

Navigating the AI-Driven Future of Scholarly Publishing

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Over the past few years, there has been a long development cycle for artificial intelligence (AI). AI includes many iterations, such as machine learning, neural networks, deep learning, and now, generative AI (Figure). In this session, panelists discussed ways to navigate this ever-changing landscape and use AI in a productive and responsible way.

What is Generative AI?

Generative AI (Gen AI) is a word prediction engine. It figures out what words go best together using mathematics, not consciousness. There are several reasons to integrate AI into workflows; however, there are also several realities to be aware of when approaching AI.

Some realities of AI to consider:

- It cannot predict the future
- It amplifies biases
- Hallucinations exist
- Copyright issues exist
- Energy consumption is increasing (but technology will become more efficient and models will improve)

AI and Scientific Publishing

Even though these considerations exist, there are ways to work around them. For example, users can ask the model to use plain language, to cite sources, and for a specific format. Giving the model constraints such as these to adhere to gives less leeway for the model to take liberties.

Authors and editors can prompt AI to summarize a manuscript, check guidelines, generate keywords, or improve the readability of a text. Advanced prompting can

include role-prompting, few-shot learning, reflexion, and chain of thought.

Reviewers cannot put another author's confidential manuscript into a public, open-source large language model (LLM). This is an ethical breach due to the confidential nature of research. Therefore, when using Gen AI, transparency is key.

For publishers, transparency is also key. Author guidelines and reviewer expectations must be set up and accessible. This involves telling authors what is required and what the journal's standards are. Currently, many authors are not transparent with their usage of AI. One possible reason for this lack of transparency is fear of being retaliated against.

Additionally, when using AI, the model needs to be vetted, trusted, and closed. A "closed" LLM refers to what happens to information after it is used in a prompt. The information put into a closed model will not be added to the LLM's database of knowledge after the query is complete. Paid models, either financed individually or through an organization's license, are better for ethical constraints. The premium paid versions of many models give much more comprehensive answers than the free or low-cost version.

Speakers also suggested that in the future, LLMs need to be able to understand the strength of claims from the data they are ingesting. Every statement has evidence underpinning it, and understanding that will allow the model to create answers that are more aligned with how science works.

Writing Prompts for AI

AI tools are powerful for automating tasks, like manuscript screening, plagiarism checks, or formatting and referencing, but they lack the nuanced understanding humans bring. Humans add value in the forms of judgment and ethics, contextual understanding, and cultural reference, ensuring that AI outputs align with the principles of scholarly publishing—trust, integrity, and quality.

To highlight this, the speakers put a sample abstract into ChatGPT. The model did not interpret who the audience was, the outcomes, etc. This is why human usage of contextual understanding as well as clear, specific prompts, are key.

AI Ethics Primer

- Tip 1: Act with integrity. Follow a policy you agree with.
- Tip 2: Understand the underlying biases in AI.
- Tip 3: AI is not accountable; you are.

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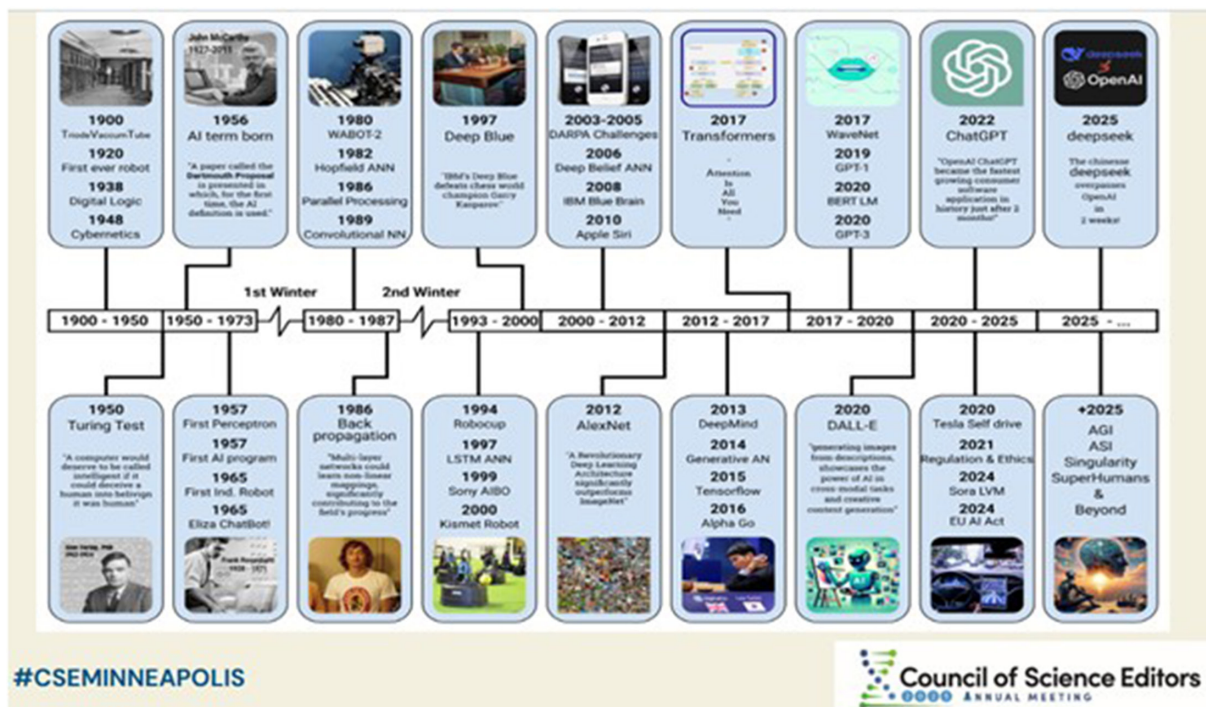


Figure. The most complete AI history timeline image covering the most important events since 1900 to 2025. Credit: Tarjomyar. Reprinted under CC BY-SA 4.0 license.

- Tip 4: Do not shame people for AI usage. Shame makes people not want to talk about it.
- Tip 5: Use/Share with AI responsibly. Be careful what you share. Before you give anything to an AI model, make sure you have permission to share it. You do not know what is going to happen to it once you enter it. Do not enter it into Gen AI if you would not post it online.

AI's Transformative Role in Scholarly Publishing

AI is transforming many of the precedents and workflows that exist in scholarly publishing. Here are a few major ways it is doing so:

- Transforming workflows from submission to publication
- Enhancing quality of language, structure, and analysis
- Raising questions of authorship, originality, and transparency
- Changing landscape

Future of AI in Scholarly Publishing

There are many practical uses for AI that would enhance scholarly publishing. For starters, AI can potentially address some of the accessibility issues that exist currently in publishing. It could also offer the potential for cross-platform standards, which would result in a consistent experience across publishers. Finally, it can also offer advanced translation to make scholarship more universal. Researchers could translate an article into their native language in order to focus on the literature without a language barrier.

Conclusion and Take-Home Messages

Professionals in the scholarly publishing industry do not need to be afraid to experiment with AI. You just have to do it responsibly and in an informed manner. Gather information about the model you are using before plugging information into it. Share your process for integrating AI into your workflows with others, and do not shame others for using AI. Following these tips will help you navigate the AI-driven future of scholarly publishing.