

Resources for Using and Mentoring AI in Scientific Communication

April 15, 2024

What is Generative AI? “Generative” AI-powered applications can rapidly generate new content based on a variety of prompts of other inputs that the user provides. You can ask AI anything you can think of; it is able to generate an answer to almost anything. We provide an example below. ***There is no guarantee that the answer is accurate or reliable. Versions in paid subscriptions are usually significantly improved from the free version.***

You: *How can AI help teach me how to construct a literature review?*

Chat GPT:

Using AI to learn how to construct a literature review can be quite helpful. Here’s a step-by-step guide on how you can leverage AI for this purpose:

- 1. **Understand the Basics**: Before diving into AI tools, make sure you understand what a literature review is and its purpose. A literature review is a critical summary and evaluation of existing research on a particular topic.*
 - 2. **Identify AI Tools**: Look for AI-powered writing assistants or platforms designed to help with academic writing. Tools like Grammarly, ProWritingAid, or even Google’s AI-powered tools like Grammar Suggestions in Google Docs can assist you in writing and structuring your literature review.*
 - 3. **Gather Resources**: Use AI-powered search engines or databases like Google Scholar, PubMed, or JSTOR to find relevant research papers and articles related to your topic. These platforms often use AI algorithms to help you find the most relevant and recent research.*
 - 4. **Analyze and Summarize**: Once you have gathered your resources, AI tools can assist in summarizing and extracting key points from each paper. Tools like SummarizeBot or IBM Watson can help you generate concise summaries of lengthy research articles.*
 - 5. **Organize Your Findings**: AI-powered note-taking apps like Evernote or Microsoft OneNote can help you organize your summarized findings. These tools often come with features like tagging and categorizing, making it easier to keep track of different themes and topics within your literature review.*
 - 6. **Drafting and Editing**: Use AI-powered writing assistants to help you draft and edit your literature review. These tools can provide suggestions for improving clarity, coherence, and overall quality of writing.*
 - 7. **Seek Feedback**: After drafting your literature review, seek feedback from peers, mentors, or academic advisors. AI tools can also assist in identifying potential areas for improvement and refinement.*
 - 8. **Review and Revise**: Finally, review and revise your literature review multiple times to ensure accuracy, coherence, and relevance. AI tools can assist in identifying grammar and spelling errors, as well as inconsistencies in your writing.*
- By integrating AI tools into your learning process, you can effectively learn how to construct a literature review while also improving your writing skills. However, remember that AI tools should be used as aids, and it’s essential to develop your critical thinking and analytical skills throughout the process.”*

General-interest resources:

- [ChatGPT](#): As of April 2024, Chat GPT is the most widely known generative AI application.
- [Claude](#): Claude is an alternative to Chat GPT and is often described as generating text with more nuance and texture than Chat GPT.
- [News Literacy Project](#): Overview of what generative AI is, with additional links.
- [Salman Khan TED talk: How AI Could Save \(Not Destroy\) Education](#). Khan Academy founder Salman Khan on the benefits for AI in universal education.
- [Ezra Klein interview with Ethan Mollick podcast: How Should I Be Using A.I. Right Now?](#) Ezra Klein interviews leader in AI for education Ethan Mollick. YouTube video of the *New York Times Ezra Klein Podcast* of April 2, 2024
- [Nature briefing about problematic use of Chat GPT in peer review](#) April 2, 2024

Creating writing assignments

- [AI Prompt Library](#) (Ethan Mollick, *More Useful Things*)
- [AI post on structured posting](#) (Ethan Mollick, *One Useful Thing*, November 1, 2023)
- [AI-Generated text considerations for teaching & learning writing](#) (University of Wisconsin-Madison collaborative document for faculty integration in teaching)

Research Aides and Tools

Systematic review apps (automation focus)

- [Rayyan](#)
- [Covidence](#)

Literature & Article Summarizer Search Tools

*Literature Search tools should be used for exploratory use only. They cannot replace a comprehensive, human-led literature search. They should not hallucinate because they pull from a body of literature.

- [Elicit](#)
- [ResearchRabbit](#)
- [Consensus](#)
- [Scholarcy](#)
- [Alethea \(still in beta\)](#)

Best apps for speakers of English as an Additional Language

- [ELSA](#), English Language Speech Assistant. This app helps English learners practice oral skills for vocabulary, sentences and conversations, and gives ratings for accent, intonation, and other qualities. The current version is likely to be over-prescriptive and can sometimes give even native speakers lower ratings, so “scores” should be taken with a grain of salt. (This is likely to improve as the app develops over time.)

- [Quillbot](#). A grammar and writing checker that also provides summary, paraphrase, plagiarism checking, and good translation for 45 languages.

Public speaking/presentation apps

These apps focus on vocal qualities such as pitch, speed, intonation, and filler words. They do not correct grammar or accents.

- [Orai](#)
- [Yoodli](#)
- [Review of presentation skills apps \(no endorsement implied\)](#) (*Second Nature* blog, July 19, 2023)

and

AI publishing,

- [APA Journals policy on generative AI: Additional guidance](#)
- [Change to policy on the use of generative AI and large language models | Science](#)
- [Guidance for Authors, Peer Reviewers, and Editors on Use of AI, Language Models, and Chatbots | JAMA Network](#)
- [“Has NIH set any restrictions on the use of artificial intelligence platforms?” | NIAID](#)
- [CSE Guidance on Machine Learning and Artificial Intelligence Tools \(csescienceeditor.org\)](#)
- [ICMJE – Defining the Roles of Authors and Contributors.](#)
- [Nature Portfolio – Artificial Intelligence Guidelines](#)
- [Springer Artificial Intelligence Guidelines](#)

AI research and education guidelines

- [Acceptable Use of ChatGPT and Similar AI Tools | UT Austin Information Security Office](#)
- [Artificial intelligence in education | UNESCO](#)
- [Embracing Artificial Intelligence in the Classroom | Harvard Graduate School of Education](#)
- [ENAI Recommendations on the ethical use of Artificial Intelligence in Education](#)
- [AI in Teaching and Learning - Office of the Provost - Purdue University](#)
- [Artificial Intelligence | Research Integrity and Assurance \(asu.edu\)](#)
- [Supporting Academic Integrity- Ethical Uses of Artificial Intelligence in Higher Education Information Sheet](#)
- [Teaching with Generative AI \(nyu.edu\)](#)
- [Have You Had “The Talk”? Discussing AI With Students - Infobase](#)
- [Duke Artificial Intelligence Policies](#)
- [UNL – AI Policy Examples](#)

AI Detection Tools

*AI text detection tools are extremely flawed and not recommended at this point. Like iThenticate, the image detection tools are being used by publishers to detect research misconduct.

Text:

- GPTZero
- Turnitin.com

Biomedical/Life Sciences Images:

- [ImageTwin](#)
- [Proofig](#)
- [ImaChek \(images\)](#)

Additional Resources

- [AI Pedagogy Project](#) – metaLAB at Harvard
- [UCL Designing Assessments for an AI-enabled World](#)