 onwards and extracted from four main databases: Scopus, ScienceDirect, SpringerLink and Taylor &amp; Francis. The extracted information includes the gaps, approaches, evaluation methods, variables, datasets and results of each reviewed study based on the methodology and algorithms used for the purpose of predicting traffic flow. Based on our findings, the common and frequent machine learning techniques that have been applied for traffic flow prediction are Convolutional Neural Network and Long-Short Term Memory. The performance of their proposed techniques was compared with existing baseline models to determine their effectiveness. This paper is limited to certain literature pertaining to common databases. Through this limitation, the discussion is more focused on (and limited to) the techniques found on the list of reviewed articles. The aim of this paper is to provide a comprehensive understanding of the application of ML and DL techniques for improving traffic flow prediction, contributing to the betterment of ITS in smart cities. For future endeavours, experimental studies that apply the most used techniques in the articles reviewed in this study (such as CNN, LSTM or a combination of both techniques) can be accomplished to enhance traffic flow prediction. The results can be compared with baseline studies to determine the accuracy of these techniques. © 2021, The Author(s).</p>
<p>De Magalhaes V.; Deboni; Frederico C.; Almeida M.; Rosa L.H.L.; Kagan N.; Mingatos M.; Gemignani F.; Cruz M.R.</p>	<p>An evaluation of the importance of smart tourism tools in the riobamba canton, ecuador</p>	<p>2021</p>	<p>10.1109/ISGTLatinAmerica52371.2021.9543037</p>	<p>Propose innovation through new technologies is a challenge when the aimed system is well-structured with the actual architecture. That said, this work assigns the functionalities and potentialities of an Energy Blockchain technology with the needed local regulations, management, and assessment of an energy grid, towards a decentralized distributed network. It is presented using programming languages JavaScript and Solidity how a simple Blockchain can be structured and how several functions can automatize even more the energy niche. Considering the state-of-art of this technology it would contribute with gains in transparency, security, cost reduction and efficiency to our actual distribution energy grid. Therefore, a walkthrough to reach a parity between the actual regulation concepts and programmed smart contracts, in terms of a public Blockchain platform, is presented aspiring gains to systematic users attained in the optimization of the prosumers state, energy matrix configuration, price, data acquisition., and responsiveness of law resolutions. © 2021 IEEE.</p>

<p>Navas R.E.; Cuppens F.; Boulahia Cuppens N.; Toutain L.; Papadopoulos G.Z.</p>	<p>A deep clustering method for analyzing uterine cervix images across imaging devices</p>	<p>2021</p>	<p>10.1109/JIO T.2020.3040358</p>	<p>Context: Internet-of-Things (IoT) systems are increasingly deployed in the real world, but their security lags behind the state of the art of non-IoT systems. Moving target defense (MTD) is a cyberdefense paradigm, successfully implemented in conventional systems, that could improve IoT security. Objective: Identify and synthesize existing MTD techniques for IoT and validate the feasibility of MTD as a cybersecurity paradigm suitable for IoT systems. Method: We use a systematic literature review method to search and analyze existing MTD for IoT techniques up to July 2020. We evaluated the existing techniques in terms of security foundations and real-world deployability using the evidence they provide. We define and use entropy-related metrics to categorize them. This is the first MTD survey to use Shannon's entropy metric empirically. Results: Thirty-two distinct MTD for IoT techniques exist: 54% are Network-layer-based, 50% present strong evidence about their real-world deployment, and 64% have weak security foundations. Conclusion: MTD for IoT is a feasible cyberdefense approach. A variety of proposals exist, with evidence about their implementation and evaluation. Nevertheless, the MTD for IoT state of the art is still immature: the security foundations of most existing proposals are weak. Novel techniques should prioritize providing convincing security foundations and real-world deployment evidence. © 2014 IEEE.</p>
<p>Paiva J.O.V.; Andrade R.M.C.; Carvalho R.M.</p>	<p>Using a systematic literature review to build a framework for University-Industry Linkages using open innovation</p>	<p>2021</p>		<p>Internet of Things (IoT) is a paradigm that enables physical objects to interact and to work together. IoT applications have particular characteristics, such as context-awareness, interconnectivity, and heterogeneity, and particular types of interaction, user interaction with devices (called human-thing interaction), and the interaction between devices (called thing-thing interaction). These characteristics represent the expectation around the system and are also known as Non-Functional Requirements (NFRs). So, during the requirements elicitation of such systems, they can appear as NFRs, and their combination often increases the complexity of the IoT application development and evaluation. Thus, this work aims to identify which approaches and NFRs have been considered in the literature to evaluate IoT applications and the main challenges faced by the evaluators. We use the systematic mapping methodology to provide a comprehensive view of approaches, methods, tools, and processes. As a result, we identified two tools, six approaches, one method, and one process that can be used to evaluate NFRs, a set of 42 NFRs that can be considered for IoT applications, and the main challenges related to the NFRs evaluation for the IoT applications. Copyright © 2021 by SCITEPRESS - Science and Technology Publications, Lda.</p>
<p>Madyatmadja E.D.; Yulia T.R.; Sembiring D.J.M.; Angin S.M.B.P.</p>	<p>Software Engineering for IoT-Driven Data Analytics Applications</p>	<p>2021</p>	<p>10.46338/IJETA0521_06</p>	<p>At present and along with the development of the times, higher education or campuses are increasingly competing with each other, especially in Indonesia. Each campus is competing to improve its quality so that it has a good assessment and can become a World Class University. This is done in various ways, for example, such as providing campus infrastructure that is equipped with adequate technology or combining technology into activities or all processes on campus, this is called the implementation of a smart campus. So that by forming a smart campus, the campus can produce better quality human resources. One form of technological advancement is the emergence of internet technology, the Internet stands for interconnection networking as a communication network connecting between electronic media using the standard IP (Internet Protocol). The internet has many benefits that make it widely used in various industrial sectors, one of which is in the higher education industry. IoT exists as an evolution of the internet as a system that has remote control. IoT is one of the right solutions to support smart campus implementation. The use of IoT on a smart campus can improve campus quality, efficiency and effectiveness. The purpose of this study is to determine the description of IoT, the network technology used and how the implementation can be done on a smart campus. © 2021 IJETAE Publication House. All rights reserved.</p>
	<p>Understanding socio-technological challenges of smart classrooms using a systematic review</p>	<p>2021</p>		<p>The proceedings contain 27 papers. The special focus in this conference is on Distributed, Ambient and Pervasive Interactions. The topics include: Touchless Interaction on Mobile Devices Using Embedded Ambient Light Sensor; comparison Between Manual and Automated Annotations of Eco-Acoustic Recordings Collected in Fukushima Restricted Zone; towards Infectious Disease Risk Assessment in Taxis Using Environmental Sensors; the Value of the User Evaluation Process in the European IoT Large-Scale Pilot for Smart Living; technology Probes to Explore How Children Learn About Gender Stereotypes; collectively Sharing Human Hearing in Artful CollectiveEars; what are we Supposed to be Learning? Motivation and Autonomy in Smart Learning Environments; design Inspired by Intangible Cultural Heritage of Taoyuan Woodcarving Craft Platform; strategies for Panel Sequence Segmentations in d-Comics; crowdsourced Urban Annotations and Augmented Reality as Design Thinking Tools to Navigate and Interact with Urban Data; papimation: A Symbol System for Children to Animate Their Drawing; tangiLetter: An Interactive Vocabulary System for Children to Learn Words About Wild Animals; A Gaze-Based Unobstructive Information Selection by Context-Aware Moving UI in Mixed Reality; online Medical Platform Oriented Identification of User Needs Related to Alzheimer's Disease and Ontology Construction; a Systematic Review of Information Quality of Artificial Intelligence Based Conversational Agents in Healthcare; standard Dialogue Structure and Frequent Patterns in the Agent Dialogue System; intelligent Product Design with Natural Interaction; HUD Information Design for IoV Intelligent Navigation System; the Inclusion of Citizens in Smart Cities Policymaking: The Potential Role of Development Studies' Participatory Methodologies; users Adaptation and Infusion of Smart City App.</p>

<p>Vizquete D.D.C.; Montoya A.V.G.; Jácome E.A.M.; Velásquez C.R.C.; Borz S.A.</p>	<p>Characterizing Visual Programming Approaches for End-User Developers: A Systematic Review</p>	<p>2021</p>	<p>10.3390/su13169436</p>	<p>The use of the state-of-art information and communication technology has been found to enhance the effectiveness and sustainability of the tourism industry and many countries have chosen to implement smart tourism tools as a strategy to adapt to the continuously changing profile of tourists. While there are many tools which could be implemented for such endeavors, the evaluation of the tourist preferences in relation to their use and importance needs to be done so as to ensure at least the sustainability of investments and of the local development strategies. The Chimborazo Fauna Reserve (canton of Riobamba, Ecuador) was selected for the application of a questionnaire survey to evaluate the importance of 38 smart tourism tools based on the experience of Ecuadorian and international tourists with them. The survey considered more than 700 respondents and 500 valid questionnaires were retained for analysis which was done mainly by developing distributions of the relative frequencies of ratings given on a 5-point Likert scale and by a correspondence analysis at the level of two subsamples: national and international tourists. There were obvious differences between these two groups in terms of importance placed on the smart tourism tools. The first difference was that the Ecuadorian tourists found less utility in the smart tools as compared to the international tourists. The second difference was that the best rated tools in terms of importance were different among the two groups, with the international tourists placing, for instance, more importance on safety-related tools. Correspondence analysis has shown the similarities of profiles and data association, being a useful tool of associating the ratings to the evaluated tools. The knowledge gained by the survey may be helpful in supporting the development of local tourist strategies, providing at the same time valuable data to support preference comparisons with other tourist destinations and countries. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.</p>
<p>Xue Z.; Guo P.; Desai K.T.; Pal A.; Ajenifuja K.O.; Adepiti C.A.; Long L.R.; Schiffman M.; Antani S.</p>	<p>Pharmaceuticals in wastewater treatment plants: A systematic review on the substances of greatest concern responsible for the development of antimicrobial resistance</p>	<p>2021</p>	<p>10.1109/CBMS52027.2021.00085</p>	<p>Visual inspection of the cervix with acetic acid (VIA), though error prone, has long been used for screening women and to guide management for cervical cancer. The automated visual evaluation (AVE) technique, in which deep learning is used to predict precancer based on a digital image of the acetowhitened cervix, has demonstrated its promise as a low-cost method to improve on human performance. However, there are several challenges in moving AVE beyond proof-of-concept and deploying it as a practical adjunct tool in visual screening. One of them is making AVE robust across images captured using different devices. We propose a new deep learning based clustering approach to investigate whether the images taken by three different devices (a common smartphone, a custom smartphone-based handheld device for cervical imaging, and a clinical colposcope equipped with SLR digital camera-based imaging capability) can be well distinguished from each other with respect to the visual appearance/content within their cervix regions. We argue that disparity in visual appearance of a cervix across devices could be a significant confounding factor in training and generalizing AVE performance. Our method consists of four components: cervix region detection, feature extraction, feature encoding, and clustering. Multiple experiments are conducted to demonstrate the effectiveness of each component and compare alternative methods in each component. Our proposed method achieves high clustering accuracy (97%) and significantly outperforms several representative deep clustering methods on our dataset. The high clustering performance indicates the images taken from these three devices are different with respect to visual appearance. Our results and analysis establish a need for developing a method that minimizes such variance among the images acquired from different devices. It also recognizes the need for large number of training images from different sources for robust device-independent AVE performance worldwide. © 2021 IEEE.</p>
<p>Neves A.R.; Costa J.; Reis J.</p>	<p>Eye Tracking Analytics for Mental States Assessment - A Review*</p>	<p>2021</p>	<p>10.1016/j.procs.2021.01.095</p>	<p>Open innovation is a hot topic which currently facilitates the establishment of links between Universities and Industry. Thus, the primary goal of this research is to synthesize the existing literature by establishing a University-Industry relationship with Open Innovation. In this scenario, we also identify the extent to which open innovation is improving innovation ecosystems in terms of promoting smart and responsible innovation. To do so, we have used a systematic literature review, which is considered an adequate method to study the state of the art of a given topic. In light of the above, we performed 1) a quantitative assessment of 50 articles by using bibliometric tools and 2) a qualitative analysis of the literature to identify meaningful relationships between articles. As a result, the literature evidenced a trinomial relationship between Universities, Society and Industries, which are interestingly far more exploited than the Education and Research. Given the noticeable importance of producing knowledge and dissemination of that information, we believe Universities will continue to have a prominent centrality in society in that regard; however, current data leads us to believe that the Universities success of producing knowledge highly depends on the efficiency of each countries to establish effective political actions. © 2021 The Authors. Published by Elsevier B.V.</p>

<p>Ahmad A.; Fahmideh M.; Altamimi A.B.; Katib I.; Albeshri A.; Alreshidi A.; Alanazi A.A.; Mehmood R.</p>	<p>Context-Aware Recommender Systems for Social Networks: Review, Challenges and Opportunities</p>	<p>2021</p>	<p>10.1109/AC CESS.2021. 3065528</p>	<p>Internet of Things Driven Data Analytics (IoT-DA) has the potential to excel data-driven operationalisation of smart environments. However, limited research exists on how IoT-DA applications are designed, implemented, operationalised, and evolved in the context of software and system engineering life-cycle. This article empirically derives a framework that could be used to systematically investigate the role of software engineering (SE) processes and their underlying practices to engineer IoT-DA applications. First, using existing frameworks and taxonomies, we develop an evaluation framework to evaluate software processes, methods, and other artefacts of SE for IoT-DA. Secondly, we perform a systematic mapping study to qualitatively select 16 processes (from academic research and industrial solutions) of SE for IoT-DA. Thirdly, we apply our developed evaluation framework based on 17 distinct criterion (a.k.a. process activities) for fine-grained investigation of each of the 16 SE processes. Fourthly, we apply our proposed framework on a case study to demonstrate development of an IoT-DA healthcare application. Finally, we highlight key challenges, recommended practices, and the lessons learnt based on framework's support for process-centric software engineering of IoT-DA. The results of this research can facilitate researchers and practitioners to engineer emerging and next-generation of IoT-DA software applications. © 2013 IEEE.</p>
<p>Alfoudari A.M.; Durugbo C.M.; Aldhmour F.M.</p>	<p>An attack tree template based on feature diagram hierarchy</p>	<p>2021</p>	<p>10.1016/j.co mpedu.2021 .104282</p>	<p>Smart classrooms are paradigm innovations for enhanced learning behavior in digital learning environments. These environments offer benefits for inclusive and virtual learning, underscoring the need for assessments of current practices. Although research on smart classrooms propose models and systems for enhancing socio-technological integration, knowledge on socio-technological challenges of smart classrooms remains limited. This article applies a systematic review methodology in line with the PRISMA protocol and analyzes current social and technological challenges based on 105 articles published between 2000 and 2019. The review identifies social challenges that facilitate personalization for external factors and teaching methods, stimulate learner-oriented content, instructor, peer, and technology forms of engagement, and boost interactivity depending on the willingness of learners and instructors. The review also finds technological challenges that concern designing learning environments and integrating intelligent systems, analytical tools and analysis, system models and ontology, and mobile and social media applications. The review suggests areas for future research involving smart classroom design for continuity and consistency, quality attributes of smart classrooms, efficiency and sustainability of smart classroom infrastructure, and the development of a smart classroom modelling language. © 2021 Elsevier Ltd</p>
	<p>Digital Transformation of the Construction Industry: A Review</p>	<p>2022</p>		<p>The proceedings contain 64 papers. The special focus in this conference is on Science and Technology. The topics include: Lifelong Learning as a Strategy for Digital Literacy in University Teachers; simulation System of a Tomato Sorting Process Using Artificial Vision; Analysis of a Network Implementing ROIP Technology; computerized Tomography Images Processing Using Artificial Intelligence Techniques; Digital Model to Predict Failures of Porous Structures in DLP-Based Additive Manufacturing; Optimization of an Autonomous Learning Model for Detection COVID-19 Using Medical Images; an Implementation of an Algorithm for Information Theft Using Deep Learning Techniques: An Ethical Hacking Event; Quality in Use Evaluation of a GraphQL Implementation; MESH Networks to Optimize the Quality of Internet Service via WiFi in University Institutions; modeling Wireless Propagation Channel: A Traditional Versus Machine Learning Approach; Design of an Academic CSIRT – A Proposal Based on Strategic Planning Principles; educational Programming as a Strategy for the Development of Logical-Mathematical Thinking; neurotoxic Effects on Banana Workers Exposed to Agrochemicals: Ecuador Case Study; behavior of Reinforced Concrete Column Specimens Under Blast Loading Produced by Pentolite Charge; augmented Reality in Determining the Cognitive Load of Blind Users During Navigation Process; machine Algorithm-Based Web Prototype for Crop Pest Detection; use of Blockchain in IoT Devices Security: A Systematic Mapping Study; proposal of Sensor-Based System to Control the Store Capacity for Prevent Infection by Covid-19; yaatree: A Mobile Application for Transportation Request Focused on People with Disabilities; robust System for Crowd Counting and Estimation Using Multi-column Filters on Unmanned Platforms.</p>



Kuhail M.A.; Farooq S.; Hammad R.; Bahja M.	3rd International Conference on HCI for Cybersecurity, Privacy and Trust, HCI-CPT 2021, held as part of the 23rd International Conference, HCI International 2021	2021	10.1109/AC CESS.2021. 3051043	Recently many researches have explored the potential of visual programming in robotics, the Internet of Things (IoT), and education. However, there is a lack of studies that analyze the recent evidence-based visual programming approaches that are applied in several domains. This study presents a systematic review to understand, compare, and reflect on recent visual programming approaches using twelve dimensions: visual programming classification, interaction style, target users, domain, platform, empirical evaluation type, test participants' type, number of test participants, test participants' programming skills, evaluation methods, evaluation measures, and accessibility of visual programming tools. The results show that most of the selected articles discussed tools that target IoT and education, while other fields such as data science, robotics are emerging. Further, most tools use abstractions to hide implementation details and use similar interaction styles. The predominant platforms for the tools are web and mobile, while desktop-based tools are on the decline. Only a few tools were evaluated with a formal experiment, whilst the remaining ones were evaluated with evaluation studies or informal feedback. Most tools were evaluated with students with little to no programming skills. There is a lack of emphasis on usability principles in the design stage of the tools. Additionally, only one of the tools was evaluated for expressiveness. Other areas for exploration include supporting end users throughout the life cycle of applications created with the tools, studying the impact of tutorials on improving learnability, and exploring the potential of machine learning to improve debugging solutions developed with visual programming. © 2013 IEEE.
Frascaroli G.; Reid D.; Hunter C.; Roberts J.; Helwig K.; Spencer J.; Escudero A.	ACM International Conference Proceeding Series	2021	10.3390/app 11156670	In recent years, there is a growing concern about the alarming spread of antimicrobial resistance (AMR) in different environments. Increasingly, many species of bacteria, fungi and viruses are becoming immune to the most commonly used pharmaceuticals. One of the causes of the development of the resistance is the persistence of these drugs, excreted by humans, in municipal and hospital wastewater (WW). Consequently, wastewater treatment plants (WWTPs) are a primary source of antimicrobial resistance genes as novel pollutants. This systematic review sought to examine the relevant literature on pharmaceutical residues (PRs) responsible for AMR in municipal and hospital WW in order to propose a classification of the PRs of greatest concern and provide an updated source for AMR management in WWTPs. Among 546 studies collected from four databases, 18 were included in the present review. The internal and external validity of each study was assessed, and the risk of bias was evaluated on a 20-parameter basis. Results were combined in a narrative synthesis discussing influent and effluent PR concentrations at 88 WWTPs, seasonal variations, differences between hospital and municipal WW, environmental risk assessment values of antimicrobial substances and treatment facilities removal efficiencies. Among the 45 PRs responsible for AMR evaluated in this study, the antibiotics ciprofloxacin, clarithromycin, erythromycin, metronidazole, ofloxacin, sulfamethoxazole and trimethoprim constitute a considerable risk in terms of ubiquitous distribution, worrying concentrations, risk quotient values and resistance to removal treatments. Gaps in knowledge, data and information reported in this review will provide a valuable source for managing AMR in WWTPs. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.
Li F.; Xu G.; Feng S.	Techniques for smart urban logistics solutions' simulation: A systematic review	2021	10.1109/SM C52423.202 1.9658674	Objectively measuring and monitoring human mental states in a non-intrusive way is important in improving the context-awareness of smart objects. One of the suitable bio-signals in measuring human mental states is eye-tracking data, as visual is the first channel of information collection. In addition, eye-tracking data shows the process of human-system interactions. Traditionally, many studies have been conducted to investigate the correlations between eye-tracking data and human mental states. Recently, with advanced artificial intelligence algorithms, the spatial and temporal patterns of eye-tracking data can be deeply analyzed for detecting human mental states. This study aims to explore and review eye-tracking parameters and state-of-art methods for mental states assessments. The study reveals that both statistical methods and novel methods, such as machine learning and deep learning have been applied to process eye-tracking data. Besides, novel features extracted from eye-tracking data, such as gaze-bin and entropy have been used in assessing human mental states. This review is expected to provide references for eye-tracking data analysis. © 2021 IEEE.

Suhaim A.B.; Berri J.	Software architectures of the convergence of cloud computing and the Internet of Things: A systematic literature review	2021	10.1109/ACCESS.2021.3072165	Context-aware recommender systems dedicated to online social networks experienced noticeable growth in the last few years. This has led to more research being done in this area stimulated by the omnipresence of smartphones and the latest web technologies. These systems are able to detect specific user needs and adapt recommendations to actual user context. In this research, we present a comprehensive review of context-aware recommender systems developed for social networks. For this purpose, we used a systematic literature review methodology which clearly defined the scope, the objective, the timeframe, the methods, and the tools to undertake this research. Our focus is to investigate approaches and techniques used in the development of context-aware recommender systems for social networks and identify the research gaps, challenges, and opportunities in this field. In order to have a clear vision of the research potential in the field, we considered research articles published between 2015 and 2020 and used a research portal giving access to major scientific research databases. Primary research articles selected are reviewed and the recommendation process is analyzed to identify the approach, the techniques, and the context elements employed in the development of the recommendation systems. The paper presents the detail of the review study, provides a synthesis of the results, proposes an evaluation based on measurable evaluation tools developed in this study, and advocates future research and development pathways in this interesting field. © 2013 IEEE.
Kumar R.	Proceedings of the 13th International Conference on Cyber Warfare and Security, ICCWS 2018	2020	10.1109/DependSys51298.2020.00022	Attack trees (ATs) are a popular model-based formalism to perform a security risk assessment. The benefits of using AT are numerous: graphical top-down representation of multi-stage attack scenarios, several analysis frameworks, and many supporting tools. The current practice of constructing an attack tree for a given system is using the rules-of-thumb. Though this process is flexible, in the absence of a template, it is non-standardized. Hence it is tedious and may result in contention between the stakeholders due to individual idiosyncrasies. To address these limitations, in this paper, we develop an AT template. We meticulously design the template by performing a literature survey of the industry-size ATs and extract the meta-categories used to build them. The AT template is then structured into layers by the systematic question-answering methodology of Potts et al. Each successive layer in our template is a refinement of the previous layer, adding more details. We link the AT template to standard threat databases. Thus, our template guides the practitioner on narrowing to the appropriate attack vectors. An important question here is how to keep the AT template flexible, given the diversity of context and system variables. To address the question, we use a feature diagram to represent the AT categories. We used the AT template to gain practical experience over a hypothetical case study of smart meters (not part of the paper). Based on our experience, we suggest future research directions. © 2020 IEEE.
Musarat M.A.; Hameed N.; Altaf M.; Alaloul W.S.; Salaheen M.A.; Alawag A.M.	Toward smart learning environments: Affordances and design architecture of augmented reality (AR) applications in medical education	2021	10.1109/DASA53625.2021.9682303	The construction industry is hailed as the driver for the economic development of every country to a great extent due to its dynamic nature, yet it needs digital transformation to align with the fast-paced digital world economy. Hence, to evaluate the potential for the digital transformation of various segments of the construction industry, a systematic review was conducted in this study. English research articles were extracted from the Scopus database by using keywords of 'Digital Transformation' AND 'Construction Industry' correlated to the engineering field. After a detailed screening process as per the PRISMA statement, only 26 articles were selected for further assessment from a total of 67 extracted articles. The extracted articles were focusing on digital technologies e.g., Building Information Modeling (BIM), Smart Devices, Internet of things (IoT), Drones, Project studio (PS), and digital twins and their implication in the digital transformation of the construction industry. It was evident that digital transformation enhanced the productivity and efficiency of construction projects with better control over cost, time, and risk throughout the project life cycle. Therefore, it is recommended to establish top management interest for digital partnering with trusted organizations enabling the realization of digital technologies in the construction industry. © 2021 IEEE.

	U-Arabic: Design perspective of context-aware ubiquitous Arabic vocabularies learning system	2021		The proceedings contain 31 papers. The special focus in this conference is on HCI for Cybersecurity, Privacy and Trust. The topics include: A Human Factor Approach to Threat Modeling; smart Technologies and Internet of Things Designed for Aging in Place; please Stop Listening While I Make a Private Call: Context-Aware In-Vehicle Mode of a Voice-Controlled Intelligent Personal Assistant with a Privacy Consideration; enterprise Data Sharing Requirements: Rich Policy Languages and Intuitive User Interfaces; heuristic Evaluation of Vulnerability Risk Management Leaders' Presentations of Cyber Threat and Cyber Risk; human Individual Difference Predictors in Cyber-Security: Exploring an Alternative Scale Method and Data Resolution to Modelling Cyber Secure Behavior; Privacy Design Strategies and the GDPR: A Systematic Literature Review; 'Just-in-Time' Parenting: A Two-Month Examination of the Bi-directional Influences Between Parental Mediation and Adolescent Online Risk Exposure; understanding User Behavior, Information Exposure, and Privacy Risks in Managing Old Devices; perceptions of Security and Privacy in mHealth; emics and Etics of Usable Security: Culturally-Specific or Culturally-Universal?; understanding User's Behavior and Protection Strategy upon Losing, or Identifying Unauthorized Access to Online Account; cyberPin - Challenges on Recognizing Youngest Cyber Talents; It's Not My Problem: How Healthcare Models Relate to SME Cybersecurity Awareness; understanding the Last Line of Defense: Human Response to Cybersecurity Events; The Effectiveness of Video Messaging Campaigns to Use 2FA; a Study on Online Businesses' Commitment to Consumer Privacy; help the User Recognize a Phishing Scam: Design of Explanation Messages in Warning Interfaces for Phishing Attacks; social Engineering Attacks: Recent Advances and Challenges.
	Effective behavioral intervention strategies using mobile health applications for chronic disease management: A systematic review	2017		The proceedings contain 35 papers. The topics discussed include: evaluation of self-adaptive systems: a women perspective; towards a reference software architecture for improving the accessibility and usability of open course ware; software architecture and reference architecture of software-intensive systems and systems-of-systems: contributions to the state of the art; CAPSim: simulation and code generation based on the CAP; the female contribution in architecting a set of tools for a formal method; role of women in software architecture: an attempt at a systematic literature review; towards a framework for managing architectural design decisions; taming missions and architecture in software intensive systems-of-systems; MAGMA: build management-based generation of microservice infrastructures; simulating architectures of situational-aware cyber-physical space; architecture analysis to predict project risks; autonomic component ensembles for dynamic evolving architectures of context-aware smart systems; software architecture reconstruction research support as provided by HUSACCT; a domain model for self-adaptive software systems; a study on cybersecurity industrial end-user perspectives in Finland; towards context aware computations offloading in 5g; adaptation for situational-aware cyber-physical systems driven by energy consumption and human safety; and an open architecture approach: towards common design principles for an IoT architecture.
Karakikes I.; Nathanail E.; Savrasovs M.	Quality Assessment Approaches for Ambient Assisted Living Systems: A Systematic Review	2019	10.1007/978-3-030-12450-2_53	Today, cities devise their own Sustainable Urban Logistics Plan (SULP) to improve the sustainability of their distribution system. Modern SULPs, following the development of technology, consider smart solutions e.g. pick-ups and deliveries by electric vehicles, bicycles or drones, city lockers, ITS systems for planning/routing, crowdsourcing services and other, which aim at mitigating the negative effects of the freight transport in the urban area. The effectiveness of these solutions, however, is not for sure, since their performance relies on particularities of cities' urban freight transport system as well as the level of infrastructure, cooperation and policy adoption. To better understand and assess the impacts of a proposed solution in a city context, ex-ante evaluation through modeling is advised. This study synthesizes the types of simulation techniques that are used to model the impacts of innovative smart urban freight solutions. A systematic literature review was performed in Web of Science Core Collection, SCOPUS and JSTOR databases to identify records that tackle with modeling smart urban freight solutions and present real case study results. Having gathered all relevant records through a query-based identification process, a screening process was adopted to keep only those that have an essential contribution to the topic. Eighty-two full papers met the criteria and were included in the qualitative analysis. Analysis' key findings were that (1) the majority of studies use custom-made techniques for the evaluation of urban freight solutions, (2) there is growing tendency from 2015 onwards for such studies and, (3) "ITS for freight monitoring and planning/routing" is the most prominent solution in such studies. © Springer Nature Switzerland AG 2019.

Banijamali A.; Pakanen O.-P.; Kuvaja P.; Oivo M.	A Systematic Literature Review of Usability Evaluation Guidelines on Mobile Educational Games for Primary School Students	2020	10.1016/j.infsof.2020.106271	Context: Over the last few years, there has been an increasing interest in the convergence of cloud computing and the Internet of Things (IoT). Although software systems in this domain have attracted researchers to develop a large body of knowledge on software architecture designs, there is no systematic analysis of this knowledge. Objective: This study aims to identify and synthesise state-of-the-art architectural elements including the design patterns, styles, views, quality attributes, and evaluation methodologies in the convergence of cloud computing and IoT. Method: We used systematic literature review (SLR) methodology for a detailed analysis of 82 primary studies of a total of 1618 studies. Results: We extracted six architectural design patterns in this domain; among them, edge connectivity patterns stand out as the most popular choice. The service-oriented architecture is the most frequently applied style in this context. Among all applicable quality attributes, scalability, timeliness, and security were the most investigated quality attributes. In addition, we included nine cross analyses to address the relationship between architectural patterns, styles, views, and evaluation methodologies with respect to different quality attributes and application areas. Conclusions: Our findings indicate that research on software architectures in this domain is increasing. Although few studies were found in which industrial evaluations were presented, industry requires more scientific and empirically validated design frameworks to guide software engineering in this domain. This work provides an overview of the field while identifying areas for future research. © 2020 Elsevier B.V.
	18th International Conference on Software Process Improvement and Capability Determination, SPICE 2018	2018		The proceedings contain 83 papers. The topics discussed include: framework for assessing cyber risk/effects in context of air force operations; the united nations and Russian initiatives on international information security; support for secure code execution in server operating systems; developing simulated cyber-attack scenarios against virtualized adversary networks; impact assessment of cyber actions on missions or business processes: a systematic literature review; IoT-related DDoS ethical issues: a system of systems approach; developing low-cost and effective ICS cyber training environments; recommendations to develop and hire more highly qualified women and minorities cybersecurity professionals; and the methodological basis for solving the problems of the information warfare and security protection.
Sen A.; Chuen C.L.K.; Zay Hta A.C.	The Internet of Things in the Oil and Gas Industry: A Systematic Review	2018	10.1007/978-981-10-5828-8_80	Medical education places emphasis on situational learning of real-life clinical contexts, while simultaneously focusing on human body three-dimensional (3D) visualization. However, classrooms and laboratories being the main learning environment in early years of medical education, there is limited exposure to real clinical environments to adequately meet such objectives. This study proposes that augmented reality (AR) applications can provide both affordances. Such applications fulfill many of the criteria for smart learning environments (SLE). A systematic review aiming to identify the affordances of AR applications, their design architectures, and impact evaluations was conducted. This review evaluated 25 studies and, with model case studies, analyzed how the different AR applications provided situational learning and visualization in medical education and how their design architecture provided such affordances toward contextualized, interactive, and personalized SLEs. It was found that AR affords facilitation of situational learning and visualization individually. Their integrated educational impact, however, needs to be evaluated further. © 2018, Springer Nature Singapore Pte Ltd.
Alobaydi E.K.; Mustaffa N.; Alkhayat R.Y.; Arshad M.R.H.M.	Linear Power Modeling for Cloud Data Centers: Taxonomy, Locally Corrected Linear Regression, Simulation Framework and Evaluation	2017	10.1109/ICC SCE.2016.7893535	Arabic vocabulary learning is in dire need for modern learning aids, especially nowadays with the advanced facilities provided by modern technologies and the high tendency of people to use these technologies such as mobile devices and smartphones in most of their life aspects. The vast amount of Arabic vocabulary, the multitude of its original and secondary meanings, differences among the ways of its writing and reading according to its position within the sentence, are the major difficulties faced by Arabic learners. This motivated us to utilize state-of-art learning technologies to design Arabic vocabulary learning system called (U-Arab) in the form of mobile application game. This paper presents the utilization of a context-aware ubiquitous learning system that facilitated vocabulary mastering by free learners from place and time restrictions by combining entertainment with education in the same time within real learning environments through QR-Code utility. Evaluation of U-Arab prototype was conducted using pre-post-tests on sample of non-Arabic students in Islamic elementary school. The results demonstrated that utilizing context-aware ubiquitous learning has positive impact on enhancing Arabic vocabulary learning for the selected sample. © 2016 IEEE.

Lee J.-A.; Choi M.; Lee S.A.; Jiang N.	Enhancing Asthma Patients' Self-Management through Smartphone-Based Application: Design, Usability Evaluation, and Educational Intervention	2018	10.1186/s12911-018-0591-0	<p>Background: Mobile health (mHealth) has continuously been used as a method in behavioral research to improve self-management in patients with chronic diseases. However, the evidence of its effectiveness in chronic disease management in the adult population is still lacking. We conducted a systematic review to examine the effectiveness of mHealth interventions on process measures as well as health outcomes in randomized controlled trials (RCTs) to improve chronic disease management. Methods: Relevant randomized controlled studies that were published between January 2005 and March 2016 were searched in six databases: PubMed, CINAHL, EMBASE, the Cochrane Library, PsycINFO, and Web of Science. The inclusion criteria were RCTs that conducted an intervention using mobile devices such as smartphones or tablets for adult patients with chronic diseases to examine disease management or health promotion. Results: Of the 12 RCTs reviewed, 10 of the mHealth interventions demonstrated statistically significant improvement in some health outcomes. The most common features of mHealth systems used in the reviewed RCTs were real-time or regular basis symptom assessments, pre-programed reminders, or feedbacks tailored specifically to the data provided by participants via mHealth devices. Most studies developed their own mHealth systems including mobile apps. Training of mHealth systems was provided to participants in person or through paper-based instructions. None of the studies reported the relationship between health outcomes and patient engagement levels on the mHealth system. Conclusions: Findings from mHealth intervention studies for chronic disease management have shown promising aspects, particularly in improving self-management and some health outcomes. © 2018 The Author(s).</p>
Erazo-Garzon L.; Erraez J.; Cedillo P.; Illescas-Peña L.	Model-based security engineering for cyber-physical systems: A systematic mapping study	2020	10.1007/978-3-030-42517-3_32	<p>Ambient Assisted Living (AAL) aims to improve people's quality of life through the use of information technologies. Due to the critical nature of AAL systems, quality is a priority. However, as AAL is a relatively new domain, its main limitation is the lack of consensus and standardization in quality assessment. This work presents a systematic review to determine the state of the art on the quality assessment of AAL systems from a multidimensional vision (software product, in use, data and context). Initially, 1308 primary studies were extracted, from them 21 relevant studies related to models, frameworks, taxonomies and other approaches of quality assessment were selected after applying the corresponding inclusion and exclusion criteria. The selected studies were subject to a comparative analysis that determined the most recurrent and critical quality attributes for AAL systems, being an important contribution to generate consensus in the construction of more complete quality models. Furthermore, this work allowed to recognize the strengths and limitations of the quality proposals studied and to identify research gaps and challenges. © 2020, Springer Nature Switzerland AG.</p>
Lin Gao X.W.; Véliz B.M.; Paz F.	Proposal of an instrument for measuring situational motivation with potential applications in educational contexts	2019	10.1007/978-3-030-23535-2_13	<p>Recently, mobile educational games became a trend for primary school students, because it makes children learn in an entertaining way, and since nowadays they spend more time with their mobile devices, especially smartphones, the usage of this games is widespread. This kind of games must consider different aspects so these can cover all the purpose that they want to provide, such as usability, playability, learnability, effectiveness, simplicity, and so on. That is why the usability evaluation plays an important role in it. However, despite the fact that a lot of usability evaluation methods exist, most of them are focused on traditional computer usage and those are not 100% compatible with mobile phone usage. Therefore, a systematic literature review was conducted in order to identify usability evaluation guidelines for mobile educational games, which are concerning primary school students as users. This work is the first step toward making a set of usability guidelines for the evaluation of mobile educational games for Primary school students. © 2019, Springer Nature Switzerland AG.</p>
	PrOLoc: Resilient localization with private observers using partial homomorphic encryption	2018		<p>The proceedings contain 26 papers. The special focus in this conference is on Software Process Improvement and Capability Determination. The topics include: Teaching software processes and standards: a review of serious games approaches; interpretation and reporting of process capability results: focus on improvement; Introducing requirements change management process into ISO/IEC 12207; measuring change in software projects through an earned value lens; semantic model based approach for knowledge intensive processes; Transforming SPEM 2.0-compatible process models into models checkable for compliance; ensuring conformance to process standards through formal verification; specification and deployment of a semantic database for system configuration management; adopting agile in the sports domain: A phased approach; techniques based on data science for software processes: A systematic literature review; systematic mapping study on process mining in agile software development; a comprehensive evaluation of agile maturity self-assessment surveys; agile usage in embedded software development in safety critical domain—A systematic review; An enterprise SPICE capability profile for an ISO 9001:2015 compliant organization; A process reference and assessment model for ECU software calibration data; An ontology to support TMMi-based test process assessment; permissioned blockchains and smart contracts into agile software processes; A systematic literature review on the gamification monitoring phase: How SPI standards can contribute to gamification maturity; towards a taxonomy of process quality characteristics for assessment; process risk determination supporting data protection impact assessment; a novel model for development project assessment in automotive; Evolving PRO2PI methodology considering recent challenges and changes in the SPI context.</p>

Wanasinghe T.R.; Gosine R.G.; James L.A.; Mann G.K.I.; De Silva O.; Warriar P.J.	7th International Conference on Learning and Collaboration Technologies, LCT 2020, held as part of the 22nd International Conference on Human- Computer Interaction, HCII 2020	2020	10.1109/JIO T.2020.2995 617	The low oil price environment is driving the oil and gas (OG) industry to become more innovative and deploy smart field technologies, to increase operational and asset efficiency, minimize health, safety, and environmental (HSE) risks, improve asset portfolio, reduce capital and operation costs, and maximize capital productivity. The Internet of Things (IoT) is at the forefront of this digital transformation, enabling seamless real-time data collection, processing, and analysis from a range of equipment, processes, and operations to achieve these objectives. There are various operations/applications in the upstream, midstream, and downstream sectors (e.g., condition-based monitoring and location tracking) for which IoT-enabled solutions have a significant impact and offer a range of opportunities to increase socioeconomic benefits. However, there are several impediments (e.g., vulnerability to cyber attacks, lower technological readiness for deploying in zone-0 and zone-1 hazardous environments, unavailability of communication infrastructure, labor concerns, and maintenance and obsolescence) that slow the pace of adoption of IoT technologies for regular upstream, midstream, and downstream operations. This review article provides an overview and assessment of the role, impact, opportunities, challenges, and current status of IoT deployment in the OG industry. © 2014 IEEE.
Ismail L.; Abed E.H.	Digital health technology for use in patients with serious mental illness: A systematic review of the literature	2019	10.1109/AC CESS.2019. 2956881	Cloud computing is a novel paradigm, where the limitations of ubiquitous connected devices in terms of computing, data access, networking and storage are solved through the use of cloud infrastructure. The pervasive adoption of cloud computing results in a rising carbon footprint due to the high energy consumption of computing servers. This negatively affects the environment and entails an associated increase in electricity costs and consequently operational costs. Many works proposed scheduling algorithms using software-centric power models in order to predict electric power consumption in underlying data centers and to schedule cloud tasks so as to reduce energy consumption. Linear models which are based on the lowest- and highest-power data points (referred to here as the 'Power Endpoints Model'-PEM) and the simple linear regression (SLR) model are the most used in the literature. However, these models have traditionally been evaluated using different environments, experimental setups, workloads, and error calculation formulas. In this paper, a unified classification and evaluation for these linear power models is presented, under unified setup, benchmarking applications, and error formula with the main goal being to achieve an objective comparison. A new power model is proposed, named Locally Corrected Multiple Linear Regression (LC-MLR), in order to increase prediction accuracy. A simulation framework for a cloud energy-aware scheduler is introduced. The framework combines the Energy-Aware Task Scheduling on Cloud Virtual Machines (EATSVM) with the LC-MLR power model, and facilitates performance measurement for cloud data centers. The scheduler with the new power model increases energy efficiency without degrading the qualities of service of the system. The workloads used for performance evaluation and comparisons in this work are generated using a diverse set of applications. The results show that LC-MLR outperforms the most-used models for simulation of power consumption of cloud data centers. The detailed performance analysis is elaborated in the paper. © 2013 IEEE.
Farzandipour M.; Nabovati E.; Heidarzadeh Arani M.; Akbari H.; Sharif R.; Anvari S.	A survey on trend, opportunities and challenges of mHealth apps	2019	10.1055/s- 0039- 1700866	Objective The aim of this study was to design and evaluate a smartphone-based application for improving self-management in patients with asthma and evaluate its effects on their knowledge. Methods In this applied research, based on the Clinical Practice Guideline and a systematic review, a questionnaire was designed to determine the application information content and functionality requirements by 15 pediatric and adult asthma and allergy specialist. Then the application was designed and developed using Adobe Air software on the Android operating system. Usability evaluation of the mobile application was performed using the standard questionnaire for user interaction satisfaction (QUIS), which completed by 30 patients with asthma, 8 information technology (IT) specialists, and 2 asthma and allergy specialists. Self-management knowledge of 30 asthma patients was measured using a researcher-made questionnaire before and after using the application. Results The number of specialists in the both Delphi rounds was 15 and the mean work experiences were 17.6 years. The most important elements for asthma self-management were avoiding exposure to allergen and triggers (96%), drug treatment (94.6%), and how to use the therapeutic tools (92.4%), and the most important functionalities were alerting the patients when they did not control asthma (92%), setting reminders for timely drug use (85.4%) and therapeutic tools (82.6%), recording prescription drugs (82.6%), and peak flow meter values (82%). Usability evaluation showed that 30 patients with asthma, 8 IT specialists, and 2 physicians evaluated the application at a good level. The mean score of the patients' knowledge before intervention was $2.43 \pm 0.95$ which after intervention was significantly increased to $4.3 \pm 0.56$ ( $p < 0.001$ ). Conclusion Considering the desirable outcomes of application evaluation and a positive impact of this educational intervention on asthma patients' knowledge, it is possible to use mobile-based self-management programs to help these patients to manage illness and gain knowledge and self-management skills. © 2019 Georg Thieme Verlag KG Stuttgart New York.

<p>Nguyen P.H.; Ali S.; Yue T.</p>	<p>20th International Conference on Business Process Modeling, Development and Support, BPMDS 2019 and 24th International Conference on Evaluation and Modeling Methods for Systems Analysis and Development, EMMSAD 2019</p>	<p>2017</p>	<p>10.1016/j.infsof.2016.11.004</p>	<p>Context Cyber-physical systems (CPSs) have emerged to be the next generation of engineered systems driving the so-called fourth industrial revolution. CPSs are becoming more complex, open and more prone to security threats, which urges security to be engineered systematically into CPSs. Model-Based Security Engineering (MBSE) could be a key means to tackle this challenge via security by design, abstraction, and automation. Objective We aim at providing an initial assessment of the state of the art in MBSE for CPSs (MBSE4CPS). Specifically, this work focuses on finding out 1) the publication statistics of MBSE4CPS studies; 2) the characteristics of MBSE4CPS studies; and 3) the open issues of MBSE4CPS research. Method We conducted a systematic mapping study (SMS) following a rigorous protocol that was developed based on the state-of-the-art SMS and systematic review guidelines. From thousands of relevant publications, we systematically identified 48 primary MBSE4CPS studies for data extraction and synthesis to answer predefined research questions. Results SMS results show that for three recent years (2014–2016) the number of primary MBSE4CPS studies has increased significantly. Within the primary studies, the popularity of using Domain-Specific Languages (DSLs) is comparable with the use of the standardised UML modelling notation. Most primary studies do not explicitly address specific security concerns (e.g., confidentiality, integrity) but rather focus on security analyses in general on threats, attacks or vulnerabilities. Few primary studies propose to engineer security solutions for CPSs. Many focus on the early stages of development lifecycle such as security requirement engineering or analysis. Conclusion The SMS does not only provide the state of the art in MBSE4CPS, but also points out several open issues that would deserve more investigation, e.g., the lack of engineering security solutions for CPSs, limited tool support, too few industrial case studies, and the challenge of bridging DSLs in engineering secure CPSs. © 2016</p>
<p>Mota F.P.; Chame H.F.; De Toledo F.P.; Kwecko V.; Da Costa Botelho S.S.</p>	<p>A knowledge-based stream processing using big data analytics</p>	<p>2017</p>	<p>10.1109/FIE.2017.8190457</p>	<p>The study of the motivational aspect and its relevance to the comprehension of the efficacy of learning has been the subject matter of several researches. According to the Self-determination Theory (SDT) there is a relation between the context, the motivation, and the performance of individuals in a given task. Thus, a continuum is defined between intrinsic, extrinsic, and lack of motivation; so individuals intrinsically motivated would perform optimally. In order to adequate the communication module of the system Sapiens for the learning of efficient energy consumption, this work has proposed to develop an instrument to evaluate the level of situational motivation of individuals, and to design persuasive messages to increase the engagement on the task, based on the motivation profiles described by SDT. For this, a methodology was defined comprising the following stages: (i) bibliographic research of the state-of-art scales to assess motivation; (ii) design of a data collection instrument in the form of a structured questionnaire; (iii) evaluation of the instrument considering an heterogeneous sample of 589 college, high-school, technical, master, and doctoral students, aged between 14 and 80 years, at three different situations (the library, the classroom, and leisure); (iv) design of the persuasive messages to enhance the user engagement on the task. The resulting instrument was named Ubiquitous Situational Motivation Scale (USMS), consisted in 18 questions presented as a 7-points Likert Scale, that measures four motivational factors with Cronbach alpha coefficients ranging from 0.61 to 0.86. Our study revealed that subjects' motivation profile varied according to the context, so leisure activities were respectively more related to intrinsic motivation than the library and the classroom activities, and suggests that classroom activities are probably more related to external regulation. The results were also consistent with the continuum hypothesis of SDT. The evaluation with potential users showed that the persuasive messages designed based on the motivational profiles were positively rated. From these results the persuasive module will integrated to the Sapiens platform so the performance of the users can be studied. © 2017 IEEE.</p>
<p>Alanwar A.; Shoukry Y.; Chakraborty S.; Martin P.; Tabuada P.; Srivastava M.</p>	<p>10th International Development Informatics Association Conference, IDIA 2018</p>	<p>2017</p>	<p>10.1145/3055031.3055080</p>	<p>Aided by advances in sensors and algorithms, systems for localizing and tracking target objects or events have become ubiquitous in recent years. Most of these systems operate on the principle of fusing measurements of distance and/or direction to the target made by a set of spatially distributed observers using sensors that measure signals such as RF, acoustic, or optical. The computation of the target's location is done using multilateration and multiangulation algorithms, typically running at an aggregation node that, in addition to the distance/direction measurements, also needs to know the observers' locations. This presents a privacy risk for an observer that does not trust the aggregation node or other observers and could in turn lead to lack of participation. For example, consider a crowd-sourced sensing system where citizens are required to report security threats, or a smart car, stranded with a malfunctioning GPS, sending out localization requests to neighboring cars - in both cases, observer (i.e., citizens and cars respectively) participation can be increased by keeping their location private. This paper presents PrOLoc, a localization system that combines partially homomorphic encryption with a new way of structuring the localization problem to enable efficient and accurate computation of a target's location without requiring observers to make public their locations or measurements. Moreover, and unlike previously proposed perturbation based techniques, PrOLoc is also resilient to malicious active false data injection attacks. We present two realizations of our approach, provide rigorous theoretical guarantees, and also compare the performance of each against traditional methods. Our experiments on real hardware demonstrate that PrOLoc yields location estimates that are accurate while being at least 500× faster than state-of-art secure function evaluation techniques. © 2017 ACM.</p>



	Predicting human mobility via attentive convolutional network	2020		The proceedings contain 86 papers. The special focus in this conference is on Learning and Collaboration Technologies. The topics include: Reflective Journaling: A Theoretical Model and Digital Prototype for Developing Resilience and Creativity; prototyping a Touch-Optimized Modeling Tool for Co-located and Inverted Classroom Group Modeling Scenarios; evaluating Portable Touch Projectors in the Context of Digital Education; STEAM-X: An Exploratory Study Adding Interactive Physical Activity to the STEAM Model; usability Testing of a Digital Competence Assessment and Certification System; designing 'Embodied' Science Learning Experiences for Young Children; impact of Constant Work on the Students' Academic Performance; Learning Analytics and MOOCs; on the Design of a Teachers' Dashboard: Requirements and Insights; evaluation of the Virtual Mobility Learning Hub; midpoint: Evaluating Instructor Perception on a Continuous and Non-specific Feedback System; characterization of Learners from Their Learning Activities on a Smart Learning Platform; AI-Driven Assessment of Students: Current Uses and Research Trends; generating Dashboards Using Fine-Grained Components: A Case Study for a PhD Programme; learning Analytics and Spelling Acquisition in German – The Path to Individualization in Learning; Building Student Interactions Outside the Classroom: Utilizing a Web-Based Application in a University Flipped Learning Course for EFL Learners; the Impact of Corpus Linguistics on Language Teaching in Russia's Educational Context: Systematic Literature Review; framework of Manga Application for Teaching Japanese Language; Individualized Differentiated Spelling with Blogs - Implementing and Individualizing (IDeRBlog ii): An Example of a Learning Analytics Platform for the Text-Based Acquisition of Spelling Skills of Students in German.
Batra S.; Baker R.A.; Wang T.; Forma F.; DiBiasi F.; Peters-Strickland T.	Classification of Balance Assessment Technology: A Scoping Review of Systematic Reviews	2017	10.2147/MDER.S144158	Background: As the capabilities and reach of technology have expanded, there is an accompanying proliferation of digital technologies developed for use in the care of patients with mental illness. The objective of this review was to systematically search published literature to identify currently available health technologies and their intended uses for patients with serious mental illness. Materials and methods: The Medline, Embase, and BIOSIS Previews electronic databases were searched to identify peer-reviewed English language articles that reported the use of digital, mobile, and other advanced technology in patients with schizophrenia/schizoaffective disorder, bipolar disorder, and major depressive disorder. Eligible studies were systematically reviewed based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Results: Eighteen studies that met the inclusion criteria were identified. Digital health technologies (DHTs) assessed in the selected studies included mobile applications (apps), digital medicine, digital personal health records, and an electronic pill container. Smartphone apps accounted for the largest share of DHTs. The intended uses of DHTs could be broadly classified as monitoring to gain a better understanding of illness, clinical assessment, and intervention. Overall, studies indicated high usability/feasibility and efficacy/effectiveness, with several reporting validity against established clinical scales. Users were generally engaged with the DHT, and mobile assessments were deemed helpful in monitoring disease symptoms. Conclusion: Rapidly proliferating digital technologies seem to be feasible for short-term use in patients with serious mental illness; nevertheless, long-term effectiveness data from naturalistic studies will help demonstrate their usefulness and facilitate their adoption and integration into the mental health-care system. © 2017 Batra et al.
Jusoh S.	Employee competencies development framework for industry 4.0 adaptation in the healthcare sector	2017	10.3991/ijim.v11i6.7265	Advancement of mobile technologies such as smartphones and PC tablets has given a great impact on healthcare systems. The mobile technology offers innovative approaches to addressing complex health concerns. Many mobile health applications (mHealth apps) are currently available on marketplaces. These apps are designed to facilitate various health issues and problems, and are intended to be used outside clinics. However, very little research has been conducted to address trend, opportunities, and challenging issues of the apps. The purpose of this study is to investigate the current state of mHealth. A literature survey was conducted. Major findings of this study include, smartphones will be the major platform for mHealth apps, the number of published software is much higher than published scientific research, current mHealth apps lacking in grounded based theory and evaluation, and security and usability issues are still vulnerable. The findings suggest that involvement of all healthcare stakeholders is critical to the success of mHealth apps.
	Sensor-based datasets for human activity recognition - A systematic review of literature	2018		The proceedings contain 38 papers. The topics discussed include: a systematic process for obtaining the behavior of context-sensitive systems - journal of software engineering research and development; barriers faced by newcomers to software-crowdsourcing projects; continuous delivery: building trust in a large-scale, complex government organization; dynamically adaptable software is all about modeling contextual variability and avoiding failures; issues on developing interoperable cloud application: definitions, concepts, approaches, requirements, characteristics and evaluation models - journal of software engineering research and development; requirements engineering for safety-critical systems: overview and challenge; characterizing architectural information in commit messages: an exploratory study; understanding architecture non-conformance: why is there a gap between conceptual architectural rules and source code dependencies?; an experience report on the adoption of microservices in three Brazilian government institutions; on challenges in engineering IoT software systems; threats to validity in controlled experiments in software engineering - what the experts say and why this is relevant; an empirical study on task documentation in software crowdsourcing: the case of the TopCoder platform; and visual notations for software pattern languages: a mapping study.

	Review of industry 4.0 competencies and virtual learning environment in engineering education	2019		<p>The proceedings contain 24 papers. The special focus in this conference is on Business Process Modeling, Development and Support. The topics include: A Situational Approach to Data-Driven Service Innovation; on the Need for Intellectual Property Protection in Model-Driven Co-Engineering Processes; dynamic Adaptation of Capabilities: Exploring Meta-model Diversity; a Process for Tailoring Domain-Specific Enterprise Architecture Maturity Models; ontology-Driven Enterprise Modeling: A Plugin for the Protégé Platform; review-Based User Profiling: A Systematic Mapping Study; matching Technology with Enterprise Architecture and Enterprise Architecture Management Tasks Using Task Technology Fit; a Method for Database Model Selection; towards Ontological Support for Journalistic Angles; coordinating Large Distributed Process Structures; a System for Semi-automatic Construction of Image Processing Pipeline for Complex Problems; specification and Management of Methods - A Case for Multi-level Modelling; the Usage of Constraint Specification Languages: A Controlled Experiment; Dealing with Structural Differences in Serialized BPMN Models; evaluating Usefulness of a Fractal Enterprise Model Experience Report; early Validation Framework for Critical and Complex Process-Centric Systems; logic Based Look-Ahead for the Execution of Multi-perspective Declarative Processes; Exploring the Understandability of a Hybrid Process Design Artifact Based on DCR Graphs; a Landscape for Case Models; testing the Fractal Enterprise Model in Practice: Experience Report; augmented Reality-Based Process Modelling for the Internet of Things with HoloFlows; the Rise of Enforceable Business Processes from the Hashes of Blockchain-Based Smart Contracts.</p>
Tamilselvi D.; Akila A.	Set of Usability Heuristics for Quality Assessment of Mobile Applications on Smartphones	2018		<p>Big Data available in almost all departments of every organization spread throughout the globe in a huge volume and category. The issues such as data heterogeneity and advanced processing capabilities are provided solution with the proposed system. Data heterogeneity is tackled by using the automatic schema mapping in the proposed work which is knowledge based solution. Inventive processing is achieved using ontology extraction and semantic inference in the proposed work. The solution is evaluated in terms of its performance and effectiveness with the publish/subscribe paradigm. The state of art analysis of huge volume of variety of data and sensory information is the real complexity. The Advanced Message Queuing Protocol is used in the proposed work for the state of art substance explanation of flooding IoT data to have dynamic mingling. The proposed work gives way to produce huge amount of data that can affect the working of the smart city systems that uses IoT data. To point out the reliability and summarization of the data, information model is used in the proposed work. The data size and average exchanged message time are the measures used to examine the working of the framework. A detailed assessment of the various sensors is carried out to inspect the storage data volume and computational cost for the substance explanation of the framework. © 2018 D. Tamilselvi, Dr. A. Akila.</p>
	Resource Management Approaches in Fog Computing: a Comprehensive Review	2019		<p>The proceedings contain 20 papers. The special focus in this conference is on Development Informatics Association. The topics include: Enablers of egalitarian participation: Case Studies in underserved communities in South Africa. Processes of creativity "Not for the sake of it"; The role of local bricoleurs in sustaining changing ICT4D solutions; building empathy for design thinking in e-Health: A Zimbabwean case study; coming to terms with telemetry: A scoping review; towards a provisional workplace e-learning acceptance framework for developing countries; localize-It: Co-designing a community-owned platform; the role of the marginalized and unusual suspects in the production of digital innovations: Models of innovation in an african context; Investigating business intelligence (BI) maturity in an African developing country: A mozambican study; The project management information system as enabler for ICT4D achievement at capability maturity level 2 and above; It should be there, but it is hard to find: Economic impact of ICT in sub-saharan economies; identifying the constructs and agile capabilities of data governance and data management: A review of the literature; Domestication of ICTs in community savings and credit associations (Stokvels) in the western cape, South Africa; Rethinking ICT4D impact assessments: Reflections from the siyakhula living lab in South Africa; supporting the identification of victims of human trafficking and forced labor in Thailand; youth unemployment in South Africa and the socio-economic capabilities from mobile phones; smartphone paradoxes in working mothers' pursuit of work-life balance; development outcomes of training for online freelancing in the Philippines.</p>

Miao C.; Luo Z.; Zeng F.; Wang J.	Enabling technologies for fog computing in healthcare IoT systems	2020	10.1145/3336191.3371846	<p>Predicting human mobility is an important trajectory mining task for various applications, ranging from smart city planning to personalized recommendation system. While most of previous works adopt GPS tracking data to model human mobility, the recent fast-growing geo-tagged social media (GTSM) data brings new opportunities to this task. However, predicting human mobility on GTSM data is not trivial because of three challenges: 1) extreme data sparsity; 2) high order sequential patterns of human mobility and 3) evolving preference of users for tagging. In this paper, we propose ACN, an attentive convolutional network model for predicting human mobility from sparse and complex GTSM data. In ACN, we firstly design a multi-dimension embedding layer which jointly embeds key features (i.e., spatial, temporal and user features) that govern human mobility. Then, we regard the embedded trajectory as an "image" and learn short-term sequential patterns as local features of the image using convolution filters. Instead of directly using convention filters, we design hybrid dilated and separable convolution filters to effectively capture high order sequential patterns from lengthy trajectory. In addition, we propose an attention mechanism which learns the user long-term preference to augment convolutional network for mobility prediction. We conduct extensive experiments on three publicly available GTSM datasets to evaluate the effectiveness of our model. The results demonstrate that ACN consistently outperforms existing state-of-art mobility prediction approaches on a variety of common evaluation metrics. © 2020 Association for Computing Machinery.</p>
Baker N.; Gough C.; Gordon S.	A systematic review to merge discourses: Interoperability, integration and cyber-physical systems	2020	10.3233/SH-TI200005	<p>Accurate assessment of postural balance is necessary to identify and measure falls risk, inform clinical practice, determine efficacy of treatment and ultimately falls prevention. The aim of this scoping review was to identify gaps and inform practice, research and policy. There are a multitude of technologies available for assessing balance and no one that meets the requirements of every situation. Force plates had provided the gold standard technology for measuring centre of pressure variables as the cornerstone of balance assessment. Inertial measurements units are now considered as valid and reliable, however inertial sensors in smartphone require further refinement to measure with the same degree of accuracy. Fusion systems combine wearable and non-wearable technology in formal gait labs but also gaming. The flexibility provided choice of wearable, non-wearable and fusion systems meets most clinical and research requirements. © 2020 The authors and IOS Press. All rights reserved.</p>
Weerasinghe W.P.T.D.; Vidanagamachchi K.; Nanayakkara L.D.J.F.	36th International Conference on Conceptual Modeling, ER 2017	2020		<p>The emergence of Health 4.0 has become significant due to the development of technologies worldwide. Hence, the latest technologies have to be attuned and the competencies of employees should be altered to adapt the features of Industry 4.0. An empirical gap has been identified in the field of health 4.0 in a global context with expert reviews based on a pilot study. Still, assessing employee proficiencies in health 4.0 remains relatively unexploited. Therefore, identification of the needed competencies and transition is vital for the healthcare industry globally. The overall objective of this study is to seek the potential for the adaptation of industry 4.0 for the healthcare sector and to investigate the required level of employee competencies to yield maximum benefits from the technology implementation. A systematic review of the literature has been carried out to investigate the different assessments and models of studies existing. A keyword-based search was conducted in research databases through three main domains namely, technologies required for industry 4.0, healthcare sector and employee competency assessment for industry 4.0 for selecting 50 relevant research papers that have been published and proven as valid, to extract the knowledge for this study. According to the relevance, 33 articles were selected for the literature review. A framework was developed to benchmark and acquire the key processes of healthcare, the latest technologies and the applications used in health 4.0, as well as employee competencies required for each level of technology adaptation. It is expected that this framework can be improved and validated empirically through case studies in the Sri Lankan healthcare sector as to future research. © IEOM Society International.</p>
De-La-Hoz-Franco E.; Ariza-Colpas P.; Quero J.M.; Espinilla M.	Reliability evaluation on interfacing with AXI and AXI-S on Xilinx Zynq-7000 AP-SoC	2018	10.1109/ACCESS.2018.2873502	<p>The research area of ambient assisted living has led to the development of activity recognition systems (ARS) based on human activity recognition (HAR). These systems improve the quality of life and the health care of the elderly and dependent people. However, before making them available to end users, it is necessary to evaluate their performance in recognizing activities of daily living, using data set benchmarks in experimental scenarios. For that reason, the scientific community has developed and provided a huge amount of data sets for HAR. Therefore, identifying which ones to use in the evaluation process and which techniques are the most appropriate for prediction of HAR in a specific context is not a trivial task and is key to further progress in this area of research. This work presents a systematic review of the literature of the sensor-based data sets used to evaluate ARS. On the one hand, an analysis of different variables taken from indexed publications related to this field was performed. The sources of information are journals, proceedings, and books located in specialized databases. The analyzed variables characterize publications by year, database, type, quartile, country of origin, and destination, using scientometrics, which allowed identification of the data set most used by researchers. On the other hand, the descriptive and functional variables were analyzed for each of the identified data sets: occupation, annotation, approach, segmentation, representation, feature selection, balancing and addition of instances, and classifier used for recognition. This paper provides an analysis of the sensor-based data sets used in HAR to date, identifying the most appropriate dataset to evaluate ARS and the classification techniques that generate better results. © 2013 IEEE.</p>

Bautista-Moncada C.; Buhangin J.F.; Angalan N.Q.	Early Detection of Mild Cognitive Impairment With In-Home Monitoring Sensor Technologies Using Functional Measures: A Systematic Review	2020		Universities all over the world are considering the utilization of virtual learning environments (VLEs) in engineering education to meet the demands of Industry 4.0 for future employment. A systematic review was conducted to display the current state-of-knowledge in strengthening educational competencies, tackling the challenges of Industry 4.0. This article was designed based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses and the Joanna Briggs Institute Method for Systematic Review. Articles published from 2004 to 2019 were sought from six electronic databases: SCOPUS, Science Direct, Emerald Insight, Ebscohost, ERIC, and IEEE. All papers were critically appraised, and quality assessment was performed. Eight studies were selected for potential eligibility. Data were extracted and synthesized using a narrative juxtaposition to provide a consolidated, comprehensive, and summarized evidence. Compared with physical or other types of online learning, the review recognizes the effectiveness ofVLEsin enhancing knowledge and cross-functional skills needed for real-world industry settings. Therefore, it is paramount that engineering education courses required to be integrated with VLE targeting the development of competencies towards Industry 4.0. © 2020 TEMPUS Publications.
Parente Da Costa R.; Canedo E.D.; De Sousa R.T.; De Oliveira Albuquerque R.; Garcia Villalba L.J.	12th Asian Conference on Intelligent Information and Database Systems, ACIIDS 2020	2019	10.1109/ACCESS.2019.2910778	The innovations proposed by the cell phone market have grown steadily in recent years, along with the increasing complexity of the hardware, operating systems, and applications available in this market. These changes bring new challenges related to usability that need to be considered during the development process of these applications since the new forms of user-application interactions increasingly require adapting the behavior of smartphone users. In this situation, usability is an important issue that depends on factors such as the Users, their characteristics and abilities, the Task which the users intend to achieve and also the application usage Context. This work presents a systematic literature review with the objective of identifying the heuristics and usability metrics used in the literature and/or industry. Based on the review results, this work presents another contribution with a proposal of a set of usability heuristics focused in mobile applications on smartphones, considering the User, Task and Context as usability factors and Cognitive Load as an important attribute of usability. The components of this set are detailed in a model intended to be used in empirical validations allowing to dynamically incorporate improvements to the proposal. © 2013 IEEE.
Ghobaei-Arani M.; Sourì A.; Rahmanian A.A.	Automatic detection of user abilities through the smartability framework	2020	10.1007/s10723-019-09491-1	In recent years, the Internet of Things (IoT) has been one of the most popular technologies that facilitate new interactions among things and humans to enhance the quality of life. With the rapid development of IoT, the fog computing paradigm is emerging as an attractive solution for processing the data of IoT applications. In the fog environment, IoT applications are executed by the intermediate computing nodes in the fog, as well as the physical servers in cloud data centers. On the other hand, due to the resource limitations, resource heterogeneity, dynamic nature, and unpredictability of fog environment, it necessitates the resource management issues as one of the challenging problems to be considered in the fog landscape. Despite the importance of resource management issues, to the best of our knowledge, there is not any systematic, comprehensive and detailed survey on the field of resource management approaches in the fog computing context. In this paper, we provide a systematic literature review (SLR) on the resource management approaches in fog environment in the form of a classical taxonomy to recognize the state-of-the-art mechanisms on this important topic and providing open issues as well. The presented taxonomy are classified into six main fields: application placement, resource scheduling, task offloading, load balancing, resource allocation, and resource provisioning. The resource management approaches are compared with each other according to the important factors such as the performance metrics, case studies, utilized techniques, and evaluation tools as well as their advantages and disadvantages are discussed. © 2019, Springer Nature B.V.

<p>Mutlag A.A.; Abd Ghani M.K.; Arunkumar N.; Mohammed M.A.; Mohd O.</p>	<p>Automated machine learning based speech classification for hearing aid applications and its real-time implementation on smartphone</p>	<p>2019</p>	<p>10.1016/j.future.2018.07.049</p>	<p>which a variety of heterogeneous devices are ubiquitously connected at the end of a network in order to provide collaboratively variable and flexible communication, computation, and storage services. Fog computing has many advantages and it is suited for the applications whereby real-time, high response time, and low latency are of the utmost importance, especially healthcare applications. Objectives: The aim of this study was to present a systematic literature review of the technologies for fog computing in the healthcare IoT systems field and analyze the previous. Providing motivation, limitations faced by researchers, and suggestions proposed to analysts for improving this essential research field. Methods: The investigations were systematically performed on fog computing in the healthcare field by all studies; furthermore, the four databases Web of Science (WoS), ScienceDirect, IEEE Xplore Digital Library, and Scopus from 2007 to 2017 were used to analyze their architecture, applications, and performance evaluation. Results: A total of 99 articles were selected on fog computing in healthcare applications with deferent methods and techniques depending on our inclusion and exclusion criteria. The taxonomy results were divided into three major classes; frameworks and models, systems (implemented or architecture), review and survey. Discussion: Fog computing is considered suitable for the applications that require real-time, low latency, and high response time, especially in healthcare applications. All these studies demonstrate that resource sharing provides low latency, better scalability, distributed processing, better security, fault tolerance, and privacy in order to present better fog infrastructure. Learned lessons: numerous lessons related to fog computing. Fog computing without a doubt decreased latency in contrast to cloud computing. Researchers show that simulation and experimental proportions ensure substantial reductions of latency is provided. Which it is very important for healthcare IoT systems due to real-time requirements. Conclusion: Research domains on fog computing in healthcare applications differ, yet they are equally important for the most parts. We conclude that this review will help accentuating research capabilities and</p>
<p>Gürdür D.; Asplund F.</p>	<p>Performance evaluation of bluetooth low energy: A systematic review</p>	<p>2018</p>	<p>10.1016/j.jii.2017.12.001</p>	<p>Cyber-physical systems (CPS) are developed through the cooperation of several engineering disciplines. Powerful software tools are utilized by each individual discipline, but it remains challenging to connect these into tool chains for increased efficiency. To support this endeavour, the literature on interoperability assessment was surveyed to identify concepts valuable to transfer from the interoperability to the tool integration research field. Implementation options, types of interoperability and domains described in interoperability assessment models were concepts identified as directly transferable. To avoid the problems with uptake that plague the models identified, visual analytics is suggested as a vehicle for the transfer. Furthermore, based on the use of non-functional properties as an underlying motivation for these models, cost, performance and sustainability are suggested as a common base for future research in both discourses. © 2017 Elsevier Inc.</p>
	<p>State-of-the-art loV trust management a meta-synthesis systematic literature review (SLR)</p>	<p>2017</p>		<p>The proceedings contain 39 papers. The special focus in this conference is on Conceptual Modeling. The topics include: Querying graph databases: What do graph patterns mean?; Scaffolding relational schemas and APIs from content in web mockups; sourceVote: Fusing multi-valued data via inter-source agreements; level-aware ecosystem transformations for industrial lifecycle interoperability; conceptual Modeling: Enhancement Through Semiotics; towards an Ontology for Privacy Requirements via a Systematic Literature Review; what happens to intentional concepts in requirements engineering if intentional states cannot be known?; goal models for acceptance requirements analysis and gamification design; modeling regulatory ambiguities for requirements analysis; CE-SIB: A modelling method plug-in for managing standards in enterprise architectures; an experimental evaluation of the understanding of safety compliance needs with models; cardinality constraints with probabilistic intervals; contextual keys; a comprehensive formal theory for multi-level conceptual modeling; alignment-based trace clustering; the conceptual modelling of dynamic teams for autonomous systems; conceptual modeling for genomics: Building an integrated repository of open data; towards thinking manufacturing and design together: An aeronautical case study; OCL UNIV: Expressive UML/OCL conceptual schemas for finite reasoning; goal orchestrations: Modelling and mining flexible business processes; a catalogue of reusable context model elements based on the i* framework; configurable and executable task structures supporting knowledge-intensive processes; various notions of soundness for decision-aware business processes; data, control, and process flow modeling for IoT driven smart solutions; determining the preferred representation of temporal constraints in conceptual models; user perception of numeric contribution semantics for goal models: An exploratory experiment; teleologies: Objects, actions and functions.</p>

Benevenuti F.; Kastensmidt F.L.	ICEIS 2017 - Proceedings of the 19th International Conference on Enterprise Information Systems	2018	10.1109/LA TW.2018.83 47233	This work is set in the context of fault tolerance and reliability of critical cyber-physical systems (CPS) based on state-of-art commercial off-the-shelf (COTS) SRAM-based FPGA devices and, in special, the all programmable system-on-chips (AP-SoC) that are a class of devices combining a general purpose processing system (PS) with custom programmable logic (PL). In SRAM-based FPGAs the Single Event Upsets (SEU) are unavoidable and may alter the contents of storage elements such as flip-flop and, of interest to this work, the configuration memory (CRAM). We analyze the case of Xilinx Zynq-7000, which is based on multi-core ARM processor that, ultimately, provides as one of its major communication interface the ARM Advanced Microcontroller Bus Architecture (AMBA) Advanced eXtensible Interface (AXI). In this context, we analyze reliability of communication interfaces between the embedded processor and the programmable logic and the different hardware modules on each side. For this, we deal with both (1) the development of experimental procedures and tools for fault injection on SRAM-based FPGAs and (2) the development of bottom-up reliability models that would allow estimating system level reliability by aggregating individual reliability from the different hardware modules and communication interfaces obtained from those experimental procedures and tools. In this scenario, fault injection contributes with fine grain reliability evaluation of each component module. © 2018 IEEE.
Lussier M.; Lavoie M.; Giroux S.; Consel C.; Guay M.; Macoir J.; Hudon C.; Lorrain D.; Talbot L.; Langlois F.; Pigot H.; Bier N.	Literature search of key factors for the development of generic and specific maturity models for industry 4.0	2019	10.1109/JB HI.2018.283 4317	The aging of the world population is accompanied by a substantial increase in neurodegenerative disorders, such as dementia. Early detection of mild cognitive impairment (MCI), a clinical diagnostic that comes with an increased chance to develop dementias, could be an essential condition for promoting quality of life and independent living, as it would provide a critical window for the implementation of early pharmacological and nonpharmacological interventions. This systematic review aims to investigate the current state of knowledge on the effectiveness of smart home sensors technologies for the early detection of MCI through the monitoring of everyday life activities. This approach offers many advantages, including the continuous measurement of functional abilities in ecological environments. A systematic search of publications in MEDLINE, EMBASE, and CINAHL, before November 2017, was conducted. Seventeen studies were included in this review. Thirteen studies were based on real-life monitoring, with several sensors installed in participants' actual homes, and four studies included scenario-based assessments, in which participants had to complete various tasks in a research lab apartment. In real-life monitoring, the most used indicators of MCI were walking speed and activity/motion in the house. In scenario-based assessment, time of completion, quality of activity completion, number of errors, amount of assistance needed, and task-irrelevant behaviors during the performance of everyday activities predicted MCI in participants. Despite technological limitations and the novelty of the field, smart home technologies represent a promising potential for the early screening of MCI and could support clinicians in geriatric care. © 2018 IEEE.
	Analysing Challenges Towards Development of Smart City Using WASPAS	2020		The proceedings contain 155 papers. The special focus in this conference is on Intelligent Information and Database Systems. The topics include: Popular Disease Topics Mining Method for Online Medical Community; an Adaptive Algorithm for Multiple Part Families Manufacturing Selection in Reconfigurable Flow Lines; time Series Analysis and Prediction of Geographically Separated Accident Data; method of Defining Diagnostic Features to Monitor the Condition of the Belt Conveyor Gearbox with the Use of the Legged Inspection Robot; road-Quality Classification and Motion Tracking with Inertial Sensors in the Deep Underground Mine; safe and Secure Software-Defined Networks for Smart Electricity Substations; Industrial Network Protection by SDN-Based IPS with AI; Vertical Integration via Dynamic Aggregation of Information in OPC UA; Assessing Industry 4.0 Features Using SWOT Analysis; real Estate Market Price Prediction Framework Based on Public Data Sources with Case Study from Croatia; lean Based and Artificial Intelligence Powered Support Framework for Independent Screen Entertainment Creators; A Proposal of Optimal Wavelet Based Smoothing for EGG Signal Trend Detection; development of Smartphone Application for Evaluation of Passenger Comfort; improving the Robustness of the Cross-Domain Tracking Process; currency Recognition Based on Deep Feature Selection and Classification; design and Life Cycle Data Analysis for Smart Metering; a Cloud Services Security Analysis; genres: The Movie Genre Detector; the Solution of the Problem of Unknown Words Under Neural Machine Translation of the Kazakh Language; comparative Analysis of Selected Geotagging Methods; music Classification by Automated Relevance Feedbacks; use of Ontology Learning in Information System Integration: A Literature Survey.

Whittington P.; Dogan H.; Jiang N.; Phalp K.	Building Information Modelling (BIM) and the Internet-of-Things (IoT): A Systematic Mapping Study	2018	10.14236/e wic/HCI201 8.43	This paper presents a proposed smartphone application for the unique SmartAbility Framework that supports interaction with technology for people with reduced physical ability, through focusing on the actions that they can perform independently. The Framework is a culmination of knowledge obtained through previously conducted technology feasibility trials and controlled usability evaluations involving the user community. The Framework is an example of ability-based design that focuses on the abilities of users instead of their disabilities. The paper includes a summary of Versions 1 and 2 of the Framework, including the results of a two-phased validation approach, conducted at the UK Mobility Roadshow and via a focus group of domain experts. A holistic model developed by adapting the House of Quality (HoQ) matrix of the Quality Function Deployment (QFD) approach is also described. A systematic literature review of sensor technologies built into smart devices establishes the capabilities of sensors in the Android and iOS operating systems. The review defines a set of inclusion and exclusion criteria, as well as search terms used to elicit literature from online repositories. The key contribution is the mapping of ability-based sensor technologies onto the Framework, to enable the future implementation of a smartphone application. Through the exploitation of the SmartAbility application, the Framework will increase technology amongst people with reduced physical ability and provide a promotional tool for assistive technology manufacturers. © Dupré et al. Published by BCS Learning and Development Ltd. Proceedings of British HCI 2018. Belfast, UK
Bhat G.S.; Shankar N.; Panahi I.M.S.	Service selection mechanisms in the Internet of Things (IoT): a systematic and comprehensive study	2020	10.1109/EM BC44109.20 20.9175693	Deep neural networks (DNNs) have been useful in solving benchmark problems in various domains including audio. DNNs have been used to improve several speech processing algorithms that improve speech perception for hearing impaired listeners. To make use of DNNs to their full potential and to configure models easily, automated machine learning (AutoML) systems are developed, focusing on model optimization. As an application of AutoML to audio and hearing aids, this work presents an AutoML based voice activity detector (VAD) that is implemented on a smartphone as a real-time application. The developed VAD can be used to elevate the performance of speech processing applications like speech enhancement that are widely used in hearing aid devices. The classification model generated by AutoML is computationally fast and has minimal processing delay, which enables an efficient, real-time operation on a smartphone. The steps involved in real-time implementation are discussed in detail. The key contribution of this work include the utilization of AutoML platform for hearing aid applications and the realization of AutoML model on smartphone. The experimental analysis and results demonstrate the significance and importance of using the AutoML for the current approach. The evaluations also show improvements over the state of art techniques and reflect the practical usability of the developed smartphone app in different noisy environments. © 2020 IEEE.
Tosi J.; Taffoni F.; Santacatterina M.; Sannino R.; Formica D.	Two-factor authentication in industrial Internet-of- Things: Attacks, evaluation and new construction	2017	10.3390/s17 122898	Small, compact and embedded sensors are a pervasive technology in everyday life for a wide number of applications (e.g., wearable devices, domotics, e-health systems, etc.). In this context, wireless transmission plays a key role, and among available solutions, Bluetooth Low Energy (BLE) is gaining more and more popularity. BLE merges together good performance, low-energy consumption and widespread diffusion. The aim of this work is to review the main methodologies adopted to investigate BLE performance. The first part of this review is an in-depth description of the protocol, highlighting the main characteristics and implementation details. The second part reviews the state of the art on BLE characteristics and performance. In particular, we analyze throughput, maximum number of connectable sensors, power consumption, latency and maximum reachable range, with the aim to identify what are the current limits of BLE technology. The main results can be resumed as follows: throughput may theoretically reach the limit of ~230 kbps, but actual applications analyzed in this review show throughputs limited to ~100 kbps; the maximum reachable range is strictly dependent on the radio power, and it goes up to a few tens of meters; the maximum number of nodes in the network depends on connection parameters, on the network architecture and specific device characteristics, but it is usually lower than 10; power consumption and latency are largely modeled and analyzed and are strictly dependent on a huge number of parameters. Most of these characteristics are based on analytical models, but there is a need for rigorous experimental evaluations to understand the actual limits. © 2017 by the authors. Licensee MDPI, Basel, Switzerland.



<p>Rehman A.; Hassan M.F.; Yew K.H.; Paputungan I.; Tran D.C.</p>	<p>Performance evaluation of existing interference mitigation techniques under designed interference environment</p>	<p>2020</p>	<p>10.7717/peerj-cs.334</p>	<p>In the near future, the Internet of Vehicles (IoV) is foreseen to become an inviolable part of smart cities. The integration of vehicular ad hoc networks (VANETs) into the IoV is being driven by the advent of the Internet of Things (IoT) and high-speed communication. However, both the technological and non-technical elements of IoV need to be standardized prior to deployment on the road. This study focuses on trust management (TM) in the IoV/VANETs/ITS (intelligent transport system). Trust has always been important in vehicular networks to ensure safety. A variety of techniques for TM and evaluation have been proposed over the years, yet few comprehensive studies that lay the foundation for the development of a “standard” for TM in IoV have been reported. The motivation behind this study is to examine all the TM models available for vehicular networks to bring together all the techniques from previous studies in this review. The study was carried out using a systematic method in which 31 papers out of 256 research publications were screened. An in-depth analysis of all the TM models was conducted and the strengths and weaknesses of each are highlighted. Considering that solutions based on AI are necessary to meet the requirements of a smart city, our second objective is to analyze the implications of incorporating an AI method based on “context awareness” in a vehicular network. It is evident from mobile ad hoc networks (MANETs) that there is potential for context awareness in ad hoc networks. The findings are expected to contribute significantly to the future formulation of IoVITS standards. In addition, gray areas and open questions for new research dimensions are highlighted. © Copyright 2020 Rehman et al.</p>
	<p>What has Industry 4.0 got to do with us? A review of the literature</p>	<p>2017</p>		<p>The proceedings contain 213 papers. The topics discussed include: we need to discuss the relationship - an analysis of facilitators and barriers of software ecosystem partnerships; the influence of software product quality attributes on open source projects: a characterization study; a TOSCA-based programming model for interacting components of automatically deployed cloud and IoT applications; an ontology-based approach to analyzing the occurrence of code smells in software; an integrated inspection system for belt conveyor rollers - advancing in an enterprise architecture; when agile meets waterfall - investigating risks and problems on the interface between agile and traditional software development in a hybrid development organization; development of an electronic health record application using a multiple view service oriented architecture; a characterization of cloud computing adoption based on literature evidence; contact deduplication in mobile devices using textual similarity and machine learning; guidelines of data quality issues for data integration in the context of the TPC-DI benchmark; extensions, analysis and experimental assessment of a probabilistic ensemble-learning framework for detecting deviances in business process instances; audio description on Instagram: evaluating and comparing two ways of describing images for visually impaired; facial expression recognition improvement through an appearance features combination; on the development of serious games in the health sector - a case study of a serious game tool to improve life management skills in the young; and software ecosystems governance - a systematic literature review and research agenda.</p>
<p>de Jesus C.; Lima R.M.</p>	<p>Interoperability and Integration Testing Methods for IoT Systems: A Systematic Mapping Study</p>	<p>2020</p>	<p>10.3390/app10175825</p>	<p>The adequacy of business models to Industry 4.0 (I4.0) is an urgent requirement and a clear concern. Ways to recognize the relative position of a company and ways to evolve towards this new paradigm are an important step both for researchers and professionals. In general, most small and medium enterprises (SME) do not have their own resources or do not have the means to be fully supported by consultancies, to develop a specific model, and they do not recognize themselves as ready to initiate any action to adapt to this new paradigm. Based on the idea of identification of directions and opportunities of research about the conditions for the adoption of approaches involving readiness assessment, implementation framework, roadmap and maturity model, the main objective of this article is the identification of factors for the development of specific maturity models, oriented towards unique conditions, located in specific contexts, and that can cover both the need for self-diagnosis of the level of preparation, as well as the actions that aim to achieve a progressive reconfiguration and guided by continuous improvement towards Industry 4.0. A Systematic Literature Review (SLR) of 67 articles was conducted and resulted in the identification of two approaches to address maturity models, which are the application of existing generic models and the process of building specific ones focused on the peculiarities of certain contexts. Moreover, this work points out five factors for development of a specific maturity model: context characterization, conceptual characterization, interaction with practitioners and experts, development of surveys, and qualitative research. Additionally, this work identified the need for development of methodologies that can be applied in a more autonomous way for the development of specific maturity models. © 2020 by the authors.</p>

Khan S.; Haleem A.; Khan M.I.	A Comprehensive Review on Electric Vehicles Operation, Development and Grid Stability	2020	10.1007/978-981-15-2545-2_39	<p>The concept of 'smart city' is gaining popularity around the globe for a sustainable and liveable urban future in the last two decades, and several developed countries have tried to transform their existing cities into 'smart cities'. Now, a few developing countries are also trying to transform their cities into smart cities or even develop afresh infrastructure. However, these developing countries are facing challenges in the development of smart cities. Therefore, the primary aim of this study is to identify the significant challenges related to the development of smart cities and prioritise in the Indian context. We have identified ten significant challenges through a systematic literature review to accomplish the research objective. Further, these ten challenges are prioritised using 'weighted aggregated sum/product assessment' (WASPAS). The highest ranked challenge is the ICT infrastructure which requires a lot of effort and resource. This study provides a basic understanding of the challenges related to the development of the smart city in the Indian context which can be helpful for the formulation of the policies related to the transformation/development of smart cities. There is some limitation of this study such as the identified challenges are limited and adopted methodology is based on the expert's input which can be biased. © Springer Nature Singapore Pte Ltd. 2020.</p>
Mohammed B.H.; Safie N.; Sallehuddin H.; Hussain A.H.B.	19th International Conference on Computational Science and Its Applications, ICCSA 2019	2020	10.1109/ACCESS.2020.3016919	<p>Of recent, Building Information Modelling (BIM) has become an influential paradigm for the development of better project delivery practices to improve construction and operational efficiencies. In the last 6 years, a significant number of studies have been published on the integration of BIM in Internet of Things (IoT). This paper aims to examine the general research productivity, demographics, and trends shaping the research domain. Hence, the paper will also help to identify, categorize, and synthesize important studies in the research domain. In doing so, we adopt an evidence-based systematic mapping methodology to ensure the coverage of key studies through a systematic and unbiased selection and evaluation process which results in the final selection of 55 relevant studies. The results of the mapping study show that the research on the integration of BIM in IoT is gaining more attention in last 6 years with stable and consistent publication output. Prominent application domains, validation methods, contribution facets, research types, and simulation tools in the field of study were identified and presented. Five research types were also identified, i.e. solution proposal, experience paper, evaluation research, validation research, and opinion paper, with solution proposals getting more research attention. In general, the overall demographics of the research domain were presented and discussed. © 2013 IEEE.</p>
Li Y.; Huang Y.; Zhang M.; Rajabion L.	The mHealth Applications Usability Evaluation Review	2020	10.1007/s10586-019-02984-4	<p>Internet of Things (IoT) describes embedded devices (things) with Internet-based connectivity, enabling them to receive and send data through the communication network. In addition, it provides infrastructure to let things have interacted with each other and people. This advantage of the IoT can increase reliability, sustainability, and efficiency by enhanced information access fashion. This technology can be used in various fields, such as environmental monitoring, home, and building automation and smart networks. Furthermore, the main aim of Service-Oriented Architecture (SOA) is to select the best services among a pool of services. These services can be selected statically or dynamically regarding the service functionalities and performance limitations. Since the performance of complex services is very important in many distributed domains. This study aims to systematically review the service selection mechanisms in the IoT. The service selection mechanisms are classified into centralized, decentralized, and hybrid classes. Also, the detailed evaluation of these techniques brings a good suggestion for further studies. © 2019, Springer Science+Business Media, LLC, part of Springer Nature.</p>
Li W.; Wang P.	Augmented reality for learning of children and adolescents with autism spectrum disorder (ASD): A systematic review	2019	10.1016/j.future.2019.06.020	<p>Due to the sensitiveness of the physical environments and resource-constrained nature of edge devices, how to securely and efficiently access real-time data in Industrial Internet-of-Things (IIoT) is becoming an increasingly imperative concern. Though intensive efforts have been made to design password-based user authentication schemes for IIoT environments, the majority of them are subject to weaknesses, either suffering from various known attacks or lack of critical features. To ameliorate this situation, firstly, we put forward a criteria set on the basis of related state-of-art evaluation set to fairly assess authentication schemes for IIoT environments. The effectiveness and practicality of our criteria are tested by 42 representative schemes. Secondly, we revisit two representative schemes, namely Amin et al.'s scheme and Gope-Hwang's scheme, as case studies to demonstrate the common pitfalls in designing robust schemes. Finally, we propose a practical authentication scheme for Industrial Internet-of-Things with provable security, and shed light on how to tackle node capture attack by using the "honeywords" technique. The security and performance evaluation results show that our new scheme is superior to other related ones, and thus, more suitable for IIoT environments. © 2019</p>

Shinde S.V.; Sonavane S.S.	Computer mediated reality technologies: A conceptual framework and survey of the state of the art in healthcare intervention systems	2020		According to the latest report, 10% people in India die because of cardiovascular diseases. This mortality rate can be reduced by using state of art technology which can give early warning signs of such attacks. Thus, Wireless Body Area Network (WBAN) arrangements where remote patient monitoring is made possible can help in this context. Also, WBAN can reduce the cost of hospitalization and ensure comfort level of the patient. This paper is an outcome of our ongoing research to design robust Wireless body area network for remote patient health monitoring system. Our previous work confirmed that designed WBAN can be extremely useful for remote patient monitoring, however WBAN are prone to interference. Interference is a phenomenon of overlapping wireless ranges of WBANs thus there is a need to test performance of designed WBAN under interference. Interference reduces the reliability of the transmission of the data, the throughput and increases the power consumption. In WBAN vital body parameters are sensed and transmitted wirelessly to the health service provider. Any delay in transmission of the data due to interference could be dangerous for patients' health. Thus, the efforts should be made to mitigate interference. Thus, performance of the designed WBAN under the influence of interference is reported in this paper. For performance analysis, three parameters i.e. delay, power consumption and throughput are considered. Also, effectiveness of two existing, concurrent Interference Mitigation Techniques (IMT) is evaluated for the interference reduction for Designed WBAN. First, the designed WBAN is tested under Interference environment without mitigation technique. Later on, a performance of SCA (Smart Channel Assignment) and ITLS (Interference Aware Traffic Priority Based Linked Scheduling) interference mitigation algorithms are tested under same interference environment and comparative statements are made. Purpose of such comparative analysis is to find the scope of development of new or better IMT for designed WBAN. © 2021 River Publishers. All rights reserved.
Adams D.Q.; Mpofu K.M.	Proceedings - International Conference on Software Engineering	2018		This article presents an exhaustive review of the literature relevant to Industry 4.0 (I.4.0) and Smart Factories (SFs). In this review, a landscape of I.4.0 principles is plotted in the form of a mind map, Definitions explored, background and components investigated, from this a pyramid framework is constructed. This pyramid will assist in identifying the major themes of this I.4.0 concept and help provide specific gaps for further research. A meta-analytic approach (qualitative literature review method) was taken. The paper highlights contradictions and similarities in the form of a table of current research presented in the field of SFs. Successful frameworks such as "Aluminium Industry 4.0", "SmartFactoryKL" as a model for I.4.0, and game changing case studies such as Exxon Mobil, Proctor and Gamble and Tata Motors are explored. Finally the paper discusses the gaps in knowledge, specifically into the area of what I.4.0 means for developing contexts. The pyramid framework is presented in the recommendations section as a tool for analysis and evaluation. Results reveal that a possible scalable solution is needed for developing contexts. Implications of the literature survey are that an optimal tool of assessment for I.4.0 is needed. This can be along the lines of a matrix, rubric, or checklist for companies to measure practically where they stand when measured against the I.4.0 movement. Future research directions could focus on a more empirical study such as a future concept facility design with the concepts of I.4.0 and SFs. © IEOM Society International.
Bures M.; Klima M.; Rechtberger V.; Bellekens X.; Tachtatzis C.; Atkinson R.; Ahmed B.S.	Evidence-based health and clinical informatics: a systematic review on randomized controlled trials	2020	10.1007/978-3-030-58768-0_6	The recent active development of Internet of Things (IoT) solutions in various domains has led to an increased demand for security, safety, and reliability of these systems. Security and data privacy are currently the most frequently discussed topics; however, other reliability aspects also need to be focused on to maintain smooth and safe operation of IoT systems. Until now, there has been no systematic mapping study dedicated to the topic of interoperability and integration testing of IoT systems specifically; therefore, we present such an overview in this study. We analyze 803 papers from four major primary databases and perform detailed assessment and quality check to find 115 relevant papers. In addition, recently published testing techniques and approaches are analyzed and classified; the challenges and limitations in the field are also identified and discussed. Research trends related to publication time, active researchers, and publication media are presented in this study. The results suggest that studies mainly focus only on general testing methods, which can be applied to integration and interoperability testing of IoT systems; thus, there are research opportunities to develop additional testing methods focused specifically on IoT systems, so that they are more effective in the IoT context. © 2020, Springer Nature Switzerland AG.
Painuli S.; Rawat M.S.; Rayudu D.R.	Dynamic pricing techniques for Intelligent Transportation System in smart cities: A systematic review	2019	10.1109/PEEIC.2018.8665643	With the objective of zero carbon emission, energy security and efficiency, electric vehicles are inclined to overtake the future transportation. Due to the capability of offering reduced fuel consumption and reduced CO2 emissions, electric vehicles are proved to be promising devices in smart grid. This paper broadcast an assessment on the studies, state-of-art, research and work done on the subject matter of electric vehicles. Based on the different proposed approaches, a detailed literature survey has been presented in the paper which will be highly helpful and benefiting the research bodies and industry professionals as an arranged ready reference on the trends of electric vehicles. © 2018 IEEE.

	17th International Conference on Computational Science and Its Applications, ICCSA 2017	2019		The proceedings contain 103 papers. The special focus in this conference is on Computational Science and Its Applications. The topics include: Integrating the Scrum Framework and Lean Six Sigma; hardware and Software System for Hydric Estimation and Crop Irrigation Scheduling; electronic Medical Information Encryption Using Modified Blowfish Algorithm; a Deep Convolutional Encoder-Decoder Architecture for Retinal Blood Vessels Segmentation; context Data Preprocessing for Context-Aware Smartphone Authentication; extending and Instantiating a Software Reference Architecture for IoT-Based Healthcare Applications; artificial Intelligence Techniques for Electrical Load Forecasting in Smart and Connected Communities; computational Investigation of Consistency and Performance of the Biochemical Network of the Malaria Parasite, Plasmodium falciparum; A Systematic Mapping Study on Software Architectures Description Based on ISO/IEC/IEEE 42010:2011; investigating Evolution in Open Source Software; development of an Alumni Feedback System for Curriculum Improvement in Building Technology Courses; e-Maintenance Framework for Strategic Asset Management in Tertiary Institutions; scenes Segmentation in Self-driving Car Navigation System Using Neural Network Models with Attention; evolutionary and Adaptive Elderly Care Ecosystem; software Engineering Methodologies for the Evaluation and Monitoring of Projects of Higher Education Students; a Web Framework for Online Peer Tutoring Application in a Smart Campus; use of Blockchain Smart Contracts in Software Engineering: A Systematic Mapping; SPLide: An Integrated Development Environment Supporting Software Product Lines; Analysis of Noise Perturbation on Neural Network Based ECG Classification; ArchCaMO - A Maturity Model for Software Architecture Description Based on ISO/IEC/IEEE 42010:2011; Multi-class Classification of Impulse and Non-impulse Sounds Using Deep Convolutional Neural Network (DCNN); parallel Symbiotic Organisms Search Algorithm.
Ansaar M.Z.; Hussain J.; Bang J.; Lee S.; Shin K.Y.; Young Woo K.	Knowledge collaboration between professionals and non-professionals: A systematic mapping review of citizen science, crowd sourcing and community-driven research	2020	10.1109/IC OIN48656.2020.9016509	Smartphones are contributing to the improvement of healthcare information and services with the help of mHealth apps. Commercially available mHealth apps have drawn prominent public attention by providing improved medication adherence and efficient results, but some of the studies exist to support their use. Usability has become the main factor for the success or adoption of smartphone apps since it helps to organize the consistency for the users to achieve their goal in an easy and efficient way. This study aims to investigate the usability evaluation process of mHealth applications with the help of a Systematic Literature Review (SLR). Our findings show that the usability evaluation process can be more reliable and satisfactory by applying the mix-method approach. This study will encourage developers and researchers to design more effortless and usable applications for users, especially for older adults and novice users. © 2020 IEEE.
Khowaja K.; Banire B.; Al-Thani D.; Sqalli M.T.; Aqle A.; Shah A.; Salim S.S.	8th International Conference on Well-Being in the Information Society, WIS 2020	2020	10.1109/ACCESS.2020.2986608	This paper presents a systematic review of relevant primary studies on the use of augmented reality (AR) to improve various skills of children and adolescents diagnosed with autism spectrum disorder (ASD) from years 2005 to 2018 inclusive in eight bibliographic databases. This systematic review attempts to address eleven specific research questions related to the learning skills, participants, AR technology, research design, data collection methods, settings, evaluation parameters, intervention outcomes, generalization, and maintenance. The social communication skill was the highly targeted skill, and individuals with ASD were part of all the studies. Computer, smartphone, and smartglass are more frequently used technologies. The commonly used research design was pre-test and post-test. Almost all the studies used observation as a data collection method, and classroom environment or controlled research environment were used as a setting of evaluation. Most of the evaluation parameters were human-assisted. The results of the studies show that AR benefited children with ASD in learning skills. The generalization test was conducted in one study only, but the results were not reported. The results of maintenance tests conducted in five studies during a short-term period following the withdrawal of intervention were positive. Although the effect of using AR towards the learning of individuals was positive, given the wide variety of skills targeted in the studies, and the heterogeneity of the participants, a summative conclusion regarding the effectiveness of AR for teaching or learning of skills related to ASD based on the existing literature is not possible. The review also proposes the research taxonomy for ASD. Future research addressing the effectiveness of AR among more participants, different technologies supporting AR for the intervention, generalization, and maintenance of learning skills, and the evaluation in the inclusive classroom environment and other settings is warranted. © 2013 IEEE.

Ibrahim Z.; Money A.G.	Social Internet of Things (SIoT): Foundations, thrust areas, systematic review and future directions	2019	10.1016/j.jbi.2019.103102	in developed countries, is expected to continue for decades to come causing an increase in demand for healthcare resources and services. Consequently, demand is growing faster than rises in funding. The UK government, in partnership with the European Commission's Vision for 2020, propose a paradigm shift towards the delivery of more patient-centred self-care interventions, facilitated by novel ubiquitous computer mediated reality technology applications, as a key strategy to overcome the scarcity of health resources gap. If this vision is to become a reality, it is crucial that state of the art research focuses efforts on the development of applications that support the delivery of patient-centred self-care interventions. Objectives: This study presents a conceptual framework, a system impact assessment taxonomy and systematic literature review of the state of the art in Computer Mediated Reality Technologies (CMRT) research. The intended function of the CMRT applications are considered systematically, with a view to establish the extent to which existing research focuses on delivering digitised, patient-centred healthcare applications, the care contexts in which these are delivered, and the specific CMRTs that are used to deliver such applications. Methods: A conceptual framework of the state of the art is derived via a systematic concept-centric incremental thematic analysis protocol. The survey considers systems that have been presented within the literature between 2010 and 2017. Primarily, the literature is considered in the context of the type of patient/practitioner relationship that the respective applications support, i.e. Traditional, Collaborative, or Patient-centred care, and the phase of healthcare intervention that is supported i.e. Primary-care, Secondary-Care and Tertiary-care. Inclusion criteria focuses on systematic CMRT implementations and analysis considers a range of clinical contexts (type), settings (location) and system specification concepts consisting of Augmented, Virtual and Mixed Reality technology in conjunction with 3D-Modelling. As a measure of the value added by respective CMRT systems, an impact assessment is carried out according to the National Service Framework Research Quality metric, and via a bespoke overall System Value
	8th International Conference on Design, User Experience, and Usability, DUXU 2019, held as part of the 21st International Conference on Human-Computer Interaction, HCI International 2019	2018		The proceedings contain 10 papers. The topics discussed include: visualizing evolving requirements models with TimedURN; a UML-based proposal for IoT system requirements specification; detailed use case points (DUCPs): a size metric automatically countable from sequence and class diagrams; extraction of probabilistic behavior models based on contexts; UML diagram synthesis techniques: a systematic mapping study; integrating semantically-related legacy models in vitruvius; building domain-specific modeling environments with papyrus: an experience report; StreamGen: a UML-based tool for developing streaming applications; improving model usability and utility by layered diagrams; and metric-based evaluation of multiagent systems models.
Christopoulou S.C.; Kotsilieris T.; Anagnostopoulos I.	11th International Joint Conference on Biomedical Engineering Systems and Technologies, BIOSTEC 2018	2018	10.1007/s12553-016-0170-2	Towards the provision of medical research and eHealth services, several Health Information Technology (HIT) platforms are blended with communication and software technologies (i.e. mobile and Web applications, wireless sensor networks, Internet of Things and cloud computing). However, an important research issue is whether and to what degree these technologies are efficiently and effectively integrated into medical practice. Accordingly, this study reviews recent literature on HITs that employ RCTs, which are acknowledged as a reliable solution by the community of health stakeholders. Furthermore, it examines the research efforts in the field and evaluates the relevant functionalities. The literature search strategy was based on PRISMA 2009 Checklist and the CONSORT-EHEALTH Checklist that are two standard methodologies for systematic reviews in Evidence Based Medicine and Health Information Technologies. The analysis of the studies included was performed according to the Cochrane Risk of Bias Assessment Tool. The sources considered in this research include the most common clinical trial registries and academic electronic databases. The studies considered were conducted from 2008 until 2016. The authors considered RCTs having published their results in at least one article. As a result, 55 articles from 42 different journals are considered in this review. The benefits of the HIT delivered interventions are clearly presented in the outcomes of the relevant studies. Significant improvements were observed in the findings of 31 trials from a total of 51 (60.78%) including the acceptance, satisfaction, reliability, usefulness, safety, effectiveness and financial benefit of HITs. The results of this review reveal that HIT and eHealth interventions achieve at least equally reliable and safe outcomes compared with the usual support methods of healthcare. Significantly encouraging results are noticed in interventions employing HIT over several healthcare fields. © 2017, IUPESM and Springer-Verlag Berlin Heidelberg.

Saharan S.; Bawa S.; Kumar N.	Awareness supporting technologies used in collaborative systems - A systematic literature review	2020	10.1016/j.comcom.2019.12.003	<p>Dynamic pricing plays an important role in modern Intelligent Transportation System (ITS) in solving problems such as congestion control, peak load reduction, mobility management of traditional or Electric Vehicles (EVs) in cost-effective manner. It also facilitates the construction of an eco-friendly environment in the society by optimized route planning of vehicles. However, framing dynamic pricing strategies for ITS has always been a challenging task keeping in view of various constraints. An in-efficient dynamic pricing technique may lead to the mismanagement of vehicles, which results an increase in the waiting time of vehicles, an increase in air and noise pollution, wastage of electric and other sources of energies. On the contrary, efficient dynamic pricing strategies can provide satisfaction to all stakeholders, including service providers and service consumers. Motivated from these facts, this paper presents an extensive literature review and analysis of dynamic pricing techniques used in the literature for ITS. The analysis presented in the paper gives new insights to the readers for the applications of one of the techniques in comparison to its merits over the others. Various problems solved by the dynamic pricing techniques, importance of various evaluation parameters, limitations of dynamic pricing techniques and their applications are discussed in-depth in this paper. Different taxonomies used for exploring various issues of dynamic pricing are also presented in a structured manner. Moreover, advantages and limitations of various dynamic pricing techniques are explored and discussed in the paper. Finally, existing challenges and future research directions of dynamic pricing in ITS are presented. © 2019 Elsevier B.V.</p>
	Industrial smart and micro grid systems – A systematic mapping study	2017		<p>The proceedings contain 325 papers. The special focus in this conference is on Computational Science and Its Applications. The topics include: Context sensitive query correction method for query-based text summarization; ontological controlling the lexical items in conceptual solution of project tasks; fast semi-blind color image watermarking scheme using DWT and extreme learning machine; quality enhancement of location based services through real time context aware obfuscation using crowd sourcing; a model-based testing method for dynamic aspect-oriented software; an experiment to evaluate software development teams by using object-oriented metrics; a systematic literature review on microservices; separation logic for states dependencies in life cycles of android activities and fragments; posting graphs for finding non terminating executions in asynchronous programs; representing contextual relations with Sanskrit word embeddings; a mobile-sensor fire prevention system based on the internet of things; geographical information system for patients, neoplasms and associated environmental contamination; evaluation of facial expressions for automatic interpretation and classification of motivation by means of computer techniques; improved energy-efficient target coverage in wireless sensor networks; standard propagation model tuning for path loss predictions in built-up environments; daily temperature and precipitation prediction using neuro-fuzzy networks and weather generators; assessing the investments sustainability after the new code on public contracts; an operative framework to support implementation plan design applied in transnational cooperation project; a renewed rational approach from liquid society towards anti-fragile planning and engaged communities for low carbon development process.</p>
Magnussen R.; Stensgaard A.G.	International Workshops on Business Process Management, BPM 2020	2019	10.34190/GBL19.185	<p>science, crowdsourcing and community-driven research from 2013-2018. Understanding these fields is central in relation to the current trend of developing games for citizen science. The review focuses on identifying general themes, trends and gaps regarding knowledge collaboration and specific themes, trends and gaps regarding learning and education. This mapping is central in understanding and developing Citizen Science games, where gamers in science or other professions can collaborate. Two hundred and forty studies were identified through iterative searches and screening processes, and 11 themes were identified through grounded theory-inspired analysis. These themes are: 1. motivation, 2. evaluation, 3. education and learning, 4. man-machine collaboration, 5. participant experience, 6. impact on research, 7. CS technologies, 8. big data, 9. system or project design, 10. social media, and 11. participant development of research. Because our focus was on learning, we defined themes with a focus on traditional educational activity and new forms of learning in the field. The review reveals central discussions on both the potential of technology in citizen science learning and the application of new types of technology. Results related to citizen science learning showed that value is added into knowledge generation by the collective process of a crowd with multiple competences. Specifically, this occurs through two types of processes: social learning and learning from experience. These results indicate that it is important to focus on defining various groups of participant skills when designing citizen science systems, determining what processes users are able to participate in and what additional training or education is needed for participants to contribute to more sophisticated processes. The review also reveals that technology will play an increasing role in crowd sourcing in both research and business. There are central discussions on whether the active input and participation of users will be transformed to more passive input with the involvement of passive sources of data generated by existing and new types of sensor technologies, bots, artificial intelligence and other types of technology. In the context of this review, the IoT development of 'the next generation of</p>

	11th International Workshop on Software Engineering for Resilient Systems, SERENE 2019	2020		<p>The proceedings contain 19 papers. The special focus in this conference is on Well-Being in the Information Society. The topics include: Trust and respect in entrepreneurial information seeking behaviours; preface; understanding the difficulties of people with dementia and their caretakers in Finland; blockchain ethics: A systematic literature review of blockchain research; the many faces of social withdrawal in Hikikomori; understanding the social media use in tourism: An affordance perspective; respecting the individuals of data economy ecosystems; internet of things (IoT) data accessibility: Ethical considerations; challenging the concept of digital nativeness – Through the assessment of information literacy and digital literacy; the adoption of new health information and communication technology: Perception of the abilities to use new technology and possibilities to get help at it; youth attitudes towards immigrants in Southern Ostrobothnia, Finland; practical training in teacher education: Reflecting physical and psychological learning environment; digitizing basic occupational health and safety knowledge for ebola virus disease missions – Reaching frontline responders through an online course; What is a PHR? Definitions of personal health record (PHR) used in literature—A systematic literature review; special needs of elderly in using web-based services; Comparison of cost and time effectiveness between CT- and MRI-based radiotherapy workflow for prostate cancer; incentivizing the use of quantified self devices: The cases of digital occupational health programs and data-driven health insurance plans.</p>
Roopa M.S.; Pattar S.; Buyya R.; Venugopal K.R.; Iyengar S.S.; Patnaik L.M.	5th Iberoamerican Workshop on Human-Computer Interaction, HCI-Collab 2019	2019	10.1016/j.comcom.2019.03.009	<p>Internet of Things (IoT) paradigm connects physical world and cyberspace via physical objects and facilitate the development of smart applications and infrastructures. A physical object is the basic constituent of IoT, often called as smart object, that interact with other objects and possess the information processing abilities. The smart objects when deployed in the real world, collect information from the surrounding environment and this is abstracted as a service. IoT has established a universe where humans are provided smart data services by the fusion of physical objects and information networks. This approach has been extended to include social networking aspects in the IoT that autonomously build social relationships to discover objects and their services viz; Social Internet of Things (SIoT). SIoT enhances information sharing, supports new applications and provide a reliable and trustworthy networking solutions utilizing the social network of friend objects. In this paper, we present the fundamentals of SIoT, identify thrust areas of it (as service discovery and composition, network navigability, relationship management, and trustworthiness management) and present several prerequisites, challenges and use case scenarios based on them. State-of-the-art research publications are reviewed on service discovery, relationship management, service composition and trust management constituents of the SIoT environment. Finally, we identify and discuss the future research directions that serves as a reference for the next generation discovery techniques to improve service provisioning, find the optimal solution for the link selection in the SIoT structure, develop large scale platforms and provide a smart mechanism for trust evaluation. © 2019 Elsevier B.V.</p>
	Characterizing context-aware recommender systems: A systematic literature review	2019		<p>The proceedings contain 167 papers. The special focus in this conference is on Design, User Experience, and Usability. The topics include: The Advent of Speech Based NLP QA Systems: A Refined Usability Testing Model; research on User Experience Evaluation Model of Smart Jewelry Based on Kansei Engineering; a Systematic Literature Review of Usability Evaluation Guidelines on Mobile Educational Games for Primary School Students; using Mobile Eye Tracking to Evaluate the Satisfaction with Service Office; information and Experience Visualization: An Analysis Approach and Decision-Making Tool for the Usability Research; development of a Heuristic Evaluation Tool for Voice User Interfaces; web Accessibility Evaluation Methods: A Systematic Review; seeing Potential Is More Important Than Usability: Revisiting Technology Acceptance; a Solution Development Model for Industry Based on Design Thinking; usability and Playability Heuristics for Augmented Reality Video Games in Smartphones; Overcoming Organizational Barriers to the Integration of UX Methods in Software Development: A Case Study; analysis the Impacting of “User Experience” for Chinese Mobile Phone’s Brands Market Changing; making Meaning: How Experience Design Supports Data Commercialization; new Intelligent Information Technology-Assisted Design Innovation Entrepreneurship Course Potential for User Experience Economy in China; Research on Automatic Fault Diagnosis Technology of IT Equipment Based on Big Data; The Purpose Quadrant: A Collaborative Workshop Method to Brand UX Teams and Raise Their Reputation in Organizations; Measuring UX Capability and Maturity in Organizations; a Value-Centered Approach for Unique and Novel Software Applications; the Construction and Practice of Risk Control Model in User Research.</p>



	2nd International Conference on Human Systems Engineering and Design: Future Trends and Applications, IHSED 2019	2019		The proceedings contain 25 papers. The special focus in this conference is on Biomedical Engineering Systems and Technologies. The topics include: Formal Neuron Models: Delays Offer a Simplified Dendritic Integration for Free; discovering Trends in Environmental Time-Series with Supervised Classification of Metatranscriptomic Reads and Empirical Mode Decomposition; how to Realize Device Interoperability and Information Security in mHealth Applications; evaluation of Power-Based Stair Climb Performance via Inertial Measurement Units; Considerations on the Usability of SClínico; interoperability in Pervasive Health: A Systematic Review; Coping with "Exceptional" Patients in META-GLARE; A Multiagent-Based Model for Epidemic Disease Monitoring in DR Congo; predictive Modeling of Emerging Antibiotic Resistance Trends; exploring the Value of Electronic Health Records from Multiple Datasets; a New Compact Optical System Proposal and Image Quality Comparison Against Other Affordable Non-mydratic Fundus Cameras; application of a Rule-Based Classifier to Data Regarding Radiation Toxicity in Prostate Cancer Treatment; Detecting MRSA Infections by Fusing Structured and Unstructured Electronic Health Record Data; multi-layered Learning for Information Extraction from Adverse Drug Event Narratives; application of Sample Entropy of Pulse Waves in Identifying Characteristic Physiological Patterns of Parkinson's Disease Sufferers; META-GLARE's Supports to Agent Coordination; Realistic Synthetic Data Generation: The ATEN Framework; design and Optimization of an Open Configuration Microfluidic Device for Clinical Diagnostics; transferability of Deep Learning Algorithms for Malignancy Detection in Confocal Laser Endomicroscopy Images from Different Anatomical Locations of the Upper Gastrointestinal Tract; Min-Cut Segmentation of Retinal OCT Images; an Optimized Method for 3D Body Scanning Applications Based on KinectFusion.
López G.; Guerrero L.A.	Industry 4.0: Current trend and future scope for further research in high performance manufacturing	2017	10.1145/2998181.2998281	Since the establishment of Computer Supported Collaborative Work as a research area, computer advances have change the paradigm of how technology is applied to improve the performance in collaborative scenarios. Notifications are an important part of this improvement. Technological systems have been applied in order to provide collaborators with the sufficient awareness to keep a task going. In this paper we present the protocol and results of a Systematic Literature Review that delves in the application of new technologies to provide awareness in collaborative systems. Moreover, we classify the collaborative systems found in literature using two traditional taxonomies for CSCW in order to understand which notification mechanisms are used to support which systems. Our review covers the last 10 years and classifies system prototypes based on the context in which they are applied, the notification and information gathering mechanism used, and the assessment performed. With over 400 papers reviewed, 83 that met the review requirements were included. The review results show that traditional interfaces and mobile devices are still the most common notification mechanisms. However, ubiquitous devices and non-traditional interfaces have also been used. © 2017 ACM.
Brem A.; Adrita M.M.; O'Sullivan D.T.J.; Bruton K.	12th European Conference on Software Architecture, ECSA 2018	2020	10.1016/j.jclepro.2019.118828	Energy efficiency and management is a fundamental aspect of industrial performance. Current research presents smart and micro grid systems as a next step for industrial facilities to operate and control their energy use. To gain a better understanding of these systems, a systematic mapping study was conducted to assess research trends, knowledge gaps and provide a comprehensive evaluation of the topic. Using carefully formulated research questions the primary advantages and barriers to implementation of these systems, where the majority of research is being conducted with analysis as to why and the relative maturity of this topic are all thoroughly evaluated and discussed. The literature shows that this topic is at an early stage but already the benefits are outweighing the barriers. Further incorporation of renewables and storage, securing a reliable energy supply and financial gains are presented as some of the major factors driving the implementation and success of this topic. © 2019 Elsevier Ltd

	8th World Conference on Information Systems and Technologies, WorldCIST 2020	2020		The proceedings contain 28 papers. The special focus in this conference is on Business Process Management. The topics include: A Generic Framework for Attribute-Driven Hierarchical Trace Clustering; Process Outcome Prediction: CNN vs. LSTM (with Attention); Improving the State-Space Traversal of the eST-Miner by Exploiting Underlying Log Structures; evaluation of Heuristics for Product Data Models; Text2Dec: Extracting Decision Dependencies from Natural Language Text for Automated DMN Decision Modelling; data Object Cardinalities in Flexible Business Processes; verifiable Multi-Party Business Process Automation; a Classification of Digital-Oriented Work Practices; Competency Cataloging and Localization to Support Organizational Agility in BPM; Enterprise System Capabilities for Organizational Change in the BPM Life Cycle; sentiProMo: A Sentiment Analysis-Enabled Social Business Process Modeling Tool; using Physical Factory Simulation Models for Business Process Management Research; modelling Notations for IoT-Aware Business Processes: A Systematic Literature Review; preface; Decentralized Data Access with IPFS and Smart Contract Permission Management for Electronic Health Records; XNAP: Making LSTM-Based Next Activity Predictions Explainable by Using LRP; unsupervised Contextual State Representation for Improved Business Process Models; root Cause Analysis in Process Mining Using Structural Equation Models; on the Complexity of Resource Controllability in Business Process Management; D3BA: A Tool for Optimizing Business Processes Using Non-deterministic Planning; Conceptualizing a Capability-Based View of Artificial Intelligence Adoption in a BPM Context; a General Framework for Action-Oriented Process Mining; analyzing Comments in Ticket Resolution to Capture Underlying Process Interactions; automated Business Process Discovery from Unstructured Natural-Language Documents; using Blockchain Technology to Redesign Know-Your-Customer Processes Within the Banking Industry.
	Systematic literature review of industry 4.0 maturity model for manufacturing and logistics sectors	2019		The proceedings contain 11 papers. The special focus in this conference is on Software Engineering for Resilient Systems. The topics include: On the Use of Quality Models to Characterize Trustworthiness Properties; a Distilled Characterization of Resilience and Its Embraced Properties Based on State-Spaces; modelling Autonomous Resilient Multi-robotic Systems; reactive Middleware for Effective Requirement Change Management of Cloud-Based Global Software Development; fault-Tolerant IoT: A Systematic Mapping Study; JARVIS, A Hardware/Software Framework for Resilient Industry 4.0 Systems; toward Testing Self-organizations in Multi-Embedded-Agent Systems; towards Integrated Correctness Analysis and Performance Evaluation of Software Systems (Doctoral Forum Paper); an Energy Aware Approach to Trust Management Systems for Embedded Multi-Agent Systems.
	Evaluation of Out-of-Band Channels for IoT Security	2019		The proceedings contain 31 papers. The special focus in this conference is on Iberoamerican Workshop on Human-Computer Interaction. The topics include: Automation of usability inspections for websites; Children detection on passenger seat using UCD and IDP: An initial prototype; collaborative content production model to reduce digital divide; design of home energy management system using IoT data flow; digital competence in initial teacher training: construction and pilot test of an evaluation tool/instrument; exploratory factor analysis of a digital competency questionnaire for research; formal protocol for the creation of a database of physiological and behavioral signals for the automatic recognition of emotions; fostering teenagers' motivation towards peace culture workshops using gamification; guidelines to evaluate the usability and user experience of learning support platforms: A systematic review; Identification of patterns in children with ADHD based on brain waves; a reformation proposal of the process phase in the computer-supported collaborative learning; organizing knowledge on nonverbal communication mediated through haptic technology; Parallel simulation of digital logic circuits using message passing via CSP as an educational tool; prevention of diabetes mellitus through the use of mobile technology (mHealth): Case study; self-reported methods for user satisfaction evaluation: A bibliometric analysis; software system for the support of mouse tracking tests; storytelling with holograms for the development of reading competence; structure of a guide for usability evaluation in virtual learning environments; the human and the context components in the design of automatic sign language recognition systems; The RASE model applied to the development of communicative competence online.
Villegas N.M.; Sánchez C.; Díaz-Cely J.; Tamura G.	Systematic literature review on empirical results and practical implementations of healthcare recommender systems: Lessons learned and a novel proposal	2018	10.1016/j.knosys.2017.11.003	Context-aware recommender systems leverage the value of recommendations by exploiting context information that affects user preferences and situations, with the goal of recommending items that are really relevant to changing user needs. Despite the importance of context-awareness in the recommender systems realm, researchers and practitioners lack guides that help them understand the state of the art and how to exploit context information to smarten up recommender systems. This paper presents the results of a comprehensive systematic literature review we conducted to survey context-aware recommenders and their mechanisms to exploit context information. The main contribution of this paper is a framework that characterizes context-aware recommendation processes in terms of: i) the recommendation techniques used at every stage of the process, ii) the techniques used to incorporate context, and iii) the stages of the process where context is integrated into the system. This systematic literature review provides a clear understanding about the integration of context into recommender systems, including context types more frequently used in the different application domains and validation mechanisms—explained in terms of the used datasets, properties, metrics, and evaluation protocols. The paper concludes with a set of research opportunities in this field. © 2017 Elsevier B.V.

	Simulation in industry 4.0: A state-of-the-art review	2020		The proceedings contain 162 papers. The special focus in this conference is on Human Systems Engineering and Design: Future Trends and Applications. The topics include: Lean and Ergonomics Competencies: Knowledge and Applications; preprocessing Information from a Data Network for the Detection of User Behavior Patterns; designing an e-Coach to Tailor Training Plans for Road Cyclists; half Scale Dress Forms from 3D Body Scans in Active Poses; a Comparison of Heart Rate in Normal Physical Activity vs. Immersive Virtual Reality Exergames; the Impact of Ergonomic Design on Smart Garments; user Centered Design of a Pill Dispenser for the Elderly; The Importance of ICT and Wearable Devices in Monitoring the Health Status of Coronary Patients; improvement of a Monitoring System for Preventing Elderly Fall Down from a Bed; ergonomic Design Process of the Shape of a Diagnostic Ultrasound Probe; autonomous Learning Mediated by Digital Technology Processes in Higher Education: A Systematic Review; discussion on the Effect of Bedding on Sleep Postures; design Culture Within the B2B Needs Roadmap; masticatory Evaluation in Non-contact Measurement of Chewing Movement; satisfaction of Aged Users with Mobility Assistive Devices: A Preliminary Study of Conventional Walkers; effect of Added Mass Location on Manual Wheelchair Propulsion Forces; Exploration of TCM Health Service Mode in the Context of Aging Society; standardized Research of Clinical Diagnosis and Treatment Data of Epilepsy; experience Design: A Tool to Improve a Child's Experience in the Use of Vesical Catheters; human Aspects in Product and Service Development; potential of Industrial Image Processing in Manual Assembly.
Acevedo Amaya M.R.; Ortega-Jiménez C.H.; Machuca J.A.D.; Alfalla-Luque R.	Industry 4.0 readiness assessment for apparel industry: A study in the Sri Lankan context	2020	10.18687/LACCEI2020.1.1.303	The fourth industrial revolution requires that personalization processes of mass productions evolve towards flexible, interconnected, cloud production with greater automation in its machines and operations, called Industry 4.0 (I4.0). However, a homogeneous I4.0 concept, infrastructure state, and other issues are still scarce, making difficult to determinate in the specialized literature, the threshold between recent manufacturing and challenges that companies had to reach competitive advantage through I4.0 inclusion. Despite becoming one of the most popular strategies for continuous improvement, many plants are struggling to turn I4.0 into a success. Therefore, this paper analyzes the current trends of Industry 4.0 in High Performance Manufacturing (HPM), aiming to consolidate the existing knowledge on both subjects, providing a starting point for academics and practitioners seeking to implement I4.0 in plants and offering suggestions for future examination. This systematic literature review aims to synthesize, organize, and structure the stock of knowledge relating to I4.0 and HPM. The results show that HPM papers do not evidence a holistic evaluation of I4.0 principles and foundations. There exists in HPM literature manufacturing practices that permit evaluate technology inclusion and their performance but not their autonomy, cloud computing and network between machines, supplier, and processes. The HPM papers trends are related with issues such as adaptability, flexibility, reconfigurability, new information technologies, modularity, automation, etc. Regarding study limitations, it is necessary to study current I4.0 adoption level, technological infrastructure, and cultural factors. The practical implications are focused in the identification of manufacturing practices used in specialized literature to measure how technology inclusion increase companies' performance, proving the technological infrastructure and I4.0 maturity level. The originality of this paper converges on the presentation of some manufacturing practices applied on HPM studies which are associated with I4.0. © 2020 Latin American and Caribbean Consortium of Engineering Institutions. All rights reserved.
	Evaluation of key performance indicators of smart cities by Delphi analysis	2018		The proceedings contain 24 papers. The special focus in this conference is on Software Architecture. The topics include: A quantitative approach for the assessment of microservice architecture deployment alternatives by automated performance testing; crunch: Automated assessment of microservice architecture assignments with formative feedback; beethoven: An event-driven lightweight platform for microservice orchestration; a platform for the automated provisioning of architecture information for large-scale service-oriented software systems; providing context as a service using service-oriented mobile indie fog and opportunistic computing; spotlighting use case specific architectures; empirical insights into the evolving role of architects in decision-making in an agile context; using informal knowledge for improving software quality trade-off decisions; understanding architecture decisions in context: An industry case study of architects' decision-making context; formally describing self-organizing architectures for systems-of-systems on the internet-of-things; software architecture measurement—Experiences from a multinational company; identifying and prioritizing architectural debt through architectural smells: A case study in a large software company; software migration and architecture evolution with industrial platforms: A multi-case study; two architectural threat analysis techniques compared; executing architectural models for big data analytics; guidance of architectural changes in technical systems with varying operational modes; applying architecture-based adaptation to automate the management of internet-of-things; IoT architectural styles: A systematic mapping study; eco-IoT: An architectural approach for realizing emergent configurations in the internet of things; A catalogue of architectural decisions for designing IIoT systems; enabling continuous software engineering for embedded systems architectures with virtual prototypes; abstraction layered architecture: Writing maintainable embedded code.

	A systematic review of the research on disruptive technology - Blockchain	2020		<p>The proceedings contain 135 papers. The special focus in this conference is on Information Systems and Technologies. The topics include: Social care services for older adults: Paper registration versus a web-based platform registration; enabling green building's comfort using information and communication technologies: A systematic review of the literature; Exploring the innovative aspects of CV distributed ledgers based on blockchain; eFish – An innovative fresh fish evaluation system; a virtual reality approach to automatic blood sample generation; Building information modeling academic assessment: international architecture workshop UPC-UAM; radar system for the reconstruction of 3D Objects: A preliminary study; Achieving stronger compaction for DCT-Based Steganography: A region-growing approach; teaching computer programming as well-defined domain for beginners with protoboard; machine learning and data networks: Perspectives, feasibility, and opportunities; underground channel model for visible light wireless communication based on neural networks; mpCUBIC: A CUBIC-like congestion control algorithm for multipath TCP; context-Aware mobile applications in fog infrastructure: A literature review; characterizing the cost of introducing secure programming patterns and practices in ethereum; analyzing IoT-Based botnet malware activity with distributed low interaction honeypots; Evolution of HTTPS usage by Portuguese municipalities; augmented reality to enhance visitors' experience at archaeological sites; Design and performance analysis for intelligent F-PMIPv6 mobility support for smart manufacturing; development of trustworthy self-adaptive framework for wireless sensor networks; traffic Flow Prediction Using Public Transport and Weather Data: A Medium Sized City Case Study; filtering users accounts for enhancing the results of social media mining tasks; from reinforcement learning towards artificial general intelligence; preface.</p>
Angreani L.S.; Vijaya A.; Wicaksono H.	Towards a refined conceptual framework model for a smart and sustainable city assessment	2020	10.1016/j.proomfg.2020.11.056	<p>A maturity model is a wide technique to measure several aspects and identify the current state of processes in an organization, which can be used as a starting point for business improvement. In the Industry 4.0 context, several terms are used to express the model, such as readiness assessment model, roadmap, framework, and maturity index. They have the same purpose of measuring how the current state of an organization unit is capable of adopting and implementing the concept of industry 4.0 in the future. Many researchers had proposed maturity models for assessing Industry 4.0 readiness and maturity since 2011 when Industry 4.0 was commenced. However, there has been no attempt to analyze empirical evidence systematically. This paper aims to analyze currently available maturity models related to Industry 4.0 and provide a synthesis on those maturity models. This paper describes a systematic literature review (SLR) of empirical studies implemented on the maturity model published in several reputable and relevant sources. It focuses on the manufacturing and logistics sectors since the processes in both sectors can be highly improved through the introduction of technologies such as cyber-physical systems, internet of things, and artificial intelligence. In general, the primary purpose of the review is to address the following questions: (1) Based on what dimensions do researchers develop Industry 4.0 maturity models, and what are the most used and influencing parameters in those dimensions? (2) How do those maturity models compare to each other in terms of dimension complexity, techniques, maturity leveling, and kind of application sectors of the model? In conclusion, the maturity model in the context of Industry 4.0 is promising to guide the adoption of industry 4.0 technologies at the organization level. However, just having a maturity model is not enough. More efforts are needed to facilitate the application of it. © 2020 The Authors. Published by Elsevier B.V.</p>
Latvala S.; Sethi M.; Aura T.	Biofeedback for everyday stress management: A systematic review	2020	10.1007/s42979-019-0018-8	<p>Secure bootstrapping is the process by which a device gets the necessary configuration information and security credentials to become operational. In many pervasive computing and Internet-of-Things scenarios, it is often not possible to rely on the existence of a trusted third party or other network infrastructure for bootstrapping. Therefore, several device bootstrapping protocols rely on an out-of-band (OOB) channel for initial device authentication and configuration. We begin this paper by understanding the need for OOB channels and performing a literature survey of existing standards and devices that rely on OOB channels. We then look at one candidate bootstrapping protocol: Nimble out-of-band authentication for EAP (EAP-NOOB). We provide a brief overview of the EAP-NOOB protocol and describe its unique OOB channel requirements. Thereafter, we implement three OOB channels for EAP-NOOB using near-field communication, quick response codes, and sound. Using our implementation, we evaluate the usability, security, benefits, and limitations of each of the OOB channels. © 2019, The Author(s).</p>
Afolabi A.O.; Toivanen P.; Haataja K.; Mykkänen J.	Usability of Voice-based Intelligent Personal Assistants	2018	10.4018/978-1-5225-5643-5.ch098	<p>This systematic literature review is aimed at examining empirical results and practical implementations of healthcare recommender systems. While fundamentally many of the development of recommender systems in medical and healthcare are based on theory and logic, the performance is always measured in terms of empirical results and practical implementations from evaluation of such systems. Besides, the ultimate judgment of the effectiveness of the methods and algorithms used is often based on the empirical results of recommender systems. Robustness, efficiency, speed, and accuracy are also best determined by empirical results. Extensive search was carried out in some major databases. Literature were grouped into three categories namely core, related, and relevant. The core papers were subjected to further analysis. The result shows that most work reviewed were partially evaluated and have a promising future. Moreover, a yet-to-be explored novel proposal for integration of a recommender system into smart home care is presented. © 2018, IGI Global. All rights reserved.</p>

de Paula Ferreira W.; Armellini F.; De Santa-Eulalia L.A.	Current taxonomy of trust based secure routing in MANETs	2020	10.1016/j.cie.2020.106868	Simulation is a key technology for developing planning and exploratory models to optimize decision making as well as the design and operations of complex and smart production systems. It could also aid companies to evaluate the risks, costs, implementation barriers, impact on operational performance, and roadmap toward Industry 4.0. Although several advances have been made in this domain, studies that systematically characterize and analyze the development of simulation-based research in Industry 4.0 are scarce. Therefore, this study aims to investigate the state-of-the-art research performed on the intersecting area of simulation and the field of Industry 4.0. Initially, a conceptual framework describing Industry 4.0 in terms of enabling technologies and design principles for modeling and simulation of Industry 4.0 scenarios is proposed. Thereafter, literature on simulation technologies and Industry 4.0 design principles is systematically reviewed using the preferred reporting items for systematic reviews and meta-analyses (PRISMA) methodology. This study reveals an increasing trend in the number of publications on simulation in Industry 4.0 within the last four years. In total, 10 simulation-based approaches and 17 Industry 4.0 design principles were identified. A cross-analysis of concepts and evaluation of models' development suggest that simulation can capture the design principles of Industry 4.0 and support the investigation of the Industry 4.0 phenomenon from different perspectives. Finally, the results of this study indicate hybrid simulation and digital twin as the primary simulation-based approaches in the context of Industry 4.0. © 2020 Elsevier Ltd
Lakmali E.; Vidanagamachchi K.; Nanayakkara J.	Information and communication technology-based assistive technology to compensate for impaired cognition in everyday life: a systematic review	2020	10.1109/SCSE49731.2020.9313026	Sri Lankan apparel industry is the most significant and driving contributor to the country's economy by constituting a large portion of GDP. In the highly competitive apparel world, manufacturers search solutions for problems such as worker inadequacy while minimizing the human impact. Therefore, there is a need for apparel manufacturers to enhance value chain processes with the latest technologies. Industry 4.0 is the fourth industrial revolution that transforms the physical production into a combined cyber-physical production environment with IoT and decentralized intelligence. It enhances the process functions from new product development to logistics by providing real-time visibility of the production flow. Existing literature mentions the applications of Industry 4.0 in the apparel industry, but these have not addressed the issue of assessing the readiness for its adaptation in the apparel value chain process. Hence this scrutiny proposes a model to assess the current level of readiness of the Sri Lankan apparel industry to adapt Industry 4.0 technologies and practices. The model was developed based on a systematic review of literature with the industry experts' guidance. The factors that determine the readiness for Industry 4.0 within an organizational context were classified under four categories; People, Process, Technology and Data which were defined as readiness dimensions. The proposed model consists of five readiness levels from 0 to 4 namely: Stranger, Beginner, Intermediate, Advanced and Elite. This model enables managers to measure the readiness for adapting of Industry 4.0 in selected apparel value chain processes by using the specified minimum requirements under each dimension and level. The outcome of this study indicates that Sri Lankan apparel industry is in 'Intermediate' level in terms of overall readiness with a value of 1.91 in the predefined readiness scale from 0 to 4. © 2020 IEEE.
Chowdhury S.N.; Dhawan S.	Can Commercial Testing Automation Tools Work for IoT A Case Study of Selenium and Node-Red	2017	10.1109/RTICT.2016.7807838	Key performance indicators act as a major flag post in the field of assessment and review. They not only describe the need for protocols and the infrastructure put in place but they also make us answer and reinvestigate the pertinent issue for which the protocols were installed in the first place. Smart cities act as the ultimate cornerstone in the transformation of human society. A city amassing in electronic devices, state of art ,information and communication technology with efficiency and sensibility at the heart of its architecture, not only needs the right mixture of the brain and the brawn but also needs an efficient set of performance indicators to evaluate its performance. With the grand Indian smart city program round the corner, we have evaluated the set of performance indicators set by the International Telecommunication Union so as to understand how many indicators will be required for full analysis of different test cases in a typical Indian city. A Delphi review has been done on the performance indicators, with the Delphi review committee having considerable amount of experience, knowledge and awareness in this field. © 2016 IEEE.
Kumar A.; Kumar S.	Usability heuristics for mobile applications: A systematic review	2020	10.1109/ICCES48766.2020.0913805	In this review, a methodical mapping of Blockchain-based research is performed across the multifaceted realm. The proposed research work is aimed at studying the prevailing research perspectives, obstacles, and upcoming considerations related to Blockchain from a technological point of view to underline the role of this disruptive technology in the current sci-tech ecosystem. For this purpose, the hypothetical fundamentals of countless work published in reputed scientific publications in the past ten years, are integrated into this paper. Following the structured, methodical review and thorough study of the recognized literature, an extensive taxonomy of Blockchain-based research in various domains like security, usability, privacy, smart contracts, throughput, latency, wasted-resources, broadcast protocol, and trustworthiness is being presented, and key presentations, directions, and originating research areas are adopted. Developing on the evaluations, various unexplored research topics are discovered and future prospecting indications that are expected to be of substantial value both for theoreticians and professionals. © 2020 IEEE.

<p>Agbali M.; Trillo C.; Fernando T.; Oyedele L.; Ibrahim I.A.; Olatunji V.O.</p>	<p>Proceedings of the 14th International Conference on Mobile Learning 2018, ML 2018</p>	<p>2019</p>	<p>10.1109/ISC246665.2019.9071697</p>	<p>The Smart City concept has attracted wide-spread interest from both industry and academia with a growing number of experimental use-cases emerging from developed countries around the world. However, despite the importance of Smart City innovation in dealing with emerging urban challenges, i.e. environmental sustainability, social cohesion, efficiency, improved quality of life, and cost effectiveness, the concept is yet to receive the attention needed among cities in developing countries, especially in Africa. Although there are ongoing efforts to conceptualise Smart Cities through associated framework models that assess their impacts, these mainly focus on key performance indicators (KPIs) and use-cases from cities in developed countries. This paper proposes a conceptual framework model to assess the impacts of Smart City innovation resulting from the introduction of new technologies to cities. To achieve this goal, existing Smart City framework models were systematically reviewed and analysed. This was supported by focus-group interviews and a survey, which were conducted in the city of Abuja and discovered how stakeholders envisioned their Smart City initiatives. This also determined the priority indicators to assess the impacts of Smartness on cities and citizens. The analysis shows that Smart City stakeholders in Abuja emphasised three components of Smart Cities, namely: Smart Infrastructure, Smart Institution, and Smart People. By analysing the empirical data from Abuja Smart City stakeholders and evidence from the literature, a conceptual framework model is proposed for Smart City innovation in Abuja and by extension, other cities with similar histories and experiences in Nigeria. © 2019 IEEE.</p>
<p>Yu B.; Funk M.; Hu J.; Wang Q.; Feijs L.</p>	<p>A systematic mapping study of edge computing and internet of things with the cloud</p>	<p>2018</p>	<p>10.3389/fict.2018.00023</p>	<p>Background: Mainly due to an increase in stress-related health problems and driven by recent technological advances in biosensors, microelectronics, computing platform, and human-computer interaction, ubiquitous physiological information will potentially transform the role of biofeedback in clinical treatment. Such technology is also likely to provide a useful tool for stress management in everyday life. The aim of this systematic review is to: (1) Classify biofeedback systems for stress management, with a special focus on biosensing techniques, bio-data computing approaches, biofeedback protocol, and feedback modality. (2) Review ways of evaluating approaches to biofeedback applications in terms of their effectiveness in stress management. Method: A systematic literature search was conducted using keywords for "Biofeedback" and "Stress" within the following databases: PubMed, IEEE Xplore, ACM, and Scopus. Two independent reviewers were involved in selecting articles. Results: We identified 103 studies published between 1990 and 2016, 46 of which met our inclusion criteria and were further analyzed. Based on the evidence reviewed, HRV, multimodal biofeedback, RSP, HR, and GSR appear to be the most common techniques for alleviating stress. Traditional screen-based visual displays remain the most common devices used for biofeedback display. Biofeedback applications are usually assessed by making both physiological and psychological measurements. Conclusions: This review reveals several challenges related to biofeedback for everyday stress management, such as facilitating user's perception and interpreting the biofeedback information, the demand of ubiquitous biosensing and display technologies, and field evaluation in order to understand the use of biofeedback in everyday environments. We expect that various emerging HCI technologies could be used to address these challenges. New interaction designs as well as biofeedback paradigms can be further explored in order to improve the accessibility, usability, comfort, engagement with, and user experience of biofeedback in everyday use. © 2018 Yu, Funk, Hu, Wang and Feijs.</p>
<p>Zwakman D.S.; Pal D.; Triyason T.; Vanijja V.</p>	<p>Architecture, technologies and challenges for cyber-physical systems in industry 4.0: A systematic mapping study</p>	<p>2020</p>	<p>10.1109/ICTC49870.2020.9289550</p>	<p>Recently the emergence of speech-based Intelligent Personal Assistants (sIPA) has opened a new modality of user interaction with machines. However, till date research in human computer interaction (HCI) has largely focused on graphical user interfaces (GUIs), and not fully facilitate the design of the sIPA's. Therefore, usability of sIPA's is an important area that current research should focus on keeping in mind their commercialization aspect. System usability scale (SUS) has been used by HCI researchers for a long time for measuring the usability aspect and the end-user experiences (UX) in a GUI environment. However, keeping in mind the fundamental differences between a speech-based and a GUI environment, the applicability and performance of SUS in this new context is unknown. In this study a subjective experiment is performed with 61 subjects across some popular commercially available smart-speakers (sIPA's) to investigate into their current state of art usability aspect along with checking if SUS is still a suitable usability evaluation scale in this new scenario. Results suggest that SUS might not be the best scale to use while evaluating the usability of these highly interactive speech-based systems and future research must focus on developing new scales for the current scenario. © 2020 IEEE.</p>

Wahi C.; Bhattacharjee V.; Chakraverty S.	Collaborative QoS prediction with context-sensitive matrix factorization	2019		It is well known that mobile ad-hoc networks face a greater challenge in ensuring secured routing as compared with infrastructure based networks owing to their unique characteristics such as open and shared medium, absence of any centralized authority, dynamic nature and multi-hop transmissions. A number of cryptographically secured routing algorithms have been developed. However, they prove to be rather impractical for infrastructure-less networks as they require the presence of a ubiquitous trusted authority. Trust based communications hold greater promise for secure and efficient routing in MANETs as they rely on ongoing peer assessment of the behavior of nodes and their past performance. With a gamut of new trust based approaches appearing on the horizon, we need a systematic study of the current literature that can provide a frame of reference to researchers to carry forward new initiatives. In this article we present a detailed survey of various trust-based MANET routing algorithms and analyze their working, performance, constraints, strengths and weaknesses to present a comprehensive review of the state-of-art in this domain. © 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved.
Brandt A.; Jensen M.P.; Søberg M.S.; Andersen S.D.; Sund T.	Design and data analysis of smart grid using prediction modelling technique	2020	10.1080/17483107.2020.1765032	Information and Communication Technology-based Assistive Technology (ICT-based-AT) to compensate for impaired cognition in everyday life activities. Materials and methods: The study was registered in PROSPERO, registration number CRD42018114913. Six databases were searched (years 2008–2019). Inclusion criteria: Randomized controlled trials (RCTs) or cohort studies; people with impaired cognition due to non-degenerative diseases; and evaluation of ICT-based-ATs' effectiveness regarding activity and participation, including prospective memory, execution of tasks and satisfaction with task execution. Each study's level of evidence and quality were assessed using "JBI Levels of Evidence" and the "JBI Meta-Analysis of Statistics Assessment and Review Instrument", respectively. Results: About 3,153 publications were located, of which 12 were included. The levels of evidence were: 1.c (RCT) (n = 7), 1.d (pseudo-RCT) (n = 1) and 3.e (observational study without control group) (n = 4). Three studies had high quality (2 RCT/1 cohort), eight acceptable (5 RCT/3 cohort) and one low (RCT) quality. Conclusions: Smartphones, personal digital assistants (PDAs), etc. with e.g. calendars and reminder alarms can improve prospective memory, especially for people with ABI. Furthermore, PDAs and similar products with prompts can improve execution of tasks for people with cognitive impairment due to different diagnoses. Products should be tailored to the users' needs and the users trained in product use. Further studies concerning children, older people and people with intellectual and developmental disability are required; as well as studies on cost-effectiveness and the effectiveness of related services. Implications for rehabilitation In order to support activity and participation in everyday life for people with prospective memory problems, especially people with acquired brain injury, they should be offered information and communication technology-based products, such smart phones, mobile phones, personal digital assistants or similar mainstream products equipped with reminding software. People with cognitive impairment having difficulties executing tasks independently should be offered PDAs and mobile telephones and similar products with prompting
Varghese N.; Sinha R.	Surgical patients follow-up by smartphone-based applications: A systematic literature review	2020	10.1109/IECON43393.2020.9254910	Background: Testing IoT software is challenging due to large scale, volume of data and heterogeneity. Testing automation is a much-needed feature in the domain. Aims: The first goal of this research is to explore the requirements and challenges of IoT testing automation. The second goal is to integrate testing automation tools used in commercial software into the IoT context. Method: A systematic literature review is carried out to elicit requirements for testing automation in IoT. A design science approach is followed to build a testing automation tool for IoT applications written in the Node-Red platform, using the commercial testing automation tool Selenium. The resulting framework uses the Selenium Web Driver for browser-based testing automation for IoT applications. Results: The proposed framework has been functionally tested on multiple browsers with preliminary evaluation on maintainability, browser capability and comprehensiveness. Conclusions: The use of commercial tools for testing automation in IoT is feasible. However, major challenges like high data volumes and parallel transmission and processing of data need to be addressed comprehensively for complete integration. © 2020 IEEE.
Dourado M.A.D.; Canedo E.D.	Comparing High Accurate Regression Models for Short-term Load Forecasting in Smart Buildings	2018	10.5220/0006781404830494	Usability is one of the factors that most affects a software quality. The increasing adoption of mobile devices brings new usability challenges, as well as a need for specific standards for this type of product. This paper aims to conduct a systematic review of the literature, complemented by a manual and snowballing search to obtain usability heuristics and heuristic evaluations for mobile applications. The result of the study was a set of thirteen usability heuristics, specific to smartphones, related to the ten Nielsen's heuristics. In addition, five possible ways of evaluating the usability of mobile applications are described. The specification of the heuristics found shows that they can be used both for the evaluation of already developed applications and for the prototyping of new applications, which helps developers achieve their goals regarding product quality. The main contributions of this work is the compilation of desktop usability heuristics in a new, more specific set of heuristics adapted to the mobile paradigm. © 2018 by SCITEPRESS - Science and Technology Publications, Lda. All rights reserved.



	A Literature Review of AR-Based Remote Guidance Tasks with User Studies	2018		The proceedings contain 35 papers. The topics discussed include: personalized adaptive content system for context-aware mobile; a mobile cloud computing based independent language learning system with automatic intelligibility assessment and instant feedback; mobile learning considerations in higher education: potential benefits and challenges for students and institutions; the potential use of smartphone and social networks in public schools: a case study in north of Brazil; promoting intrinsic motivation with a mobile augmented reality learning environment; identification of the parameters concerning young adults' taking epistemic risks in their social media posts with academic content; a systematic review of learning and teaching with tablets; individualization of instruction using 'socratic' app; assessing mobile instant messaging in a foreign language classroom; mobile learning and digital literacy in the context of university young adults; and towards a mobile augmented reality prototype for corporate training: a new perspective.
Odun-Ayo I.; Eweoya I.; Toro-Abasia W.; Bogleb S.	A Game-Based Learning Assessment Framework for Learning Ubiquitous Computational Thinking	2019		Cloud computing is a business paradigm wherein computers and computing related services are provided by Cloud Service Providers to consumers either as software, development platform, or infrastructure. The integration of edge computing and IoT with Cloud opens a new technological dimension and a vista of research opportunities in this field. To determine the research context specifically in edge computing and IoT in relation to the cloud is a rigorous research process, this is where reviews and paper surveys come to play; as they easily help to discover research gaps. This paper aims to conduct a systematic mapping study of integration of Edge and IoT with the Cloud. A combination of topical, research and contribution facets were used to analyze publications of interest in reputable journals, magazines and conferences. Obtained results showed that most publications were on the topic of Applications in terms of Tool and Model, with 11.21% and 17.76% respectively. They were closely followed by publications on Architecture in terms of Model and Tool with 11.21% and 5.61%. Opinion papers were the least in the aspects of Architectures. In addition, there were more publications on Evaluation and Solution research with respect to Application with 9.92% and 14.5% respectively. Most papers on Ubiquitous Networks were in the area of Validation research with 5.34%. Furthermore, there were more work on Optimization in the areas of Philosophical, Evaluation and Experience studies, with 7.62%, 6.11% and 6.11% respectively. The output of this research is to be of benefit to research community as it readily points out areas of research drought. © International Research Publication House.
Hofer F.	Energy-Efficient IoT Service Composition for Concurrent Timed Applications	2018	10.1145/3239235.3239242	Background: The vision of a fourth industrial revolution lately strongly captured the attention of research A Cyber-physical system (CPS) is one of the main drivers of this vision. Such system controls an underlying factory interacting with sensors, actuators and other systems creating systems-of-systems. A main point of interest is how these components are built and interconnected, i.e. the system's architecture, and how it might be improved to increase reliability and security. Aims: Unfortunately, there is no review available describing and identifying recent research status and progress for such architectures. Thus, in this systematic mapping study, we overview research on architecture for CPS in the context of Industry 4.0. Method: With an initial automatic search and through iterative refining, first results were gathered. Next, forward and backwards snowballing was performed to integrate the results, giving a final population of 213 papers. The output of this study is firstly a categorization and plot of architectural styles. Secondly, the categorization is extended to include security concerns. Results: In general, there is a tendency in proposing solutions in the fields of system and software architecture while other areas are visibly under-researched. Most proposals focus in digital representation, information management and integration of solutions. Conclusions: While a lot of solution proposals for different architectures exist, there are many fields uncovered and most of the solutions still lack of validation and evaluation results. Our findings highlight areas for future research and provide suggestions for investigation approaches. © 2018 ACM.
Wu H.; Yue K.; Li B.; Zhang B.; Hsu C.-H.	Adjunct Proceedings of the 2016 IEEE International Symposium on Mixed and Augmented Reality, ISMAR-Adjunct 2016	2018	10.1016/j.future.2017.06.020	How to obtain personalized quality of cloud/IoT services and assist users selecting the appropriate service has become a hot issue with the explosion of services on the Internet. Collaborative QoS prediction is proposed to address this issue by borrowing ideas from recommender systems. However, there is still a challenging problem as how to incorporate contextual factors into existing algorithms to realize context-aware QoS prediction as contextual factors play a crucial role in QoS assessment. In this paper, we propose a general context-sensitive matrix-factorization approach (CSMF) to make collaborative QoS prediction. By considering the complexity of service invocations, CSMF models the interactions of users-to-services and environment-to-environment simultaneously, and make full use of implicit and explicit contextual factors in the QoS data. Experimental results show that CSMF significantly outperforms the-state-of-art methods in metric of prediction accuracy. Particularly, when the QoS data is very sparse, CSMF is more effective and robust. © 2017 Elsevier B.V.

Bhadraji K.; Lalu M.; Krishna D.; Anil Kumar T.	Evaluating Energy Efficiency and Security for Internet of Things: A Systematic Review	2019	10.35940/ijeat.F86870.88619	Information analytics and also information scientific research plays a substantial duty in nowadays culture. In the context of Smart Grids (SG), the collection of substantial quantities of information has actually seen the introduction of a myriad of information evaluation strategies. In this paper, we carry out a Systematic Mapping Study focused on obtaining understandings regarding various aspects of SG information evaluation: application sub-domains (e.g., power tons control), elements covered (e.g., projecting), made use of methods (e.g., clustering), tool-support, study approaches (e.g., experiments/simulations), reliability/reproducibility of study. The last objective is to supply a sight of the present standing of study. Projecting of electrical energy need has actually turned into one of one of the most vital locations of study in the electrical power market, as it is an essential element of cost-effective power system monitoring and also preparation. In this context, precise as well as durable tons projecting are meant to play an essential duty in decreasing generation prices, as well as manage the integrity of the power system. Nevertheless, as a result of require heights in the power system, projections are incorrect and also susceptible to high varieties of mistakes. In this paper, our payments consist of a recommended data-mining plan for need modeling with optimal discovery, along with making use of these details to feed the projecting system. For this objective, we have actually taken a various strategy from that of time collection projecting, representing it as a two-stage pattern acknowledgment issue. ©BEIESP.
Baniasadi T.; Ghazisaeedi M.; Hassaniazad M.; Niakan Kalhori S.R.; Shahi M.; Esmaeili M.	17th International Conference on Information Security, ISSA 2018	2020	10.3233/SH-TI200079	Background: Telemedicine technology with the development of mobile applications (apps) has provided a new approach for the follow-up of patients. Objectives: This study aims to carry out an overview of the studies related to the use of mobile apps in the follow-up of surgical patients. Methods: In this study, an electronic search of four databases included PubMed, Scopus, Embase, and web of science was carried out. It included studies in the English language from the beginning of 2009 to June 2019. Results: Twenty-three articles were selected for the final analysis, that all of them were published from 2015 onwards. In most studies, fourteen to thirty-days follow-up period for different outpatient and inpatient surgeries was planned. Apps' components in the studies mostly include indexes for evaluation of recovery quality, pain level, and the surgical site infection. The most important achievement of studies included feasibility, early detection of complications, reducing unscheduled in-person visits, patients' self-efficiency, and satisfaction. Conclusions: Our review showed that mHealth-based interventions have potential that may support better management of post-discharge systematic follow-up of surgery patients. © 2020 The authors, AIT Austrian Institute of Technology and IOS Press.
Nguyen T.T.Q.; Tran T.P.T.; Debusschere V.; Bobineau C.; Rigo-Mariani R.	20th Americas Conference on Information Systems, AMCIS 2014	2020	10.1109/IECON43393.2020.9255314	Load prediction is at the core of many smart grid topics because its accuracy affects the resilience and optimal operation of the power grid. Short term load forecasting (STLF) specific to buildings is needed for both demand and production sides management, to help reducing peak electricity demand, optimizing energy planning, management, and conservation among other. In this paper, we analyze and compare five state of art regressive STLF algorithms relying on deep learning techniques. Algorithms were chosen based on their performances in the context of load prediction. These methods are compared in the context of smart buildings with real (large) data-set, leading to a comparison on quality metrics and a precise evaluation. The load forecasting is deployed with and without taking into account environmental features to better evaluate the benefits of reaching for external information. The idea is to help determine which of the five forecasting algorithm could be considered in the optimization loop of an energy management systems, either at the level of a district (local energy communities, or smart districts) or directly at the level of individual households (smart residential buildings) using quality metrics and need of exogenous data. Results show that the algorithms will perform better if we accept a larger training time and also present a high sensitivity on the choice of influencing parameters. © 2020 IEEE.
Lapointe J.-F.; Molyneaux H.; Allili M.S.	Proceedings of the 2nd International Living Usability Lab Workshop on AAL Latest Solutions, Trends and Applications, AAL 2012, in Conjunction with BIOSTEC 2012	2020	10.1007/978-3-030-49698-2_8	The future of work is increasingly mobile and distributed across space and time. Institutions and individuals are phasing out desktops in favor of laptops, tablets and/or smart phones as much work (assessment, technical support, etc.) is done in the field and not at a desk. There will be a need for systems that support remote collaborations such as remote guidance. Augmented reality (AR) is praised for its ability to show the task at hand within an immersive environment, allowing for spatial clarity and greater efficiency, thereby showing great promise for collaborative and remote guidance tasks; however, there are no systematic reviews of AR based remote guidance systems. This paper reviews the literature describing AR-based remote guidance tasks and discusses the task settings, technical requirements and user groups within the literature, followed by a discussion of further areas of interest for the application of this technology combined with artificial intelligence (AI) algorithms to increase the efficiency of applied tasks. © 2020, NRC Canada.

Wong Y.S.; Hayati M.Y.M.; Tan W.H.; Yap L.C.	Use of MEMS sensors in walking speed monitoring for purposes of behavioral analysis	2020	10.1007/978-3-030-40271-6_60	<p>At present there is no Game-based learning (GBL) assessment framework that could assess the student performance and understanding on Ubiquitous Computational Thinking (UCT) accurately. Therefore this paper aims to discuss the development of a novel assessment framework based on GBL to assess the student understanding toward UCT properly. The model is very crucial to aid in designing UCT learning content to improve the performance and understanding of student. This research is divided into two main stages, which are quasi-experiment and assessment framework modelling. In stage one, systematic literature review of assessment framework for learning UCT will be conduct to identify the research gap for this research. The systematic reviewed result will be adapting GBL approach to develop a computer game as the main assessment tool. To ensure the effectiveness of the developed game, quasi-experiment will be conducted. In stage two, data obtained from stage one will also be further analyzed to establish the assessment framework to access the student understanding towards UCT that adapting GBL approach. The newly constructed assessment framework will then be used to assess student understanding and performance towards UCT. This will involve quasi-experiment where target students will be participated to this research by playing the game while assessing the understanding towards UCT. Moreover the knowledge gained could contribute to determining the important of GBL approach that could construct an appropriate assessment framework for learning UCT. © 2020, Springer Nature Switzerland AG.</p>
Sun M.; Zhou Z.; Wang J.; Du C.; Gaaloul W.	Improving user interaction through a Smart Disability Framework	2019	10.1016/j.future.2019.05.070	<p>The Internet of Things (IoT) paradigm has established an efficient platform to enable the collaboration and cooperation of self-configurable and energy-aware IoT nodes for supporting complex applications. Heterogeneous IoT nodes provide various kinds of functionalities, which can be encapsulated and represented as IoT services. These services can be composed to provide value-added services, while spatial-temporal constraints of IoT services should be satisfied, and energy consumption of IoT nodes should be balanced to prolong the network lifetime. Given a set of concurrent service requests, a challenge is to recommend efficient service compositions. To address this challenge, this paper proposes to identify and share common functional components, and thus, to integrate and optimize concurrent requests, where a component corresponds to a snippet of IoT service compositions. Shared components in different requests should not violate their temporal dependencies and thus improving resource utilization. Consequently, composing IoT services with respect to concurrent requests can be reduced to a constrained multi-objective optimization problem, which can be solved by heuristic algorithms. Experimental evaluation has been performed with respect to the state-of-art's algorithms, and the results demonstrate the efficiency and performance of this technique, especially when IoT nodes are relatively large in number and their functionalities are highly overlapped with each other. © 2019 Elsevier B.V.</p>
	The implementation of virtual coach to enhance ambient assisted living	2017		<p>The proceedings contain 98 papers. The topics discussed include: DualCAD: integrating augmented reality with a desktop GUI and smartphone interaction; real time noise reduction to identify motion parameters in AR maintenance scenario; mobile augmented reality: placing labels based on gaze position; streaming and exploration of dynamically changing dense 3D reconstructions in immersive virtual reality; a systematic review of usability studies in augmented reality between 2005 and 2014; full-scale visualization of a person on a movable transparent screen; participatory design of STEM education AR experiences for heterogeneous student groups: exploring dimensions of tangibility, simulation, and interaction; an augmented reality guide for assisting forklift operation; EgoSAR: towards a personalized spatial augmented reality experience in multi-user environments; TeachAR: an interactive augmented reality tool for teaching basic English to non-native children; enhancing 3D mapping via real-time superpixel-based segmentation; a haptic serious augmented reality game for motor assessment of Parkinson's disease patients; indoor localisation and navigation on augmented reality devices; technical concept and technology choices for implementing a tangible version of the Sokoban game; frustration free pose computation for spatial AR devices in industrial scenario; and distributed optimization for shadow removal in spatial augmented reality.</p>
Oliveira L.P.; Vieira M.N.; Leite G.B.; de Almeida E.L.V.	SBSI 2016 - 12th Brazilian Symposium on Information Systems: Information Systems in the Cloud Computing Era, Proceedings	2020	10.1007/978-3-030-44041-1_20	<p>The Internet of Things (IoT) contains devices to collect and transmit information that should not be captured by third parties. Although devices have internet connectivity, some devices have battery limited energy. Therefore, it is important the conducting of evaluations to investigate, compare and propose security mechanisms with energy-efficient. However, there is a very low number of research using practical evaluations with real devices, as measurement approach takes a long time to perform the experiments. Therefore, the aim of this paper is to analyze, categorize analytically and statistically the methodologies which have been presented in the area of IoT based on the Systematic Literature Review (SLR) method, in order to extract features of the research protocols (definition of a set of equipment, topology, traffic, parameters, metrics and other variables) to be used in new research that addresses the concepts of security, energy and IoT. The weaknesses and highlighting of each study is discussed as well as presenting some hints for addressing future research with lower execution times of experiments, as it will be possible to reuse the results of measurements already published for the same parameter and metrics. © 2020, Springer Nature Switzerland AG.</p>

	Usability, accessibility and ambient-assisted living: a systematic literature review	2019		The proceedings contain 13 papers. The special focus in this conference is on Information Security. The topics include: Preventing and Mitigating Ransomware: A Systematic Literature Review; mitigating the Ransomware Threat: A Protection Motivation Theory Approach; skills requirements for cyber security professionals: A content analysis of job descriptions in South Africa; real-Time Face Antispoofing Using Shearlets; password Policies Adopted by South African Organizations: Influential Factors and Weaknesses; an Investigation into Students Responses to Various Phishing Emails and Other Phishing-Related Behaviours; information Availability and Security in Foreign Corrupt Practices Act Investigations; the Current State of Electronic Consent Systems in e-Health for Privacy Preservation; Detecting Manipulated Smartphone Data on Android and iOS Devices; an Evaluation of the Password Practices on Leading e-Commerce Websites in South Africa; SA-EF Cube: An Evaluation Framework for Assessing Intelligent Context-Aware Critical Information Infrastructure Protection Solutions.
	International Conference on Information Systems, ICIS 2013, Volume 1	2014		on Information Systems. The topics include: A classification of factors that impact the role of the CIO; a comparison of IT governance and control frameworks in cloud computing; a conceptual approach for optimizing distribution logistics using big data; a database-driven model for risk assessment; a framework for developing integrated supply chain information system; a maturity model and web application for environmental management benchmarking; a model of distributed agile team; a model of effective IT governance structures for developing economies; a multi-agent system for healthcare data privacy; a novel indexing method for improving timeliness of high-dimensional data; a systematic review of cloud computing, big data and databases on the cloud; a user satisfaction study of the London congestion charging e-service; achieving business goals with gamification; addressing levels issues in IS qualitative research; affect infusion in a computer based multitasking environment; alignment between business process governance and IT governance; an actor-network perspective on business process management; an agent-based system for medication adherence monitoring and patient care; an application of the knowledge management maturity model; an efficient stochastic update propagation method in data warehousing; an empirical study of consumer behavior in online pay-to-bid auctions; an empirical study of the gratifications of customer resonance on purchase intention; an explorative study of mobile apps in the enterprise; an information system framework and prototype for collaborative and standardized Chinese liquor production; an ontology-based record management systems approach for enhancing decision support; an organizational mining approach based on behavioral process patterns; applying emergent outcome controls to mitigate time pressure in agile software development; augmented reality and print communication; barriers to green IT service management; behavioural affect and cognitive effects of time-pressure and justification requirement in software acquisition; a holistic investigation into factors affecting social media utilisation in the workplace; beyond traditional IT-enabled innovation; a key capability for competitive
	Tailoring real-time physical activity coaching systems: a literature survey and model	2012		The proceedings contain 10 papers. The topics discussed include: towards elderly social integration using a multimodal human-computer interface; ambient assisted living technologies, systems and services: a systematic literature review; spoken communication with CAMBADA@Home service robot; Health@Home scenario: creating a new support system for home telerehabilitation; from an autonomous soccer robot to a robotic platform for elderly care; assessment of ambient assisted living services in a living lab approach: a methodology based on ICF; standardized representation of medical data in AAL applications; optimizing electrode positioning in 3-lead ECG chest devices; heart monitoring system based on NFC for continuous analysis and pre-processing of wireless vital signs; and needs and opportunities in ambient assisted living in Portugal.
Karchnák J.; Šimšík D.; Galajdová A.; Jobbágy B.	Ubiquitous semantic applications: A systematic literature review	2015	10.4028/www.scientific.net/JERA.18.159	Wearable sensors are bringing innovative approach in research of smart environments, tele-monitoring and home care services. Average walking speed is one of the suitable indicators of state, condition and activities of patient along with observing of hip extension angle. The proposed article is aimed on study of accelerometer usability for monitoring of such parameters from view of long-term perspective. The article is divided into the following sections: the first section describes analysis of current state-of-art and motivation for such research, the second section is devoted to description of sensors and methodology of experimental verification and methods of data processing and the last section deals with data evaluation. © (2015) Trans Tech Publications, Switzerland.
Afolabi A.O.; Toivanen P.; Haataja K.; Mykkanen J.	Exiting the cleanroom: On ecological validity and ubiquitous computing	2015	10.4018/IJHISI.2015100101	This systematic literature review is aimed at examining empirical results and practical implementations of healthcare recommender systems. While fundamentally many of the development of recommender systems in medical and healthcare are based on theory and logic, the performance is always measured in terms of empirical results and practical implementations from evaluation of such systems. Besides, the ultimate judgment of the effectiveness of the methods and algorithms used is often based on the empirical results of recommender systems. Robustness, efficiency, speed, and accuracy are also best determined by empirical results. Extensive search was carried out in some major databases. Literature were grouped into three categories namely core, related, and relevant. The core papers were subjected to further analysis. The result shows that most work reviewed were partially evaluated and have a promising future. Moreover, a yet-to-be explored novel proposal for integration of a recommender system into smart home care is presented. Copyright © 2015, IGI Global.

Whittington P.	BLITHE: Behavior Rule-Based Insider Threat Detection for Smart Grid	2016	10.14236/e wic/HCI201 6.8	<p>This paper aims to improve user interaction by establishing a SmartDisability Framework for the healthcare and assistive technology industries through considering mappings between Disability Types, Range of Movement (ROM) and Interaction Mediums to produce Technology and Task recommendations. The SmartDisability conceptual model (based on the familiar disability symbol) is the result of the Framework being populated through a systematic literature review of disability classification, ROM, interaction mediums, 'off-the-shelf' technologies and tasks. A previously conducted requirements elicitation process, involving surveys and semi-structured interviews, and a described usability evaluation involving touch and head-based interaction methods augmented the framework. The evaluation was conducted using a simulation of SmartATRS; a smartphone system that controls Automated Transport and Retrieval System (ATRS) enabling a user with disability to autonomously dock a powered wheelchair (powerchair) onto a platform lift of a vehicle, as well as controlling an automated tailgate and a motorised driver's seat. System Usability Scale (SUS) and NASA Task Load Index (NASA TLX) was applied to measure the usability of each interaction method. Discussions of future work are provided including the anticipated framework validation process that will utilise focus groups considering fictional personas. The SmartDisability Framework will be exploited through the development of a smartphone or web based application. © Paul Whittington.</p>
	International Conference on Information Systems, ICIS 2013, Volume 2	2017		<p>The proceedings contain 213 papers. The topics discussed include: we need to discuss the relationship - an analysis of facilitators and barriers of software ecosystem partnerships; the influence of software product quality attributes on open source projects: a characterization study; a TOSCA-based programming model for interacting components of automatically deployed cloud and IoT applications; an ontology-based approach to analyzing the occurrence of code smells in software; an integrated inspection system for belt conveyor rollers - advancing in an enterprise architecture; when agile meets waterfall - investigating risks and problems on the interface between agile and traditional software development in a hybrid development organization; development of an electronic health record application using a multiple view service oriented architecture; a characterization of cloud computing adoption based on literature evidence; contact deduplication in mobile devices using textual similarity and machine learning; guidelines of data quality issues for data integration in the context of the TPC-DI benchmark; extensions, analysis and experimental assessment of a probabilistic ensemble-learning framework for detecting deviances in business process instances; audio description on Instagram: evaluating and comparing two ways of describing images for visually impaired; facial expression recognition improvement through an appearance features combination; on the development of serious games in the health sector - a case study of a serious game tool to improve life management skills in the young; and software ecosystems governance - a systematic literature review and research agenda.</p>
Chang Chien W.-S.; Hsu C.-J.; Lai T.-Y.	Towards evaluating ambient assisted living: State-of-the-art use of measures	2014	10.4017/gt.2 014.13.02.3 59.00	<p>an open platform for implementing ambient intelligence systems to support aging in place. 'Virtual Coach' is an Android-based somatosensory app installed in a TV Set-Top Box developed by Industrial Technology Research Institute (ITRI). Heart rate monitoring (through ANT+) and motion similarity analysis techniques have been converged in the system. In order to demonstrate the benefits of the UniversAAL, the 'Virtual Coach' has been transformed to connect with lights at home through the platform. Through the utilization of the UniversAAL platform, the virtual coach system has extended the service to assist the user to get involved with a wide variety of interaction with his/her home environment such as the lighting and temperature control system seen in Figure 1. Method: The UniversAAL system architecture relies on the features of its middleware. For example, the context bus which is the overall 'event' handler, and the different communication buses (service bus) (Figure 2). The Virtual Coach has been connected to the UniversAAL ecosystem through the middleware. With pre-provision the heart rate threshold of user's age by exercise level, the different heart rate measurements will trigger lighting by different color. The user will then be aware of the change of physical condition by the response of the light. For instance, when the heart rate exceeds the safety threshold, an alert will be sent out to trigger the red light through the platform. The system will simultaneously switch to the calm mode to keep the user safe. Five elderly participants volunteered to use the Virtual Coach AAL in their homes for 30 days. User responses were collected using the Likert Scale to evaluate feasibility and satisfaction. Results &amp; Discussion: The evaluation showed that Virtual Coach integrated with lighting and temperature control systems through universal open platform was successfully implemented in the households in order to facilitate real-time exercise monitoring. Four of the five participants reported that they were able to live more independently and they were also satisfied with the UAAL services. Users indicated that the service become more useful especially when they had a difficulty reading the instructions on the TV screen. The service has changed the user experience</p>

	International Conference on Information Systems, ICIS 2013, Volume 4	2016		The proceedings contain 79 papers. The topics discussed include: IT governance in healthcare industry organizations: a case study of COBIT implementation; a domain ontology for privacy preservation in data published by the Brazilian government; evaluation methodology of municipal transparency websites; big data and transparency: using MapReduce functions to increase public expenditure transparency; an unsupervised topic-based method for identifying reputation dimensions in microblogs; analysis of information retrieval in call center documents - case study in computer solutions bases; profiling household consumption with clustering algorithms; conformance check in healthcare with the supporting of processes mining; ArchiRI - an ontology-based architecture for the exchange of reputation information; externalization of knowledge through group storytelling: a case study in online tutoring; a systematic literature review on communication in the context of project management of information systems; Demiourgos: agent-based simulation for the analysis of camouflage evolution of living beings; an information system for genetic improvement of goats and sheep; fusion of face and gait for biometric recognition: systematic literature review; a computational model for accessibility in smart cities; a model for data integration and availability in health government area; digital democracy: an analysis of resources and acceptance; and a cost model for IaaS clouds based on virtual machine energy consumption.
Queirós A.; Silva A.; Alvarelhão J.; Rocha N.P.; Teixeira A.	On effectiveness of smart grid applications using co-simulation	2015	10.1007/s10209-013-0328-x	Ambient-assisted living (AAL) is, nowadays, an important research and development area, foreseen as an important instrument to face the demographic aging. The acceptance of the AAL paradigm is closely related to the quality of the available systems, namely in terms of intelligent functions for the user interaction. In that context, usability and accessibility are crucial issues to consider. This paper presents a systematic literature review of AAL technologies, products and services with the objective of establishing the current position regarding user interaction and how are end users involved in the AAL development and evaluation processes. For this purpose, a systematic review of the literature on AAL was undertaken. A total of 1,048 articles were analyzed, 111 of which were mainly related to user interaction and 132 of which described practical AAL systems applied in a specified context and with a well-defined aim. Those articles classified as user interaction and systems were further characterized in terms of objectives, target users, users' involvement, usability and accessibility issues, settings to be applied, technologies used and development stages. The results show the need to improve the integration and interoperability of the existing technologies and to promote user-centric developments with a strong involvement of end users, namely in what concerns usability and accessibility issues. © 2013, Springer-Verlag Berlin Heidelberg.
	Product Services Systems and Value Creation. Proceedings of the 6th CIRP Conference on Industrial Product-Service Systems, IPSS 2014	2013		on Information Systems. The topics include: Computing requirements in open source software projects; a comparison of nonlinear pricing preference models for digital services; a computational approach to detecting and assessing sustainability-related communities in social media; a conceptualisation of management situations relevant for collaborative research projects; a conceptualization of complexity in IS-driven organizational transformations; information security collective efficacy and vulnerability; a cross-sectional and temporal analysis of information consumption on twitter; a measurement model for investigating digital natives and their organisational behaviour; a model of product design and information disclosure investments; a problem-solving perspective on governance and product design in open source software projects; a qualitative approach to examine technology acceptance; a sensemaking approach to tablet users accommodating practices; a systems approach to countermeasures in credibility assessment interviews; aligning business and IT strategies in multi-business organizations; an empirical examination of users information hiding in a crowdfunding context; an empirical investigation of a user-centric typology of innovation for evolving information systems products; an exploration of group information security compliance; an information quality evaluation framework of object tracking systems; an ontology artifact for information systems sentiment analysis; visualising perspectives of business and information systems; attention trade-off between two types of user contributions; the effects of user- and marketer-generated content on purchase decision processes; boundary spanning through enterprise social software; investment management systems and new institutional logics for regulatory compliance; bundling of software products and services to fight against piracy; capturing multi-stakeholder needs in customer-centric cloud service design; an empirical analysis of the impact of formal controls in strategic outsourcing contracts; cloud computing providers unrealistic optimism regarding IT security risks; cognitive biases in new technology appropriation; collective intelligence in market-based social decision making;

op den Akker H.; Jones V.M.; Hermens H.J.	Empirical Studies on Usability of mHealth Apps: A Systematic Literature Review	2014	10.1007/s11257-014-9146-y	Technology mediated healthcare services designed to stimulate patients' self-efficacy are widely regarded as a promising paradigm to reduce the burden on the healthcare system. The promotion of healthy, active living is a topic of growing interest in research and business. Recent advances in wireless sensor technology and the widespread availability of smartphones have made it possible to monitor and coach users continuously during daily life activities. Physical activity monitoring systems are frequently designed for use over long periods of time placing usability, acceptance and effectiveness in terms of compliance high on the list of design priorities to achieve sustainable behavioral change. Tailoring, or the process of adjusting the system's behavior to individuals in a specific context, is an emerging topic of interest within the field. In this article we report a survey of tailoring techniques currently employed in state of the art real time physical activity coaching systems. We present a survey of state of the art activity coaching systems as well as a conceptual framework which identifies seven important tailoring concepts that are currently in use and how they relate to each other. A detailed analysis of current use of tailoring techniques in real time physical activity coaching applications is presented. According to the literature, tailoring is currently used only sparsely in this field. We underline the need to increase adoption of tailoring methods that are based on available theories, and call for innovative evaluation methods to demonstrate the effectiveness of individual tailoring approaches. © 2014, Springer Science+Business Media Dordrecht.
Ermilov T.; Khalili A.; Auer S.	Proceedings - 2016 IEEE 1st International Conference on Connected Health: Applications, Systems and Engineering Technologies, CHASE 2016	2014	10.4018/ijswis.2014010103	Recently practical approaches for development of ubiquitous semantic applications have made quite some progress. In particular in the area of the ubiquitous access to the semantic data the authors recently observed a large number of approaches, systems and applications being described in the literature. With this survey the authors aim to provide an overview on the rapidly emerging field of Ubiquitous Semantic Applications (UbiSA). The authors conducted a systematic literature review comprising a thorough analysis of 48 primary studies out of 172 initially retrieved papers. The authors obtained a comprehensive set of quality attributes for UbiSA together with corresponding application features suggested for their realization. The quality attributes include aspects such as mobility, usability, heterogeneity, collaboration, customizability and evolvability. The primary studies were surveyed in the light of these quality attributes and the authors performed a thorough analysis of five ubiquitous semantic applications, six frameworks for UbiSA, three UbiSA specific ontologies, five ubiquitous semantic systems and nine general approaches. The proposed quality attributes facilitate the evaluation of existing approaches and the development of novel, more effective and intuitive UbiSA. Copyright © 2014, IGI Global.
Carter S.; Mankoff J.; Klemmer S.R.; Matthews T.	A vision-based indoor positioning method with high accuracy and efficiency based on self-optimized-ordered visual vocabulary	2008	10.1080/07370020701851086	Over the past decade and a half, corporations and academies have invested considerable time and money in the realization of ubiquitous computing. Yet design approaches that yield ecologically valid understandings of ubiquitous computing systems, which can help designers make design decisions based on how systems perform in the context of actual experience, remain rare. The central question underlying this article is, What barriers stand in the way of real-world, ecologically valid design for ubicomp? Using a literature survey and interviews with 28 developers, we illustrate how issues of sensing and scale cause ubicomp systems to resist iteration, prototype creation, and ecologically valid evaluation. In particular, we found that developers have difficulty creating prototypes that are both robust enough for realistic use and able to handle ambiguity and error and that they struggle to gather useful data from evaluations because critical events occur infrequently, because the level of use necessary to evaluate the system is difficult to maintain, or because the evaluation itself interferes with use of the system. We outline pitfalls for developers to avoid as well as practical solutions, and we draw on our results to outline research challenges for the future. Crucially, we do not argue for particular processes, sets of metrics, or intended outcomes, but rather we focus on prototyping tools and evaluation methods that support realistic use in realistic settings that can be selected according to the needs and goals of a particular developer or researcher.
Bao H.; Lu R.; Li B.; Deng R.	Heuristic evaluation of mobile usability: A mapping study	2016	10.1109/JIO T.2015.2459049	In this paper, we propose a behavior rule-based methodology for insider threat (BLITHE) detection of data monitor devices in smart grid, where the continuity and accuracy of operations are of vital importance. Based on the dc power flow model and state estimation model, three behavior rules are extracted to depict the behavior norms of each device, such that a device (trustee) that is being monitored on its behavior can be easily checked on the deviation from the behavior specification. Specifically, a rule-weight and compliance-distance-based grading strategy is designed, which greatly improves the effectiveness of the traditional grading strategy for evaluation of trustees. The statistical property, i.e., the mathematical expectation of compliance degree of each trustee, is particularly analyzed from both theoretical and practical perspectives, which achieves satisfactory tradeoff between detection accuracy and false alarms to detect more sophisticated and hidden attackers. In addition, based on real data run in POWER WORLD for IEEE benchmark power systems, and through comparative analysis, we demonstrate that BLITHE outperforms the state of arts for detecting abnormal behaviors in pervasive smart grid applications. © 2014 IEEE.



	AA-Dedupe: An application-aware source deduplication approach for cloud backup services in the personal computing environment	2013		on Information Systems. The topics include: Computing requirements in open source software projects; a comparison of nonlinear pricing preference models for digital services; a computational approach to detecting and assessing sustainability-related communities in social media; a conceptualisation of management situations relevant for collaborative is research projects; a conceptualization of complexity in IS-driven organizational transformations; information security collective efficacy and vulnerability; a cross-sectional and temporal analysis of information consumption on twitter; a measurement model for investigating digital natives and their organisational behaviour; a model of product design and information disclosure investments; a problem-solving perspective on governance and product design in open source software projects; a qualitative approach to examine technology acceptance; a sensemaking approach to tablet users accommodating practices; a systems approach to countermeasures in credibility assessment interviews; aligning business and it strategies in multi-business organizations; an empirical examination of users information hiding in a crowdfunding context; an empirical investigation of a user-centric typology of innovation for evolving information systems products; an exploration of group information security compliance; an information quality evaluation framework of object tracking systems; an ontology artifact for information systems sentiment analysis; visualising perspectives of business and information systems; attention trade-off between two types of user contributions; the effects of user- and marketer-generated content on purchase decision processes; boundary spanning through enterprise social software; investment management systems and new institutional logics for regulatory compliance; bundling of software products and services to fight against piracy; capturing multi-stakeholder needs in customer-centric cloud service design; an empirical analysis of the impact of formal controls in strategic outsourcing contracts; cloud computing providers unrealistic optimism regarding it security risks; cognitive biases in new technology appropriation; collective intelligence in market-based social decision making;
Breitschwerdt R.; Bergmann A.; Thomas O.	Multimodal automation controller for smart homes	2012		In order to determine the current evaluation of Ambient Assisted Living (AAL) solutions' benefits, a systematic review of state-of-the-art literature was conducted. Four scientific online libraries were searched, articles combining AAL and controlling were considered relevant. In total, 223 abstracts were identified. Each of them was assessed regarding its suitability for the research at hand. The subsequent review contained analysis of 13 heterogeneous relevant articles: two of them discussed instruments and indicators for efficiency, eleven focused on quality aspects. Evidence on concrete measurement of benefits is specific and limited. Analyses of outcomes for stakeholders have not been standardized, yet. Demand for larger studies of AAL solutions and more focus on patients' and economic perspectives exists.
	Embedding Android devices in automation systems	2013		on Information Systems. The topics include: Computing requirements in open source software projects; a comparison of nonlinear pricing preference models for digital services; a computational approach to detecting and assessing sustainability-related communities in social media; a conceptualisation of management situations relevant for collaborative is research projects; a conceptualization of complexity in IS-driven organizational transformations; information security collective efficacy and vulnerability; a cross-sectional and temporal analysis of information consumption on twitter; a measurement model for investigating digital natives and their organisational behaviour; a model of product design and information disclosure investments; a problem-solving perspective on governance and product design in open source software projects; a qualitative approach to examine technology acceptance; a sensemaking approach to tablet users' accommodating practices; a systems approach to countermeasures in credibility assessment interviews; aligning business and it strategies in multi-business organizations; an empirical examination of users' information hiding in a crowdfunding context; an empirical investigation of a user-centric typology of innovation for evolving information systems products; an exploration of group information security compliance; an information quality evaluation framework of object tracking systems; an ontology artifact for information systems sentiment analysis; visualising perspectives of business and information systems; attention trade-off between two types of user contributions; the effects of user- and marketer-generated content on purchase decision processes; boundary spanning through enterprise social software; investment management systems and new institutional logics for regulatory compliance; bundling of software products and services to fight against piracy; capturing multi-stakeholder needs in customer-centric cloud service design; an empirical analysis of the impact of formal controls in strategic outsourcing contracts; cloud computing providers' unrealistic optimism regarding it security risks; cognitive biases in new technology appropriation; collective intelligence in market-based social decision making;
Moulema P.; Yu W.; Griffith D.; Golmie N.	Mobile personal health records for pregnancy monitoring functionalities: Analysis and potential	2015	10.1109/ICC CN.2015.72 88438	The smart grid is a complex system that comprises components from both the power grid and communication networks. To understand the behavior of such a complex system, co-simulation is a viable tool to capture the interaction and the reciprocal effects between a communication network and a physical power grid. In this paper, we systematically review the existing efforts of co-simulation and design a framework to explore co-simulation scenarios. Using the demand response and energy price as examples of smart grid applications and operating the communication network under various conditions (e.g., normal operation, performance degrade, and security threats), we implement these scenarios and conduct a performance evaluation of smart grid applications by leveraging a co-simulation platform. © 2015 IEEE.

	Measuring tool chain interoperability in Cyber-Physical Systems	2014		The proceedings contain 65 papers. The topics discussed include: scenarios as a tool for transition towards sustainable PSS; a method for impact analysis of cyclic changes within innovation processes of PSS; use of cloud services in functional products: availability implications; service innovation and smart analytics for industry 4.0 and big data environment; service knowledge capture and reuse; state-of-art product-service systems in Japan - the latest Japanese product-service systems developments; multi-physics simulation for product-service performance assessment; a framework for value co-creation through customization and personalization in the context of machine tool PSS; balancing product-service provider's performance and customer's value: the service engineering methodology (SEEM); and validation of product-service systems - a prototyping approach.
Zapata B.C.; Fernández-Alemán J.L.; Idri A.; Toval A.	Requirements and barriers to pervasive health adoption	2015	10.1007/s10916-014-0182-2	The release of smartphones and tablets, which offer more advanced communication and computing capabilities, has led to the strong emergence of mHealth on the market. mHealth systems are being used to improve patients' lives and their health, in addition to facilitating communication between doctors and patients. Researchers are now proposing mHealth applications for many health conditions such as dementia, autism, dysarthria, Parkinson's disease, and so on. Usability becomes a key factor in the adoption of these applications, which are often used by people who have problems when using mobile devices and who have a limited experience of technology. The aim of this paper is to investigate the empirical usability evaluation processes described in a total of 22 selected studies related to mHealth applications by means of a Systematic Literature Review. Our results show that the empirical evaluation methods employed as regards usability could be improved by the adoption of automated mechanisms. The evaluation processes should also be revised to combine more than one method. This paper will help researchers and developers to create more usable applications. Our study demonstrates the importance of adapting health applications to users' need. © 2015, Springer Science+Business Media New York.
	19th AIAA Applied Aerodynamics Conference 2001	2016		The proceedings contain 70 papers. The topics discussed include: a mobile solution for fast and accurate medical emergency reporting; equal area user clustering algorithm for energy efficient cellular network; reliable transport protocol based on loss-recovery and fairness for wireless body area networks; reliable transport protocol based on loss-recovery and fairness for wireless body area networks; automatic assessment of environmental hazards for fall prevention using smart-cameras; stroke prediction context-aware health care system; transforming healthcare through life-long personal digital footprints; architectural approaches for implementing clinical decision support systems in cloud: a systematic review; and manage my condition: a standard framework for the development of cloud-based medical condition management applications.
Wu T.; Chen L.-K.; Hong Y.	The trade-off between usability and security in the context of egovernment: A mapping study	2016	10.1109/PLANS.2016.7479682	In this paper, we present a novel indoor positioning method with high accuracy and efficiency, requiring only the camera of a mobile device. The proposed method takes advantage of a novel visual vocabulary, Self-Optimized-Ordered Visual (SOO) Vocabulary under Bag-of-Visual-Word framework to exploit deep connections between physical locations and feature clusters. Additionally, related techniques improving positioning performance such as feature selection and visual word filtering are also designed and examined. Evaluation results show that when the training image size varies from 20 to 640, our method can save up to 80% processing time in both phases compared to two existing vision-based indoor positioning methods that use state-of-art image query techniques. In the meantime, the average image query accuracy of our method among all evaluated indoor scenes is above 95%, which highly increases positioning accuracy and makes the method a very suitable option for smart-phone based indoor positioning and navigation. © 2016 IEEE.
De Lima Salgado A.; Freire A.P.	Proceedings - 7th International Conference on Advanced Software Engineering and Its Applications, ASEA 2014	2014	10.1007/978-3-319-07227-2_18	The mobile devices market has grown substantially, along with significant developments in mobile interactive technologies. Devices such as tablets, smartphones and others have increasingly become more popular and helped improve the way people interact and exchange information. The aim of this paper is to perform a systematic mapping of the literature regarding the use of heuristic evaluation methods applied on mobile applications. The aims of this research were twofold: analysing what are the most used sets of usability heuristics on usability evaluations of mobile devices, providing a common base to improve mobile design and usability evaluation; analysing details of how usability inspections of mobile applications have been conducted. The results show that different heuristics have been reported in research papers to evaluate usability of mobile devices. The study identified a total of 9 different heuristics sets means of the literature mapping. The traditional set of heuristics proposed by Nielsen and Molich was still the most used set of heuristics in heuristic usability evaluations of mobile devices, but the proposal of new specific heuristics for mobile interfaces has grown substantially. © 2014 Springer International Publishing.

Fu Y.; Jiang H.; Xiao N.; Tian L.; Liu F.	International Conference on Information Systems, ICIS 2013, Volume 5	2011	10.1109/CL USTER.201 1.20	The market for cloud backup services in the personal computing environment is growing due to large volumes of valuable personal and corporate data being stored on desktops, laptops and smart phones. Source deduplication has become a mainstay of cloud backup that saves network bandwidth and reduces storage space. However, there are two challenges facing deduplication for cloud backup service clients: (1) low deduplication efficiency due to a combination of the resource-intensive nature of deduplication and the limited system resources on the PC-based client site, and (2) low data transfer efficiency since post-deduplication data transfers from source to backup servers are typically very small but must often cross a WAN. In this paper, we present AA-Dedupe, an application-aware source deduplication scheme, to significantly reduce the computational overhead, increase the deduplication throughput and improve the data transfer efficiency. The AA-Dedupe approach is motivated by our key observations of the substantial differences among applications in data redundancy and deduplication characteristics, and thus is based on an application-aware index structure that effectively exploits this application awareness. Our experimental evaluations, based on an AA-Dedupe prototype implementation, show that our scheme can improve deduplication efficiency over the state-of-art source-deduplication methods by a factor of 2-7, resulting in shortened backup window, increased power-efficiency and reduced cost for cloud backup services. © 2011 IEEE.
Maskeliunas R.; Raudonis V.; Stambolov G.; Simutis R.	International Conference on Information Systems, ICIS 2013, Volume 3	2012		Authors suggest an approach of a multimodal controller based on a client-server architecture running on a x86 Windows server platform connected to the USB I/O hardware interface and capable of remote control via web application using speech commands, touch gestures or gaze tracking. The paper presents the state-of-art situation, the proposed architecture, the associative control algorithm as well as the initial experimental evaluation on the recognition accuracy of the input modalities analyzed and the effectiveness of control tasks.
Nicolae M.; Lucaci L.; Moise I.	International Conference on Human Aspects of Advanced Manufacturing, HAAMAHA 2016	2013	10.1109/SII TME.2013.6 743676	The paper presents a novel architecture based on frequent utilization of PDAs and mobile phones as human machine interface (HMI) in controlling various systems. There are two main considerations discussed. One is with regards to real-time constraints in the context of industrial process control. The second is the possibility of transferring some tasks from the process controller towards the Android device (tablet or smart phone). Therefore, after analyzing the current implementations together with their limitations, we designed an evaluation framework. The main goal of the new structure will be to analyze the limitations of balancing processing load between process controller and Android device's resources. The structure is comprised of a cheap Android tablet connected to an embedded module via an USB cable. The embedded module has as his core a state-of-art ARM Cortex M4F processor for industrial applications. The proposed solution provides the advantages derived from both components. The implementation required driver development, considerations which are also presented briefly. © 2013 IEEE.
Bachiri M.; Idri A.; Fernández- Alemán J.L.; Toval A.	Compliance of Blood Donation Apps with Mobile OS Usability Guidelines	2016	10.1016/j.c mpb.2016.0 6.008	Background and objective Personal Health Records (PHRs) are a rapidly growing area of health information technology. PHR users are able to manage their own health data and communicate with doctors in order to improve healthcare quality and efficiency. Mobile PHR (mPHR) applications for mobile devices have obtained an interesting market quota since the appearance of more powerful mobile devices. These devices allow users to gain access to applications that used to be available only for personal computers. This paper analyzes the functionalities of mobile PHRs that are specific to pregnancy monitoring. Methods A well-known Systematic Literature Review (SLR) protocol was used in the analysis process. A questionnaire was developed for this task, based on the rigorous study of scientific literature concerning pregnancy and applications available on the market, with 9 data items and 35 quality assessments. The data items contain calendars, pregnancy information, health habits, counters, diaries, mobile features, security, backup, configuration and architectural design. Results A total of 33 mPHRs for pregnancy monitoring, available for iOS and Android, were selected from Apple App store and Google Play store, respectively. The results show that none of the mPHRs selected met 100% of the functionalities analyzed in this paper. The highest score achieved was 77%, while the lowest was 17%. Conclusions In this paper, these features are discussed and possible paths for future development of similar applications are proposed, which may lead to a more efficient use of smartphone capabilities. © 2016 Elsevier Ireland Ltd
Cubic, M	Drivers, barriers and social considerations for AI adoption in business and management: A tertiary study	2016	10.1109/SY SOSE.2016. 7542964	Cyber-Physical Systems are developed through complex engineering projects that include many stakeholders and a variety of tools and processes from different engineering backgrounds. Interoperability in these development tool chains is an important aspect for well-integrated systems. Furthermore, since full tool chain interoperability is neither possible nor necessarily desired, measuring interoperability in development environments is essential for setting the right priorities. This systematic literature review gives an overview of the literature about interoperability assessment methods. A survey was conducted through digital libraries and a total of 42 papers were read. Out of these papers, 24 different interoperability assessment models were identified and analyzed. A striking find of this study is that no proof of industrial adaptation of these models was found. In this paper, we analyze the reasons for this lack of validation in the context of CPS development. © 2016 IEEE.

Xie, L; Natarajarathinam, M; Johnson, MD; Qiu, SP	Current Trends in Supply Chain Training Programs in the Context of Industry 4.0 Technologies	2015	10.4018/978-1-4666-8751-6.ch012	Recently practical approaches for development of ubiquitous semantic applications have made quite some progress. In particular in the area of the ubiquitous access to the semantic data the authors recently observed a large number of approaches, systems and applications being described in the literature. With this survey the authors aim to provide an overview on the rapidly emerging field of Ubiquitous Semantic Applications (UbiSA). The authors conducted a systematic literature review comprising a thorough analysis of 48 primary studies out of 172 initially retrieved papers. The authors obtained a comprehensive set of quality attributes for UbiSA together with corresponding application features suggested for their realization. The quality attributes include aspects such as mobility, usability, heterogeneity, collaboration, customizability and evolvability. The primary studies were surveyed in the light of these quality attributes and the authors performed a thorough analysis of five ubiquitous semantic applications, six frameworks for UbiSA, three UbiSA specific ontologies, five ubiquitous semantic systems and nine general approaches. The proposed quality attributes facilitate the evaluation of existing approaches and the development of novel, more effective and intuitive UbiSA. © 2016, IGI Global. All rights reserved.
Gadey, N; Pataunia, P; Chan, A; Rincon, AR	Technologies for monitoring activities of daily living in older adults: a systematic review	2013	10.1007/978-3-642-32538-0_15	eHealth applications is the rise in consumer empowerment. The latest advances in sensor technology, sensors implementation, improved wireless telecommunications capabilities, open networks, continued increases in computing power, improved battery technology, and the emergence of flexible software architecture has led to an increased accessibility to healthcare providers, more efficient tasks and processes, and a higher overall quality of healthcare services. Intelligent infrastructures have provided the layers for contextual information gathering, knowledge processing as well as adaptation and optimization mechanisms. Pervasive health monitoring and care (PHMC) would shift the paradigm of healthcare from the traditional reactive, event-driven model, to one were subjects proactively manage their health in a patient centered healthcare system. The objective of this work was to identify requirements and barriers to adoption of pervasive sensing and computing in healthcare. To do so, the authors systematically reviewed published works on health information technology, eHealth, and pervasive health care, since 2005. We found technological, financial, psychological, logistic and liability issues related with requirements and barriers to PHMC adoption. We identified as potential requirements related with adoption of PHMC: optimization of hardware and software for remote, unobtrusive health monitoring; better evaluation of the implemented systems; better coordination of the involved stakeholders; respect and improvement of existing standards for eHealth or new standards realization; collaboration and team work of all stakeholders that may benefits from pervasive health implementation; training in using new technology; training for searching library and information sciences related with health technology and information communication technology; training in thoughtfully analysis of added value associated with new health technology; promotion of healthier lifestyle using health information technology; analysis of social and organizational change process in order to design flexible, adaptive systems for health monitoring and care; adequate policy support for quality improvement of pervasive health systems; transparency with regard to the goal, business plan and process
Revez, J; Corujo, L	Infodemic, disinformation and fake news: the role of libraries in Post-Truth Society	2001		on Aerodynamics. The topics include: Review of state-of-art of smart structures and integrated systems; fracture parameters determination in stiffened composite panels; controlling progressive failure analyses using artificial viscous damping; progressive failure studies of composite panels with and without cutouts; strain invariant failure criteria for polymers in composite materials; failure analysis of internally pressurized elliptical composite cylinders; composite sandwich beams under low-velocity impact; post-buckling analysis of debonded sandwich beams; damage characteristics in sandwich panels subjected to static indentation using spherical indentors; thermal testing of tow-placed, variable stiffness panels; numerical investigation of the gouging phenomena within a hypersonic rail-sled assembly; impact resonance of affordable graphite/epoxy woven fabric composites; curved flange effectivities for unsymmetric composites; design of braided composite tubes for energy absorption; intelligent gossamer structures - a review of recent developments and future trends; distributed localized shape control of gossamer space structures; local effects of PVDF patches on inflatable space-based structures; adaptive structures technology for membrane optical surfaces; simultaneous optimization of design and manufacture of composite structures; stacking sequence blending of multiple composite laminates using genetic algorithms; optimization of a composite pitch-controlled variable-speed wind turbine; composite wing structural design optimization with continuity constraints; optimal weight of cracked composite panels by an equivalent strain constraint; aerodynamic impulse response of a panel method; transonic limit cycle oscillation analysis using reduced order aerodynamic models; development of unsteady aerodynamic state-space models from CFD-based pulse responses; high temperature polyimide materials in extreme temperature environments; steady state cracking of pmcs at cyrogenic temperatures; modeling of propellant leakage through matrix cracks in composite laminates; detection of micro-leaks through complex geometries under mechanical load and at cryogenic temperature; facesheet push-off tests to determine composite sandwich toughness at

Soomro, SA; Casakin, H; Nanjappan, V; Georgiev, GV	Makerspaces Fostering Creativity: A Systematic Literature Review	2016	10.14236/ ewic/HCI201 6.36	Most governments implement the latest information communication technology (ICT) to improve the online experience of their citizens and businesses. Governments put great effort into providing user-focused services that are usable, secure and accessible by portable and wireless devices (e.g. tablets, smart phones etc.). However, such devices bring with them specific problems of usability and security that affect how users interact with government digital services (GDS). This paper presents a systematic mapping study, investigating the existing problems of usability and security of GDS accessed through smart devices. It aims to uncover what evaluation methods have been used by researchers and investigate how the trade-off between usability and security is assessed in the context of GDS accessed through smart devices. The paper summarises the current knowledge available with regards to this trade-off over the last ten years. The results of the mapping study help identify several research gaps, leading to areas for new research in the domain of usability and security in the context of GDS. © Alshamsi et al.
Queiros, A; Silva, A; Alvarelhao, J; Rocha, NP; Teixeira, A	Barriers to and Facilitators of Using eHealth to Support Gestational Diabetes Mellitus Self-management: Systematic Literature Review of Perceptions of Health Care Professionals and Women With Gestational Diabetes Mellitus	2015		The proceedings contain 11 papers. The topics discussed include: model for the effectiveness estimation of simulation-based acquisition by considering the value of modeling and simulation; cost estimation of simulation models for the effectiveness estimation of simulation-based acquisition; current trends in usability evaluation methods: a systematic review; data integration progression in large data source using mapping affinity; the effect of database system application to alleviate chronic obstructive pulmonary disease; a design of efficient medical information system to enhance health behaviors after radical prostatectomy; construction for balanced Boolean function with maximum algebraic immunity; optical illusion effect by histogram analysis; a survey on encryption schemes in wireless sensor networks; a survey on security models, techniques, and tools for the internet of things; and quantitative risk management for communication and information systems: state-of-the-art and challenges.
Lee, KT; Im, JB; Park, SJ; Kim, JH	Assessing asthma severity based on claims data: a systematic review	2013		on Information Systems. The topics include: Computing requirements in open source software projects; a comparison of nonlinear pricing preference models for digital services; a computational approach to detecting and assessing sustainability-related communities in social media; a conceptualisation of management situations relevant for collaborative is research projects; a conceptualization of complexity in IS-driven organizational transformations; information security collective efficacy and vulnerability; a cross-sectional and temporal analysis of information consumption on twitter; a measurement model for investigating digital natives and their organisational behaviour; a model of product design and information disclosure investments; a problem-solving perspective on governance and product design in open source software projects; a qualitative approach to examine technology acceptance; a sensemaking approach to tablet users' accommodating practices; a systems approach to countermeasures in credibility assessment interviews; aligning business and it strategies in multi-business organizations; an empirical examination of users' information hiding in a crowdfunding context; an empirical investigation of a user-centric typology of innovation for evolving information systems products; an exploration of group information security compliance; an information quality evaluation framework of object tracking systems; an ontology artifact for information systems sentiment analysis; visualising perspectives of business and information systems; attention trade-off between two types of user contributions; the effects of user- and marketer-generated content on purchase decision processes; boundary spanning through enterprise social software; investment management systems and new institutional logics for regulatory compliance; bundling of software products and services to fight against piracy; capturing multi-stakeholder needs in customer-centric cloud service design; an empirical analysis of the impact of formal controls in strategic outsourcing contracts; cloud computing providers' unrealistic optimism regarding it security risks; cognitive biases in new technology appropriation; collective intelligence in market-based social decision making;

Safiee, L; Rough, DJ; Whitford, H	Clinical Practice Pathways for Evaluation and Medication Choice for Attention-Deficit/Hyperactivity Disorder Symptoms in Autism Spectrum Disorders	2013		on Information Systems. The topics include: Computing requirements in open source software projects; a comparison of nonlinear pricing preference models for digital services; a computational approach to detecting and assessing sustainability-related communities in social media; a conceptualisation of management situations relevant for collaborative is research projects; a conceptualization of complexity in IS-driven organizational transformations; information security collective efficacy and vulnerability; a cross-sectional and temporal analysis of information consumption on twitter; a measurement model for investigating digital natives and their organisational behaviour; a model of product design and information disclosure investments; a problem-solving perspective on governance and product design in open source software projects; a qualitative approach to examine technology acceptance; a sensemaking approach to tablet users' accommodating practices; a systems approach to countermeasures in credibility assessment interviews; aligning business and it strategies in multi-business organizations; an empirical examination of users' information hiding in a crowdfunding context; an empirical investigation of a user-centric typology of innovation for evolving information systems products; an exploration of group information security compliance; an information quality evaluation framework of object tracking systems; an ontology artifact for information systems sentiment analysis; visualising perspectives of business and information systems; attention trade-off between two types of user contributions; the effects of user- and marketer-generated content on purchase decision processes; boundary spanning through enterprise social software; investment management systems and new institutional logics for regulatory compliance; bundling of software products and services to fight against piracy; capturing multi-stakeholder needs in customer-centric cloud service design; an empirical analysis of the impact of formal controls in strategic outsourcing contracts; cloud computing providers' unrealistic optimism regarding it security risks; cognitive biases in new technology appropriation; collective intelligence in market-based social decision making;
Jacob, C; Haas, JS; Bechtel, B; Kardos, P; Braun, S	Remote Big Data Management Tools, Sensing and Computing Technologies, and Visual Perception and Environment Mapping Algorithms in the Internet of Robotic Things	2017		The proceedings contain 213 papers. The topics discussed include: we need to discuss the relationship - an analysis of facilitators and barriers of software ecosystempartnerships; the influence of software product quality attributes on open source projects: a characterization study; a TOSCA-based programming model for interacting components of automatically deployed cloud and IoT applications; an ontology-based approach to analyzing the occurrence of code smells in software; an integrated inspection system for belt conveyor rollers - advancing in an enterprise architecture; when agile meets waterfall - investigating risks and problems on the interface between agile and traditional software development in a hybrid development organization; development of an electronic health record application using a multiple view service oriented architecture; a characterization of cloud computing adoption based on literature evidence; contact deduplication in mobile devices using textual similarity and machine learning; guidelines of data quality issues for data integration in the context of the TPC-DI benchmark; extensions, analysis and experimental assessment of a probabilistic ensemble-learning framework for detecting deviances in business process instances; audio description on Instagram: evaluating and comparing two ways of describing images for visually impaired; facial expression recognition improvement through an appearance features combination; on the development of serious games in the health sector - a case study of a serious game tool to improve life management skills in the young; and software ecosystems governance - a systematic literature review and research agenda.
Jayawardana, J; Kulatunga, AK; Jayasinghe, JASC; Sandanayake, M; Zhang, GM	Challenges in Assessing Mobile Health App Quality A Systematic Review of Prevalent and Innovative Methods	2016		The proceedings contain 53 papers. The special focus in this conference is on Human Aspects in Composite Manufacturing, Product Evaluation, Human Aspects in Textile Manufacturing, Product Evaluation, Ergonomic Design of Future Production Systems, Industrial Robotics; Intelligent Automation, Ergonomics Design of Manufacturing Processes, Organization Design, Management, Human-Oriented Design of Production Systems and Integrated Design of Flexible Production Systems. The topics include: Study on light diffusion of creped silk inserted GFRP; research and development of robots with advanced skills in hand lay-up; analysis of blowing in quartz glass fire process; process study of hand lay-up method to clarify implicit knowledge of professionals; study on braiding skills of experts with eye movement measurement and operating analysis; study on the effect of arm movement in knitting process on knitting quality; model-based evaluation of cooperative assembly processes in human-robot collaboration; lightweight robots and human interaction in assembly systems; interaction dialog design for the use of mobile devices while walking; a customizable digital human model for assembly system design; management of enterprise of the future in the ecosystem of the internet of things; assessing graphical robot aids for interactive co-working; safety system for industrial robots to support collaboration; assistance systems in manufacturing; a systematic review; agility of knowledge-based organizations; achieving mass customization through additive manufacturing; flexibility of SMEs and the dimensions of seaports management in a static systemic approach.

Mahajan, R; Bernal, MP; Panzer, R; Whitaker, A; Roberts, W; Handen, B; Hardan, A; Anagnostou, E; Veenstra- VanderWeele, J	Effects of Virtual Reality on the Limb Motor Function, Balance, Gait, and Daily Function of Patients with Stroke: Systematic Review	2015	10.1007/s10916-015-0243-1	The aim of this paper is to employ the guidelines of Android, iOS, Blackberry and Windows Phone to analyze the usability compliance of free blood donation (BD) apps. An analysis process based on a systematic review protocol is used to select free BD apps. An assessment is conducted using a questionnaire composed of 13 questions concerning the compliance of free BD apps with Android, Blackberry, iOS and Windows Phone usability guidelines. A total of 133 free BD apps have been selected from the 188 BD apps identified. Around 63 % of the free BD apps selected have a good compliance with mobile OS usability recommendations. Around 72 % of Android, 57 % of Windows Phone, 33 % of iOS and 33 % of Blackberry BD apps have a high usability score. The aspect of BD app behavior should be improved along with some style components: the use of pictures to explain ideas and the adaptation of the app to both horizontal and vertical orientations. Structure patterns should also be used to improve the structure aspect of a BD app. Usability is a quality aspect that should be improved in current BD apps. Our study provides smartphone users with a list of usable free BD apps and BD app developers with recommendations. © 2015, Springer Science+Business Media New York.
Andronie, M; Lazaroiu, G; Karabolevski, OL; Stefanescu, R; Hurloiu, I; Dijmarescu, A; Dijmarescu, I	Supply chain flexibility and mass personalization: a systematic literature review			
Grundy, QH; Wang, ZC; Bero, LA	Prescribable mHealth apps identified from an overview of systematic reviews			
Zhang, BH; Wong, KP; Qin, J	Social anxiety apps: a systematic review and assessment of app descriptors across mobile store platforms			
Novais, LR; Maqueira, JM; Bruque, S	Understanding Design Approaches and Evaluation Methods in mHealth Apps Targeting Substance Use: Protocol for a Systematic Review			
Byambasuren, O; Sanders, S; Beller, E; Glasziou, P	Usability Evaluations of Mobile Mental Health Technologies: Systematic Review			
Alyami, M; Giri, B; Alyami, H; Sundram, F	Effectiveness of technologies in the treatment of post-stroke anomia: A systematic review			
Wong, YS; Hayati, MYM; Tan, WH; Yap, LC	Digital contact tracing, community uptake, and proximity awareness technology to fight COVID-19: a systematic review			
Kunchay, S; Linden-Carmichael, AN; Lanza, ST; Abdullah, S	Study protocol for a systematic review of evidence for digital interventions for comorbid excessive drinking and depression in community-dwelling populations			
Fatima, N; Saxena, P; Gupta, M	Mobile Health for First Nations Populations: Systematic Review			
Inal, Y; Wake, JD; Guribye, F; Nordgreen, T	Mobile Phone and Wearable Sensor-Based mHealth Approach for Psychiatric Disorders and Symptoms: Systematic Review and Link to the m-RESIST Project			
Lavoie, M; Macoir, J; Bier, N	Smartphone-Based Self-Monitoring, Treatment, and Automatically Generated Data in Children, Adolescents, and Young Adults With Psychiatric Disorders: Systematic Review			
Grekousis, G; Liu, Y	Effectiveness of telemedicine: A systematic review of reviews			



Bautista-Moncada, C; Buhangin, JF; Angalan, NQ	m-Health adoption by healthcare professionals: a systematic review			
Schulte, B; Kaner, EFS; Beyer, F; Schmidt, CS; O'Donnell, A	Barriers to blockchain-based decentralised energy trading: a systematic review			
Villegas, NM; Sanchez, C; Diaz-Cely, J; Tamura, G	Effectiveness of Mobile Health Application Use to Improve Health Behavior Changes: A Systematic Review of Randomized Controlled Trials			
Hobson, GR; Caffery, LJ; Neuhaus, M; Langbecker, DH	A systematic review of cardiovascular emergency department visits, hospital admissions and mortality associated with ambient black carbon			
Seppala, J; De Vita, I; Jamsa, T; Miettunen, J; Isohanni, M; Rubinstein, K; Feldman, Y; Grasa, E; Corripio, I; Berdun, J; D'Amico, E; Bulgheroni, M	Examining the Academic Trends in Neuropsychological Tests for Executive Functions Using Virtual Reality: Systematic Literature Review			
Melbye, S; Kessing, LV; Bardram, JE; Faurholt-Jepsen, M	Multidisciplinary-based Rehabilitation (MBR) Compared With Active Physical Interventions for Pain and Disability in Adults With Chronic Pain A Systematic Review and Meta-analysis			
Ekeland, AG; Bowes, A; Flottorp, S	Evaluation of Clinical Practice Guidelines on Fall Prevention and Management for Older Adults A Systematic Review			
Gagnon, MP; Ngangue, P; Payne-Gagnon, J; Desmartis, M	Machine learning in point-of-care automated classification of oral potentially malignant and malignant disorders: a systematic review and meta-analysis			
Karumba, S; Sethuvenkatraman, S; Dedeoglu, V; Jurdak, R; Kanhere, SS	Identification and Classification of Global Theoretical Trends and Supply Chain Development Directions			
Han, M; Lee, E	The relationship between sleep and problematic smartphone use among adolescents: A systematic review			
Luben, TJ; Nichols, JL; Dutton, SJ; Kirrane, E; Owens, EO; Datko-Williams, L; Madden, M; Sacks, JD	Digital health interventions for the management of mental health in people with chronic diseases: a rapid review			
Kim, E; Han, J; Choi, H; Prie, Y; Vigier, T; Bulteau, S; Kwon, GH	Current State and Future Directions of Technology-Based Ecological Momentary Assessment and Intervention for Major Depressive Disorder: A Systematic Review			

Casey, MB; Smart, KM; Segurado, R; Doody, C	Smartphone addiction risk, technology-related behaviors and attitudes, and psychological well-being during the COVID-19 pandemic			
Montero-Odasso, MM; Kamkar, N; Pieruccini-Faria, F; Osman, A; Sarquis-Adamson, Y; Close, J; Hogan, DB; Hunter, SW; Kenny, RA; Lipsitz, LA; Lord, SR; Madden, KM; Petrovic, M; Ryg, J; Speechley, M; Sultana, M; Tan, MP; van der Velde, N; Verghese, J; Masud, T	Evaluating the use of telemedicine in gynaecological practice: a systematic review			
Ferro, A; Kotecha, S; Fan, K	Dietary assessment methods used in adult digital weight loss interventions: A systematic literature review			
Grzybowska, K	Agri-Food Contexts in Mediterranean Regions: Contributions to Better Resources Management			
Mac Carthaigh, S; Griffin, C; Perry, J	Smartphone-Based Self-Assessment of Stress in Healthy Adult Individuals: A Systematic Review			
Sasseville, M; LeBlanc, A; Boucher, M; Dugas, M; Mbemba, G; Tchuente, J; Chouinard, MC; Beaulieu, M; Beaudet, N; Skidmore, B; Cholette, P; Aspiros, C; Larouche, A; Chabot, G; Gagnon, MP	Use of mobile applications in post-stroke rehabilitation: a systematic review			
Cunha, B; Brito, C; Araujo, G; Sousa, R; Soares, A; Silva, FA	Evidence of Effectiveness of Health Care Professionals Using Handheld Computers: A Scoping Review of Systematic Reviews			
Ermilov, T; Khalili, A; Auer, S	Current reporting of usability and impact of mHealth interventions for substance use disorder: A systematic review			
Colombo, D; Fernandez-Alvarez, J; Patane, A; Semonella, M; Kwiatkowska, M; Garcia-Palacios, A; Cipresso, P; Riva, G; Botella, C	E-Government Usability Evaluation: Insights from A Systematic Literature Review			
Popescu, AM; Balica, RS; Lazar, E; Busu, VO; Vascu, JE	The sustainability impact of a digital circular economy			

Murugesu, S; Galazis, N; Jones, BP; Chan, M; Bracewell-Milnes, T; Ahmed-Salim, Y; Grewal, K; Timmerman, D; Yazbek, J; Bourne, T; Saso, S	Enhancing the cost-effectiveness of surgical care in pancreatic cancer: a systematic review and cost meta-analysis with trial sequential analysis			
Shoneye, CL; Kwasnicka, D; Mullan, B; Pollard, CM; Boushey, CJ; Kerr, DA	Pervasive refusal syndrome: systematic review of case reports			
Martinho, VJPD	The effect of mobile application-based rehabilitation in patients with Parkinson's disease: A systematic review and meta-analysis			
Porarinsdottir, H; Kessing, LV; Faurholt-Jepsen, M	Text Messaging Interventions for Reducing Alcohol Consumption Among Harmful and Hazardous Drinkers: Protocol for a Systematic Review and Meta-Analysis			
Ansaar, MZ; Hussain, J; Bang, J; Lee, S; Shin, KY; Woo, KY	Evaluative Research of Technologies for Prehospital Communication and Coordination: a Systematic Review			
Zhou, X; Du, MX; Zhou, LS	Social Networking Sites, Depression, and Anxiety: A Systematic Review			
Ferreira, WD; Armellini, F; De Santa-Eulalia, LA	Persistently high hepatitis C rates in haemodialysis patients in Brazil [a systematic review and meta-analysis]			
Mickan, S; Tilson, JK; Atherton, H; Roberts, NW; Heneghan, C	Novel Screening and Monitoring Techniques for Deformational Plagiocephaly: A Systematic Review			
Carreiro, S; Newcomb, M; Leach, R; Ostrowski, S; Boudreaux, ED; Amante, D	Data Aggregation Mechanisms on the Internet of Things: A Systematic Literature Review			
Lyzara, R; Purwandari, B; Zulfikar, MF; Santoso, HB; Solichah, I	The impact of smartphone app-based interventions on adolescents' dietary intake: a systematic review and evaluation of equity factor reporting in intervention studies			
Kapassa, E; Themistocleous, M; Christodoulou, K; Iosif, E	Economic Evaluations of Clinical Pharmacy Services: 2006-2010			
Piscicelli, L	Medical Correctness and User Friendliness of Available Apps for Cardiopulmonary Resuscitation: Systematic Search Combined With Guideline Adherence and Usability Evaluation			
Khowaja, K; Banire, B; Al- Thani, D; Sqalli, MT; Aqle, A; Shah, A; Salim, SS	Usability evaluation methods for mobile serious games applied to health: a systematic review			

Karunakaran, M; Jonnada, PK; Chandrashekhar, SH; Vinayachandran, G; Kaambwa, B; Barreto, SG	Evaluating optimal utilisation of technology in type 1 diabetes mellitus from a clinical and health economic perspective: protocol for a systematic review			
Otasowie, J; Paraiso, A; Bates, G	Smart teachers, successful students? A systematic review of the literature on teachers' cognitive abilities and teacher effectiveness			
Hosseinzadeh, M; Hemmati, A; Rahmani, AM	What Is Next for Patient Preferences in Health Technology Assessment? A Systematic Review of the Challenges			
Ozden, F	Towards Deeper Understanding of User Experience with Ubiquitous Computing Systems: Systematic Literature Review and Design Framework			
Bendtsen, M	Development of a patient-reported outcome measure of recovery after abdominal surgery: a hypothesized conceptual framework			
Zhang, Z; Brazil, J; Ozkaynak, M; Desanto, K	Smartphone-Based Ecological Momentary Assessment of Well-Being: A Systematic Review and Recommendations for Future Studies			
Saqib, M; Moon, AH	Open innovation and collaboration: A systematic literature review			
Seabrook, EM; Kern, ML; Rickard, NS	Harnessing Difference: A Capability-Based Framework for Stakeholder Engagement in Environmental Innovation			
Zapata, BC; Fernandez-Aleman, JL; Idri, A; Toval, A	Systemic Defenses to Prevent Intravenous Medication Errors in Hospitals: A Systematic Review			
Niquini, RP; da Mota, JC; Bastos, LS; Barbosa, DDM; Falcao, JD; Palmieri, P; Martins, P; Villar, LM; Bastos, FI	Review and Application of Research on Social Representation Theory			
Watt, A; Zammit, D; Lee, JM; Gilardino, M	Use and Effectiveness Of Mobile Health Applications For Stress Management and Emotional Self-Regulation In Adult Workers: A Systematic Review			
Batra, S; Baker, RA; Wang, T; Forma, F; DiBiasi, F; Peters-Strickland, T	The Prevalence of Nonsuicidal Self-Injury in Military Personnel: A Systematic Review and Meta-Analysis			
Yousefi, S; Karimipour, H; Derakhshan, F	Learning design and learning analytics in mobile and ubiquitous learning: A systematic review			
Schaafsma, HN; Jantzi, HA; Seabrook, JA; McEachern, LW; Burke, SM; Irwin, JD; Gilliland, JA	Vector control for malaria prevention during humanitarian emergencies: protocol for a systematic review and meta-analysis			

Ismail, ZAB	Blockchain review for battery supply chain monitoring and battery trading			
Touchette, DR; Doloresco, F; Suda, KJ; Perez, A; Turner, S; Jalundhwala, Y; Tangonan, MC; Hoffman, JM	Antibacterial data synthesis challenges: a systematic review of treatments for complicated gram-negative urinary tract infections			
Metelmann, B; Metelmann, C; Schuffert, L; Hahnenkamp, K; Brinkrolf, P	Use of Near-infrared Spectroscopy and Implantable Doppler for Postoperative Monitoring of Free Tissue Transfer for Breast Reconstruction: A Systematic Review and Meta-analysis			
Schmidt, JDE; De Marchi, ACB	A Systematic Review of Fitness Apps and Their Potential Clinical and Sports Utility for Objective and Remote Assessment of Cardiorespiratory Fitness			
Dorst, LM; Cimonetti, V; Cardoso, JR; Moura, FA; Bini, RR	Indoor Air-Quality Data-Monitoring System: Long-Term Monitoring Benefits			
Pease, A; Lo, C; Earnest, A; Liew, D; Zoungas, S	Industry 4.0 in the product development process: benefits, difficulties and its impact in marketing strategies and operations			
Bardach, L; Klassen, RM	Evidence on respectful maternity care for adolescents: a systematic review protocol			
Yu, JY; de Antonio, A; Villalba-Mora, E	A Systematic Review on the Effectiveness of Blended Learning on Learners? EFL Vocabulary Performance			
Huls, SPI; Whichello, CL; van Exel, J; Uyl-de Groot, C; de Bekker-Grob, EW	A review on trust management in fog/edge computing: Techniques, trends, and challenges			
Cardona, JS; Lopez, JA; Vela, FLG; Moreira, F	Evaluation of User Experience in Human-Robot Interaction: A Systematic Literature Review			
Vaananen-Vainio-Mattila, K; Olsson, T; Hakkila, J	A systematic review of eHealth modes in preventing sexually transmitted infections			
Alam, R; Figueiredo, SM; Balvardi, S; Nauche, B; Landry, T; Lee, L; Mayo, NE; Feldman, LS; Fiore, JF	Framework for the Design Engineering and Clinical Implementation and Evaluation of mHealth Apps for Sleep Disturbance: Systematic Review			
Erazo-Garzon, L; Erraez, J; Cedillo, P; Illescas-Pena, L	Social media for clinical management of neurologic diseases: an HTA approach			
de Vries, LP; Baselmans, BML; Bartels, M	Outcomes of Telehealth-Delivered Physical Activity Programs in Adult Cancer Survivors: A Systematic Review			
Meireles, FRD; Azevedo, AC; Boaventura, JMG	Self-Directed Interventions to Promote Weight Loss: A Systematic Review of Reviews			

Watson, R; Wilson, HN; Smart, P; Macdonald, EK	A Survey of Smartwatches in Remote Health Monitoring			
De Queiroz, MJN; Duarte, EF; Dos Reis, JC; Pimenta, JRDG	A systematic review of the use of dietary self-monitoring in behavioural weight loss interventions: delivery, intensity and effectiveness			
Kuitunen, SK; Niittynen, I; Airaksinen, M; Holmstrom, AR	Challenges and Tendencies of Automatic Milking Systems (AMS): A 20-Years Systematic Review of Literature and Patents			
Wang, JM	Usability of Mobile Phones in Physical Activity-Related Research: A Systematic Review			
Vertola, G; Marcello, A; Bottone, M; Sperandeo, R; Muzii, B; Scandurra, C; Maldonato, NM	Long-term effects of e-Health secondary prevention on cardiovascular health: a systematic review and meta-analysis			
Gromatsky, M; Halverson, TF; Dillon, KH; Wilson, LC; LoSavio, ST; Walsh, S; Mellows, C; Mann, AJ; Goodman, M; Kimbrel, NA	A systematic literature review of innovative technologies adopted in logistics management			
Pishtari, G; Rodriguez-Triana, MJ; Sarmiento-Marquez, EM; Perez-Sanagustin, M; Ruiz-Calleja, A; Santos, P; Prieto, LP; Serrano-Iglesias, S; Valjataga, T	Effects of clinical communication interventions in hospitals: A systematic review of information and communication technology adoptions for improved communication between clinicians			
Messenger, LA; Furnival-Adams, J; Pelloquin, B; Rowland, M	Systematic review of tools to measure outcomes for young children with autism spectrum disorder			
Rufino, CA; Sanseverino, ER; Gallo, P; Koch, D; Schweiger, HG; Zanin, H	Emotion regulation and burnout in doctors: a systematic review			
Dillon, R; Uyei, J; Singh, R; McCann, E	A systematic review of mobile health interventions in China: Identifying gaps in care			
Berthelot, M; Ashcroft, J; Boshier, P; Hunter, J; Henry, FP; Lo, B; Yang, GZ; Leff, D	How to design font size for older adults: A systematic literature review with a mobile device			
Muntaner-Mas, A; Martinez-Nicolas, A; Lavie, CJ; Blair, SN; Ross, R; Arena, R; Ortega, FB	A systematic review showing the lack of diagnostic criteria and tools developed for lower-limb cellulitis			
da Costa, VBF; de Doile, GND; Troiano, G; Dias, BH; Bonatto, BD; Soares, T; de Freitas, W	A Systematic Review of Behaviour-Related Outcome Assessments for Children on the Autism Spectrum with Intellectual Disabilities in Education Settings			

Sun, SJ; Zheng, XC; Villalba-Diez, J; Ordieres-Mere, J	The effect of telemedicine on secondary prevention of atherosclerotic cardiovascular disease: A systematic review and meta-analysis			
Arromba, IF; Martin, PS; Ordonez, RC; Anholon, R; Rampasso, IS; Santa-Eulalia, LA; Martins, VWB; Quelhas, OLG	Sensing Systems for Respiration Monitoring: A Technical Systematic Review			
Habib, HH; Mwaisaka, J; Torpey, K; Maya, ET; Ankomah, A	Cost-effectiveness of exercise versus multimodal interventions that include exercise to prevent falls among community-dwelling older adults: A systematic review and meta-analysis			
Moulema, P; Yu, W; Griffith, D; Golmie, N	Towards Sustainable Development through the Perspective of Construction 4.0: Systematic Literature Review and Bibliometric Analysis			
Chuane, Q; Shukor, SS; Singh, CKS; Guilin, W; Xiaofen, Z; Yuehong, T	Understanding technology acceptance in smart agriculture: A systematic review of empirical research in crop production			
Navas, RE; Cuppens, F; Cuppens, NB; Toutain, L; Papadopoulos, GZ	A Systematic Review of Energy Efficiency Home Retrofit Evaluation Studies			
Nikravan, M; Kashani, MH	A Comprehensive Study of the IoT Cybersecurity in Smart Cities			
Apraiz, A; Lasa, G; Mazmela, M	DALEC: a framework for the systematic evaluation of data-centric approaches to process management software			
Nourimand, F; Keramat, A; Sayahi, M; Bozorgian, L; Hashempours, Z	Managing expectations: cognitive authority and experienced control in complex healthcare processes			
Aji, M; Gordon, C; Stratton, E; Calvo, RA; Bartlett, D; Grunstein, R; Glozier, N	Applications of Bayesian belief networks in water resource management: A systematic review			
Torri, E; Pace, N; Bonifati, DM; Nollo, G	Applications of biosensors for bacteria and virus detection in food and water-A systematic review			
Blackwood, J; Rybicki, K	A Systematic Literature Review of the Design Approach and Usability Evaluation of the Pain Management Mobile Applications			
Tang, J; Abraham, C; Greaves, C; Yates, T	Protocol for a systematic review of evaluation research for adults who have participated in the SMART recovery' mutual support programme			



King, CE; Sarrafzadeh, M	A Lot of Action, But Not in the Right Direction: Systematic Review and Content Analysis of Smartphone Applications for the Prevention, Detection, and Management of Cancer			
Lopez, G; Guerrero, LA	Attention-deficit/hyperactivity disorder mobile apps: A systematic review			
Raber, M; Liao, Y; Rara, A; Schembre, SM; Krause, KJ; Strong, L; Daniel-MacDougall, C; Basen-Engquist, K	Sustainable Industry 4.0 in Production and Operations Management: A Systematic Literature Review			
Cogato, A; Brscic, M; Guo, H; Marinello, F; Pezzuolo, A	Mobile-assisted and gamification-based language learning: a systematic literature review			
Monroe, CM; Thompson, DL; Bassett, DR; Fitzhugh, EC; Raynor, HA	A systematic review of balance and fall risk assessments with mobile phone technology			
Su, JJ; Liu, JYW; Cheung, DSK; Wang, SS; Christensen, M; Kor, PPK; Tyrovolas, S; Leung, AYM	Text Messaging and Mobile Phone Apps as Interventions to Improve Adherence in Adolescents With Chronic Health Conditions: A Systematic Review			
Lagorio, A; Zenezini, G; Mangano, G; Pinto, R	A Systematic Literature Review of the Pain Management Mobile Applications: Toward Building a Conceptual Model			
Wu, RC; Tran, K; Lo, V; O'Leary, KJ; Morra, D; Quan, SD; Perrier, L	Smartphone Interventions for Weight Treatment and Behavioral Change in Pediatric Obesity: A Systematic Review			
McConachie, H; Parr, JR; Glod, M; Hanratty, J; Livingstone, N; Oono, IP; Robalino, S; Baird, G; Beresford, B; Charman, T; Garland, D; Green, J; Gringras, P; Jones, G; Law, J; Le Couteur, AS; Macdonald, G; McCull, EM; Morris, C; Rodgers, J; Simonoff, E; Terwee, CB; Williams, K	Evidence-based investment selection: Prioritizing agricultural development investments under climatic and socio-political risk using Bayesian networks			
Jackson-Koku, G; Grime, P	Food and Consumer Attitude(s): An Overview of the Most Relevant Documents			
Yang, XS; Kovarik, CL	Internet of Things and Smart City Initiatives in Middle Eastern Countries			
Hou, GH; Anicetus, U; He, JW	Use of Smartphones for the Detection of Uterine Cervical Cancer: A Systematic Review			

Patel, M; Lee, SI; Akyea, RK; Grindlay, D; Francis, N; Levell, NJ; Smart, P; Kai, J; Thomas, KS	Examining the applications of intelligent tutoring systems in real educational contexts: A systematic literature review from the social experiment perspective			
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Margarido, MG; Shah, A; Seto, E	SOOM: Sort-Based Optimizer for Big Data Multi-Query			













































































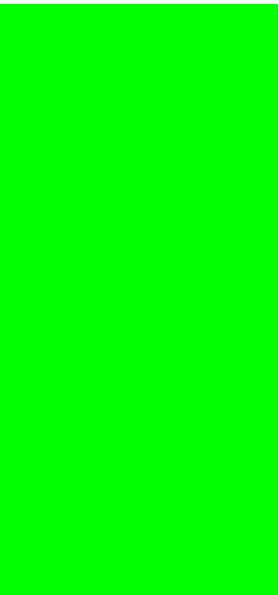












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