Waipapa Taumata Rau
University of Auckland

AI tools for literature reviews

We will get started soon!

Meanwhile, introduce yourself, faculty and your research area in the chat

April 2026

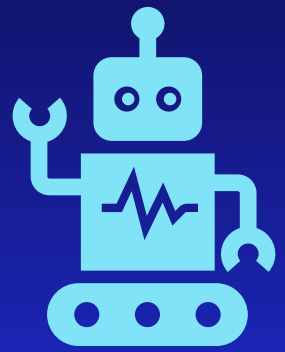
Ngā Ratonga Manaaki Rangahau | Research Services
Student and Scholarly Services

Quick poll
& Session roadmap

1. Using AI for research – navigating policy
2. Literature review overview
3. AI for literature discovery
4. AI for screening and data extraction
5. Evaluating - use case, tool, output

Pātai

How have you been using AI for study, research or personal applications?



AI for
Your research

What guides acceptable use?

National

Publishers

Discipline practices

Institution

What guides acceptable use?

National

Publishers

Discipline practices

Institution

Governmental policy

AI for the Public Service

Royal Society Te Apārangi

Guidelines for the best-practice use of generative artificial intelligence in research in Aotearoa New Zealand (Online)

- Te Tiriti o Waitangi
- Māori, Pacific and Indigenous data sovereignty
- Research integrity

What guides acceptable use?

National

Publishers

Discipline practices

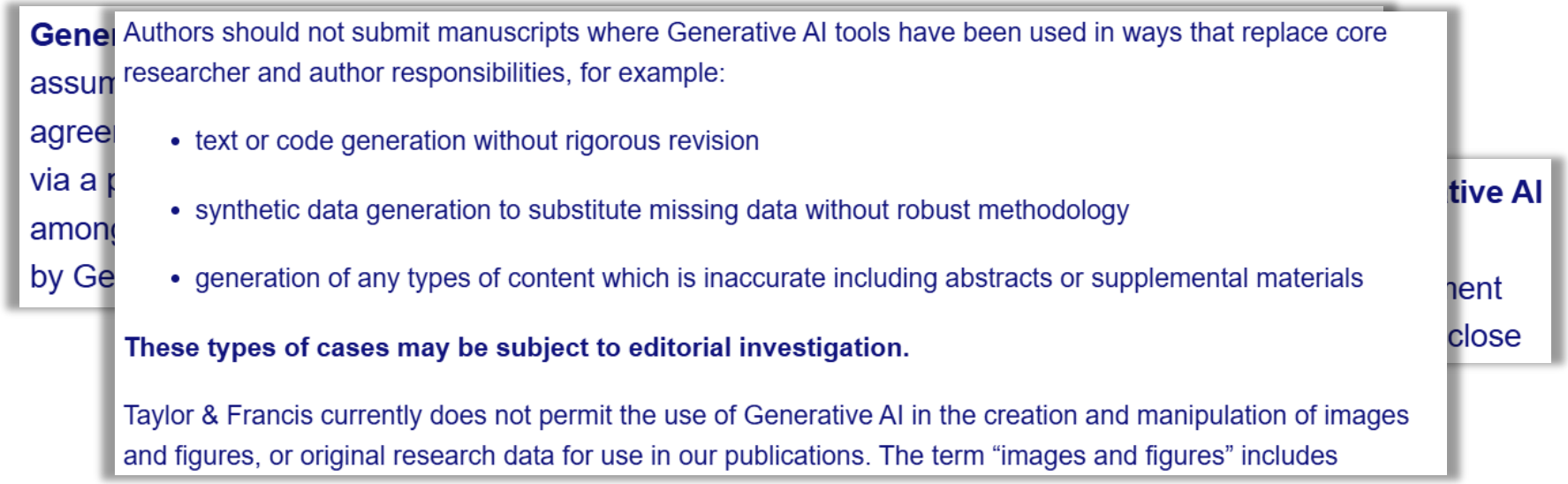
Institution

Publishers

Not a co-author, disclosure and specific stipulations

Taylor & Francis [AI policy]

as of 01/08/2025



Authors should not submit manuscripts where Generative AI tools have been used in ways that replace core researcher and author responsibilities, for example:

- text or code generation without rigorous revision
- synthetic data generation to substitute missing data without robust methodology
- generation of any types of content which is inaccurate including abstracts or supplemental materials

These types of cases may be subject to editorial investigation.

Taylor & Francis currently does not permit the use of Generative AI in the creation and manipulation of images and figures, or original research data for use in our publications. The term “images and figures” includes

What guides acceptable use?

National

Publishers

Discipline practices

Institution

NZ Law Society

- Generative AI guidance for lawyers
- Generative AI guidance for lawyers: balancing the opportunities and risks

Medicine

- AI in Health Research Network
- National Artificial Intelligence and Algorithm Expert Advisory Group

Ministry of Education

- Guidance and resources for education professionals on the use of artificial intelligence in schools.

Department of Conservation

- Long-Term Insights Briefing

What guides acceptable use?

National

Publishers

Discipline practices

Institution

What reports and research are coming out in your discipline?

What do governing bodies or relevant research societies have on AI?

Discuss current applications for research with your peers and supervisors.

What guides acceptable use?

National

Publishers

Discipline practices

Institution

Gen AI

AI at the University
(guidance & resources)

Generative AI Usage Standard
(no SSO-required via TeachWell)

Research data

Data Classification Standard

Research integrity & good research practice

Research Integrity Policy

Good Research Practice Guidance

Authorship and Publication Guidelines

Copyright

Academic integrity

Student Academic Conduct Statute

Doctoral policies and guidelines

University approved AI tools

Enterprise-wide tools

For secure access, sign in to these tools using your University account. This is your abcd123@aucklanduni.ac.nz address.

- Microsoft 365 Copilot Chat is approved for public, internal and sensitive data.
- Google Gemini is approved for public, internal and sensitive data.
- Google AI Studio is approved for public, internal and sensitive data.
- NotebookLM is approved for public and internal data.

Free or user-pays tools

Before using these tools, we recommend going to settings and turning off permissions for Large Language Model (LLM) training.

- Claude Pro is approved for public and internal data.
- ChatGPT is approved for public data.
- Consensus.ai is approved for public data.
- Perplexity is approved for use with public and internal data.

AI at the University

Public

Freely available on the internet

i.e. social media content, published research data

Internal

Restricted audience, privacy/disclosure concerns

i.e. preliminary research data intended for publication, internal emails

Sensitive

Highly restricted audience, potentially damaging to institution or people if released

i.e. commercially confidential information, patient data

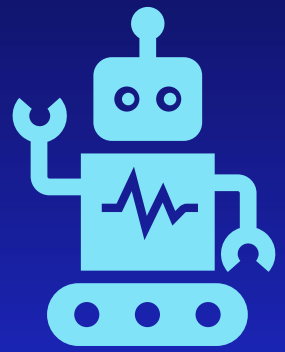
Restricted

Should not be shared

Data Classification Standard

Steps to take for acceptable use - theses

1. Discuss with your supervisor if AI use is appropriate and what are the benefits, risks and limitations (how these will be acknowledged/addressed).
2. Follow the Generative AI usage standard & prioritise using secure UOA-approved tools.
3. Log your interactions with AI (prompts, inputs, outputs) to support research integrity.
4. A thesis is a “substantial piece of original work” – the final content should be your work, not AI’s.
5. Cite your use



AI for
Your literature review

Pātai

What is the purpose and outcomes of a literature review?

- Get an overview of the existing literature
- Form evidence-based conclusions
- Identify research gaps & build research topic
- Critically evaluate research
- Understand methodologies in your discipline
- Build critical thinking, reading and writing skills

Pātai

What could you gain from using AI to do all or some of this work?

What could you lose from using AI to do all or some of this work?

Review process

- Different reviews, different methodologies, different steps
- Unbiased, reliable, reproducible, transparent

Should you use AI for your review?

Purpose

Methodology

Tools

Should you use AI for your review?

Purpose

Methodology

Tools

Different uses – different regulations

What is acceptable use and what is not?

Theses

- ✓ Personal learning about a topic
- ✓ Brainstorming
- ✓ Finding seed articles
- X Substantial pieces of work
- ? What does your supervisor advise

Publications

As per publisher guidelines, discipline standards, University policy

Should you use AI for your review?

Purpose

Methodology

Tools

What is the level of rigour needed?

Meticulousness, systematic and transparent approach to the review process, ensuring the reliability, trustworthiness, and credibility of the findings.

Narrative reviews — Systematic reviews

It might only be appropriate for certain steps

- Research topic development
- Initial scoping
- Finding key articles
- Hand searching
- Screening assistants
- Supervised data extraction

Should you use AI for your review?

Purpose

Methodology

Tools

Are there appropriate tools?

General tools like large language models vs task-specific tools tailored for reviews

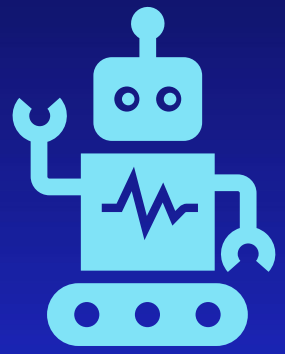
Assistant vs automation

No tools specific to reviews provided via UoA

Tools available to staff and students include:

- Copilot (use for public, internal & sensitive data)
- Gemini (use for public & internal data)
- NotebookLM (use for public & internal data)

See intranet pages Getting started with AI for updates and Data Classification Standard for more information on data types.



AI for
Literature discovery

Traditional database searching

Impact of Climate Change on Public Health

Concepts	Climate change	Public health
Synonyms	Global warming	Climate variability	Climate crisis	Human health	Population health	Community health
	Sea level rise	environmental change	Heatwaves	Health impacts	Health effects	Health outcomes
Subject terms	Climate change	Global warming	Greenhouse effect	Public health	Health effect	Mortality

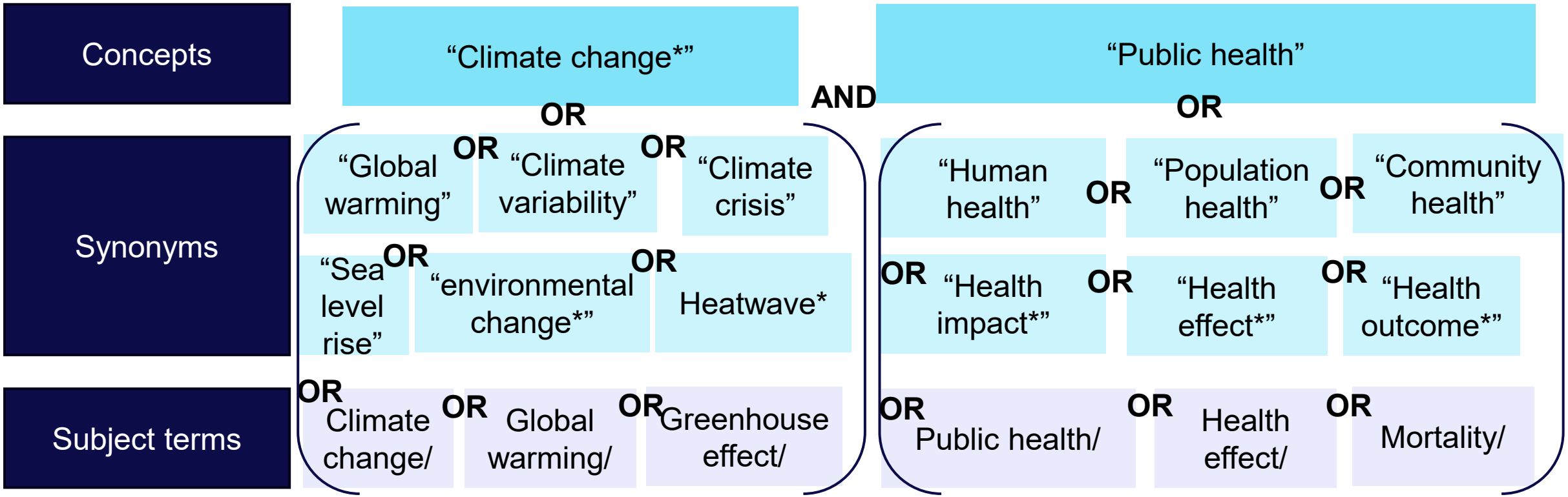
Traditional database searching

Impact of Climate Change on Public Health

Concepts	“Climate change*”	“Public health”
Synonyms	“Global warming”	“Climate variability”	“Climate crisis”	“Human health”	“Population health”	“Community health”
	“Sea level rise”	“environmental change*”	Heatwave*	“Health impact*”	“Health effect*”	“Health outcome*”
Subject terms	Climate change/	Global warming/	Greenhouse effect/	Public health/	Health effect/	Mortality/

Traditional database searching

Impact of Climate Change on Public Health



Traditional database searching

Impact of Climate Change on Public Health

(exp Climate Change/ OR Global Warming/ OR Greenhouse Effect/ OR ((climat* adj3 (chang* OR variab* OR crisis)) OR "global warming" OR (environmental adj2 chang*) OR "extreme weather" OR heatwave* OR (heat adj1 wave*) OR drought* OR flood* OR wildfire* OR bushfire* OR ("sea level" adj2 rise) OR "sea-level rise").ti,ab,kw.)

AND

(Public Health/ OR Health Impact Assessment/ OR Morbidity/ OR Mortality/ OR ("public health" OR "population health" OR "community health" OR "human health" OR "health impact*" OR "health effect*" OR "health outcome*" OR "disease burden" OR "health risk*").ti,ab,kw.)

Medline database search → *Troubleshooting* → Translate then Scopus database search → Translate then Web of Science database search

Pātai

Have you heard of or tried any AI tools for finding literature?

Demo #1: Creating search strategies with Gemini

Platform:

Gemini Pro or Gemini thinking with University login

Prompts:

Create a Boolean search strategy for my research topic "Impact of Climate Change on Public Health" for searches in Medline via Ovid, or Scopus.

Discussion: LLM tools can

- Construct Boolean search strategies for different databases
- Provides synonyms, related terms and subject headings
- Human review is essentials for bias and accuracy

- Research shows (Clark et al., 2025) search quality is not good even with next-level prompting (GPT4 studies)
  - Return rate of 13% of relevant results
  - Lower precision, meaning more results to sift through before getting relevant results.

Demo #2 - Chatbots with deep research

Platform:

Gemini Fast or Thinking with Deep Research with University login

Prompts:

1. Find seminal articles on the research topic of “Impact of Climate Change on Public Health”, discuss their findings and their impact on the field

Discussion:

- How it works
  - Starts with a research plan you can review
  - Runs multi-step, autonomous searches
  - Builds answers from sources (Retrieval Augmented Generation or RAG approach)

- **Cautions**
  - Always verify sources and accuracy
  - Outputs often need editing/reworking as they are not your original work
  - Consider reproducibility for your use case

Demo #3 - Academic search engines

Platforms:

/Google Scholar lab/Pubmed.ai/ Consensus free accounts

Prompts:

Find seminal articles on the research topic of "Impact of climate changes on public health"

1. Search in Google Scholar labs
2. Pubmed.ai – Search in Pubmed
3. Search in Consensus

Discussion:

- Scope of tools and data sources varies
  - Google Scholar labs – data from Google Scholar
  - Pubmed.ai – data from Pubmed
  - Consensus – Semamtic Scholar, OpenAlex, Pubmed, etc.
- Functionalities
  - Different strengths and functionalities across tools
  - Paid versions improve performance
- Considerations
  - Cost and access inequity issues
  - Free use is usually paid for in other ways, i.e., trade off with data privacy

Demo #4: Citation mapping tools

Platform:

Research Rabbit

(others include Litmaps, Connected Papers)

Seed articles from

- Uploaded reference library
- DOI search
- Search papers in ResearchRabbit and add selected papers into library

Discussion:

- Network from the provided seed articles
- Provides citation tracking (cited and citing papers)
- Some AI-based semantic (contextual/meaning) matching for related papers
- Further publications from the authors

What information are these tools working with?

Sources

- Public metadata

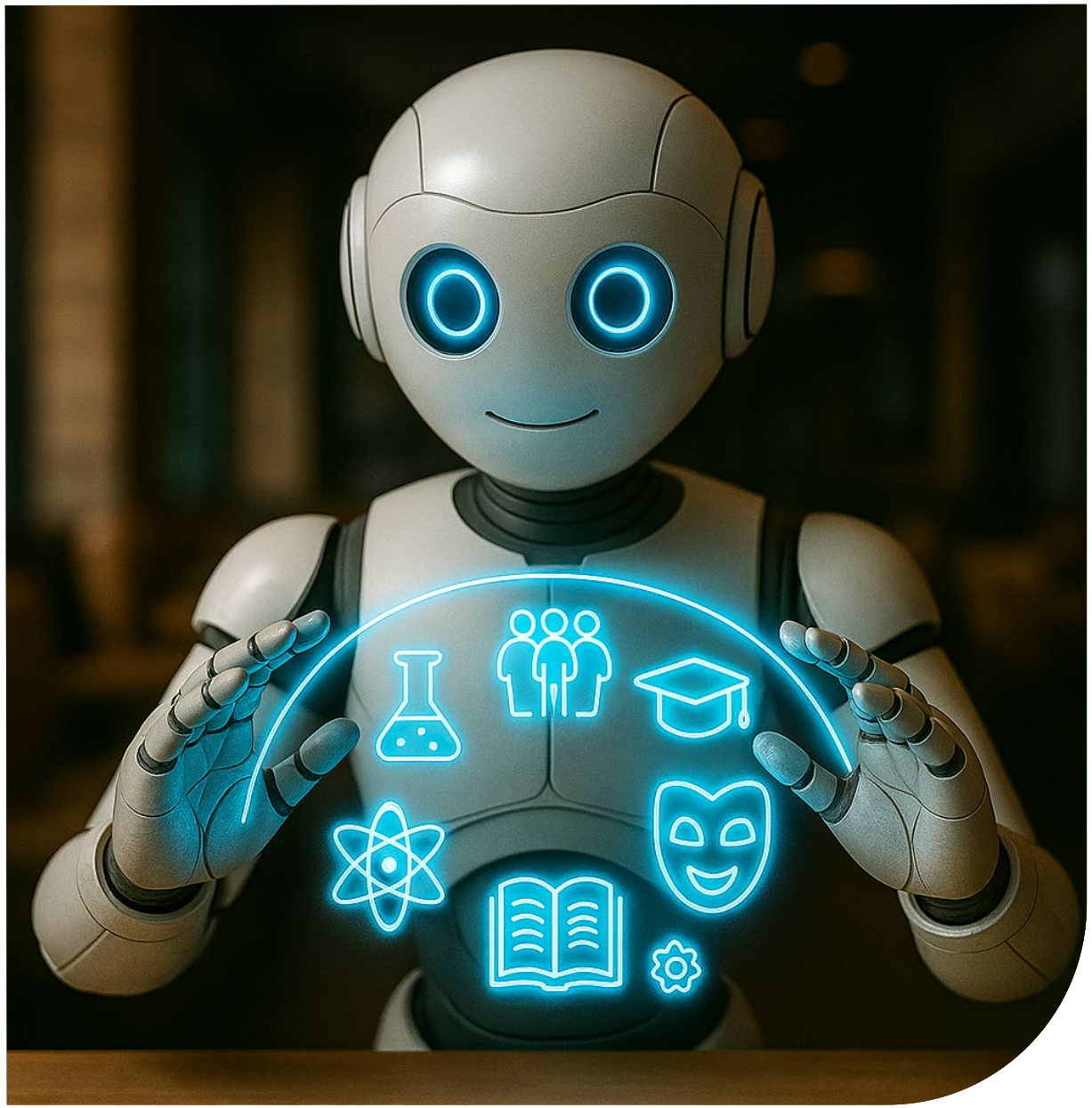
  (titles, abstracts)
- Open full-texts
- Preprints
- General web content
- Your own papers

Limitations for literature discovery

Quality

Comprehensive

Biases



Suggestions on when/how to use AI

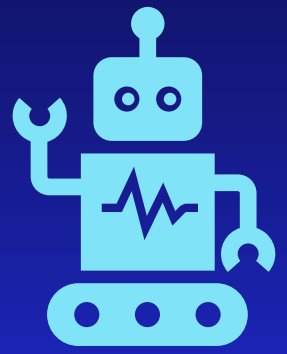
When the required rigour is lower

Where outputs have expert evaluation or validation

Personal knowledge building

Keeping up to date

Record your use



AI for
Screening & data extraction

Pātai

Have you used AI to pull out information from a research article before? – Screening and Data extraction

Demo #5 – Screening

Platforms:

- TERA – supports both automated and manual screening
- Elicit – offers more automation, and subscription based, but still in beta version, accuracy is variable
- Established tools: Rayyan, Covidence

Discussion:

- A lot of potential in screening
  - Improves consistency and reduces subjectivity
  - Growing evidence of high sensitivity
- Automation vs Assistance
  - AI can support or partially automate screening
  - Human oversight still needed

Demo #6 - Data extraction

Platforms:

- NotebookLM
- Elicit

Discussion:

- **Performance**
  - around 70-100% of human levels extraction (e.g., GPT-4)
  - Accuracy varies by tools
- **Limitations**
  - Struggles with complex or nuanced cases (e.g. retractions, ambiguous data)
  - Limited validation and scalability – best for low-rigour reviews
- **Use in practice**
  - Effective for rapid, early-stage extraction
  - Full-text access improves quality raises copyright issues

Overall: Performance varies by tool; human oversight is essential.

Navigating copyright, licensing & full text sharing

What articles are covered by copyright?

All articles except public domain information

Includes paywalled subscription content and open access, free-to-read content

Who owns the copyright?

Publishers

Authors

What are library licenses?

Paid access to subscription database content that is negotiated between the publisher & the library.

Determines what University members can do with the publisher's copyrighted materials

Database usage is monitored by the publishers

Copyright laws for AI & full texts

Exceptions in the NZ Copyright Act allow copies made for private research or study as fair dealings.

Sharing articles with a closed AI is likely covered under this exception.

Closed = tool does not re-use submitted data for training or on-share to third parties. Check the tool's terms of use & privacy policy.

See Copyright at Auckland or discuss your use case with our Copyright Officer.

Library licenses & AI full texts

Whilst the University could potentially not be liable due to copyright exceptions, publishers can cancel University access to databases if you go beyond what is allowed under our licenses.

Text mining projects will need to be negotiated individually between the research group and the publisher.
e.g. IEEE *Xplore* Text and Data Mining (TDM) Options

Example of library license

IEEE license, section 3c

Restrictions. Except as expressly permitted in this Agreement, Licensee and its Authorized Users may not: **(1) download, reproduce, retain or redistribute the Licensed Products, in its entirety, or any journal or issue of a journal in the Licensed Products in any substantial or systematic manner**, including, but not limited to, accessing the Licensed Products using a robot, spider, crawler, screen scraping or similar technological device; (2) **electronically distribute, via e-mail or otherwise, any Article or eBook**; (3) abridge, modify, translate or create any derivative work based upon the Licensed Products without the prior written consent of IEEE; (4) **display or otherwise make available any part of the Licensed Products to anyone other than Authorized Users**; (5) sell, resell, rent, lease, **license, sublicense, assign or otherwise transfer any rights granted under this Agreement**, including, but not limited to, use of the Licensed Products for document delivery, fee-for-service or any other substantially similar commercial purpose; ….. (continues)

Suggestions for screening/data extraction

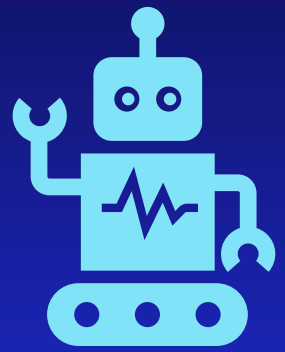
Limit your uploading and stay in closed systems without user data reuse.

Or, stick to public data for now with tools that support title/abstract screening & extract data manually.

Verify extracted information

Document use

Source: [Google Scholar Labs AI Review for Academics]



Evaluating AI

Evaluating your use case

- Is AI appropriate for your **review purpose**?
- What **specific tasks** are you using AI for?
- Is there a **suitable tool** for those tasks?
- How might this affect your **learning and skill development**?
- Do the **benefits** outweigh the **risks and costs**?

Evaluating a tool

- Does it fit your **method** and **level of rigour**?
- Is the **tool's data** trustworthy and unbiased?
- What **data** can you share, and which **tools** are allowed?
- How will the tool use your **data**, and do you have authority to share it?
- Does it align with **institutional and policy requirements**?

Evaluating an output

- Is it **accurate** and **verifiable**?
- Is there credible **evidence** behind the claims?
- Does it contain **errors** or **hallucinations**?
- Is it **relevant** to your research question?
- Are any key papers or concepts **missing**?
- What are your **next steps** to verify or improve it?

Summary

1. AI for literature reviews is still evolving
2. Augment, don’t replace, established research practices
3. You are responsible for ethical and safe data use
4. Follow relevant guidelines, policies, and standards
5. Critically evaluate your use, tools and outputs
6. Be transparent in documentation and acknowledgement

Poll then questions?

More resources:

- Research AI on ResearchHub
- AI in literature review work flows on ResearchHub
- AI for literature reviews workshop on ResearchHub
- Responsible AI in research workshop on ResearchHub
- AI Essentials
- Literature review learning resources
  - Finding information
  - Research writing
- Contact the library via AskUs

Waipapa Taumata Rau
University of Auckland

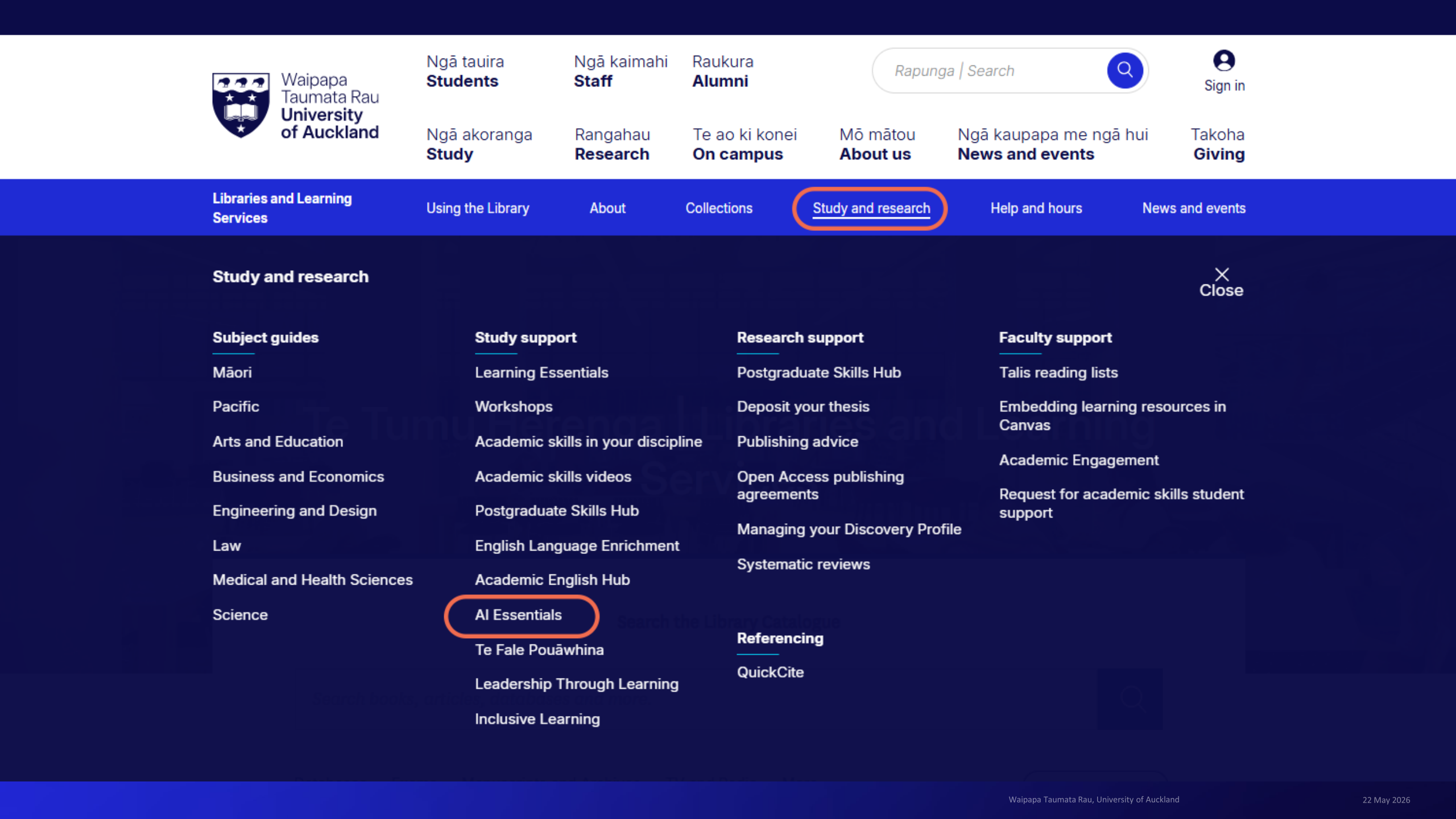
AI Essentials

Building AI Literacy

AI can be a powerful assistant throughout your academic journey.

The key is knowing how to use it.

More Info


Waipapa Taumata Rau University of Auckland
Ngā tauira Students
Ngā kaimahi Staff
Raukura Alumni
Rapunga | Search
Sign in
Ngā akoranga Study
Rangahau Research
Te ao ki konei On campus
Mō mātou About us
Ngā kaupapa me ngā hui News and events
Takoha Giving
Libraries and Learning Services
Using the Library
About
Collections
Study and research
Help and hours
News and events
Study and research
Close
Subject guides
Māori
Pacific
Arts and Education
Business and Economics
Engineering and Design
Law
Medical and Health Sciences
Science
Study support
Learning Essentials
Workshops
Academic skills in your discipline
Academic skills videos
Postgraduate Skills Hub
English Language Enrichment
Academic English Hub
AI Essentials
Te Fale Pouāwhina
Leadership Through Learning
Inclusive Learning
Research support
Postgraduate Skills Hub
Deposit your thesis
Publishing advice
Open Access publishing agreements
Managing your Discovery Profile
Systematic reviews
Referencing
QuickCite
Faculty support
Talis reading lists
Embedding learning resources in Canvas
Academic Engagement
Request for academic skills student support