



AI LITERACY FOR RESEARCHERS

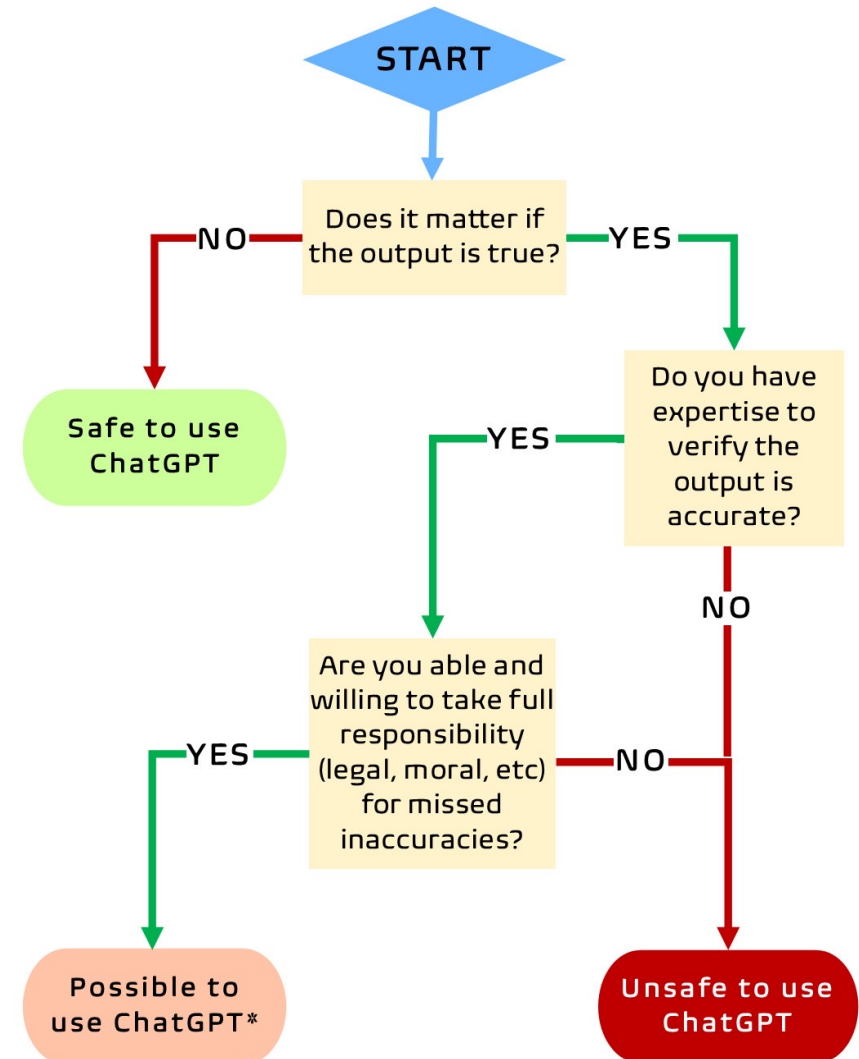
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CONSIDERATIONS FOR RESEARCHERS

- Generative AI models can hallucinate 'facts' and citations, as well as hold imbedded bias.
- Privacy, intellectual property and data sovereignty considerations.
- Expectations around Academic Integrity
- Free vs Freemium vs Paid tools
- Lecturers / supervisors have final say on levels of usage in assessment.

When is it safe to use ChatGPT?



** but be sure to verify each output word and sentence for accuracy and common sense*



Kate Thompson 2023
Adapted from UNESCO
2023

DIFFERENT APPLICATIONS OF AI:

- **Predictive** : Analyses historical data to predict future outcomes.

Eg. Stock market predictions and insurance calculators.

- **Conversational**: Enables 'human-like' interactions, but from a set script or dataset.

Eg. Virtual assistants like Siri or Alexa.

Website chatbots like 'Oscar' from the Air New Zealand website.

- **Generative**: Can create *original* content based on the massive datasets and deep learning algorithms.






Eg. ChatGPT / Co-Pilot for text, or DALL-E for images.

MORE APPLICATIONS FOR AI: ACADEMIC EDITION

- **Writing Assistants**
 - Such as GrammarlyGo can assist with spelling & grammar, but also rewrite text in 'academic voice', help brainstorm, check for plagiarism and create citations.
- **Referencing Management:**
 - ARIA Plug-in for Zotero
- **Data Visualisation and Analysis**
- **Search Assistants**
 - Literature search and citation mapping

Full-text Literature / Citation Mapping Tools

As you start your research, quickly gain an overview of topics, and identify gaps in research. After traditional database searching, export citations and find further cited papers or research.



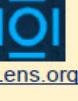
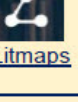

Product	Cost	Source	Import	Export	Best for
 Connected Papers	Freemium. 5 graphs per month	Semantic Scholar	Manual, DOI	BibTex	Finding additional articles based on co-citation and bibliographic coupling
 Inciteful	Free	Open Alex	BibTex	RIS, BibTex	Finding additional articles, e.g., similar, most cited, top 100, most recent.
 Litmaps	Freemium. 200 articles, 200 notes, and 2 collaborations per month	Open Alex, Semantic Scholar	BibTex, RIS	BibTex, RIS, CSV	Finding additional articles, exporting visualisations
 Open Knowledge Maps	Free	PubMed, Base, Open AIRE	Manual	BibTex	Generating search concepts using text similarity between your query and article metadata to determine relevance.
 ResearchRabbit	Free	Unknown	Manual, DOI, PMID, BibTex, RIS, Zotero	BibTex, RIS, CSV	Finding networks of additional articles

These tools were selected because they: create data visualisation maps, are cloud-based, provide full-text open access outputs, and cover all subject areas. The University Library anticipates you will use your own discretion and ethical integrity when selecting and using AI tools.

Academic Search AI Tools

Using LLMs (Large Language Models), these customised GenAI tools provide more accurate and specific responses to your research queries.

They support, but do not replace systematic database searching in traditional academic databases.

Product	Cost	Source	Full-text	Export	Best for
 Consensus	Free	Semantic Scholar	Yes	Link	Creating a summary from multiple articles. It responds to 6 topics: economics, sleep, social policy, medicine, and mental health and health supplements. Uses RAG
 Elicit	Freemium Get limited amount of credits with free account	Semantic Scholar	No	RIS, BibTex, CSV	Summarise papers extract data and synthesise findings. Uses RAG
 Lens.org	Free	Microsoft Academic, OpenAlex , PubMed, CrossRef	Yes	BibTex, RIS, CSV, JSON	Finding additional articles including grey literature and patents and climate research.
 Litmaps	Freemium. 20 inputs with free account	OpenAlex , CrossRef, Semantic Scholar	Yes	BibTex, RIS, CSV	Finding additional articles.
 SciSpace	Freemium Basic version free	OpenAlex , Semantic Scholar , many repositories	Yes	BibTex, RIS, CSV, Excel, XML	Helps understand complex scientific articles. Will summarise and synthesis papers. Uses RAG.

These tools were selected because they: are connected to large datasets, are cloud-based, and cover all subject areas. The University Library anticipates you will use your own discretion and ethical integrity when selecting and using AI tools.

*Retrieval Augmented Generation can bring in new information and optimise outputs, eg accurate citations.



HOW TO USE AI IN TEACHING AND LEARNING

- **Citation mapping**

- Pro: Can help find literature a database search might miss
- Pro: Using natural language or a “seed” paper can be easier than constructing a database search
- Con: Most tools use a similar repository of literature, leaving gaps in the search
- Con: Replication of search strategies is hard, if not impossible

- **Search strategies**

- Help you get started on a search
- Subject matter knowledge is needed to know if you are searching the right things, or just searching

HOW TO PROMPT THE AI WELL?

- **Prompt literacy**

- Be specific in what you want the AI to do *and* not to do
- Structure prompts so the AI makes as few decisions as possible
- Use sequential prompts to break up tasks into manageable bits
- Iterate your prompt if you don't get the response you need
- Rephrase your prompt if needed: "Please make that response more formal"

- More info and examples here: <https://genai.umich.edu/resources/prompt-literacy>

HOW TO USE AI IN OTHER WORK

- **Prompts for research questions**
 - *Help me write a research question about the following topics: climate change, university students, activism*
- **Understanding jargon**
 - *What does EBM mean?*
- **Making activities**
 - *Design an activity for first year university students to learn how to use the library catalogue*
- **Summarising large amounts of data**
 - *Please take the following data, and summarise it*
- Almost anything else: <https://theresanaiforthat.com/>

TAKEAWAYS

- Give it a go! Learning AI is about experimentation and figuring out what works and what doesn't
- AI is another tool in the toolbox - not a replacement
- Be mindful of what information you send to the AI (especially sensitive or personally identifiable info)
- AI is here to stay