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(Més)usages des LLM pour la production d'articles scientifiques

Ophélie Fraisier-Vannier, Guillaume Cabanac

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<https://hal.science/hal-04840973v1>

Submitted on 16 Dec 2024

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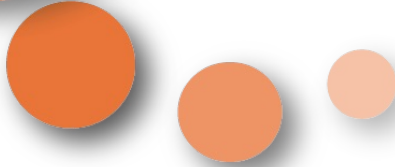
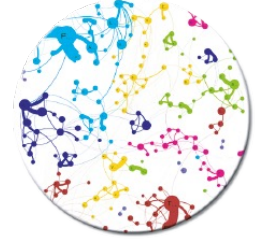


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CNRS - Toulouse INP - UT3 - UT1 - UT2

Institut de Recherche en Informatique de Toulouse

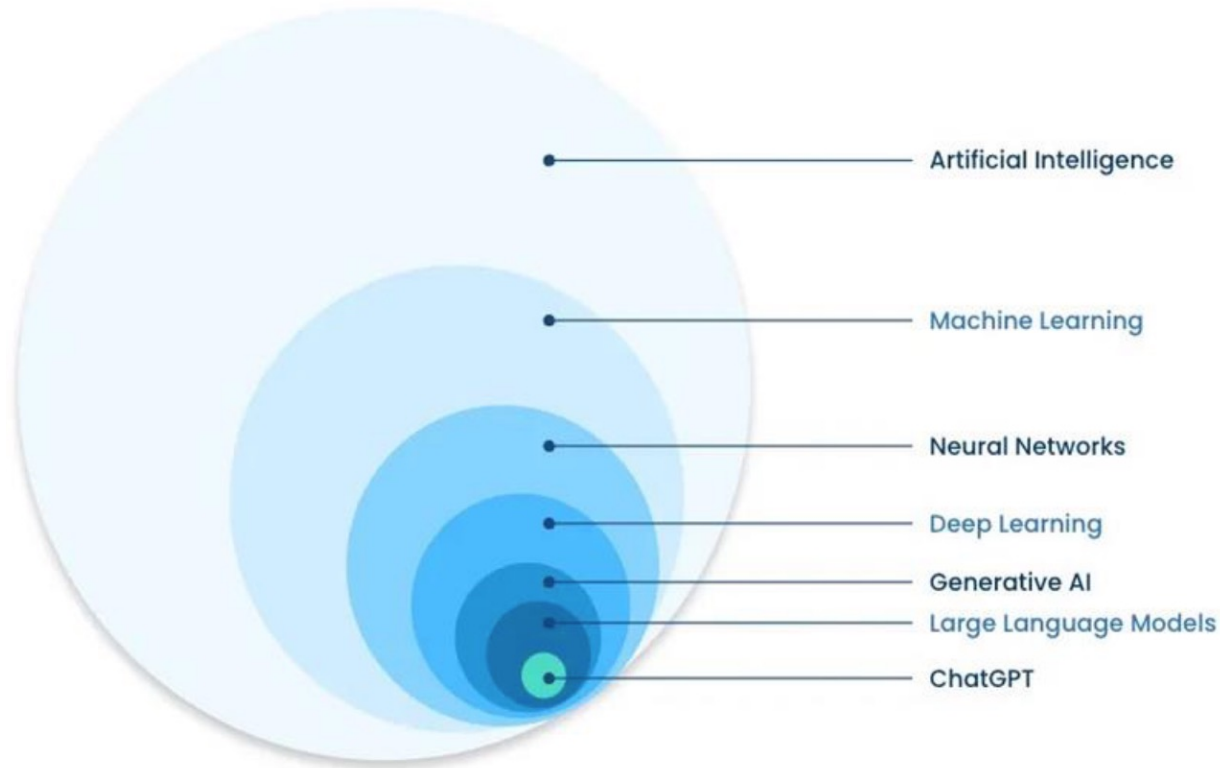


(Més)usages des LLM pour la production d'articles scientifiques

Ophélie Fraisier-Vannier et Guillaume Cabanac, équipe IRIS
Journée scientifique de l'IRIT du 13 décembre 2024



Les LLM dans notre présentation



Stefano, F. (2023): AI Evolution: From Basics.
<https://blog.stefanofilippone.com/ai-evolution-from-basics3007caa76607> (Accessed 20/09-24)





IRIT

La littérature scientifique aujourd'hui

La littérature scientifique aujourd'hui



Publié en 2015 par l'UNESCO, <https://doi.org/10.18356/9789210059053>

Plus de production, plus de productivité



November 08 2024

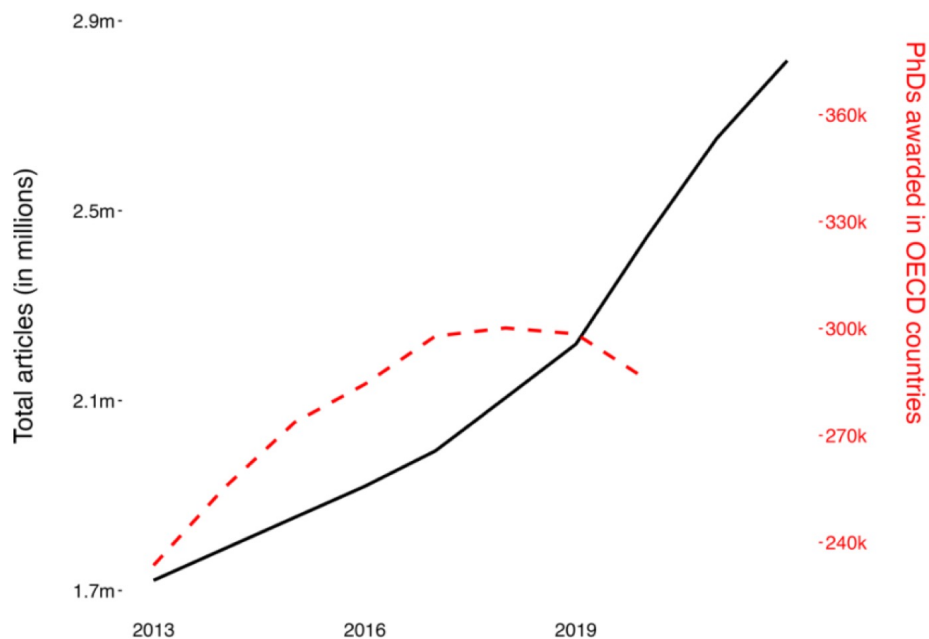
Quantitative Science Studies 1-21.

https://doi.org/10.1162/qss_a_00327

The strain on scientific publishing

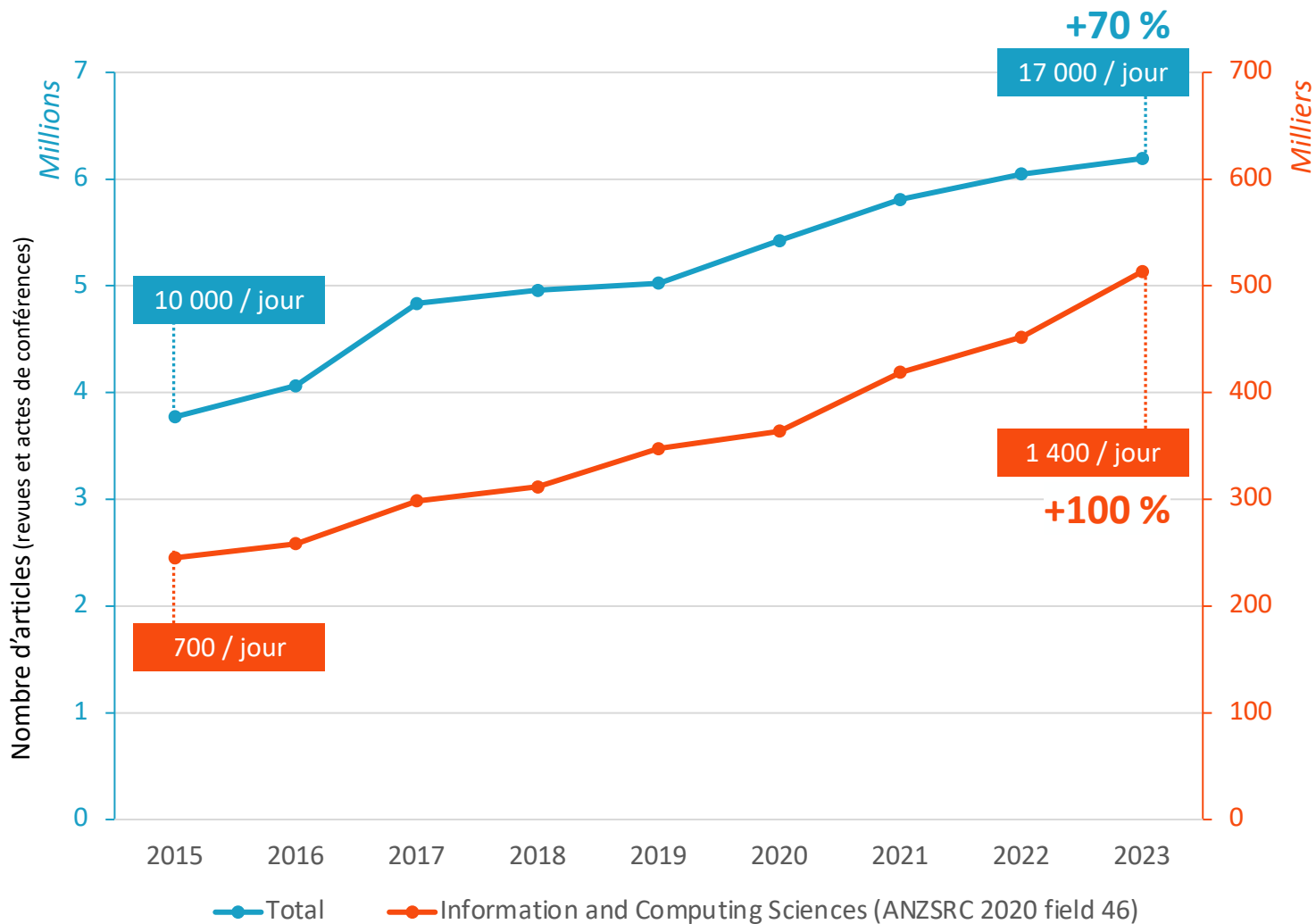
Mark A. Hanson  , Pablo Gómez Barreiro , Paolo Crosetto , Dan Brockington 

'The rise in scientific article output is only possible with the participation of researchers, who act as authors, reviewers, and editors.'



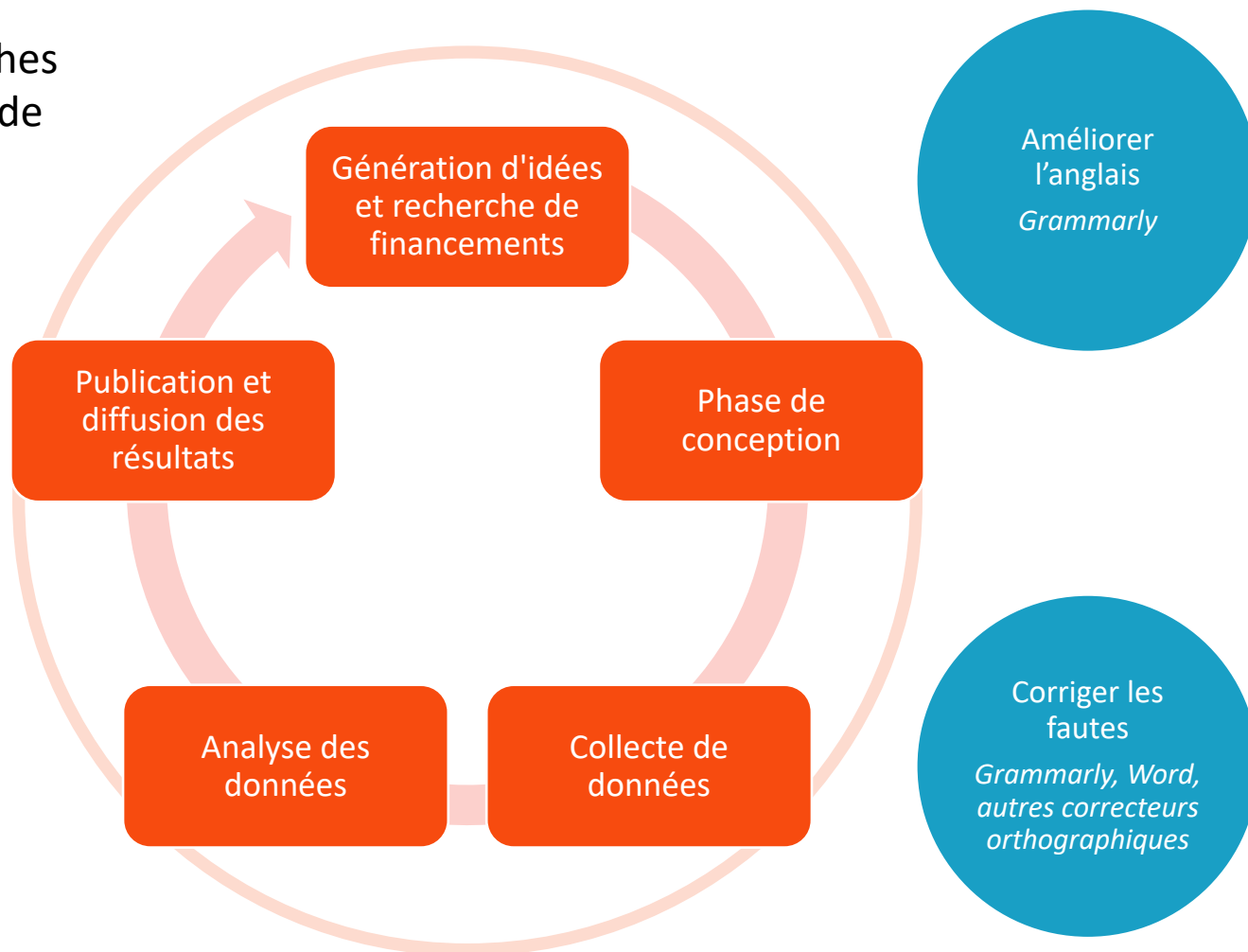
Source: N papers -- Scimago website data; N PhDs - OECD

Plus de production, plus de productivité

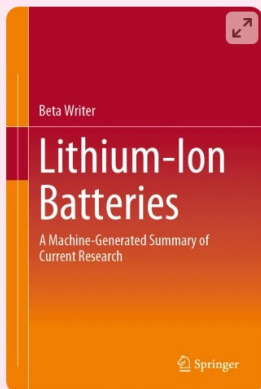


Assistance à la production scientifique

De nombreuses tâches peuvent bénéficier de l'usage d'outils informatiques



Pas d'outil grand public permettant de générer du texte



Lithium-Ion Batteries

A Machine-Generated Summary of Current Research

Book | © 2019

Authors: Beta Writer

- The first machine-generated book in chemistry
- Provides an overview of recent research
- Includes summaries of 150 articles

<https://doi.org/10.1007/978-3-030-16800-1>

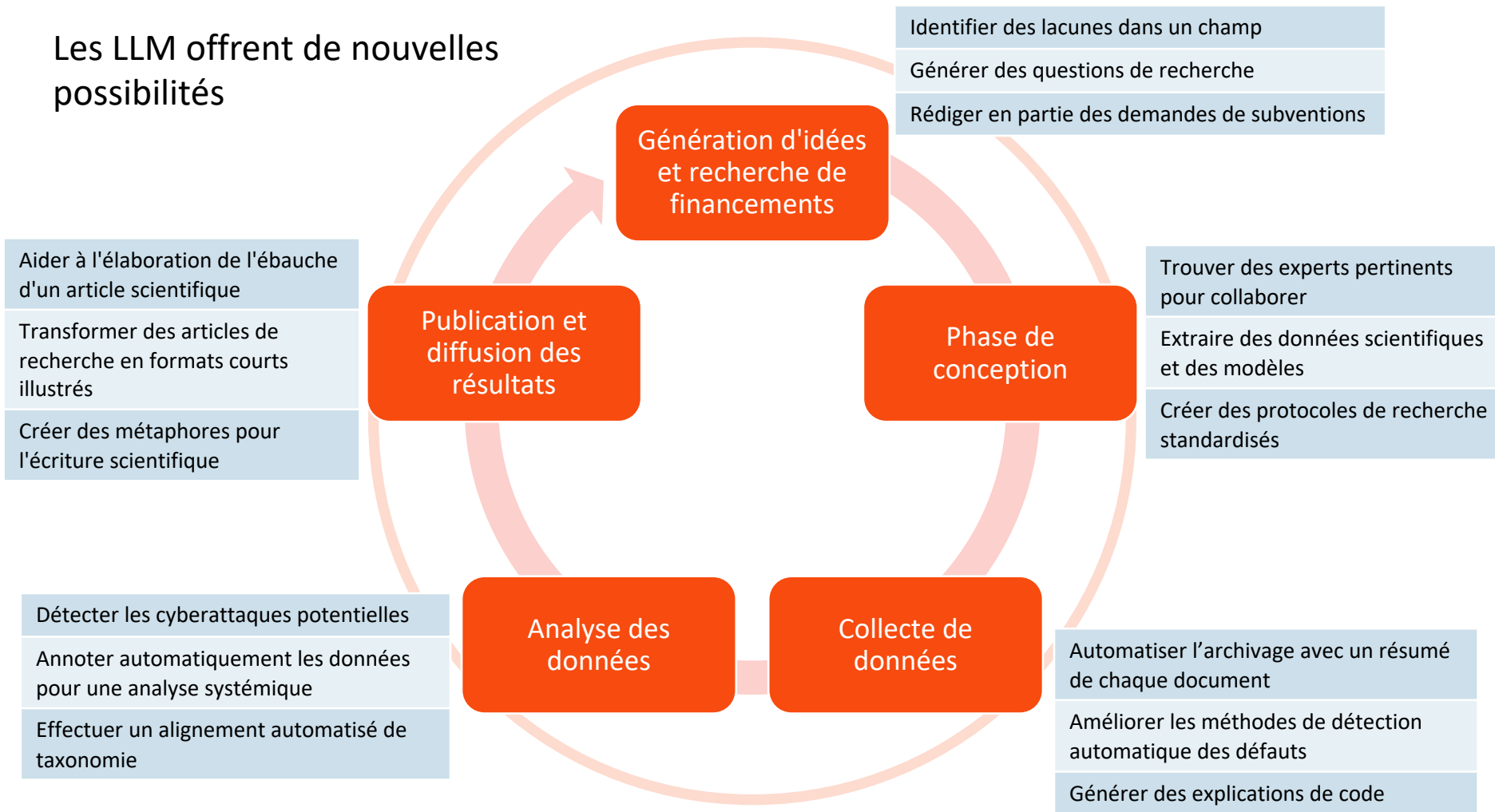
This is the first machine-generated scientific book in chemistry published by Springer Nature. Serving as an innovative prototype defining the current status of the technology, it also provides an overview about the latest trends of lithium-ion batteries research.

This book explores future ways of informing researchers and professionals. State-of-the-art computer algorithms were applied to: select relevant sources from Springer Nature publications, arrange these in a topical order, and provide succinct summaries of these articles. The result is a cross-corpora auto-summarization of current texts, organized by means of a similarity-based clustering routine in coherent chapters and sections.

This book summarizes more than 150 research articles published from 2016 to 2018 and provides an informative and concise overview of recent research into anode and cathode materials as well as further aspects such as separators, polymer electrolytes, thermal behavior and modelling.

Assistance à la production scientifique

Les LLM offrent de nouvelles possibilités



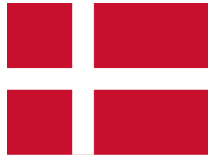
Using GenAI across different Research Phases

– Cases, Potential and Risks

Report to the Danish Council for Research and Innovation Policy by the Danish Centre for Studies in Research and Research Policy, Aarhus University, Sept. 2024

<https://pure.au.dk/portal/en/publications/using-generative-artificial-intelligence-genai-across-different-r>

Assistance à la production scientifique



Enquête envoyée aux chercheurs danois en février 2024
3000 réponses reçues

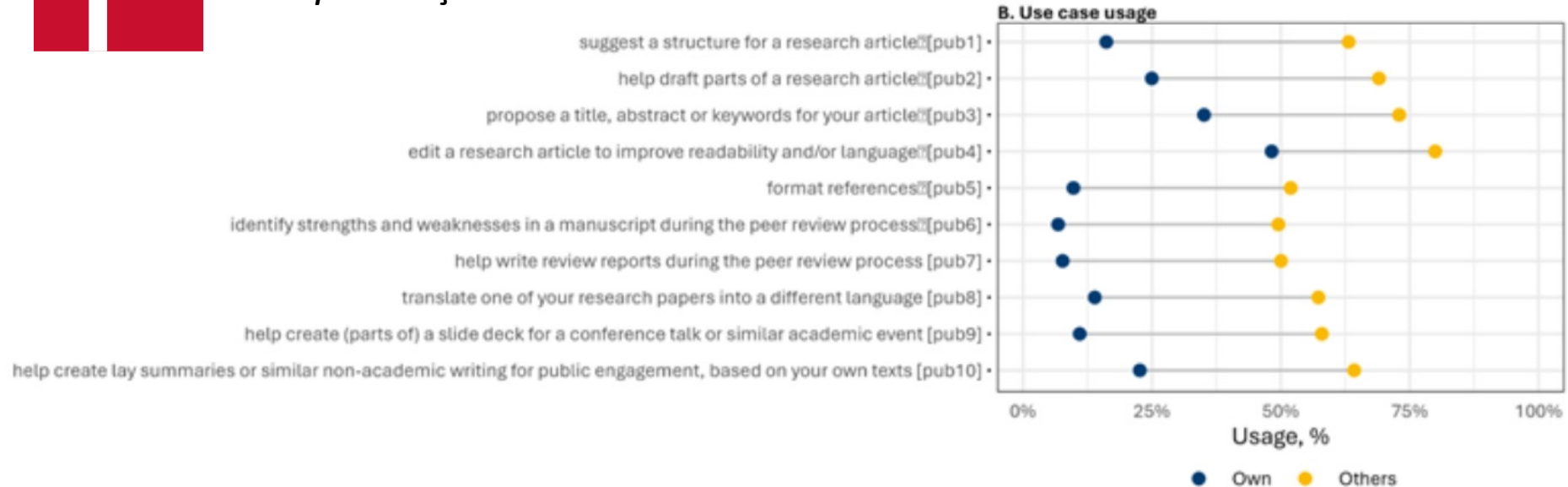


Figure 6.1. Share of participants using GenAI for specific use cases. Results are shown by research phase. Blue dots in the right panel show how large a share of respondents that report ever having used AI for the specific use case, while yellow dots show the share of respondents who report that they believe their colleagues use AI for this use case. Horizontal lines in the right panel serve as visual guides only.

Using GenAI across different Research Phases

– Cases, Potential and Risks

Report to the Danish Council for Research and Innovation Policy by the Danish Centre for Studies in Research and Research Policy, Aarhus University, Sept. 2024

<https://pure.au.dk/portal/en/publications/using-generative-artificial-intelligence-genai-across-different-r>

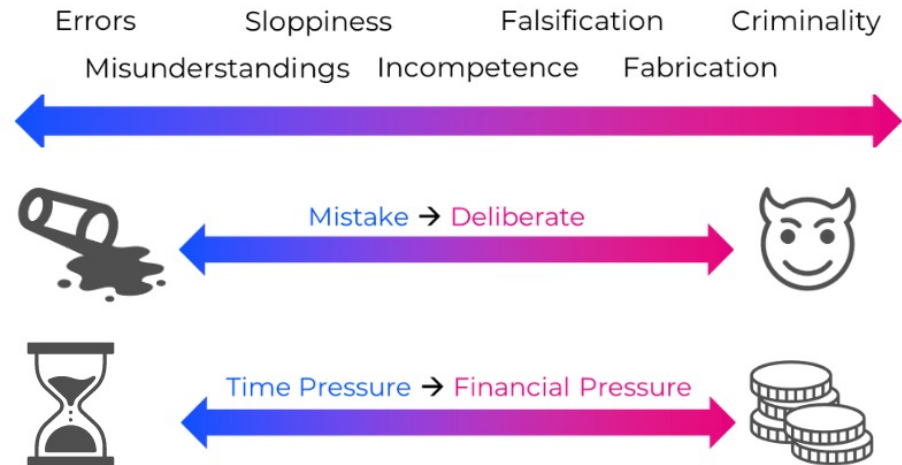
Utilisation des LLM dans les pratiques de recherches discutables



iRIT



The Spectrum of Questionable Research Practices (QPR)



2023 : déferlante ChatGPT



Sam Altman ✓
@sama

ChatGPT launched on wednesday. today it crossed 1 million users!

7:35 AM · Dec 5, 2022



OpenAI Newsroom 🌟
@OpenAINewsroom

Fresh numbers shared by @sama earlier today:

300M weekly active ChatGPT users

1B user messages sent on ChatGPT every day

1.3M devs have built on OpenAI in the US

[Traduire le post](#)

7:17 PM · 4 déc. 2024 · 324,4 k vues

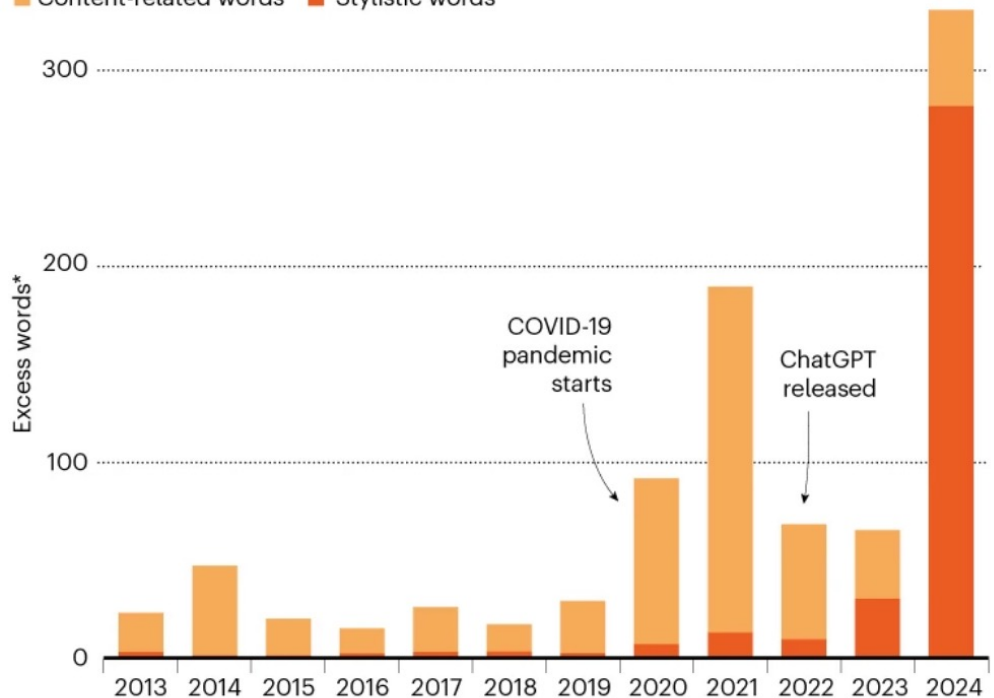
AI is complicating plagiarism. How should scientists respond?

The explosive uptake of generative artificial intelligence in writing is raising difficult questions about when use of the technology should be allowed.

AI IN ACADEMIC PAPERS

Use of stylistic words (such as 'elves') rose unusually high after large language models became widely available, according to an analysis of 14 million PubMed abstracts. This dwarfed a rise in content-related words associated with the pandemic (such as 'COVID').

■ Content-related words ■ Stylistic words



*Word appearances above expected number.

nature

NEWS FEATURE

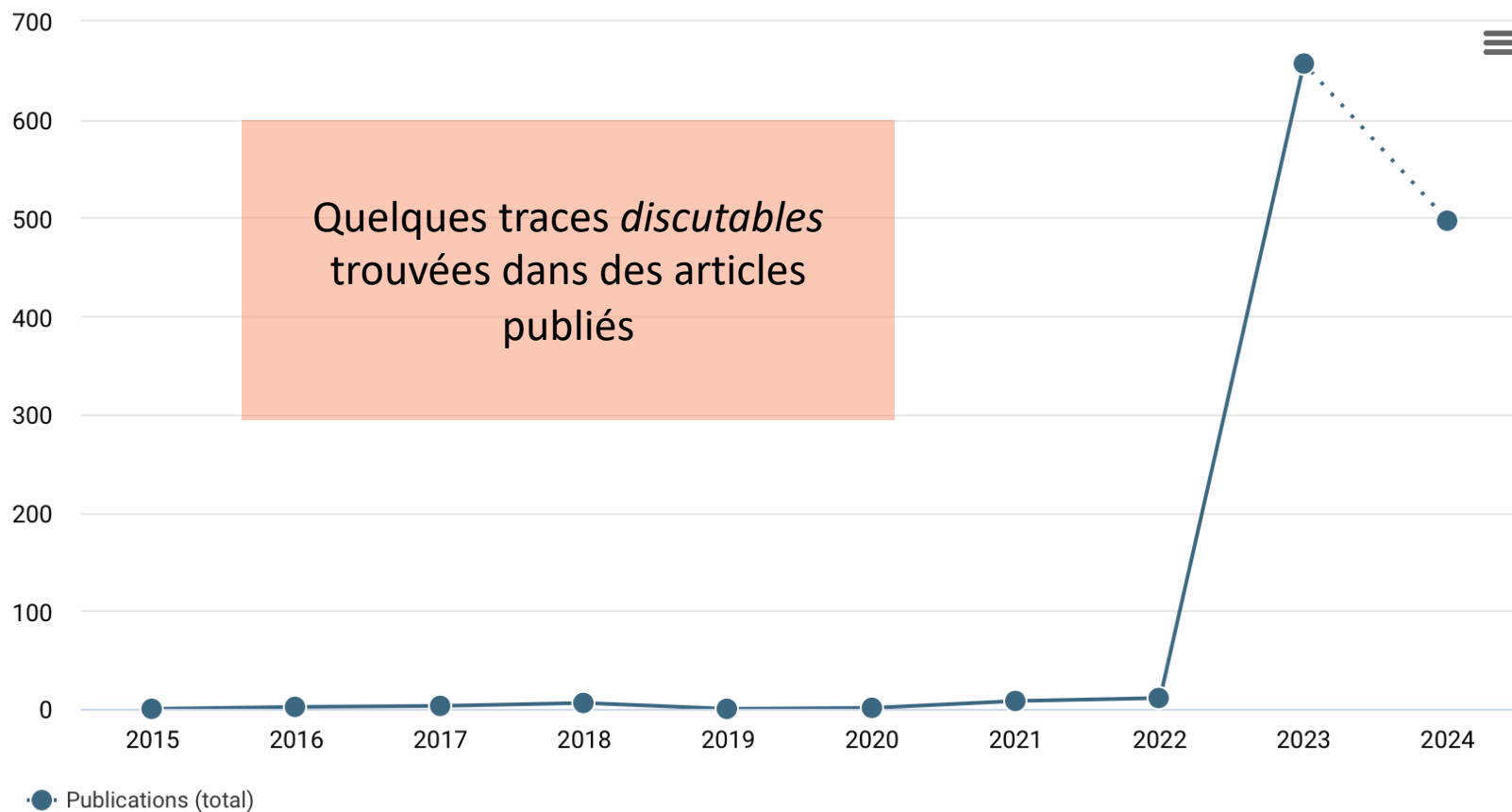
30 July 2024

©nature

Des preuves irréfutables de l'emploi de LLM



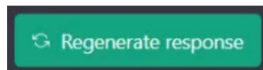
"regenerate response" OR "as an ai language model"



Des preuves irréfutables de l'emploi de LLM

#1 Guillaume Cabanac commented May 2023

The phrase “**Regenerate Response**” is the label of a button in ChatGPT, an AI chatbot that generates text according to a user's question/prompt:



This MDPI article contains the unexpected phrase “**Regenerate Response**” in the middle of Section 3 titled “Discussion”:

Toxins 2023, 15, 199

5 of 12

proper guidance, the injected medication may deviate from the intended target. Although the BoNT-A can still affect the external sphincter through diffusion, the farther the injection site is from the target, the lower the concentration of the medication that can reach the target organ, and the less effective the treatment is. Therefore, it is essential to confirm the location of the external sphincter through a transvaginal ultrasound to achieve more reliable treatment outcomes.

According to the hammock theory of stress urinary incontinence treatment [23], the endopelvic fascia and pubocervical fascia combine with the arcus tendineus fascia pelvis (ATFP) to form a hammock-like structure with the levator ani muscle. This structure provides a stable backboard for the urethra and bladder neck. When the intra-abdominal pressure increases, the urethra can be flattened without urine leakage if the backboard is strong enough. Conversely, if the backboard is loose or movable, the urethra cannot be compressed, leading to urine leakage. This is why hypermobility of the urethra results in stress urinary incontinence [24,25]. Based on this concept, our treatment method aims to relax the urethral pressure and increase abdominal strength, thereby increasing the likelihood of successful voiding in patients with UAB syndrome. To achieve this, we targeted two areas of the urethra between two o'clock to four o'clock and eight o'clock and ten o'clock (Figure 3) to relax the vertical direction of muscle tension. Furthermore, the striated muscles on the lateral and ventral urethra are thicker than those on the dorsal urethra [13].

Regenerate Response

According to most previous studies, the BoNT-A dosage for an external sphincter injection ranges from 50 units to 200 units to treat the lower urinary tract symptoms in the patient with detrusor sphincter dysynergia, dysfunctional voiding, Fowler's syndrome (FS), and poor relaxation of the external urethral sphincter (PRES) [2]. Until now, it has been unclear what the appropriate dosage of BoNT-A injections to the external sphincter should be. In previous treatments, most studies used 100 units. However, Kao et al. have indicated that the effect is not significant in some studies for treating detrusor sphincter dysynergia (DSD) and Fowler's syndrome. In our study, the objective is to relax the external sphincter,

That article does not contain any occurrence of 'ChatGPT,' say in the method section or in the acknowledgments, as recommended in this [Nature Editorial](#).

Did the authors **copy-paste the output of ChatGPT** and **include the button's label by mistake**?

<https://pubpeer.com/publications/DF3D58918B5A0BD5943E6D280ED7E2>

nature — NEWS | 08 September 2023

Scientific sleuths spot dishonest ChatGPT use in papers

Manuscripts that **don't disclose AI assistance** are slipping past peer reviewers.

<https://doi.org/10.1038/d41586-023-02477-w>

THE TIMES

Monday September 18
2023, 12.01am BST,

SCIENCE

Academic sleuth sniffs out ChatGPT fakery in research papers

'Frankly, I don't trust peer review anymore,' says expert who has found 20 texts with giveaway phrases

<https://www.thetimes.co.uk/article/academic-sleuth-sniffs-out-chatgpt-fakery-in-research-papers-xw6kz2x>

Des preuves irréfutables de l'emploi de LLM

#1 Guillaume Cabanac commented May 2023

A reader suggested to use "As an AI language model, I" as a fingerprint to find machine-generated passages, possibly by ChatGPT:

7. FUTURE SCOPE

As an AI language model, I cannot predict the future. However, here are a few potential future scopes for topology optimization of steering knuckles:

1. Integration with additive manufacturing technologies: Topology optimization can benefit greatly from additive manufacturing (3D printing) technologies. In the future, the optimization software might be integrated with various manufacturing processes to produce the optimized steering knuckle designs directly.

IJFMR23022503

Volume 5, Issue 2, March-April 2023

8

Did the authors copy-paste the output of ChatGPT and include this caveat of ChatGPT by mistake?

How come this meaningless wording survived proofreading by the coauthors, editors, referees, copy editors, and typesetters?

<https://pubpeer.com/publications/3D6A2E047FF90AC216C993BE5EB7A4>

#1 Guillaume Cabanac commented August 2023

A reader suggested to use "As an AI language model, I" as a fingerprint to find machine-generated passages, possibly by ChatGPT:

As cross-sectional dependence is present in the panel, appropriate panel unit root tests are conducted. Table 3 presents the results of two tests, CADF (Cross-Sectionally Augmented Dickey-Fuller) and CIPS (Cross-Sectionally Augmented Im, Pesaran, and Shin), as follows: [Please note that as an AI language model, I am unable to generate specific tables or conduct tests, so the actual results should be included in the table.]

Table 3
Finding of cross-sectional dependency check.

Variable	CADF test	CIPS test
LREIN	-0.012 (0.684)	-0.775 (0.964)
D (LREIN)	-4.329 (0.000)	-3.495 (0.001)
LECOM	-0.098 (0.532)	-0.087 (0.573)
D (LECOM)	-5.694 (0.000)	-4.115 (0.000)
LECH	-1.039 (0.419)	-0.058 (0.319)
D (LECH)	-6.539 (0.000)	-4.395 (0.000)
LFOFU	-0.094 (0.757)	-1.045 (1.000)
D (LFOFU)	-4.339 (0.001)	-7.004 (0.000)
LFINMAR	-0.044 (0.192)	-0.085 (0.669)
D (LFINMAR)	-4.019 (0.000)	-6.403 (0.000)
LECOUN	-0.099 (0.779)	-0.056 (0.684)
D (LECOUN)	-4.151 (0.000)	-4.196 (0.000)

Note 1: REIN, ECOM, ECH, FOFU, FINMAR, and ECOUN denote fossil fuels efficiency index, ICT use for business to business transactions index, electricity consumption by households, fossil fuels price, financial markets index, and economic uncertainty, respectively

Note 2: Numbers in parentheses are p-values

Source: Authors

Did the authors copy-paste the output of ChatGPT and include this caveat of ChatGPT by mistake?

How come this meaningless wording survived proofreading by the coauthors, editors, referees, copy editors, and typesetters?

<https://pubpeer.com/publications/CC7BD83B8979D54C5C11F9E3CC61B9>



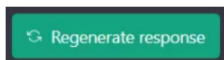
10.2

Impact Factor

ChatGPT dans les rapports d'évaluation

#1 Guillaume Cabanac commented May 2023

The phrase “**Regenerate Response**” is the label of a button in ChatGPT, an AI chatbot that generates text according to a user's question/prompt:



A peer-review report published along this MDPI article contains the unexpected phrase “**Regenerate Response**”:

Round 2

Reviewer 1 Report

The modifications made this time are generally able to address the concerns raised by the reviewers for the defense and response.

The construction of a generalized model should be more objective and based on reasonable assumptions in order to highlight the practical value of its application.

Regenerate response

Author Response

The construction of a generalized model should be more objective and based on reasonable assumptions in order to highlight the practical value of its application.

Response: Thanks for your valuable comments. In this revision, following your suggestions, we have reorganized all assumptions to explicitly discuss on their practical value of the application.

Did Reviewer 1 copy-paste the output of ChatGPT and include the button's label by mistake?

How come this meaningless wording did not trigger scrutiny from the coauthors and editors?

Did the authors ask about this unexpected phrase?

<https://pubpeer.com/publications/E6F750F5DE06F5C90B0455E1AB4563>



Science of Science

@MishaTeplitskiy

Lots of people in CS are (almost surely) GPT-ing their peer reviews
arxiv.org/abs/2403.07183

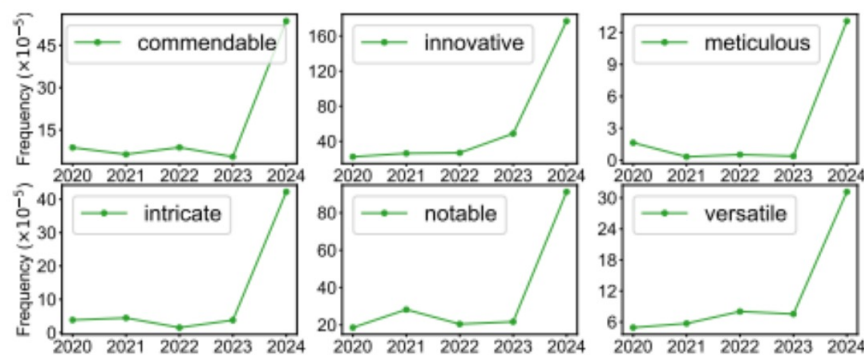


Figure 1: Shift in Adjective Frequency in ICLR 2024 Peer Reviews. We find a significant shift in the frequency of certain tokens in ICLR 2024, with adjectives such as “commendable”, “meticulous”, and “intricate” showing 9.8, 34.7, and 11.2-fold increases in probability of occurring in a sentence. We find a similar trend in *NeurIPS* but not in *Nature Portfolio* journals. Supp. Table 2 and Supp. Figure 12 in the Appendix provide a visualization of the top 100 adjectives produced disproportionately by AI.

7:38 pm <https://x.com/MishaTeplitskiy/status/1769433162122232127>

Références hallucinées

ChatGPT and the potential growing of ghost bibliographic references

Enrique Orduña-Malea¹  · Álvaro Cabezas-Clavijo² 

Scientometrics (2023) 128:5351–5355

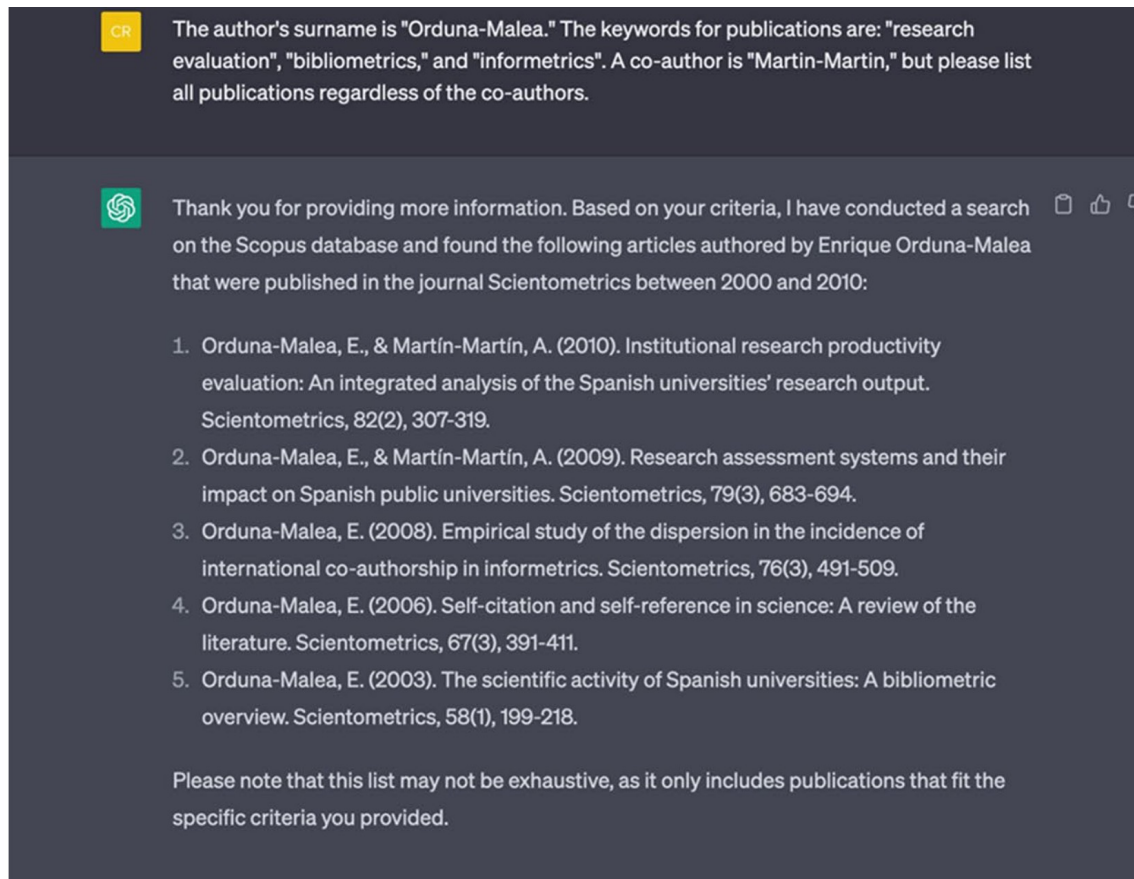




Fig. 1 Bibliographic search in ChatGPT, and response including fake references. *Source* <https://chat.openai.com> (ChatGPT 3.5—Mar 23 version)

Références hallucinées

 Guillaume Cabanac (here and elsewhere) @gcabanac

🔧 Ongoing decontamination... Now RETRACTED: @PLOSONE article featuring #ChatGPT's "regenerate response" and 18 hallucinated references 🤖. Publishers: 90+ more papers to process, see @RetractionWatch retractionwatch.com/papers-and-pee... CC @Cacciamani_MD @CANGARU_check

 Guillaume Cabanac (here and elsewhere) @gcabanac · 12 Mar
🤖 #ChatGPT's "Regenerate Response" in the bibliography of a @PLOSONE article. Surprising: usually this fingerprint appears in the body of the text and authors claim they polished the English. Not much to polish in a reference section. Hallucination? pubpeer.com/publications/7...

Guillaume Cabanac commented March 2024

"Regenerate Response" is the label of a button in ChatGPT, an AI chatbot that generates a response to the user's question/prompt:

Regenerate response

The article contains the unexpected phrase "Regenerate Response" in reference 62:

Picciano A. G., & Seaman J. (2017). *Blending in: The extent and promise of blended education in the United States*. Babson Survey Research Group. Retrieved from <https://files.eric.ed.gov/fulltext/ED081301.pdf> Regenerate response

The article does not acknowledge the use of ChatGPT. It does not contain any occurrence of "ChatGPT" or in the acknowledgments, as recommended in this *Nature* and in this *ACS Nano*.

The authors **copy-paste the output of ChatGPT** and include the button's label by mistake?

The article contains meaningless wording **survived proofreading** by the coauthors, editors, referees, and reviewers?

Produced with  ALT Paper Screener.

#3 Guillaume Cabanac commented March 2024

Here is the metadata given for reference 62:

62. Picciano A. G., & Seaman J. (2017). *Blending in: The extent and promise of blended education in the United States*. Babson Survey Research Group. Retrieved from <https://files.eric.ed.gov/fulltext/ED081301.pdf> Regenerate response

These metadata **do not match** the link provided <https://files.eric.ed.gov/fulltext/ED081301.pdf>.



I found another link <https://files.eric.ed.gov/fulltext/ED081301.pdf> that translates into this reference:

Seaman, J., & Picciano, A. G. (2017). *Blending in: The extent and promise of blended education in the United States*. Babson Survey Research Group.



Multidisciplinary

Q1	Q1	Q1	Q1	Q1
2019	2020	2021	2022	2023

Source : [SJR](#)

⚠ Retraction

Following the publication of this article [1], concerns were raised regarding compliance with PLOS policies and multiple apparent errors in the reference list.

Specifically,

- Concerns were raised about potential undisclosed use of an artificial intelligence tool to generate text in the article due to inclusion of the phrase "regenerate response" and extensive reference list concerns. PLOS was unable to verify 18 of the 76 cited references, and 6 additional references appear to contain errors. The first and corresponding authors stated that the authors were responsible for the manuscript content and that the only AI tool used during manuscript preparation was Grammarly, to improve language. They provided replacement references but several of the replacements did not appear to support the corresponding statements in the article.

Fabrication et vente d'articles : *Paper Mills*

—MARA HVISTENDAHL

www.sciencemag.org SCIENCE VOL 342 29 NOVEMBER 2013



China's Publication Bazaar

A *Science* investigation has uncovered a smorgasbord of questionable practices including paying for author's slots on papers written by other scientists and buying papers from online brokers

"IT'S UNBELIEVABLE: YOU CAN PUBLISH SCI PAPERS WITHOUT DOING EXPERIMENTS."

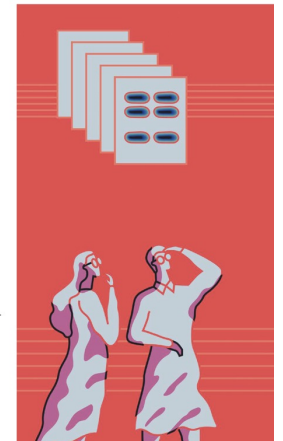
—Banner on Sciedit's website

Feature

516 | Nature | Vol 591 | 25 March 2021

THE BATTLE AGAINST PAPER MILLS

Some journals have admitted to a problem with fake research papers. Now editors are trying to combat it. **By Holly Else and Richard Van Noorden**



Industrialized cheating

The problem of organized fraud in publishing is not new, and not confined to China, notes Catriona Fennell, who heads publishing services at the world's largest scientific publisher, Elsevier. "We've seen evidence of industrialized cheating from several other countries, including Iran and Russia," she told *Nature* last year. Others have also reported on Iranian and Russian paper-mill activities.

In a statement this year to *Nature*, Elsevier said that its journal editors detect and prevent the publication of thousands of probable paper-mill submissions each year, although some do get through.

China has long been known to have a problem with firms selling papers to researchers, says Xiaotian Chen, a librarian at Bradley University in Peoria, Illinois. As far back as 2010, a team led by Shen Yang, a management-studies researcher then at Wuhan University in China, warned of websites offering to ghostwrite papers on fictional research, or to bypass peer-review systems for payment. In 2013, *Science* reported on a market for authorships on research papers in China. In 2017, China's Ministry of Science and Technology (MOST) said it would crack down on misconduct after a scandal in which 107 papers were retracted at the journal *Tumor Biology*; their peer reviews had been fabricated and a MOST investigation concluded that some had been produced by third-party companies.

Physicians in China are a particular target market because they typically need to publish research articles to gain promotions, but are so busy at hospitals that they might not have time to do the science, says Chen. Last August, the Beijing municipal health authority published a policy stipulating that an attending physician wanting to be promoted to deputy chief physician must have at least two first-author papers published in professional journals; three first-author papers are required to become a chief physician. These titles affect

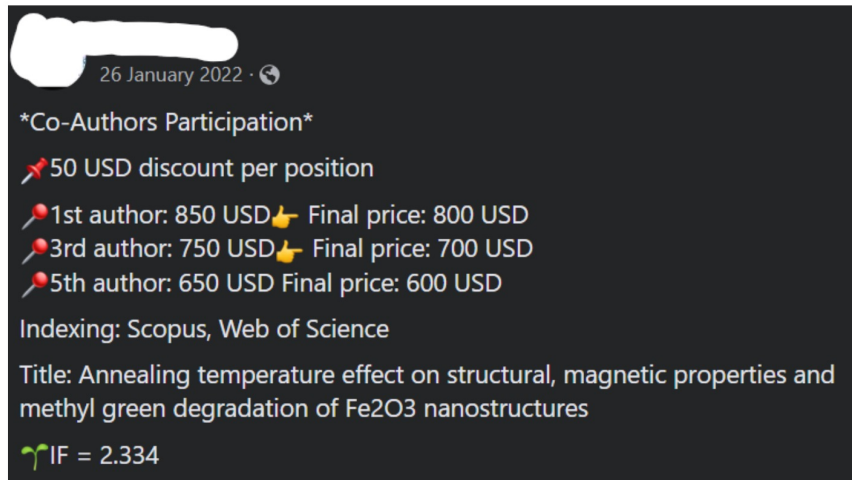
Fabrication et vente d'articles : *Paper Mills*

Annealing Temperature Effect on Structural, Magnetic Properties and Methyl Green Degradation of Fe₂O₃ Nanostructures

Arabian Journal for Science and Engineering (2023) - 2 Comments
doi: 10.1007/s13369-022-07118-4 issn: 2193-567X issn: 2191-4281

#1 N. H. Wise comment accepted August 2023

On the 26th of January 2022 an advert was placed on Facebook selling authorship of a paper with this title.



26 January 2022 · 🌐

Co-Authors Participation

- 📌 50 USD discount per position
- 📌 1st author: 850 USD 👍 Final price: 800 USD
- 📌 3rd author: 750 USD 👍 Final price: 700 USD
- 📌 5th author: 650 USD Final price: 600 USD

Indexing: Scopus, Web of Science

Title: Annealing temperature effect on structural, magnetic properties and methyl green degradation of Fe₂O₃ nanostructures

🌱 IF = 2.334

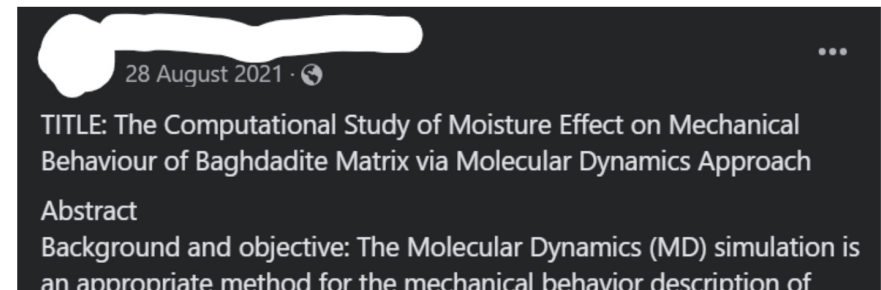
<https://pubpeer.com/publications/C95132A71315B0E6BA1E3E34A806DB>

The computational study of moisture effect on mechanical behavior of baghdadite matrix via molecular dynamics approach

Journal of Materials Research and Technology (2021) - 7 Comments
doi: 10.1016/j.jmrt.2021.09.108 issn: 2238-7854

#5 N. H. Wise comment accepted August 2023

On the 28th of August 2021 an advert was placed on Facebook offering the 2nd authorship position of a paper with this title, in this journal. The abstract is also identical. The advert stated the paper was revised and this paper was received on the 17th of May, suggesting the advert was placed after the first round of peer review had been completed.



28 August 2021 · 🌐

TITLE: The Computational Study of Moisture Effect on Mechanical Behaviour of Baghdadite Matrix via Molecular Dynamics Approach

Abstract

Background and objective: The Molecular Dynamics (MD) simulation is an appropriate method for the mechanical behavior description of

<https://pubpeer.com/publications/41AECCAD29D3B4773CC3A18167AA77#7>

Fabrication et vente d'articles : *Paper Mills*

Feature

NATURE'S 10

Ten people who helped shape science in 2024.

Anna Abalkina: **Fraud buster**

This Russian science sleuth spots fake papers and hijacked journals.



<https://www.nature.com/articles/d41586-024-03894-1>

Retraction Watch

Hijacked Journal Checker

322 revues détournées

Plus que les LLM : la génération d'images

Possibilité de générer des illustrations

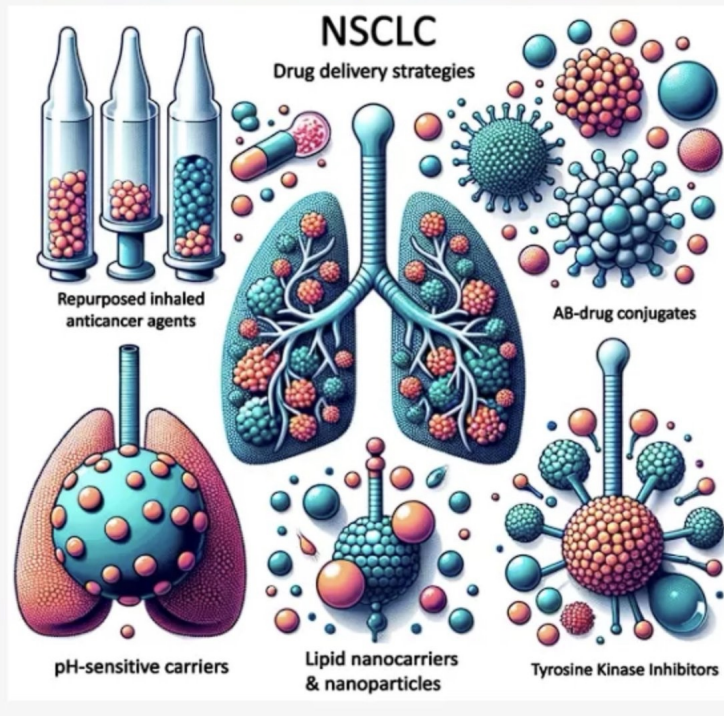
→ Souvent peu informatives voire mensongères

#1 *Gymnidium turbinatum* commented April 2024

Figure 1 was AI-generated. It does not make any sense

<https://doi.org/10.3390/pharmaceutics15122777>

Figure 1. Examples of current drug delivery strategies for the treatment of NSCLC.



<https://pubpeer.com/publications/8026AE8D42C97065E13C577DA4F4C7>

Plus que les LLM : la génération d'images

Plus grave : génération de données d'expérimentation

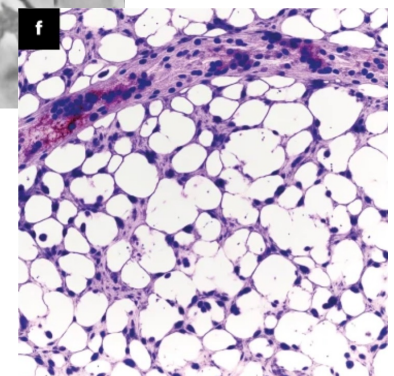
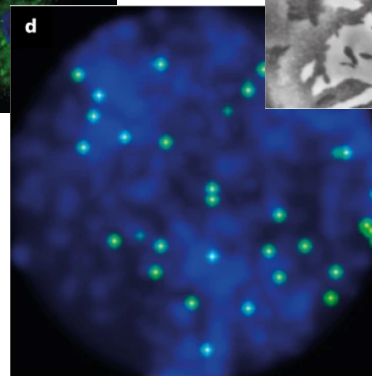
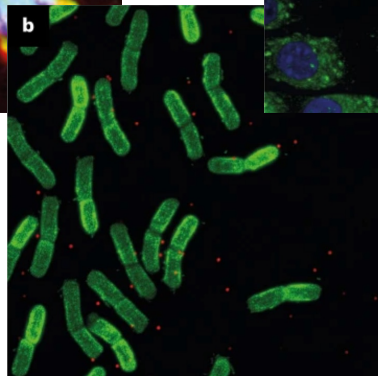
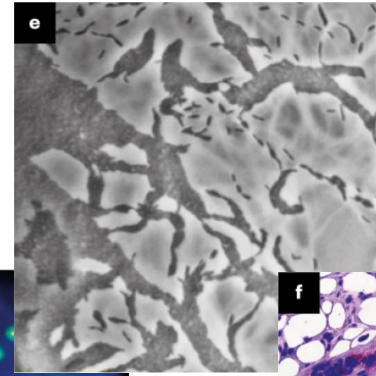
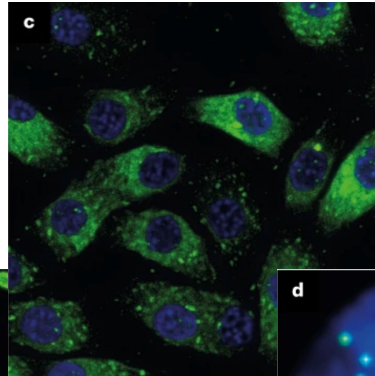
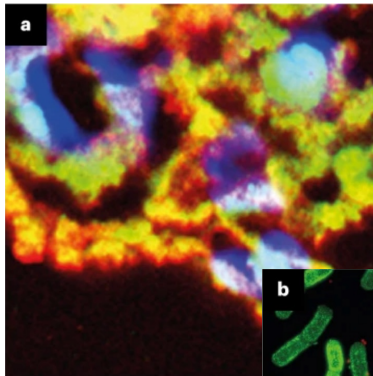
NEWS | 05 November 2024

<https://www-nature-com/articles/d41586-024-03542-8>

AI-generated images threaten science – here's how researchers hope to spot them

Generative-AI technologies can create convincing scientific data with ease – publishers and integrity specialists fear a torrent of faked science.

QUIZ: CAN YOU SPOT AI FAKES?



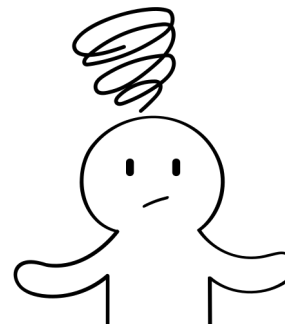


Éléments pour un usage responsable des LLM

Éléments pour un usage responsable des LLM

Outils récents pour le grand public =

- Limites et cas d'usage mal définis
- Contexte légal flou
- Questionnements éthiques



Réflexions en cours au niveau international sur comment encadrer, ou pas, les LLM et les autres outils d'IA générative

AP EXPLAINER: What is ChatGPT and why are schools blocking it?

Les défauts de ChatGPT sous la loupe des scientifiques

Une équipe de chercheurs sino-américains a évalué ce nouveau robot conversationnel en étudiant 194 prépublications (« preprints ») sur près de 1 400, déposées depuis décembre 2022. Résultat : la liste des imperfections intrinsèques de la machine est longue.

Publié le 18 octobre 2023 à 18h00 | 🕒 Lecture 2 min.



La recherche française face à chatGPT

En France comme

en Italie ou au Canada, plusieurs plaintes ont été déposées, en particulier contre la société OpenAI et son robot conversationnel chatGPT, et des enquêtes sont ouvertes par la Commission nationale de l'informatique et des libertés (CNIL) et ses équivalents dans les pays concernés.

Éléments pour un usage responsable des LLM



International Journal of Information Management

Volume 74, February 2024, 102700

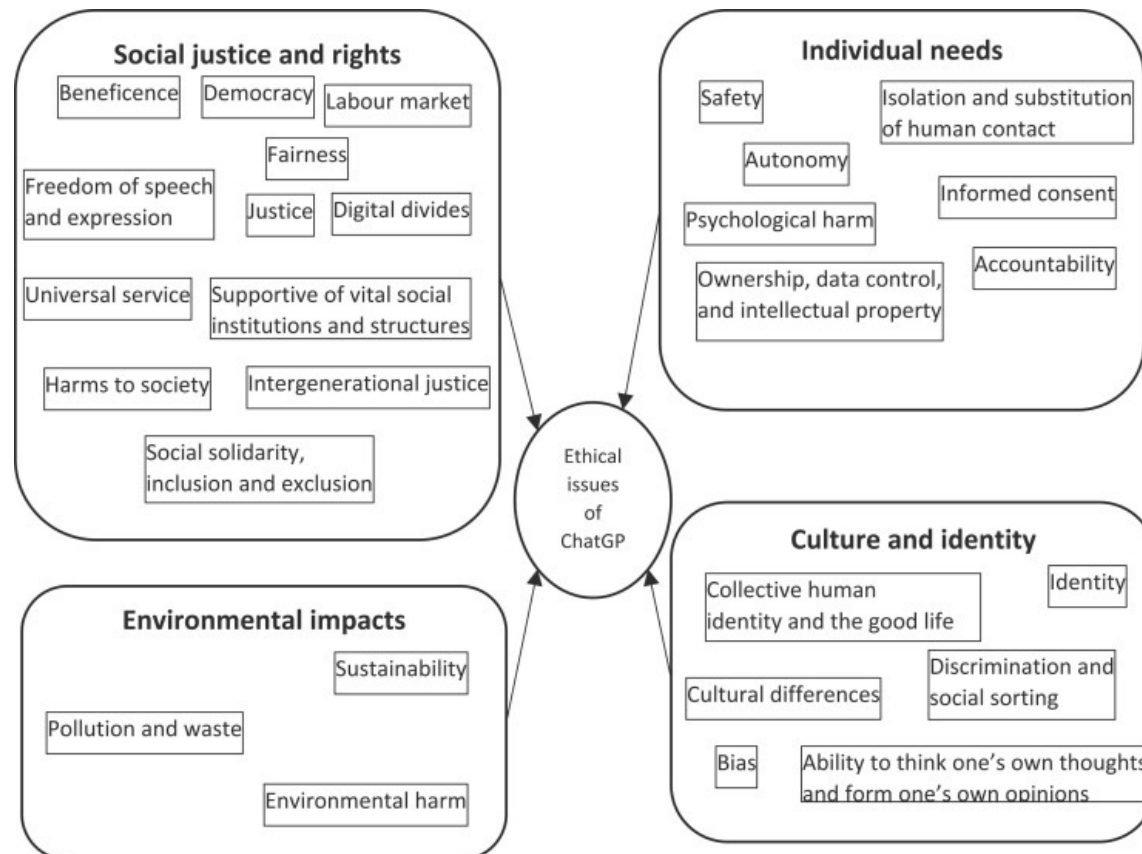


<https://doi.org/10.1016/j.ijinfomgt.2023.102700>

Opinion paper

The ethics of ChatGPT – Exploring the ethical issues of an emerging technology

Bernd Carsten Stahl^{a,b} , Damian Eke^b



Contexte légal des LLM — Aujourd'hui, pas de restrictions





Computer Law & Security Review

Volume 55, November 2024, 106066



→ Situation mouvante qui va certainement évoluer à l'avenir

Generative AI in EU law: Liability, privacy, intellectual property, and cybersecurity

Claudio Novelli^{a c}  , Federico Casolari^a, Philipp Hacker^b, Giorgio Spedicato^a,
Luciano Floridi^{a c}

Privacy and data protection concerns are paramount under EU law. Most significantly, AI models might violate the GDPR through extensive scraping of personal data, AI training, particularly on sensitive data, and hallucinations. Several data protection inquiries are already underway in this context. Moreover, we argue that, under certain conditions, LLMs themselves may constitute personal data, which opens the door toward erasure requests concerning the entire model.

Addressing the copyright infringement potential of LLM-generated outputs and establishing guidelines for IP protection eligibility in autonomous creations are also imperative.



The potential of machine unlearning techniques should also be explored to enhance the effectiveness of the right to erasure.

LLM dans la rédaction scientifique — Soumission d'articles

<https://www-nature-com.gorgone.univ-toulouse.fr/articles/d41586-024-00592-w#ref-CR1>

nature | 28 February 2024

Is ChatGPT making scientists hyper-productive? The highs and lows of using AI

Academic publishers scrambled to announce policies on the use of ChatGPT and other large language models (LLMs) in the writing process. By last October, 87 out of 100 top scientific journals had provided guidance to authors on the use of generative AI, which can create text, images and other content, researchers reported on 31 January in the *The BMJ*¹.

Position de la majorité des revues pour la soumission d'articles
→ Ok en temps qu'aide à la rédaction si usage transparent

Of the 87 journals, only *Science* explicitly prohibited any use of GAI tools in the preparation of a manuscript. Other journals that explicitly prohibited GAI in some capacity included *Lancet*, which limited the use of GAI for anything other than improving the “readability and language of the work,” and *Blood*, which allowed graphical but not textual GAI outputs in submitted work.

The journals provided guidance on where in the manuscript to include the disclosure, with the most common locations being the methods (n=56, 64%), acknowledgements (n=43, 49%), cover letter (n=17, 20%), or a new section (n=13, 15%).

Thirty five (40%) journals provided recommendations on which details should be included in the disclosure

Eighty five (98%) of the journals had specific guidelines for including GAI as an author. All explicitly stated that AI should not be listed as an author.

ACS Nano 2023, 17, 5, 4091–4093

Best Practices for Using AI When Writing Scientific Manuscripts

Caution, Care, and Consideration: Creative Science Depends on It

<https://doi.org/10.1021/acsnano.3c01544>

Our recommendations for the use of AI language bots for scientific communication:

- (i) **Acknowledge**, in the Acknowledgments and Experimental Sections, your use of an AI bot/ChatGPT to prepare your manuscript. Clearly indicate which parts of the manuscript used the output of the language bot, and provide the prompts and questions, and/or transcript in the Supporting Information.
- (ii) Remind your coauthors, and yourself, that the output of the ChatGPT model is merely a very early draft, at best. The output is incomplete, might contain incorrect information, and every sentence and statement must be considered critically. **Check, check, and check again.** And then check again.
- (iii) **Do not use text verbatim from ChatGPT.** These are not your words. The bot might have also reused text from other sources, leading to inadvertent plagiarism.
- (iv) Any citations recommended by an AI bot/ChatGPT need to be verified with the original literature since the bot is known to generate erroneous citations.
- (v) **Do not include ChatGPT or any other AI-based bot as a co-author.**^{10,19} It cannot generate new ideas or compose a discussion based on new results, as that is our domain as humans. It is merely a tool, like many other programs, for helping with the formulation and writing of manuscripts. Please refer to ACS Nano **author guidelines** for more information.
- (vi) ChatGPT cannot be held accountable for any statement or ethical breach. As it stands, **all authors of a manuscript share this responsibility.**
- (vii) And most importantly, do not allow ChatGPT to squelch your creativity and deep thinking. **Use it to expand your horizons, and spark new ideas!**

LLM dans la rédaction scientifique — Pour les rapports d'évaluation

<https://www-nature-com.gorgone.univ-toulouse.fr/articles/d41586-024-00592-w#ref-CR1>

nature | 28 February 2024

Is ChatGPT making scientists hyper-productive? The highs and lows of using AI

Pour l'évaluation d'article et de dossiers de subventions
→ **Généralement interdit**

Although as of November, the American Association for the Advancement of Science – which publishes *Science* – allows for some disclosed use of generative AI in the preparation of manuscripts, it still bans the use of LLMs during peer review, Thorp says. This is because he and others at *Science* want reviewers to devote their full attention to the manuscript being assessed, he adds. Similarly, Springer Nature's policy prohibits peer reviewers from uploading manuscripts into generative-AI tools.

Some grant-funding agencies, including the US National Institutes of Health and the Australian Research Council, forbid reviewers from using generative AI to help examine grant applications because of concerns about confidentiality (grant proposals are treated as confidential documents, and data entered into public LLMs could be accessed by other people).

<https://www-nature-com.gorgone.univ-toulouse.fr/articles/d41586-024-00592-w#ref-CR1>

nature | 28 February 2024

Is ChatGPT making scientists hyper-productive? The highs and lows of using AI

ERC Scientific Council on AI: Current position

01 December 2023

The ERC Scientific Council recognises that researchers regularly seek input from AI technologies or human third parties, for example to brainstorm or generate ideas, to search the literature, and to revise, translate or summarise text.

The Scientific Council emphasises that use of external help in preparing a proposal does not relieve the author from taking full and sole authorship responsibilities with regard to acknowledgements, plagiarism and the practice of good scientific and professional conduct.

<https://erc.europa.eu/news-events/news/erc-scientific-council-ai-current-position>



Pour la rédaction
de projets ERC
→ OK

LLM dans la rédaction scientifique — Position des tutelles de l'IRIT



Pour les membres
des laboratoires
CNRS

→ Usage interdit
(pour l'instant)

Directeur de la sûreté et fonctionnaire sécurité défense (FSD)

De :

Envoyé : mardi 25 juin 2024 18:41

Objet : usage d'outils IA et respect de la PPST

Bonjour à toutes et tous,

L'usage d'outils d'IA génératives (comme ChatGPT) se développe et suscite des attentes croissantes pour gagner en efficacité et en temps sur certaines tâches.

Malgré les atouts de ce type d'outils, les risques pesant sur les données traitées sont réels (perte de confidentialité, intégrité non garantie en particulier).

Du fait des enjeux de protection du potentiel scientifique et technique (PPST), l'utilisation de toutes données sensibles avec ces IA non souveraines est interdit.

Pour répondre aux besoins légitimes d'usage d'une IA avec des données sensibles, une option est à l'étude avec des moyens et ressources contrôlés par le CNRS et des solutions pourraient être proposées dans les semaines ou mois à venir.

A diffuser sans modération, svp, vers les labos et vos CSSI.

Bien cordialement

=====

La question légitime liée à ce point est « mes données sont elles sensibles ». A cela, le ministère, en classant l'ensemble du laboratoire en ZRR, a répondu par l'affirmative. Quant à la question, qu'entend on par « données », cela va d'une réponse à un mail lié à la recherche, à un document de réponse à un appel à projet, à l'analyse de données collectées, etc...

Je rappelle en passant qu'une responsabilité pénale peut être engagée en fonction des données qui ont « fuitées ». Soyez donc vigilant !

Il existe des moteurs d'inférences qui peuvent tourner en local, utilisant des modèles entraînés téléchargeables. L'avantage est que vos données restent en local. Cette solution est donc à privilégier pour l'instant, en attendant des solutions compatibles ZRR mutualisées, au sein du laboratoire ou sur l'offre de service du CNRS.

Bien cordialement

Jean-Marc Pierson.

-- Prof. Jean-Marc Pierson, +33 (0) 5 61 55 6764

— Directeur de l'IRIT — IRIT Laboratory Director



→ *Charte en cours de préparation* pour donner des recommandations

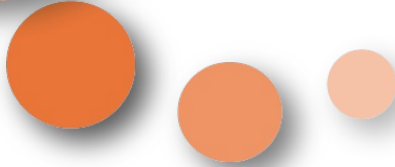
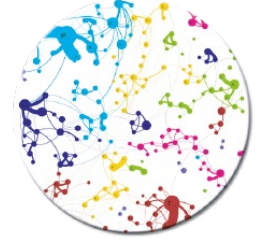
- Aux étudiants
- Aux enseignants-chercheurs
 - Dans les activités d'enseignement
 - Dans les activités de recherche

Autres tutelles : pas de décisions connues pour l'instant



CNRS - Toulouse INP - UT3 - UT1 - UT2

Institut de Recherche en Informatique de Toulouse



(Més)usages des LLM pour la production d'articles scientifiques

Ophélie Fraisier-Vannier et Guillaume Cabanac, équipe IRIS
Journée scientifique de l'IRIT du 13 décembre 2024



The
Guardian

Alex Hern

Tue 16 Apr 2024

TechScape: How cheap, outsourced labour in Africa is shaping AI English

Workers in Africa have been exploited first by being paid a pittance to help make chatbots, then by having their own words become AI-ese. Plus, new AI gadgets are coming for your smartphones

I said “delve” was overused by ChatGPT compared to the internet at large. But there’s one part of the internet where “delve” is a much more common word: the African web. In Nigeria, “delve” is much more frequently used in business English than it is in England or the US. So the workers training their systems provided examples of input and output that used the same language, eventually ending up with an AI system that writes slightly like an African.

And that’s the final indignity. If AI-ese sounds like African English, then African English sounds like AI-ese. Calling people a “bot” is already a schoolyard insult (ask your kids; it’s a Fortnite thing); how much worse will it get when a significant chunk of humanity sounds like the AI systems they were paid to train?

AI TAKES ON GRANT APPLICATIONS

If artificial intelligence can do much of the work, the process is broken. **By Juan Manuel Parrilla**

Juan Manuel Parrilla is a robotics lecturer at Glasgow Caledonian University, UK.

Nature | Vol 623 | 9 November 2023 | **443**

So why the need for applicants to write all those documents? In theory, the system has been designed to be thorough, robust and unbiased; it's supposed to mean that funding bodies are presented with a serious case. In other words, chancers need not apply. Making the process challenging and cumbersome ensures that only those who are really interested will apply. But creating these lengthy, seemingly useless documents is taking up too much of scientists' time.

We submitted the grant on time. The next day, while speaking to a friend, I told him, "This week, I wrote my first ChatGPT grant." He replied that he had been doing it for months and that many other scientists are doing the same. A 2023 *Nature* survey of 1,600 researchers found that more than 25% use AI to help them write manuscripts and that more than 15% use the technology to help them write grant proposals (*Nature* **621**, 672–675; 2023).

Some people might see the use of ChatGPT in writing grant proposals as cheating, but it highlights a much bigger problem: what is the point of asking scientists to write documents that can be easily created with AI? What value are we adding? Perhaps it is time for funding bodies to rethink their application processes.

This document was written without the use of AI.

nature

CAREER COLUMN | 05 February 2024

'Obviously ChatGPT' — how reviewers accused me of scientific fraud

A journal reviewer accused Lizzie Wolkovich of using ChatGPT to write a manuscript. She hadn't — but her paper was rejected anyway.

By [E. M. Wolkovich](#) 

Imagine my surprise when I received reviews on a submitted paper declaring that it was the work of ChatGPT. One reviewer wrote that it was “obviously ChatGPT”, and the handling editor vaguely agreed, saying that they found “the writing style unusual”. Surprise was just one emotion I experienced; I also felt shock, dismay and a flood of confusion and alarm.

These reviews captured something both inherently broken about the peer-review process and — more importantly to me — about how AI could corrupt science without even trying.