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Progress Report on Research Stay and Activities at Université Côte d’Azur “Creative Problem Solving with educational robots”

Oksana Strutynska, Margarida Romero

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“Creative Problem Solving with educational robots”

Progress Report on Research Stay and Activities at
Université Côte d'Azur



June 2024

Full prof. Oksana Strutynska

in collaboration with Full prof. Margarida Romero within the CreaComp research programme (ANR-18-CE38-0001 CreaMaker “#CreaMaker: assessment of co-creativity in a maker-based activity combining tinkering and digital fabrication” and the #CreaCube framework, Horizon augMENTOR ID 101061509, “Augmented Intelligence for Pedagogically Sustained Training and Education”) and MSc Smart EdTech “Co-creativity & Technology Enhanced Learning”.

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Research profile and outcomes

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Research platform: <https://creamaker.univ-cotedazur.fr/>

Introduction

The war in my country came as an unexpected disaster. In one day, peaceful life turned into a dangerous war zone for all citizens in Ukraine, in which it became very difficult, and often impossible, to work, study, to implement interesting ideas, and continue a normal life.

First and foremost, these processes have had a negative impact on Ukrainian education and science: a large number of destroyed educational institutions (both schools and universities), a large number of affected educators, and learners. All these conditions could have led to a large gap between the previous achievements of our country and its potential for future development.

However, thanks to the enormous support of democratic countries on all fronts (including refugee asylum, military and humanitarian needs, etc.), Ukrainian educators and scientists are able to continue their development and research.

France is one of the countries that most strongly supports my country and its citizens in this terrible war in which Ukrainians find themselves. In particular, thanks to the support of the French government, many Ukrainian children, educators and scientists can continue their normal lives, studies and professional activities in a safe and secure environment in France.

For me and my family, this opportunity is unique and I am very grateful to all my colleagues who supported me to get a funding from the PAUSE programme of the Collège de France "Emergency assistance to Ukrainian researchers" and the IDEX UCAjedi Advanced Research Programme of the University of Côte d'Azur and with supporting of the ANR CreaMaker project to continue my education, scientific and research activities.

I would like to express my special gratitude to full professor Margarita Romero for contacting me, for inviting me to participate in the competitive selection for a grant for research activities at LINE lab under PAUSE programme of the Collège de France "Emergency assistance to Ukrainian researchers" and the IDEX UCAjedi Advanced Research Programme of the University of Côte d'Azur, for supporting and supporting me, my family and all my colleagues from my home university in current period (starting with the preparation of my arrival in France and all other steps of integration into work in the French and European academic community).

Such support is of great importance not only for me as a scientist, but also for my colleagues, the university, the development of Ukrainian education and science in general, since I have already implemented many ideas obtained as a result of research activities in LINE lab into the educational and scientific process home university, disseminated at All-Ukrainian

scientific conferences, involved Ukrainian educators of all levels in their implementation (by conducting trainings, webinars, Summer Schools, etc.).

I believe that the funding of such research and the support of Ukrainian scientists and educators by the French government are an extremely important and effective tool for realizing the possibility of continuing research for Ukrainian scientists until the moment the war is over. The experience gained during the research stay of the Ukrainian researchers and educators will certainly contribute to the faster integration of Ukrainian education and science into the pan-European cultural space.

Description of the research activities

My research stay is funded by PAUSE programme of Collège de France “Emergency assistance to Ukrainian researchers” and the IDEX UCA ^{Jedi} Advanced Research Program of Université Côte d’Azur. The ANR CreaMaker has supported with the material and research infrastructure for video analysis (<https://creamaker.univ-cotedazur.fr/>) and the research activities and events at the national and international level¹. The MIO MSc Smart EdTech programme has facilitated teaching and workshop activities with Université Côte d’Azur master students.

Throughout my initial research stay supported by the IDEX UCA ^{Jedi} Advanced Research Program 2022 (November 2022–October 2023), I investigated the potential for theoretical and experimental cooperation with the host professor in areas of shared interest. We have paid special attention to original approaches to problem solving.

An experimental approach using CreaCube modular robotics to assess divergent thinking components through playful activities with Ukrainian students studying in France and in Kyiv.

The IDEX UCA ^{Jedi} Advanced Research Program 2022 funded the research stay that took place from November 2023 to June 2024, with a particular focus on artificial intelligence (AI) in education.

Analysis of research studies, scientific publications, and other materials on the application of AI in education was done during this time. In order to use AI tools creatively to solve real-world problems, practical tasks were developed. During the spring intensive week, the tasks were made available to MSc students in Smart EdTech. For students studying French and Ukrainian, a survey about artificial intelligence (AI) and its applications for pre-service teachers was created. The outcomes provide information for additional study on the application of AI tools and systems in education, particularly in pre-service teacher preparation.

The primary study findings are listed below.

¹ <https://creamaker.wordpress.com/>

Publications

List of publications funded by the IDEX UCA^{iedi} Advanced Research Program 2022, ANR CreaMaker (ANR-18-CE38-0001) and IDEX^{JEDI} Initiative of Excellence (IdEx-Action6-2023):

1. Strutynska O., Romero M. (2024). Evaluation of divergent thinking through playful modular robotics among Ukrainian refugees in France and participants in Kyiv under condition of war. EJEL <https://academic-publishing.org/index.php/ejel> Research Paper (Submitted).
2. Strutynska O., Romero M. Creative use of AI tools to solve real-world problems. *Theory and practice of using information technologies in the context of digital transformation of education: Proceedings of the II All-Ukrainian scientific and practical conference* (June 19-20, 2024, Kyiv, Ukraine). 2024. Submitted. (in Ukrainian).
3. Matusevych T., Romero M., Strutynska O. (2024). Citizenship, Censorship, and Democracy in the Age of Artificial Intelligence. In: Urmeneta, A., Romero, M. (eds) *Creative Applications of Artificial Intelligence in Education*. Palgrave Studies in Creativity and Culture. Palgrave Macmillan, Cham. pp. 57-71. https://doi.org/10.1007/978-3-031-55272-4_5. Retrieved from: https://link.springer.com/content/pdf/10.1007/978-3-031-55272-4_5 Book Chapter. (hal-04593573)
4. Romero M., Frosig T., Taylor-Beswick A.M.L., Laru J., Bernasco B., Urmeneta A., Strutynska O. & Girard M.A. (2024). Manifesto in Defence of Human-Centred Education in the Age of Artificial Intelligence. In: Urmeneta, A., Romero, M. (eds) *Creative Applications of Artificial Intelligence in Education*. Palgrave Studies in Creativity and Culture. Palgrave Macmillan, Cham. pp. 157-178. https://doi.org/10.1007/978-3-031-55272-4_12. Retrieved from: https://link.springer.com/content/pdf/10.1007/978-3-031-55272-4_12 Book Chapter. (hal-04593582).
5. Umryk, M., Strutynska, O., Khomych, O., Marushko, Y. (2024). How to Prepare the Modern Generation for Jobs in the Robotics Field?. In: Shchokin, R., Iatsyshyn, A., Kovach, V., Zaporozhets, A. (eds) *Digital Technologies in Education*. Studies in Systems, Decision and Control, vol. 529. Springer, Cham. https://doi.org/10.1007/978-3-031-57422-1_8. pp. 95-110. Retrieved from: https://link.springer.com/chapter/10.1007/978-3-031-57422-1_8. Book Chapter. (hal-04601425).

6. Strutynska O., Li C., Septiani D.P., Romero M. (2024). Smart EdTech, a global community of practice for the sociocritical development of artificial intelligence in education. *Proceedings of the 13th International Research Meeting in Business and Management (IRMBAM24)*, (July 4-5, 2024, Nice, France). Preprint. [hal-04606079](#).
7. Strutynska O., Matuskevych T., Romero M. Artificial intelligence: challenges and problems for civil society. *Educational robotics and artificial intelligence: Proceedings of the IV All-Ukrainian scientific and practical conference* (April 11-12, 2024, Dnipro, Ukraine). 2024. pp. 36-40. [hal-04606107](#) (in Ukrainian).
8. Strutynska O., Romero M. (2023). Evaluating playful creative problem solving in Kyiv and Ukrainian refugees in France. *17th European Conference on Games Based Learning (ECGBL-2023)*. (October 5-6, 2023, Enschede, the Netherlands). Vol. 17 No. 1 (2023). pp. 658-665. DOI: [10.34190/ecgbl.17.1.1342](https://doi.org/10.34190/ecgbl.17.1.1342). Retrieved from: <https://papers.academic-conferences.org/index.php/ecgbl/article/view/1342/1707>. Conference Paper. [hal-04601359](#).
9. Strutynska O., Romero M. Evaluating Playful Creative Problem Solving in Kyiv and Ukrainian Refugees in France. *Hybrid research symposium within the CreaComp research programme "Co-creative problem-solving and technology enhanced learning from a sociocultural perspective"* (October 17, 2023, Nice, France). 2023. Conference Poster. [hal-04601414](#)
10. Strutynska O., Romero M. Experience in evaluating creative problem-solving skills using modular robotics. *Theory and practice of using information technologies in the context of digital transformation of education: Proceedings of the I All-Ukrainian scientific and practical conference*, (June 29, 2023, Kyiv, Ukraine). 2023. pp. 152-156. [hal-04601383](#) (in Ukrainian).

All publications above are also integrated in the HAL repository.

11. Romero, M., Clarà, M., Isaac, G., Barma, M., Strutynska, O., & Matuskevych, T. (2023). *Co-creative problem-solving and dialogic inquiry for addressing the Artificial Intelligence opportunities for education. Proceedings of the research session within the General Assembly Meeting AugMENTOR*. (June 2, 2023, Université Côte d'Azur, Nice, France). pp. 7-8. Retrieved from: https://www.researchgate.net/publication/370804786_Co-creative_problem_solving_and_dialogic_inquiry_for_addressing_the_Artificial_Intelligence_opportunities_for_education_2nd_June_9h_within_the_Research_and_Innovation_Action_Augmented_Intelligence_f_or

List of additional publications from this time period (publications of the findings obtained through research under IDEX UCA^{icdi} Advanced Research Program 2022, ANR CreaMaker (ANR-18-CE38-0001) and IDEX^{JEDI} Initiative of Excellence (IdEx-Action6-2023) - dissemination research results):

12. Nesterova O., **Strutynska O.** Teaching the History of Science and Computer Engineering to Pre-Service Computer Science Teachers in the System of General Cultural Human Values. *Modern science and education: the latest socio-cultural projection: Proceedings of the International Scientific and Practical Conference* (May 20-21, 2024, Kyiv, Ukraine). 2024. pp. 127-131. (in Ukrainian).
13. Morze N., Boiko M., **Strutynska O.**, Smyrnova-Trybulska E. (2024). What Should Be the Digital Competence of Teachers in the Field of Artificial Intelligence? *Open educational e-environment of modern University*. No 16 (2024). pp. 76-91. ISSN: 2414-0325. DOI: <https://doi.org/10.28925/2414-0325.2024.16>. Retrieved from: <https://openedu.kubg.edu.ua/journal/index.php/openedu/article/view/531/458> Research Paper. (in Ukrainian).
14. **Strutynska O.V.**, Umryk M.A., Yefymenko V.V., Yefymenko T.O., Nesterova O.D. International practices of STREAM education. *Scientific and methodological bases of creating an innovative model of STEM education: Proceedings of the VII All-Ukrainian Scientific and Practical Conference* (October 26-27, 2023, Dnipro, Ukraine). 2023. pp. 10-12. (in Ukrainian).
15. **Strutynska O.V.**, Vasylyuk A.D. Topical issues of training teachers of robotics in Ukraine. *Educational Robotics: Proceedings of the III All-Ukrainian Scientific and Practical Conference* (April 13-14, 2023, Dnipro, Ukraine). 2023. pp. 19-23. (in Ukrainian).
16. Morze, N.V. and **Strutynska, O.V.**, 2023. Advancing educational robotics: competence development for pre-service computer science teachers. *CTE Workshop Proceedings (CITEd-2022)*, 10, pp.107-123. Available from: <https://doi.org/10.55056/cte.549>. Retrieved from: <https://acnsci.org/journal/index.php/cte/article/view/549> Conference Paper.
17. Morze, N. and **Strutynska, O.** (2023). Digital Transformation in Education: Model for Higher Educational Institutions. *Proceedings of the 2nd Myroslav I. Zhaldak Symposium on Advances in Educational Technology - AET* (November 11-12, 2021, Kyiv, Ukraine); ISBN 978-989-758-662-0, SciTePress, pages 421-431. DOI: 10.5220/0012065000003431. Retrieved from: <https://www.scitepress.org/PublicationsDetail.aspx?ID=4x7en9b07IQ=&t=1>
18. **Strutynska O.V.**, Umryk M.A., Yefymenko V.V., Yefymenko T.O., Nesterova O.D. European experience in STREAM education. *Proceedings of the round table*

"STEM-education from theory to practice" (March 24, 2023, Kyiv, Ukraine). Kyiv: Institute of Gifted Child of the National Academy of Pedagogical Sciences of Ukraine. 2023. pp. 77-85. URL: https://iod.gov.ua/content/events/40/krugliy-stil-steam-osvita-vid-teoriyi-do-praktiki_publications.pdf?1681920274.7301 (in Ukrainian).

Research activities and results

Main Activities:

| | |
|------------------------------|--|
| <p>17.06-20.06. 2024</p> | <p><i>Role: co-organizer and key speaker.</i></p> <p>Summer School DigTriES 2024 "EU best practices: computational thinking in primary school" for Ukrainian educators (with using the best practice in computational thinking and creative problem solving gained (with prof. Margarida Romero) by Prof. Strutynska during her research stay under <i>ANR CreaMaker</i> project in Université Côte d'Azur (Nice, France)).</p> <p>Facebook post: https://www.facebook.com/share/p/XJncSdMuBb9Tzxwh/?mibextid=oFDknk</p> |
| <p>15.05-18.05. 2024</p> | <p><i>Role: organizer and participant.</i></p> <p>Study visit to <i>EDUMOTIVA</i> - European Lab for Educational Technology under STREAM project (Athens, Greece) and to <i>IASIS</i> - Centre for social integration and mental health under <i>augMENTOR</i> project (Athens, Greece):</p> <ul style="list-style-type: none"> • workshop on creative use of AI tools for practicing teachers (EDUMOTIVA); • workshop in using digital tools for supporting mental health <i>iFightDepression</i> (IASIS). <p>Facebook posts: https://www.facebook.com/share/p/a6Ay7Js5DvHJkDhA/ https://www.facebook.com/permalink.php?story_fbid=pfbid036GHp3TUTwBuYNZEoXt8sUDxtznhvZyK5zaeb1skuBNRb7tv99zxR4DphyFZ86h15l&id=100003601359066</p> |
| <p>14.05-03.06. 2024</p> | <p><i>Role: researcher.</i></p> <p>Conducting a survey (online) on using Artificial Intelligence (AI) and its applications for pre-service teachers (Ukrainian students).</p> <p>Link on survey: in Ukrainian: https://forms.gle/2LLm6c55pCv1VANA8 (about 130 participants).</p> |
| <p>06.05-07.05. 2024</p> | <p><i>Role: researcher.</i></p> <p>Conducting a survey (face-to-face) on using Artificial Intelligence (AI) and its applications for pre-service teachers (French students).</p> <p>Link on survey: in French: https://forms.gle/PweRry2F5uvG2NC4A (about 30 participants). in English: https://forms.gle/QCCriz4poSHhqWtj6 (about 40 participants).</p> |
| <p>09.04.2024</p> | <p><i>Role: speaker.</i></p> <p>Workshop "Missions with AI: creative use of technology and AI tools" for <i>MSc Smart EdTech</i> students during spring intensive week (08.04.2024-12.04.2024).</p> |

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| | <p>Link on the CreaMaker website: https://wordpress.com/post/creamaker.wordpress.com/839</p> |
| 12.02-15.02.2024 | <p><i>Role: participant.</i></p> <p>Smart EdTech Internship under PEERS exchange with HEP-Vaud (Lausanne, Switzerland):</p> <ul style="list-style-type: none"> • workshop on collaboration, creativity and problem-solving in the light of Technology-Enhanced Learning (TEL); • workshop in the Future Classroom LAB; • interview in School Radiobus. <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2024/02/17/smartedtech-internship/</p> <p>Link on FCL HEP: https://fcl.hepl.ch/visite-du-peers-de-luniversite-cote-dazur/</p> |
| 25.09-29.09.2023 | <p><i>Role: co-organizer and key speaker.</i></p> <p>Summer School STREAM 2023 "EU experience in training practicing teachers on STREAM education" for Ukrainian educators (using the best practice in STEAM education and educational Robotics gained (with prof. Margarida Romero) by Prof. Strutynska during her research stay under ANR CreaMaker project in Université Côte d'Azur (Nice, France)).</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/10/07/summer-school-stream-2023-for-training-ukrainian-practicing-teachers-in-stream-education-under-support-of-the-idex-ucajedi-excellence-program-and-anr-creamaker/</p> <p>Facebook post: https://www.facebook.com/profile.php?id=100086840350807</p> |
| 13.07.2023 | <p><i>Role: organizer.</i></p> <p>Next Workshop on Co-creative Problem Solving with Ukrainian students in Kyiv (Ukraine).</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/09/19/next-workshop-on-co-creative-problem-solving-with-ukrainian-students-in-kyiv-ukraine/</p> |
| 26.06-30.06.2023 | <p><i>Role: co-organizer and key speaker.</i></p> <p>Summer School DigTriES 2023 "EU best practices: universal design for teaching and learning" for Ukrainian educators (with the best practice in creative problem solving gained (with prof. Margarida Romero) by Prof. Strutynska during her research stay under ANR CreaMaker project in Université Côte d'Azur (Nice, France)).</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/09/18/summer-school-on-using-digital-tools-in-education-for-ukrainian-educators-under-support-of-the-idex-ucajedi-excellence-program-and-anr-c</p> |

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| | <p>reamaker/ Facebook post: https://www.facebook.com/groups/1132905924318408</p> |
| 05.04.2023 | <p><i>Role: speaker.</i></p> <p>Workshop "Digital world around us: Robotics, AI, 3D technology" for <i>MSc Smart EdTech</i> students during spring intensive week (03.04.2023-07.04.2023).</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/04/07/workshop-with-robotics-ai-and-3d-technology-activities-for-msc-smartedtech-students-during-spring-intensive-week-03-04-2023-07-04-2023/</p> <p>Facebook post: https://www.facebook.com/margarida.romero/posts/pfbid02nj5VZw27mLnvsQJ5YmxFNE6FFaMjbx2GESxRzhiKzLU88A9fEpYDWUNMsUvHWhW1I</p> |
| 18.01.2023 17.01.2023 14.01.2023 | <p><i>Role: organizer.</i></p> <p>Third Workshop on Creative Problem Solving with Ukrainian Kids & Teens & Families. Having interesting activities in Kyiv (Ukraine).</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/02/16/third-workshop-on-creative-problem-solving-with-ukrainian-kids-teens-families-having-interesting-activities-in-kyiv-ukraine/</p> |
| 14.12.2022 | <p><i>Role: co-organizer</i> (with Prof. Margarida Romero).</p> <p>Second Workshop with Ukrainian Kids & Teens & Families. Having fun with Unplugged Quest activities, CreaCube and Micro:Bit.</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2022/12/16/second-workshop-with-ukrainian-kids-teens-families-having-fun-with-unplugged-quest-activities-creacube-and-microbit/</p> |
| 07.12.2022 | <p><i>Role: co-organizer</i> (with Prof. Margarida Romero).</p> <p>Workshop on Creative Problem Solving and Educational Robotics with Ukrainian Kids & Teens & Families.</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2022/12/09/workshop-on-creative-problem-solving-and-educational-robotics-with-ukrainian-kids-teens-families/</p> |

There are some photos:

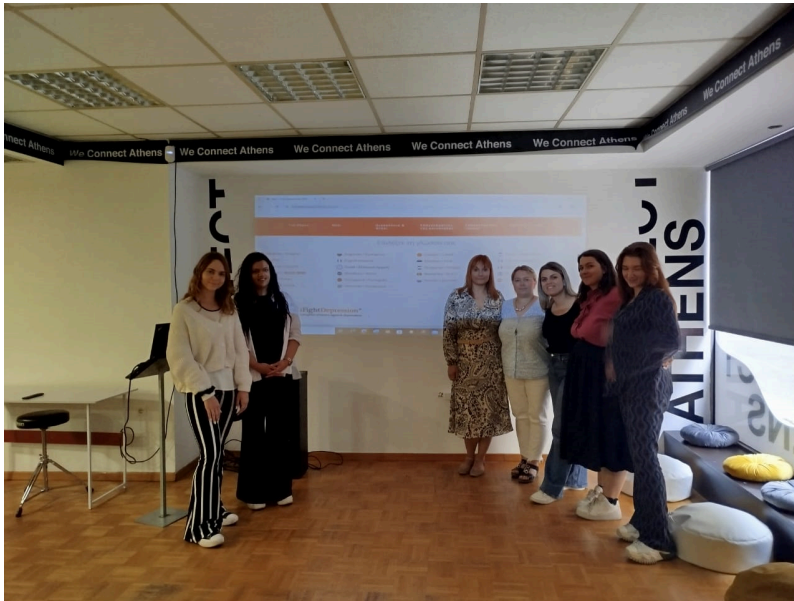


Figure 1. Study visit to IASIS – Centre for social integration and mental health under augMENTOR project (Athens, Greece)



Figure 2. Smart EdTech Internship under PEERS exchange with HEP-Vaud (Lausanne, Switzerland)



Figure 3. Study visit to EDUMOTIVA - European Lab for Educational Technology (Athens, Greece)



Figure 4. Workshop "Missions with AI: creative use of technology and AI tools" for MSc Smart EdTech students during spring intensive week (08.04.2024-12.04.2024)



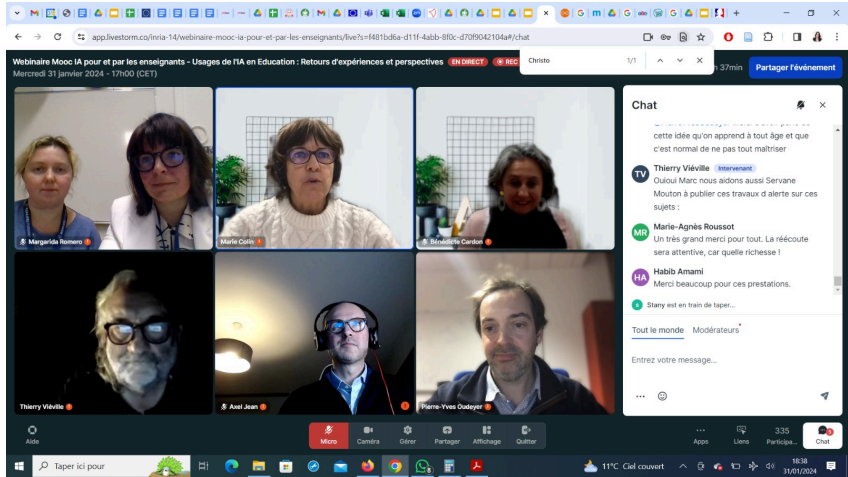
Figure 5. Workshops on Co-creative Problem Solving with Ukrainian school students in Nice (on the left) and in Kyiv (on the right)



Figure 6. Workshops on Co-creative Problem Solving with Ukrainian school students in Nice

Participation in the events (conferences, workshops, webinars etc.)

| | |
|------------|---|
| 19.06.2024 | <p><i>Role: co-organizer and key speaker.</i></p> <p>II Scientific and Practical Conference "Theory and Practice Use of IT in the Conditions of Digital Transformation of Education" (Dragomanov Ukrainian State University, Kyiv, Ukraine). Presentation: "Creative use of AI tools to solve real-world problems".</p> |
| 04.06.2024 | <p><i>Role: speaker.</i></p> <p>Presentation of the book launch: "Creative Applications of Artificial Intelligence in Education" (Ed. Alex Urmeneta, Margarida Romero): https://link.springer.com/book/10.1007/978-3-031-55272-4.</p> <p>Facebook post: https://www.facebook.com/share/p/K9zrFFiJp4ZX3Js5/</p> |
| 22.05.2024 | <p><i>Role: co-speaker (with Prof. Margarida Romero).</i></p> <p>Training day at Terra Numerica (for French practicing teachers). Presentation: "Penser et créer avec les IA génératives".</p> <p>Facebook post: https://www.instagram.com/p/C7TsN-etqEe/?utm_source=ig_web_button_share_sheet&igsh=MDQwZDY1YmMyMg%3D%3D&fbclid=IwZXh0bgNhZW0CMATAAR1LQmFmL6kcZ4mmBE0btuRa6CxFfXhJC0IMmJATnNoKPaVfaCzjdDpaZb8_aem_ZmFrZWR1bW15MTZieXRlcw&img_index=1</p> |
| 22.05.2024 | <p><i>Role: key speaker.</i></p> <p>International Scientific and Practical Conference "Modern science and education: the latest socio-cultural projection" (May 20-21, 2024, Kyiv, Ukraine). Presentation: "Artificial intelligence and civil society: challenges and prospects".</p> |
| 11.04.2024 | <p><i>Role: key speaker.</i></p> <p>IV All-Ukrainian scientific and practical conference "Educational robotics and artificial intelligence" (April 11-12, 2024, Dnipro, Ukraine). Presentation: "Artificial intelligence: challenges and problems for civil society".</p> <p>Link on the CreaMaker website: https://wordpress.com/post/creamaker.wordpress.com/867</p> <p>Facebook post: https://www.facebook.com/permalink.php?story_fbid=pfbid02jP9PX3neExdTrtDHhuArt2ifXGXK5XaDNvNxKA1SkDSkaQEF1nv617e4FahRr1WFl&id=100086840350807&rdid=OupKZm2</p> |

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| | 5ZWstQHxf |
| 16.02.2024 | <p><i>Role:</i> participant.</p> <p>TV interview Learning Center - Sophia Antipolis (Antibes, France). Topic of interview: "Artificial Intelligence in Education".</p> |
| 12.02.2024 | <p><i>Role:</i> speaker.</p> <p>Workshop on collaboration, creativity and problem-solving in the light of Technology-Enhanced Learning (TEL), (HEP-Vaud, Lausanne, Switzerland). Presentation: "Research on Creative Problem Solving and Technology-Enhanced learning".</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2024/02/17/smartedtech-internship/</p> |
| 31.01.2024 | <p><i>Role:</i> participant.</p> <p>Webinar "MOOC AI pour et par les enseignants – Usages de l'IA en Education: Retours d'experiences et perspectives" organized by Ministry of Education in France.</p>  |
| 31.01.2024 | <p><i>Role:</i> master class leader and participant.</p> <p>Hybrid research symposium within the CreaComp research programme, Horizon AugMentor and SoRAI "Robotics, artificial intelligence and creative pedagogies". Master class topic: "Smart World Around Us: Workshop on using IoT devices and robotics platforms". Movchan's presentation (PhD student supervised by prof. Strutynska): "Use of drones in education".</p> <p>Link on the CreaMaker website: https://wordpress.com/post/creamaker.wordpress.com/755</p> <p>Facebook post: https://www.facebook.com/permalink.php?story_fbid=pfbid0LyzGNA33s5NvjaNUUpu9qKsq9qo86Q2jdusCMBPZ4EuKVAwqFEjyIQZTFUVBA6FI&id=100086840350807</p> <p>Link on department of IT and programming website (home university):</p> |

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| | <p>https://kitp.fmif.edu.edu.ua/news/vebinar-z-robototekhniky-shtuchnoho-intelektu-ta-kreatyvno-i-pedahohiky/</p> |
| 26.10.2023 | <p><i>Role: key speaker.</i></p> <p>VII All-Ukrainian Scientific and Practical Conference "Scientific and Methodological Principles of Creating an Innovative Model of STEM Education". Presentation: "International practices of STEM education".</p> <p>Record on YouTube channel: https://www.youtube.com/watch?v=8cHUgxNmBuQ</p> |
| 25.10.2023 | <p><i>Role: key speaker.</i></p> <p>Training for Ukrainian practicing teachers to use EU best practices in STREAM education (presentation the experience and research results gained with Full Prof. Margarida Romero under <i>ANR CreaMaker</i> project at Université Côte d'Azur (Nice, France)). Topic of the training: "EU experience in teacher training in STREAM education".</p> <p>Facebook post: https://www.facebook.com/permalink.php?story_fbid=pfbid028jsv6TXm7h3E9SNdCoFKdgu6vGHFQ6LkgL2Aop8ufyRL5GbDBtYPRmxJANccb8fil&id=100086840350807&mibextid=YxdKMJ</p> |
| 21.10.2023 | <p><i>Role: master class leader.</i></p> <p>Fête des sciences (Antibes, France). Master class topic: "Smart devices around us".</p> <p>Link on the CreaMaker website: https://www.facebook.com/margarida.romero/posts/pfbid0gh1KTpyUWfC9DZAQdPXTnEwZ26Lu3nuGQVYVmbgcVo2hgP17WYh5f2DfgwdXNsYxl</p> <p>Facebook post: https://wordpress.com/post/creamaker.wordpress.com/743</p> |
| 17.10.2023 | <p><i>Role: speaker.</i></p> <p>Hybrid research symposium within the CreaComp research programme "Co-creative problem-solving and technology enhanced learning from a sociocultural perspective" (University of Côte d'Azur, Nice, France). Poster Strutynska & Romero "Evaluating Playful Creative Problem Solving in Kyiv and Ukrainian Refugees in France".</p> <p>Link to the poster: https://www.researchgate.net/publication/375446601_Evaluating_Playful_Creative_Problem_Solving_in_Kyiv_and_Ukrainian_Refugees_in_France_POSTER DOI: 10.13140/RG.2.2.22860.18568</p> <p>Link on the CreaMaker website: https://wordpress.com/post/creamaker.wordpress.com/718</p> |
| 05.10.2023 | <p><i>Role: speaker.</i></p> |

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| | <p>17th European Conference on Games Based Learning (ECGBL-2023), (University of Twente, Enschede, the Netherlands).</p> <p>Presentation: "Evaluating playful creative problem solving in Kyiv and Ukrainian refugees in France".</p> <p>Link on the CreaMaker website: https://wordpress.com/post/creamaker.wordpress.com/670</p> |
| 29.06.2023 | <p>Role: co-organizer and key speaker.</p> <p>Scientific and Practical Conference "Theory and Practice Use of IT in the Conditions of Digital Transformation of Education" (Dragomanov Ukrainian State University, Kyiv, Ukraine).</p> <p>Presentation: "Experience in Evaluation Creative Problem-Solving Skills Using Modular Robotics".</p> <p>Facebook post: https://www.facebook.com/kafedraitp/posts/pfbid0ZAK7MHihgaQHt2KB9dH2uHtNuEVWtP7x8RhXzf5rfpEwKat16j5uqpADWz2heJGI</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/09/18/scientific-conference-theory-and-practice-use-of-it-in-the-conditions-of-digital-transformation-of-education/</p> |
| 02.06.2023 | <p>Role: key speaker.</p> <p>Symposium "Co-creative problem solving and dialogic inquiry for addressing the AI opportunities for education" (University of Côte d'Azur, Nice, France).</p> <p>Presentation: "AI for Ukraine's survival and recovery: creative decisions in challenging times".</p> <p>Facebook post: https://www.facebook.com/permalink.php?story_fbid=pfbid0pXQdZ3auH5wMXhBuXhhFqG4SNSXUa22GZd2Z2SsQchZmNxxkiKYynxTPymVBVPNrl&id=100086840350807</p> <p>Link on the CreaMaker website: https://wordpress.com/post/creamaker.wordpress.com/419</p> |
| 13.04.2023 | <p>Role: key speaker.</p> <p>III All-Ukrainian Scientific and Practical Conference "Educational Robotics", April 13-14, 2023 (Dnipro, Ukraine).</p> <p>Presentation: "Current issues of robotics teacher training in Ukraine". https://www.youtube.com/watch?v=MzBeeTp9VxQ</p> <p>Link on the CreaMaker website: https://wordpress.com/post/creamaker.wordpress.com/408</p> |
| 27.03.2023 | <p>Role: key speaker.</p> <p>Webinar "Why do I need to develop my digital competence?" within the framework of the project "Digital Transformation in Education: EU Best Research" (DigTriES), Erasmus+ Jean Monnet Module (№101099006), partnered by Borys Grinchenko Kyiv University.</p> <p>Presentation: "How to test your own digital competence?".</p> |

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| | <p>Facebook post: https://www.facebook.com/groups/1132905924318408/permalink/1238148467127486/</p> |
| 24.03.2023 | <p><i>Role: key speaker.</i></p> <p>Round table "STEM education from theory to practice". Presentation: "European experience in STREAM education". Presenting the common results gained with Full Prof. Margarida Romero.</p> <p>Roundtable program: https://iod.gov.ua/content/events/40/krugliy-stil-steam-osvita-vid-teorivi-do-praktiki_program.pdf?1680779180.3996</p> <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/03/24/participation-in-round-table-stem-education-from-theory-to-practice/</p> <p>Facebook post: https://www.facebook.com/permalink.php?story_fbid=pfbid0Vp9RRKjfdTxYnXydDU6vwwfRLCWYRvnxKgSShfM9ZaHK67oZ5MyLhV1sNZ6VZmZ7ul&id=100086840350807 https://www.youtube.com/watch?v=g18ROVXgnLA</p> |
| 17.03.2023 | <p><i>Role: speaker.</i></p> <p>9th International Conference on Education 2023 (ICEDU 2023), 16-17 March 2023, Bangkok, Thailand. Presentation: "Assessment and Development of STEAM Competences of Perspective and in-service Teachers: Selected Aspects".</p> |
| 16.03.2023 | <p><i>Role: speaker.</i></p> <p>9th International Conference on Education 2023 (ICEDU 2023), 16-17 March 2023, Bangkok, Thailand. Presentation: "Awareness of the Importance of Artificial Intelligence in Today's World – a Polish-Ukrainian Comparative Study".</p> |
| 08.03.2023 | <p><i>Role: participant.</i></p> <p>6ème Journée cerveau & santé au CHU de Nice.</p> <p>Link on the CreaMaker website: https://www.semaineducerveau.fr/manifestation/ouverture-sdc-2023-en-paca-6eme-journee-cerveau-sante-au-chu-de-nice/</p> |
| 10.02.2023 | <p><i>Role: speaker.</i></p> <p>IDEX Advanced Research Program Event (University Cote D'Azur, Nice, France). Presentation: "Research visit of the Scholar from Ukraine under the IDEX UCA^{jedi} Advanced Research Program 2022".</p> |

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| | <p>Link on the CreaMaker website: https://creamaker.wordpress.com/2023/02/16/participation-in-idex-advanced-research-program-event/</p> |
| 15.11.2022 | <p><i>Role:</i> speaker.</p> <p>Workshop on Creative Problem Solving under <i>CreaComp-CreaMaker</i> Project (University Cote D'Azur, Nice. Ukraine), LINE lab.</p> <p>Presentation: "Educational Robotics and STEAM education: Ukrainian experience".</p> <p>Link: https://univ-cotedazur.zoom.us/j/83247892240?pwd=VkMrS2ZDQncwUG04SVpKNnExMFI PUT09</p> |

There are some photos:

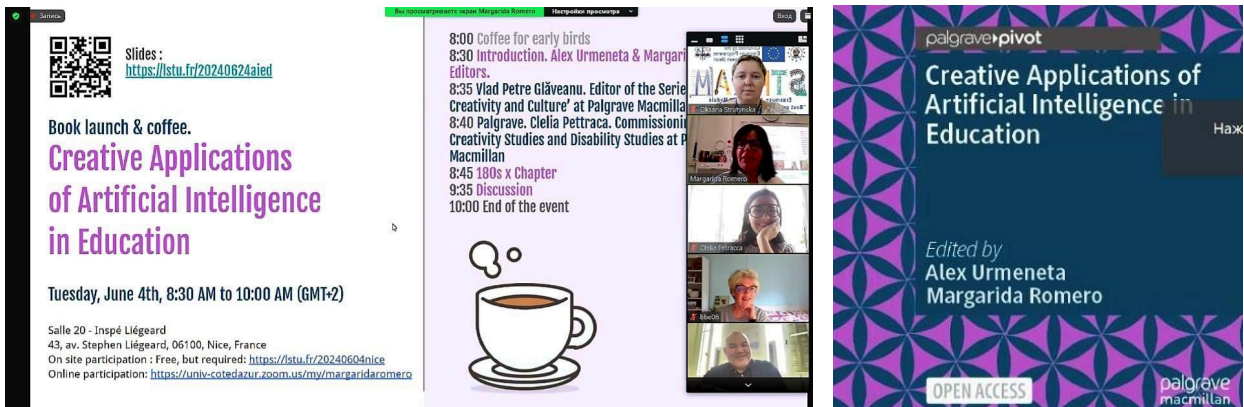


Figure 7. Presentation of the book launch: "Creative Applications of Artificial Intelligence in Education"

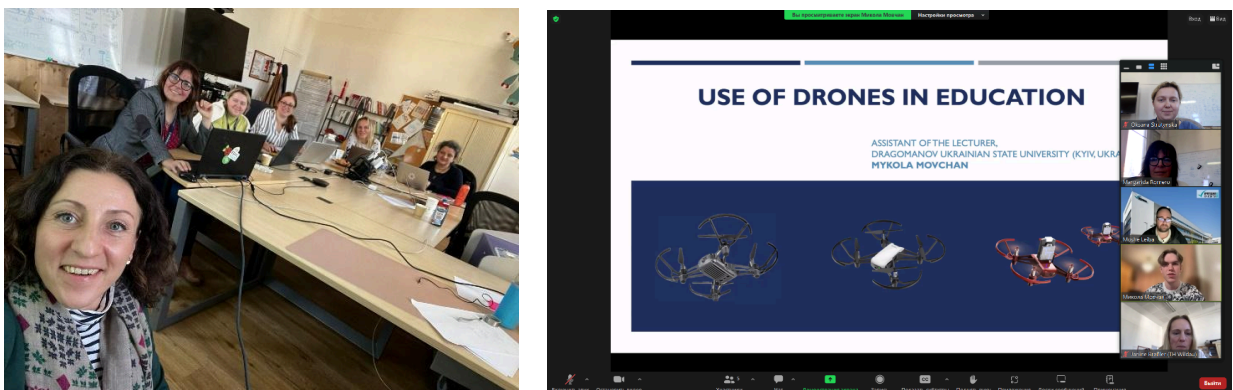


Figure 8. Hybrid research symposium within the CreaComp research programme, Horizon AugMentor and SoRAI "Robotics, artificial intelligence and creative pedagogies"



Figure 9. 17th European Conference on Games Based Learning (ECGBL-2023), (University of Twente, Enschede, the Netherlands)



Figure 10. Fête des sciences (Antibes, France)



Figure 11. Scientific and Practical Conference "Theory and Practice Use of IT in the Conditions of Digital Transformation of Education" (Dragomanov Ukrainian State University, Kyiv, Ukraine)



Figure 12. Symposium "Co-creative problem solving and dialogic inquiry for addressing the AI opportunities for education" (University of Côte d'Azur, Nice, France)



Figure 13. Visit to Maison de l'Intelligence Artificielle (Biot, France)

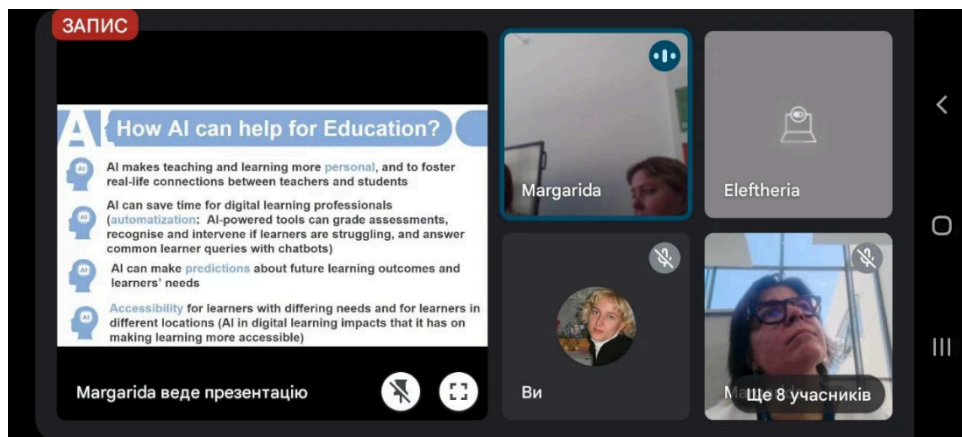


Figure 14. Symposium "Co-creative problem solving and dialogic inquiry for addressing the AI opportunities for education" (University of Côte d'Azur, Nice, France)

Research visit of the Scholar from Ukraine under the IDEX UCA^{jedi} Advanced Research Program 2022



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 D.Sc. (in Pedagogical Sciences),
 Full professor, PhD, Department of IT and programming,
 Mykhailo Drahomanov Ukrainian State University, Kyiv, Ukraine



18/02/2023



Figure 15. IDEX Advanced Research Program Event, 2023 (University Cote D'Azur, Nice, France)



Figure 16. Workshop "Digital world around us: Robotics, AI, 3D technology" for MSc Smart EdTech students during spring intensive week (03.04.2023-07.04.2023)

Research meetings (during all period of the research stay)

The main activities during research meetings:

- Introduction to the methodology of research activities for studying divergent thinking with CreaCube (defining the goals of the experiment, studying the protocol, conditions of the experiment, etc.).
- Introduction to the methodology of research activities for creative use of AI in Education.
- Participation in the workshops, seminars and other research events in the LINE lab (Université Côte d'Azur, Nice, France), (during all periods).
- Preparation for the workshops with Ukrainian children in Nice and in Kyiv (Ukraine).
- Learning the functionality of the software for analyzing the experimental data obtained from the workshops.
- Analysis of experimental data with CreaCube, obtained as workshops' results.
- Analysis of Research Papers for Horizon augMENTOR Project.
- Participation in augMENTOR Project meetings.
- Participation in discussions on research proposals of PhD students (LINE lab).
- Preparing the research papers and publications (see list of publications above).
- Online meetings for PAUSE laureates (during all periods).
- Meetings to prepare the application for Erasmus+ KA220 "Enhancing Active Learning with Social Robots and AI in the Classroom (SoRAI)" (with Prof. Dr. Margarida Romero, Prof. Dr. Ilona Buchem, Dr. Janett Mohnke, Dr. Andriani Piki & Dr. Moshe Leiba). **Submitted.**
- Participation in online meeting "MA Girard. AI for school leadership".
- Meeting on updating Smart EdTech MSc program as members of the improvement council (Membres du comité de perfectionnement).
- Paper discussion (with prof. Margarida Romero) "Evaluation of divergent thinking through playful modular robotics among Ukrainian refugees in France and participants in Kyiv under condition of war" to EJEL (Scientific journal). **Final submission (submitted).**
- Paper discussion (with prof. Margarida Romero, Chengcheng Li and Dea Septiani) "Smart EdTech, a global community of practice for the sociocritical development of artificial intelligence in education" to IRMBAM24 (Conference). **Final submission (accepted).**
- Analysis of scientific papers, study and materials on use AI in education (preparing for the current research).

- Discussing (with prof. Margarida Romero) of the paper structure based on a survey on using AI and its applications for pre-service teachers (study for Ukrainian and French students).
- Preparing (with prof. Margarida Romero) of the research paper on creative use AI tools for pre-service teachers (designing and conduction of the survey and practical tasks, analysis gained results, etc.) – **current research**.
- Preparing for the presentation for the 13th International Research Meeting in Business and Management (IRMBAM24), July 4-5, 2024 (Nice, France), <https://irmbam24.exordo.com/>.
- Preparing for the presentation for the Global Smart Education (GSE 2024) Conference, August 18-20, 2024 (Beijing, China), <https://gse.bnu.edu.cn/en>.

Planned activities (June-October 2024) and future collaborations

Activities planned for the period June-October 2024

1. Participation in the Hybrid Research Workshop “Creativity and artificial intelligence in education”, July 12, 2024 (LINE lab, Université Côte d'Azur, Nice, France). Preparing for the presentation about research activity in LINE lab during the previous period of stay (November 2023 - June 2024).
2. Analyzing and compare of the current research results of the AI in education practices in France and Ukraine,
3. Completing of the research paper to be submitted to a journal in the field of AI in education (*Education Sciences*, <https://www.mdpi.com/journal/education>),
4. Preparing the GSE 2024 presentation and travel according to the UCA policies,
5. Updating curriculum (with prof. Margarida Romero) for preparing Ukrainian pre-service Computer Science teachers (BSc and MSc levels) in taking in account gained research results in the field of AI in education,
6. Dissemination results gained during research in the LINE lab for the Ukrainian academic community,
7. Dissemination within the MSc Smart EdTEch intensive week starting October 7, 2024,
8. Participation in the Conference session November 15, 2024. Preparing for the paper and presentation about creative uses of artificial intelligence for language teaching and learning (with prof. Margarida Romero and Chengcheng Li).

Mid-term collaborations

9. European project,
10. Joint supervision of master (*MSc Smart EdTech*) and PhD students,
11. Joint supervision of bachelor, master (*BSc, MSc in Secondary Education (Informatics)*) and PhD students at the Dragomanov Ukrainian State University,
12. Once the war will finish, organization of a research workshop in Kyiv.



Additional resources

Information about all activities you can find out in the website <https://creamaker.wordpress.com/>.

Acknowledgement

This work was supported by the French government through the France 2030 investment plan managed by the National Research Agency (ANR), as part of the Initiative of Excellence of Université Côte d'Azur under reference number ANR-15-IDEX-01.

Summary

In conclusion, I believe that my research activity at LINE lab definitely contributes to my professional growth and the integration of my research results into the European academic community.

Such cooperation with University of Côte d'Azur in general and LINE lab in particular (in the person of a full professor Margarita Romero) already has great significance and influence on me, my colleagues from my home university (inviting Ukrainian colleagues to France to participate in conferences and other scientific events), my bachelor, master and PhD students from the Dragomanov Ukrainian State University (their presentations at seminars in LINE lab, involvement in joint publications, joint supervision of their research with full professor Margarita Romero, integration of ideas obtained in LINE lab during common research with the full professor Margarita Romero, in their diploma theses, etc.), as well as the dissemination of the results of scientific activity in the Ukrainian academic environment as a whole.

Heartfelt thanks to all the persons that have permitted this collaboration. I hope for further fruitful cooperation.

Host:
Prof. Margarida Romero

Visiting:
Prof. Oksana Strutynska