Slide 1

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ENABLING DISCOVERY | POWERING EDUCATION | SHAPING WORKFORCES

AI Tools for Scientific Writing & Research

Dr. David Peralta
Editor-in-Chief, *ChemMedChem*

Slide 2

AI Tools in Writing and Research

Outline

- AI tools for text generation
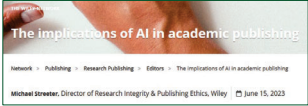- Best practices for AI in publishing
- Evaluating some AI tools for research organization

Slide 3

What is a Generative AI tool?

ARTIFICIAL INTELLIGENCE (AI)
- Machines perceiving, synthesizing, and inferring information

TRADITIONAL AI
- Designed to respond to a set of inputs to **perform a specific task** by relying on **explicit rules**.
- E.g., Voice Assistants like Siri/Alexa, Google search algorithm, basic plagiarism detection, basic text editing software

GENERATIVE AI
- Capable of **generating/creating something new** (e.g., text, art, protocols) based on simple input ("**prompts**"), by **learning from patterns & structures**.

Slide 4

What is a Generative AI tool?

TOOL: An object that helps you accomplish a task

– Important questions you need to ask before using a tool:

What was it made to do? optimized for?

What non-intended purposes can it be used for?

What should it not be used for?

TASK: Open a tin can   Available tools in the kitchen:

Slide 5

Generative AI tools in scientific writing and publishing

Popular AI tools for image generation

- **DALL-E / DALL-E 2 / DALL-E 3 (OpenAI)**
- **Midjourney**
- **Stable Diffusion**
- Craiyon AI
- Canva AI
- Dream by WOMBO

And many more!

USAGE RULES:
bit.ly/wileyethicalguidelines

Popular AI tools for text generation; Researcher tools

- **GPT/GPT-2/GPT-3/GPT-4 & ChatGPT, Copilot (Microsoft; using OpenAI tools)**
- **Google Pathways Language Model (PaLM 2) & Google Gemini (formerly Bard)**
- **Research-specific apps: Semantic Scholar, Consensus, Scite.ai, Research Rabbit, PotatoAI, Perplexity, ChatPDF, Elicit, NotebookLM**

And many more!

Slide 6

AI tools for text generation

What are they and how do they work?

Current AI tools with text outputs are based on **Large Language Models (LLMs)**.
You may also hear of the broader term "**Natural Language Processing (NLP) Models**".

Can interpret and generate human-like text based on **patterns** and **information learned** from training data.

Slide 7

AI tools for text generation

Language tools **lacking real-world understanding*** but **mimic human speech**.

On their own, they generate answers based on learned patterns, **without <u>true</u> comprehension*** of the content or fact-checking capacity.

*COMMON INTELLIGENCE TRAITS:
Reasoning, Knowledge Representation/Common Sense, Planning, Learning, Communicating in a Natural Language, Integration of all skills

They are **<u>statistical models</u>** learning patterns between words.
Without a separate layer of verification from an updated source, **output could be unreliable.**

M. Mitchel, D.C. Krakauer. "The debate over understanding in AI's large language models", PNAS *120* (13) e2215907120. https://www.pnas.org/doi/10.1073/pnas.2215907120 https://stackoverflow.blog/2023/07/03/do-large-language-models-know-what-they-are-talking-about/ https://jeremyhadfield.com/why-llms-will-not-understand-language/

Slide 8

AI tools for text generation

> **Neil Gaiman** @neilhimself
>
> ChatGPT doesn't give you information. It gives you information-shaped sentences.
>
> 7:16 PM · Mar 25, 2023
>
> ♥ 1.7K   Reply   Copy link

Tweets from Grady Brooch, Francois Chollet, and Neil Gaiman as presented in the Stack Overflow Blog; Ryan Donovan, Do large language models know what they are talking about?, *3 July 2023* https://stackoverflow.blog/2023/07/03/do-large-language-models-know-what-they-are-talking-about/

GPT-4/GPT-4o (Generative Pretrained Transformer 4)

What was it trained to do?
– **Analyze and generate human-like text** based on **patterns** and **information** learned from training data.
– It has **no true comprehension of content, nor can it check facts.**

What training data was used?
– Current websites, Wikipedia, Common Crawl (archive of webpage data from 8 years), internet-accessible books, public-domain text.
– Information is constantly generated, so there is always a **"knowledge cutoff"**. For GPT 3, this was September 2021. Most powerful GPT4o goes up to October 2023. GPT 4 (Turbo) goes up to December 2023.
– GPT used ~45 TB of data in its initial training set.
– New features like "Search GPT" and "Deep Research" now integrate online sources.

Who owns the training data?
– Claimed that training material was *publicly available with OA licenses* or in the public domain. If it had a copyright, permission was requested. For other companies, language can be vague or hard to find. Copyright protection for data mining is also complex. Current legal claims also dispute OpenAI's statement.

Is my data protected? Used in the training set?
– For non-enterprise options of ChatGPT, there is an **opt-out option** ("turn off chat history").
– For ChatGPT Team, Enterprise, and API, it does not train on business data. You own your inputs, output, and how long data is retained.

Who owns the product?
– For ChatGPT/GPT, OpenAI states that authors (question-askers) own the response. (But copyright registration laws may not recognize it!)

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AI tools for text generation: Key Issues

PROS
- Improved language **modeling and translation**
- Increased **efficiency** in monotonous/labor-intensive tasks.
  – Summarizing texts
  – Transcribing audio & retrieving structured information
  – Automating transactions
  – Content editing
- Speed **in memorizing and analyzing** data, helping users generate insights quicker.
  – Optimized searches
  – Assisted idea generation
  – Organizing large amounts of data + easy access

CONS
- **Training set limitations**
  – LLM training sets have cut-off dates
- **Misinformation** (false/inaccurate info, e.g. due to inherent errors dataset)
  – LLMs cannot fact-check training info
- **Disinformation** (deliberately creating false info)
  – **AI HALLUCINATION**; LLMs respond based on patterns & associations, not facts
- **Biased Information**
  – Because of the training set and lack of transparency, LLMs can perpetuate biases (gender, ideological, racial, etc.)
- **Copyright and Privacy Concerns & Unwanted Data Mining**
  – Who owns the input? Output?
- **Ethical, Philosophical & Environmental Points**

https://deepchecks.com/top-5-risks-of-large-language-models/
https://medium.com/@fenjiro/large-language-models-llms-emergent-abilities-chatgpt-talks-moroccan-dialect-as-an-example-c945f93aa63a

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AI tools for text generation: examples

We asked ChatGPT 3.5

PROMPT: Can you write me a two-paragraph introduction about HDAC inhibitors, and include at least one reference per sentence and claim made? Please include references/citations as numbered superscripts and all references as a numbered list at the end corresponding to the citations. Also use only references from medicinal chemistry and pharmaceutical chemistry journals, dated 2017-2022.

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AI tools for text generation: examples

ChatGPT 3.5 responded

Reads ok at first pass. But gets redundant, and just spews back general statements and keywords from input text.

Histone deacetylase inhibitors (HDACis) are a promising class of compounds that have gained considerable attention in recent years as potential therapeutic agents for various diseases. HDACs are a group of enzymes that regulate the acetylation status of histone and non-histone proteins, thereby modulating gene expression and various cellular processes[1]. HDACis work by inhibiting the activity of HDACs, leading to an increase in acetylation and altering the expression of genes involved in cell proliferation, differentiation, and apoptosis[2]. Several HDACis have been approved by the FDA for the treatment of different cancers, such as lymphoma and multiple myeloma, and others are currently being investigated in clinical trials for the treatment of various diseases[3].

Research in medicinal chemistry and pharmaceutical chemistry has led to the development of novel HDACis with improved pharmacokinetic and pharmacodynamic profiles, increased selectivity for specific HDAC isoforms, and reduced toxicity[4]. Several studies have shown that these newly developed HDACis have potent anti-cancer, anti-inflammatory, and neuroprotective effects[5]. Additionally, these compounds have shown promise as potential therapies for various diseases, including neurodegenerative disorders, and inflammatory diseases[6]. While HDACis hold great promise as a therapeutic approach, further research is needed to fully understand their mechanisms of action and potential clinical applications.

References: **References 1 & 5 were made up by ChatGPT !!! They look legit, but do NOT exist.**

1. Halder R, Hennion M, Vigneron A, et al. HDACs and HDAC Inhibitors in Cancer Development and Therapy. **ChemMedChem**. 2019;14(9):829-846. doi: 10.1002/cmdc.201900056.
2. Verdin E, Ott M. 50 years of protein acetylation: from gene regulation to epigenetics, metabolism and beyond. Nat Rev Mol Cell Biol. 2015;16(4):258-264. doi: 10.1038/nrm3931.
3. Molife LR, Attard G, Fong PC, Karavasilis V, Reid AH, Patterson S, et al. Phase II clinical and pharmacodynamic study of the oral histone deacetylase inhibitor MS-275 in refractory and metastatic solid tumors. J Clin Oncol. 2008;26(15):2542-2549. doi: 10.1200/JCO.2007.14.5375.
4. Bradner JE, West N, Grachan ML, et al. Chemical phylogenetics of histone deacetylases. Nat Chem Biol. 2010;6(3):238-243. doi: 10.1038/nchembio.307.
5. Oh SR, Park JH, Cho YY, et al. HDAC inhibitors as potential therapeutics for rheumatoid arthritis. Epigenomics. 2017;9(2):215-225. doi: 10.2217/epi-2016-0117.
6. Kim D, Frank CL, Dobbin MM, et al. Deregulation of HDAC1 by p25/Cdk5 in neurotoxicity. Neuron. 2008;60(5):803-817. doi: 10.1016/j.neuron.2008.10.015.

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Plagiarism in generative AI tools

The Times Sues OpenAI and Microsoft Over A.I. Use of Copyrighted Work
Michael N, Grynbaum and Ryan Mac
December 27, 2023
Available at https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html?smid=url-share

Generative AI Has a Visual Plagiarism Problem
Gary Marcus and Reid Southern
January 6, 2024 Available at https://spectrum.ieee.org/midjourney-copyright

NY Times sued OpenAI in December 2023 for plagiarism

These are the parts that have **not** been plagiarized

https://spectrum.ieee.org/midjourney-copyright

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AI tools for text generation: GPT Detection

GPT Output detectors exist, but many of them are still not optimal.
AI models aim for low perplexity and burstiness/style.

PERPLEXITY: "How confusing is this to the average reader?"
• Variation at word level.

BURSTINESS: "How long and structured are sentences?"
• Variation at sentence level. "Style"

Turnitin's AI writing detection available now

https://gptcypher.com/can-gpt-zero-detect-quillbot/

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AI tools for text generation: GPT Detection

GPT Output detectors exist, be careful with them; many are old versions or suboptimal.

GPTZero detected it; You can also look at Originality AI and Undetectable AI. Detectors will always have their limitations and are not 100% accurate.

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Food for thought

Opinion
GPT detectors are biased against non-native English writers
Weixin Liang,[1,4] Mert Yuksekgonul,[1,4] Yining Mao,[2,4] Eric Wu,[3,4] and James Zou[1,3,5,*]
[1]Department of Computer Science, Stanford University, Stanford, CA, USA
[2]Department of Computer Science, Stanford University, Stanford, CA, USA
[3]Department of Electrical Engineering, Stanford University, Stanford, CA, USA
[4]Department of Biomedical Data Science, Stanford University, Stanford, CA, USA
*These authors contributed equally
*Correspondence: jamesz@stanford.edu
https://doi.org/10.1016/j.patter.2023.100779

GPT detectors frequently misclassify non-native English writing as AI generated, raising concerns about fairness and robustness. Addressing the biases in these detectors is crucial to prevent the marginalization of non-native English speakers in evaluative and educational settings and to create a more equitable global landscape.

Available at https://doi.org/10.1016/j.patter.2023.100779; Reuse via CC-BY-NC-ND 4.0

Computer Science > Computation and Language
[Submitted on 11 Jun 2024 (v1), last revised 2 Jul 2024 (this version, v2)]
Delving into ChatGPT usage in academic writing through excess vocabulary
Dmitry Kobak, Rita González-Márquez, Emőke-Ágnes Horvát, Jan Lause

Recent large language models (LLMs) can generate and revise text with human-level performance, and have been widely commercialized in systems like ChatGPT. These models come with clear limitations: they can produce inaccurate information, reinforce existing biases, and be easily misused. Yet, many scientists have been using them to assist their scholarly writing. How widespread is LLM usage in the academic literature currently? To answer this question, we use an unbiased, large-scale approach, free from any assumptions on academic LLM usage. We study vocabulary changes in 14 million PubMed abstracts from 2010-2024, and show how the appearance of LLMs led to an abrupt increase in the frequency of certain style words. Our analysis based on excess words usage suggests that at least 10% of 2024 abstracts were processed with LLMs. This lower bound differed across disciplines, countries, and journals, and was as high as 30% for some PubMed sub-corpora. We show that the appearance of LLM-based writing assistants has had an unprecedented impact in the scientific literature, surpassing the effect of major world events such as the Covid pandemic.

Comments: v2: Updating dataset, figures and formatting. Included in PubMed abstracts until end of June 2024
Subjects: Computation and Language (cs.CL); Artificial Intelligence (cs.AI); Computers and Society (cs.CY); Digital Libraries (cs.DL); Social and Information Retrieval (cs.IR)
Cite as: arXiv:2406.07016 [cs.CL]
(or arXiv:2406.07016v2 [cs.CL] for this version)
https://doi.org/10.48550/arXiv.2406.07016

Available at https://arxiv.org/abs/2406.07016; Reuse and re-license as CC-BY-SA

~10% of 2024 abstracts were processed with LLMs

Use of words like the ff:
Delves, Showcasing, Underscores
Comprehensive, Crucial, Intricate, Pivotal

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AI tools for text generation: Best uses

- Translation
- Brainstorming
- Grammar and spelling check
- Style/tone/brevity
- Transcription
- Coding/Programming learning/starting point
- Data retrieval & prediction; process optimization (only with proper prompt engineering & training)

Wiley Position on such tools

bit.ly/wileyethicalguidelines

Artificial Intelligence Generated Content

Artificial Intelligence Generated Content (AIGC) tools—such as ChatGPT and others based on large language models (LLMs)—cannot be considered capable of initiating an original piece of research without direction by human authors. They also cannot be accountable for a published work or for research design, which is a generally held requirement of authorship (as discussed in the previous section), nor do they have legal standing or the ability to hold or assign copyright. Therefore—in accordance with COPE's position statement on AI tools—these tools cannot fulfil the role of, nor be listed as, an author of an article. If an author has used this kind of tool to develop any portion of a manuscript, its use must be described, transparently and in detail, in the Methods or Acknowledgements section. The author is fully responsible for the accuracy of any information provided by the tool and for correctly referencing any supporting work on which that information depends. Tools that are used to improve spelling, grammar, and general editing are not included in the scope of these guidelines. The final decision about whether use of an AIGC tool is appropriate or permissible in the circumstances of a submitted manuscript or a published article lies with the journal's editor or other party responsible for the publication's editorial policy.

The implications of AI in academic publishing

Network › Publishing › Research Publishing › Editors › The implications of AI in academic publishing

Michael Streeter, Director of Research Integrity & Publishing Ethics, Wiley   June 15, 2023

- Traditional AI for minor tasks are allowed and do not need disclosure (e.g., spell/grammar/reword apps)
- **Generative-AI for text** (e.g. ChatGPT, Copilot) is **allowed but must be disclosed** in the manuscript. Authors should include details as a footnote or as additional comments in the paper. (Which AI tool, what version, how it was used, where it was used. Authors are fully responsible for the accuracy of the output. Keep track of prompts used.)

AI tools for text generation: AI authorship of articles

bit.ly/wileyethicalguidelines

"AI tools **cannot meet the requirements for authorship** as they **cannot take responsibility** for the submitted work.

As non-legal entities, they cannot assert the presence or absence of conflicts of interest nor manage copyright and license agreements."

–Commission on Publication Ethics (COPE)

AI tools for text generation: AI use by reviewers

bit.ly/wileyethicalguidelines

Feeding sections of a paper under review into an AI tool **violates confidentiality** and could pose a **danger to the authors**, especially if any input/prompt is included in the training set.

Referees must never use data/results & conclusions as prompts or feed the manuscript. But one can use AI tools to improve quality of written feedback. This must be declared to the editor.

Certain tools might make a referee's life easier (e.g., reference checking; looking for related work, validating statements made in the introduction section) but must still **not share confidential manuscript information.**

YOUR FIVE-FOLD TEST IN CONSIDERING ANY AI TOOL: L-O-C-A-D

L: Limitations
- What was this AI tool designed to do? What is its purpose? What are its limits? Terms of use?

O: Ownership
- Copyright issues: Who owns the input? The product? The training set? Were proper licenses obtained?
- Can I use/reuse the product freely for the medium/purpose I am planning?
- Could I run into any copyright infringement problems?

C: Confidentiality
- Will I inadvertently disclose confidential information?
- Could I put my work in danger of being scooped?
- Are my data/prompts being used in the training set?
- Is my data protected?

A: Accuracy
- Is the output accurate? Can I trust this output?
- Have I done my own accuracy check of it? Am I prepared to take responsibility for this accuracy?
- Does the AI/app use current/validated information to produce the result?

D: Disclosure
- Does my institute, the journal, the publisher allow usage? What are the SOPs for disclosure?

AI tools for text generation

Can an app using an LLM/GPT-X/ChatGPT be created with additional info sources & immediate verification? Can there be tools built/trained to minimize hallucination?

YES.

((even ChatGPT is adapting with Search/SearchGPT built in))

AI tools for scientists based on GPT

Most popular AI tools based on LLMs with additional layers of data sources and verification. What do they do, are they useful, and are they safe to use? How do we evaluate them?

- Text editing tools
- Semantic Scholar
- Consensus
- Scite.ai
- Elicit
- Research Rabbit
- Potato.ai
- Perplexity
- ChatPDF
- NotebookLM

Note: this is not an ad for any of these. Most of these are not affiliated with Wiley.

https://www.euronews.com/next/2023/06/20/best-ai-tools-academic-research-chatgpt-consensus-chatpdf-elicit-research-rabbit-scite

AI tools for scientists: Text editing tools

- Many; free/limited use and paid.
- **Not all are generative AI (yet)**
- Usual included tools:
  - Spelling and grammar check
  - Paraphrasing; style and tone correction
  - Citation formatting
  - Plagiarism check
  - AI-assisted writing (various levels)

- Always check:
  - Data usage (storage? selling?) GDPR/data protection requirements
  - Terms of Service; Content ownership
  - Text collection/forwarding/use for training set

Microsoft Editor   grammarly / grammarlyGO proprietary AI   QuillBot   Wordvice.ai
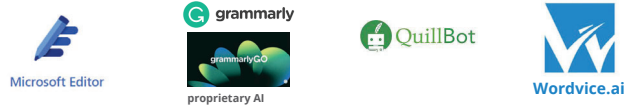
AI tools for scientists: Consensus

https://consensus.app/

- Search engine which uses AI to provide answers with the consensus of the academic community. Powered by GPT4.
- "Child of ChatGPT and Google Scholar" – Mushtaq Bilal
- You ask a question, it returns answers, but with a source per answer to help you validate. Paper summaries possible.
- Learn consensus for YES/NO questions.
- If question is too complicated, it will say so.
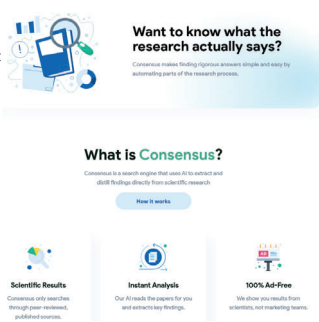
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CONSENSUS METER

(if questions are simpler)

https://consensus.app/home/blog/introducing-the-consensus-meter/
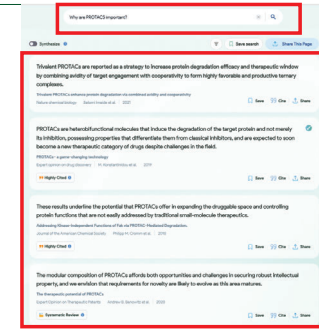
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AI tools for scientists: Elicit

https://elicit.org/

- An "AI Research Assistant"
- Good for looking for references.
- Answers questions and provides resources and summaries in a table.
- Helps find relevant articles for you. Uses semantic similarity, so even papers that are related but use different keywords can be found.
- Powered by Semantic Scholar and GPT

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AI tools for scientists: Scite.Ai

https://scite.ai/

- Also answers questions and provides resources. Can summarize papers. Powered by ChatGPT
- Great for tracking your own papers & their legacy.
- Provides context of citations and if they support or dispute a claim
- Find sources/references for text generated by LLMs
- Connected to ORCID, it can suggest papers for you
- From indexing agreements w/ publishers & open sources.
- NOT free; 7-day free trial, then 16 Eur/Mo; 115 Eur/year
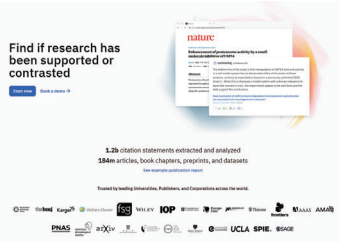
https://www.linkedin.com/pulse/sciteai-gpt-chatbot-science-writing-damien-soul%C3%A9A9

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Scite Assistant (very similar to Consensus): Ask questions, get answers with references.
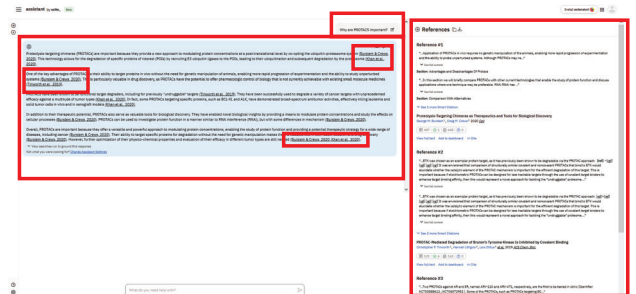
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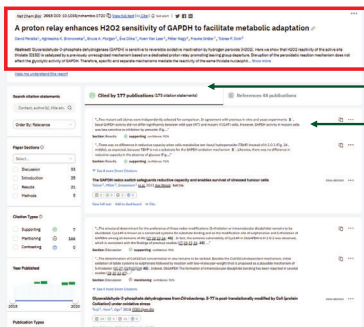
Lists all papers that have cited yours.

Shows quotes from citing paper that support and/or mention your claim/study, with a % confidence level from the AI (can be corrected by user).

Counts citation types: Supporting, Mentioning, or Contrasting.

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Visualize a map of your citations (mentions, supports, contrasts, how closely they support, and their interconnectedness)
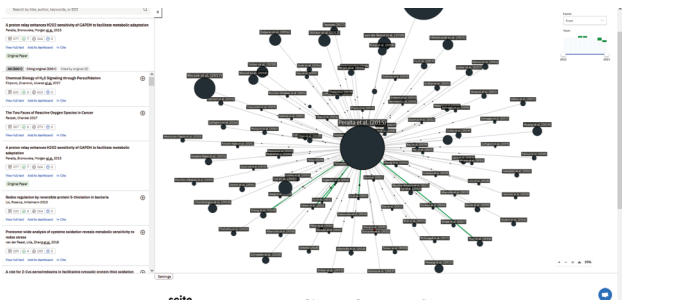
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AI tools for scientists: Research Rabbit

https://www.researchrabbit.ai/

- "The Spotify of Research"
- Helps with literature search & organization
- Sorts your lit in collections & makes recommendations
- Cluster papers by relationship, timeline
- Visualizes papers & their relationships
- Maps author networks; interact with other authors/research (social media-esque aspect)
- Powered by PubMed & Semantic Scholar
- FREE
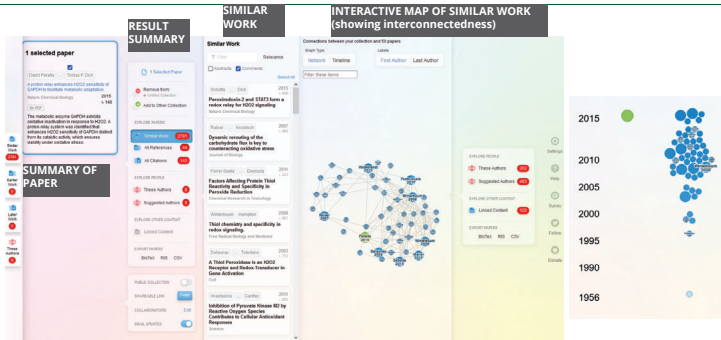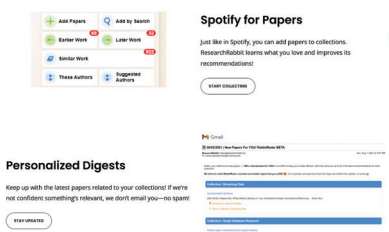
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Potato AI

https://readysetpotato.com/

First Wiley Partner in its Co-Innovation Program for AI

- AI research assistant powered by peer-reviewed literature that enables high-quality science.
- A literature-based tool to plan, collaborate on, and run new methods.
- Has a free plan; 5 users per team.

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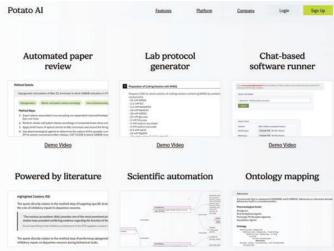
Perplexity

https://www.perplexity.ai/

- Search engine that uses an LLM to respond to queries. Has a quick search and more in-depth pro search feature.
- One can upload files to fine-tune prompts and answers.
- LLM and web search all combined into one space.
- Based on GPT, Claude, and their proprietary AI/LLM

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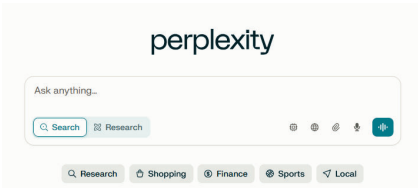
AI tools for scientists: ChatPDF

https://www.chatpdf.com/

- Reading assistant; summarizes an uploaded PDF
- Recommends questions you can ask.
- Powered by ChatGPT, so has same limits as a plain LLM. Can refer to pages in the PDF where the answers support are supposed to be.
- Cannot analyze images/figures
- One must validate the answers and references on their own.
- BUT concerning copyright; only use for articles you own the copyright to, public domain level or open-access articles. **Think about reuse rights! Remember, the tool doesn't change whatever limits the original copyright/license has set.**
- Free 3PDFs per day.

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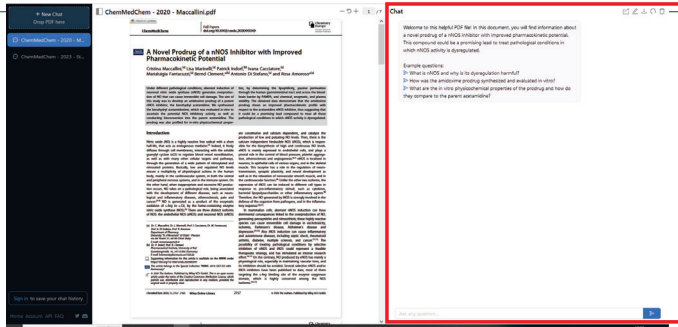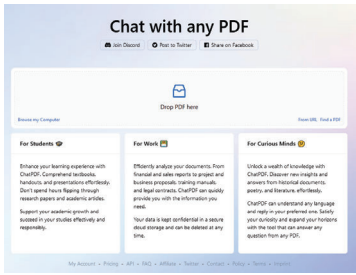
Microsoft Copilot & GPT; Deep Research

https://openai.com/index/introducing-deep-research/

DEEP RESEARCH

- Only from Feb. 2025
- GPT Pro & Plus users; Free use in Copilot but limited prompts (5/mo) without a license.
- For multi-step, multi-faceted, domain-specific inquiries where depth and detail are critical.
- "Analyzes & synthesizes hundreds of online sources to create a comprehensive report at the level of a research analyst."
- Optimized for web browsing & data analysis.

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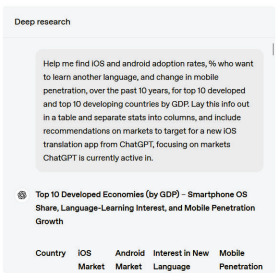
Google NotebookLM

https://notebooklm.google.com

- Research & note-taking online tool; can prepare review notes.
- By Google Labs, powered by Google Gemini Document interaction
- **"Deep Dive"**: summary of a written document as an engaging two-person podcast
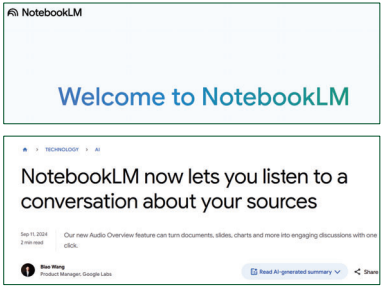
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Wiley and AI

Available at https://scholarlykitchen.sspnet.org/2024/10/31/wileys-josh-jarret-interview-about-impact-of-ai/
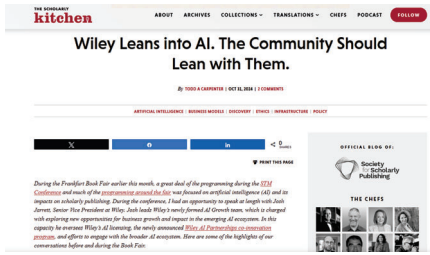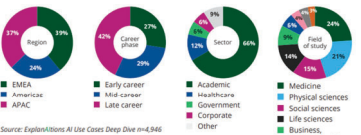
bit.ly/wileyaistudy

bit.ly/wileyethicalguidelines   **bit.ly/wileyaiprinciples**

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The ExplanAItions study   bit.ly/wileyaistudy

Online survey

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

Who's more likely to have already used AI in the research process?
- Researchers in China **(59%)** and Germany **(57%)**
- Early career researchers **(57%)**
- Computer science **(57%)** and business, economics, and finance researchers **(55%)**

Source: ExplanAItions GenAI Perceptions, Attitudes, and Behaviors, n=1,043

Key takeaways

- Despite limited current use, researchers know that developing AI skills will be highly important to them personally in the near future

- Most researchers believe AI already exceeds human performance in more than half of the studied use cases, signaling strong confidence in AI capabilities

- Uncertainty is a major barrier to researchers making the most of AI's potential

- Approximately 70% of participants express a desire for clear guidelines on AI use in scholarly research and support in avoiding potential pitfalls.

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Wiley AI Principles (Good guide for publishers/businesses)

bit.ly/wileyaiprinciples
- A **visionary and vigilant** approach to AI.
- AI as an **opportunity** to **accelerate** the pace of **innovation** in research, learning, and publishing
- Stay **aware of the risks** associated with AI and are taking steps to mitigate them.

1. HUMAN OVERSIGHT
- AI solutions must be developed, leveraged, and maintained with **human oversight**.

2. TRUSTWORTHINESS & TRANSPARENCY
- Wiley makes transparency and trustworthiness core elements of our AI use and development.

3. SAFETY & FAIRNESS
- We are committed to ensuring our AI systems and processes are **safe and fair**.

4. GOVERNANCE & ACCOUNTABILITY
- We will maintain **appropriate governance** over our use of AI and its incorporation into our business to **manage risks and assure accountability**.

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Technology Empowering Publishers with AI

Wiley's AI-as-a-Service features deliver powerful Artificial Intelligence solutions directly through our platform to publishing and solutions partners. We empower partners to make their content discoverable and engage their audiences in a personalized manner and maintain a competitive edge in a rapidly evolving industry.

Knowledge Enrichment
Impact & Benefit
- Transforms raw content into structured, enriched, and ready-to-publish formats
AI Features
- Manuscript Transformation
- Grant and Keyword Extraction

Enhanced Audience Data
Impact & Benefit
- Verifies author identity, ensuring accurate attribution and credibility
AI Features
- Author Disambiguation

Screening & Integrity
Impact & Benefit
- Upholds the highest standards of ethics and integrity in publications
AI Features
- Author/Editor/Reviewer Validation
- Papermill Detection*

Knowledge Discovery
Impact & Benefit
- Personalizes and optimizes the connection between content, authors, and readers
AI Features
- Journal and Reviewer Suggestions

Current availability: features and services highlighted above are available for use.
*Papermill Detection is currently in pilot.

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AI Tools for Researchers

Do not be afraid of AI tools.
Familiarize & train yourself.
Read the fine print; L-O-C-A-D.

Use them lawfully and ethically.
Let them **enhance** the way you do research, but **not replace** human critical thinking, analysis, and creativity.

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AI USAGE:

Limits
Ownership
Confidentiality
Accuracy
Disclosure

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bit.ly/wileyaiprinciples
bit.ly/wileyaistudy

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**VIELEN DANK!
SALAMAT!
THANK YOU!**