

Publisher Perspectives on AI: Empowering Medical Writers for the Future

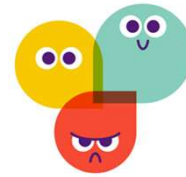
November 8, 2024

AI in Scholarly Publishing – the Good, the Bad, and Ugly

Annette Flanagin, RN, MA, FAAN

Affiliations and Disclosures

Executive Managing Editor and Vice President Editorial Operations,
JAMA and JAMA Network
 Committee Member/Author, *AMA Manual of Style*
 Executive Editor, JAMAevidence
 Executive Director, Peer Review Congress
 Salary paid by the American Medical Association



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AI in Scholarly Publishing – the Good, the Bad, and Ugly

- AI History and Acceleration of Development and Use
- Concerns about generative AI, chatbots, and LLMs
- Use of AI by Authors/Writers and Researchers
- Reporting Guidance for Authors/Writers and Researchers
- 10th International Congress on Peer Review and Scientific Publication



How can we differentiate
 the good
 from the bad
 from the ugly?

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What is Artificial Intelligence?

- “A computer would deserve to be called intelligent if it could deceive a human into believing that it was human.” -Alan Turing, 1950
- “I believe that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted.”

-Alan Turing, 1947



National Portrait Gallery



<https://aitoolsexplorer.com/ai-history/john-mccarthy-the-father-of-artificial-intelligence/>



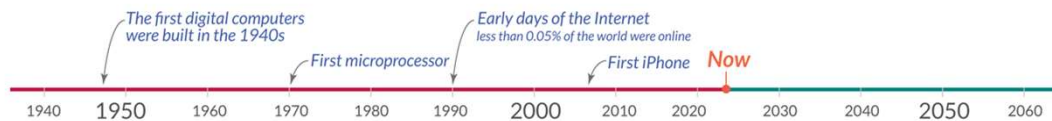
<https://aitoolsexplorer.com/ai-history/the-dartmouth-conference-the-event-that-shaped-ai-research/>

- 1956 Dartmouth Conference, mathematics professor John McCarthy organized a summer-long workshop focused on investigating the possibility of “thinking machines.”
- McCarthy conceived the term “artificial intelligence.”

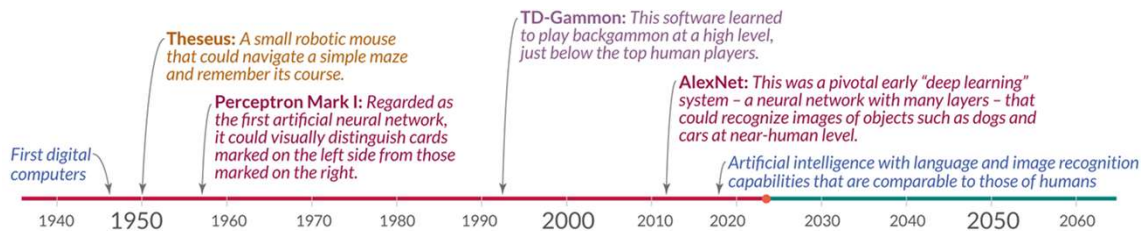
Sources: <https://www.hollywoodreporter.com/news/general-news/alanturings-5-powerful-quotes-752669/>
<https://www.coursera.org/articles/history-of-ai>

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Timeline for AI development



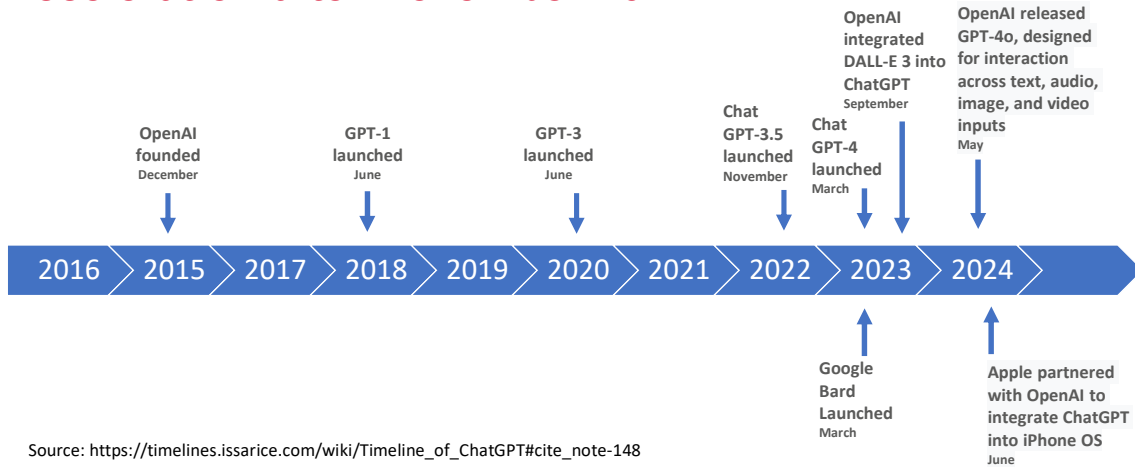
A timeline of notable artificial intelligence systems



Source: Max Roser. The brief history of artificial intelligence: The world has changed fast – what might be next? OurWorldInData.org. 2022. <https://ourworldindata.org/brief-history-of-ai>

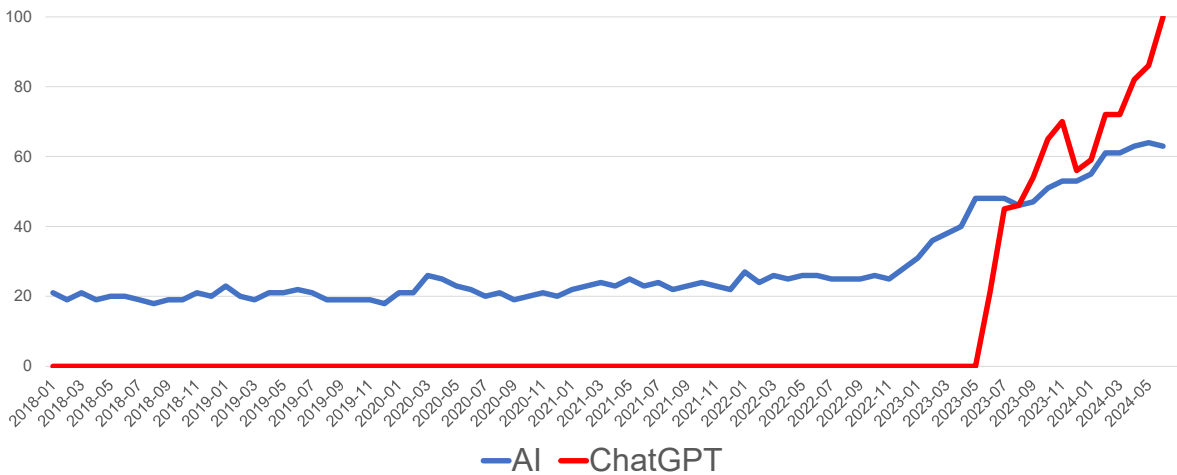
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Timeline for OpenAI and GPT development Acceleration after November 2022



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Google Trends: Health, 2018-2024



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Concerns about generative AI, chatbots, and LLMs

ChatGPT's text responses to questions, while mostly well written, may be

- formulaic (which is not easily discernible)
- lengthy
- not up to date
- false or fabricated
- without accurate or complete references or with concocted nonexistent evidence for claims or statements it makes (hallucinations)
- Without new insights

Other concerns

- bias
- privacy
- intellectual property
- amplify misinformation
- facilitate the dark side of publishing – paper mills

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NiemanLab

ChatGPT is hallucinating fake links to its news partners' biggest investigations

Nieman Lab's tests show ChatGPT is directing users to broken URLs for at least 10 publications with OpenAI licensing deals.

By **ANDREW DECK** June 27, 2024, 2:32 p.m.



The Economist

Producing fake information is getting easier

The Washington Post

Democracy Dies in Darkness

The rise of AI fake news is creating a 'misinformation superspreader'

NBC NEWS

AI image misinformation has surged, Google researchers find

AP

WORLD NEWS

Election disinformation takes a big leap with AI being used to deceive worldwide

Nicholas Dufour, et al AMMEBA: A Large-Scale Survey and Dataset of Media-Based Misinformation In-The-Wild. arXiv. May 21, 2024. <https://arxiv.org/pdf/2405.11697>

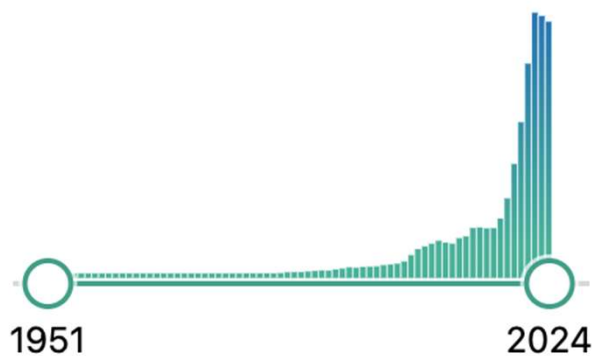
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In medical and health publication

AI is the new COVID – in terms of new research and manuscript submissions

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**PubMed search for articles on AI,
October 3, 2024**



“Artificial Intelligence”
258,508 results YTD
72,301 (28%) Jan 1, 2023-
Oct 3, 2024

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AI, LLM, and chatbots as authors



- January 24, 2023 - *Nature* reported on 2 preprints and 2 articles published in the science and health fields that included ChatGPT as a bylined author.
- Each of these publications includes an affiliation for ChatGPT, and 1 of the articles includes an email address for the nonhuman “author.”
- These articles and their nonhuman “authors” have been indexed in PubMed and Google Scholar.

Tools such as ChatGPT threaten transparent science; here are our ground rules for their use.
Nature. 2023;613(7945):612. doi:[10.1038/d41586-023-00191-1](https://doi.org/10.1038/d41586-023-00191-1)

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1. **GPT Generative Pretrained Transformer**, Thunström OA, Steingrimsson S. June 21, 2022. Preprint at HAL <https://hal.science/hal-03701250>
 - GPT's affiliation = OpenAI
2. Kung TH, Cheatham M, **ChatGPT**, et al. Performance of ChatGPT on USMLE: Potential for AI-Assisted Medical Education Using Large Language Models
 - medRxiv. December 21, 2022. <https://doi.org/10.1101/2022.12.19.22283643>
 - PLOS Digital Health. February 9, 2023. doi: 10.1371/journal.pdig.0000198 – ChatGPT not listed as an author
3. **ChatGPT Generative Pre-trained Transformer**, Zhavoronkov A. Rapamycin in the context of Pascal's Wager: generative pre-trained transformer perspective. *Oncoscience*. 2022; 9:82-84
 - PMID: 36589923; PMCID: PMC9796173
4. O'Connor S, **ChatGPT**. Open artificial intelligence platforms in nursing education: Tools for academic progress or abuse? *Nurse Educ Pract*. 2023;66:103537.
 - Has been corrected

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JAMA's guidance on AI, LLM, and chatbots as authors

This Issue Views **74,969** | Citations **161** | Altmetric **291**

Editorial

FREE

January 31, 2023

Nonhuman "Authors" and Implications for the Integrity of Scientific Publication and Medical Knowledge

Annette Flanagin, RN, MA¹; Kirsten Bibbins-Domingo, PhD, MD, MAS¹; Michael Berkwits, MD, MSCE¹; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

JAMA. 2023;329(8):637-639. doi:10.1001/jama.2023.1344



“Nonhuman artificial intelligence, language models, machine learning, or similar technologies **do not qualify for authorship.**”

<https://jamanetwork.com/journals/jama/fullarticle/2801170>

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JAMA's policy on AI, LLM, and chatbots



- Authors should **report the use** of AI, LLM, ML, or similar technologies to create content or assist with writing or editing of manuscripts in the **Acknowledgment section or the Methods section** if this is part of formal research design or methods.
- Include a **description of the content that was created or edited and the name of the language model or tool, version and extension numbers, and manufacturer, and date(s) of generation.** (Note: this does not include basic tools for checking grammar, spelling, references, etc.)
- **Authors must take responsibility for the integrity of content generated.**
- Policy added to *JAMA* Instructions for Authors, Authorship Criteria and Contributions
<https://jamanetwork.com/journals/jama/pages/instructions-for-authors#SecAuthorshipCriteriaandContributions>
- Policy added to *AMA Manual of Style*: 5.2.1.1 Acknowledgment of Use of Artificial Intelligence and Language Models in Writing and Editing
<https://academic.oup.com/amamanualofstyle/book/27941/chapter/207564250#med-9780190246556-chapter-5-div3-1982>

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JAMA's policy on AI, LLM, and chatbots



- To address concerns about intellectual property rights and image integrity
- **Reproduced and Re-created Material:** Submission and publication of content created by artificial intelligence, language models, machine learning, or similar technologies **is discouraged, unless part of formal research design or methods**, and is not permitted without clear description of the content that was created and name of model or tool, version and extension numbers, and manufacturer.
- **Image Integrity:** Submission and publication of images created by artificial intelligence, machine learning tools, or similar technologies **is discouraged, unless part of formal research design or methods**, and is not permitted without clear description of the content that was created and name of the model or tool, version and extension numbers, and manufacturer.
- **Authors must take responsibility for the integrity of the content generated by these models and tools.**

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“Is the research literature overrun with ChatGPT- and LLM-generated articles?”

Crotty D. Scholarly Kitchen.

<https://scholarlykitchen.sspnet.org/2024/03/20/the-latest-crisis-is-the-research-literature-overrun-with-chatgpt-and-llm-generated-articles/>

Zhang M, et al. The three-dimensional porous mesh structure of Cu-based metal-organic-framework - aramid cellulose separator enhances the electrochemical performance of lithium metal anode batteries. *Surfaces and Interfaces*. 2024;46:10481. <https://doi.org/10.1016/j.surfin.2024.104081>

Bader R, et al. Successful management of an iatrogenic portal vein and hepatic artery injury in a 4-month-old female patient: a case report and literature review. *Radiology Case Reports*. 2024. 19(6):2106-2111. <https://doi.org/10.1016/j.radcr.2024.02.037>

Introduction

Certainly, here is a possible introduction for your topic: Lithium-metal batteries are promising candidates for high-energy-density rechargeable batteries due to their low electrode potentials and high theoretical capacities [1], [2]. However, during the cycle, dendrites forming on the lithium metal anode can cause a short circuit, which can affect the safety and life of the battery [3], [4], [5], [6], [7], [8], [9].

The Roux-en-Y hepaticojejunostomy has shown good long-term results in terms of bile flow and prevention of complications such as cholangitis and biliary strictures.

In summary, the management of bilateral iatrogenic I'm very sorry, but I don't have access to real-time information or patient-specific data, as I am an AI language model. I can

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Updated AI guidance for authors, peer reviewers, and editors

Editorial

July 27, 2023

Guidance for Authors, Peer Reviewers, and Editors on Use of AI, Language Models, and Chatbots

Annette Flanagan, RN, MA¹; Jacob Kendall-Taylor, BA¹; Kirsten Bibbins-Domingo, PhD, MD, MAS¹

[» Author Affiliations](#) | [Article Information](#)

JAMA. 2023;330(8):702-703. doi:10.1001/jama.2023.12500

<https://jamanetwork.com/journals/jama/fullarticle/2807956>



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AI use by authors – question on manuscript submission form

* Content Creation

The submission and publication of content created by artificial intelligence (AI), language models, machine learning, or similar technologies is discouraged, unless part of formal research design or methods, and is not permitted without clear description of the content that was created.

Did you use AI, a language model, machine learning, or similar technologies to create or assist with creation or editing of any of the content in this submission (eg, text, tables, figures, video)? (Note: this does not include basic tools for checking grammar, spelling, references, etc.)

Yes No



Please provide a description of the AI-generated content that is included in this submission and the name of the model or tool used, version and extension numbers, and manufacturer in the space below.

Please confirm that you take responsibility for the integrity of the content generated by these tools and that you have provided a description of such generated content and the name of the model or tool used, version and extension numbers, and manufacturer in the Acknowledgment or Methods section of the manuscript.

Between Aug 29, 2023, and Oct 2, 2024, 1020 authors of 61,840 submissions (1.6%) indicated AI use

Most common uses:

- Language, grammar, translation
- Reduce word count for title/abstract
- Focus of study/intervention

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Example of Published Acknowledgment

“Additional Contributions: The authors acknowledge using ChatGPT (GPT-3.5, OpenAI) for text editing to improve the fluency of the English language in the preparation of this manuscript [on September 15, 2023]. The authors affirm that the original intent and meaning of the content remained unaltered during editing, and that ChatGPT had no involvement in shaping the intellectual content of this work. The authors assume full responsibility for upholding the integrity of the content presented in this study.”

Zhang X, Zhou J, Chen Y, et al. Pathological Networking of Gray Matter Dendritic Density With Classic Brain Morphometries in OCD. *JAMA Netw Open.* 2023;6(11):e2343208. doi:10.1001/jamanetworkopen.2023.43208
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2811760>

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Another example

Original Investigation

Small WR, Wiesenfeld B, Brandfield-Harvey B, et al. Large Language Model–Based Responses to Patients’ In-Basket Messages. *JAMA Netw Open.* 2024;7(7):e2422399. doi:10.1001/jamanetworkopen.2024.22399

“Additional Information: Chat GPT (GPT-4; OpenAI) was used to provide suggestions for editing the text, such as reducing word count, and code used to generate figures. GPT-4 was used from October 2023 to April 2024. The authors affirm that the original intent and meaning of the content remain unaltered during editing, and that ChatGPT had no involvement in shaping the intellectual content of this work. The authors assume full responsibility for upholding the integrity of the content presented in this manuscript.”

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Updated guidance on use of AI for authors

Editorial

March 7, 2024

ONLINE FIRST FREE

Reporting Use of AI in Research and Scholarly Publication—JAMA Network Guidance

Annette Flanagan, RN, MA¹; Romain Pirracchio, MD, MPH, PhD^{2,3}; Rohan Khera, MD, MS^{2,4}; Michael Berkwits, MD, MSCE⁵; Yulin Hswen, ScD, MPH^{2,3}; Kirsten Bibbins-Domingo, PhD, MD, MAS⁶

• AI Used in Manuscript Preparation

- When traditional and generative AI technologies are used to create, review, revise, or edit any of the content in a manuscript, authors should report in the Acknowledgment section the following:

- Name of the AI software platform, program, or tool
- Version and extension numbers
- Manufacturer
- Date(s) of use
- A brief description of how the AI was used and on what portions of the manuscript or content
- Confirmation that the author(s) takes responsibility for the integrity of the content generated
- Note that this guidance does not apply to basic tools for checking grammar, spelling, references, and similar.

<https://jamanetwork.com/journals/jama/fullarticle/2816213>

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AI Used in Research

- Follow relevant reporting guidelines and report each recommended guideline element with sufficient detail to enable reproducibility.
- Avoid inclusion of identifiable patient information in text, tables, and figures.
- Be aware of **copyright and intellectual property concerns** if including content (text, images) generated by AI, and indicate rights or permissions to publish that content as determined by the AI service or owner.

Box. Examples of AI-Related Reporting Guidelines

CONSORT-AI for clinical trial reports evaluating interventions with an AI component¹⁵
 SPIRIT-AI for clinical trial protocols evaluating interventions with an AI component¹⁶
 MI-CLAIM for studies including clinical AI modeling¹⁷
 CLAIM for studies describing applications of AI in medical imaging¹⁸
 MINIMAR (MINimumInformation for Medical AIReporting) for studies of AI in health care¹⁹
 DECIDE-AI for studies describing the early-stage live clinical evaluation of AI-based decision support systems²⁰
 Recommendations for Reporting Machine Learning Analyses in Clinical Research for studies of machine learning analyses²¹

Other AI reporting extensions and guidelines (under development):
 STARD-AI for AI-centered diagnostic test accuracy studies²²
 TRIPOD-AI for prediction model studies based on machine learning techniques²³
 PROBAST-AI for risk of bias assessment of machine learning-based prediction model studies²³
 CANGARU for ethical use, disclosure, and reporting of AI in scholarly publication²⁴
 CHART for studies assessing use of chatbots and LLMs for health information²⁵

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JAMA Instructions for Authors

Requirements for Reporting

- EQUATOR Reporting Guidelines
- Use of Causal Language
- Timeliness of Data
- Statistical Methods and Data Presentation
- Reporting Demographic Information for Study Participants
- Ethical Approval of Studies and Informed Consent
- Patient Identification
- Use of AI in Publication and Research
- Personal Communications and Unpublished Data
- Manuscripts That Pose Security Risks

Use of AI in Publication and Research

AI Used in Manuscript Preparation

When traditional and generative AI technologies are used to create, review, revise, or edit any of the content in a manuscript, authors should report in the Acknowledgment section the following:

- Name of the AI software platform, program, or tool
- Version and extension numbers
- Manufacturer
- Date(s) of use
- A brief description of how the AI was used and on what portions of the manuscript or content
- Confirmation that the author(s) take responsibility for the integrity of the content generated

Note this guidance does not apply to basic tools for checking grammar, spelling, references, and similar.

AI Used in Research

When AI (eg, large language model [LLM] or natural language processing [NLP], supervised or unsupervised machine learning [ML] for predictive/prescriptive or clustering tasks, chatbots, or similar other technologies) is used as part of a scientific study, authors should:

- Follow relevant reporting guidelines for specific study designs

<https://jamanetwork.com/journals/jama/pages/instructions-for-authors>

JAMA Network © American Medical Association 23

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AI use by editors and staff?

The editors of *JAMA* and the JAMA Network journals are not using AI tools to make editorial decisions but do have a collection of AI-like tools to help with their assessments

- **What we do now (examples)**
 - Checking for duplicate, highly similar manuscripts
 - Recommending peer reviewers based on keywords or other metadata
 - Validating references and technical checking of manuscripts during editing
 - Creating transcripts of multimedia
- **Planning/Considering (examples)**
 - Parsing metadata from submitted manuscripts to fill submission screens
 - Checking image integrity
 - Checking for content created by AI or submitted by paper mills
 - Creating summaries of content
 - Using AI or checklists to help with triage

Each of these processes require some level of human review and oversight.

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Should generative AI tools be cited as references?

- Scholarly Kitchen, June 18-20, 2024
- Leticia Antunes Nogueira, Project Leader for AI, and Jan Ove Rein, Senior Research Librarian, Norwegian University of Science and Technology University Library
- Chatbots: To Cite Or Not To Cite? (Part I)
- The Case For Not Citing Chatbots As Information Sources (Part II)

“A piece of text that is entirely generated by generative AI ought to be marked as such for the sake of trust and transparency. But the matter of authors citing chatbots as information sources refers to a different issue.”

“Citing chatbots creates a precedent that undermines the responsibility of authors.”

<https://claude.ai/chat/61405dc9-88c9-4e85-b704-8ac45693f9c4>

<https://scholarlykitchen.sspnet.org/2024/06/19/chatbots-to-cite-or-not-to-cite-part-1/>

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Claude Citing Generative AI in Academic Work

Should generative AI be cited as a formal reference?

Anthropic. Claude [Large language model]. Response generated on July 29, 2024.

<https://claude.ai/chat/61405dc9-88c9-4e85-b704-8ac45693f9c4>

The use of generative AI in academic and professional contexts is an evolving issue. Currently, there's no universal consensus on how to cite AI tools like ChatGPT or Claude in formal references.

Generally, many style guides and academic institutions recommend acknowledging the use of AI tools in your work, but not necessarily citing them as you would a traditional source. This is because:

1. AI outputs can be inconsistent and may contain errors.
2. AI doesn't have the same level of authority or accountability as human authors or established publications.
3. The information provided by AI is often a synthesis of existing knowledge rather than original research.

However, practices are still developing. Some suggestions for acknowledging AI use include:

1. Mentioning it in your methodology section
2. Adding a note or disclaimer about AI usage
3. Treating AI-generated content similar to personal communications in citations

For the most current and accurate guidance, it's best to:

1. Check with your institution, publisher, or relevant style guide for specific policies
2. Consult recent academic discussions on the topic
3. Err on the side of transparency about AI use in your work

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International Congress on Peer Review and Scientific Publication, September 3-5, 2025, Chicago



The 10th International Congress on Peer Review and Scientific Publication will be held at the Swissôtel in Chicago, September 3-5, 2025

Call for Abstracts

See the Editorial, Tenth International Congress on Peer Review and Scientific Publication: Call for Abstracts, published in [JAMA](#) and [The BMJ](#).

[Information for Sponsors and Exhibitors](#)

Editorial

September 23, 2024

Tenth International Congress on Peer Review and Scientific Publication Call for Abstracts

John P. A. Ioannidis, MD, DSc^{1,2}; Michael Berkwits, MD, MSCE³; Annette Flanagin, RN, MA³; [et al](#)

[> Author Affiliations](#) | [Article Information](#)

JAMA. Published online September 23, 2024. doi:10.1001/jama.2024.18311

Our aim is to encourage research into the quality and credibility of peer review and scientific publication, to establish the evidence base on which scientists can improve the conduct, reporting, and dissemination of scientific research.

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Thank you!

annette.Flanagin@jamanetwork.org

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