

# Tipsheet: Leveling up the Research Process with Generative AI

This guide provides practical tips for using generative AI tools effectively, ethically, and strategically throughout the academic research process.

## 1. AI Tool Tips Across the Research Process

Generative AI tools can support—*not replace*—your thinking at each stage of your research. Below are examples of how AI can assist throughout the research process.

### Planning Your Research Project

- Use tools like **Goblin.Tools** to break large projects into actionable steps.
- Ask LLMs (e.g., ChatGPT, Copilot) to help refine your research question, identify components of an information need, and outline a research timeline.

### Developing Search Strategies

- Use AI tools to:
  - Brainstorm keywords and related concepts.
  - Map out synonyms and broaden/narrow search terms.
  - Draft Boolean search statements for library databases (refine manually).

### Finding & Analyzing Sources

- LLMs can:
  - Help interpret unfamiliar theories, frameworks, or terminology.
  - Summarize long articles to support comprehension (*does **not** replace reading the source*).

### Mapping the Scholarly Landscape

- Tools such as **ResearchRabbit** help visualize citation networks, trace influential works, and discover related scholarship.

### ResearchRabbit Tips:

- Begin by selecting **2–4 articles** closely related to your research question.
- Include **2–3 slightly older articles** (published 2–3 years prior to the current year); these typically accumulate more citations and yield richer “similar works” results in ResearchRabbit.
- Remember: **not all similar articles will be relevant**—review each one individually to determine whether it meets your research needs.
- To view similar works in **chronological order**, use the *About* button in the lower-right corner → select **Y Axis** → check **Publication Date**.
- Some articles link directly to full text or PDFs but if not, search for the item in your library’s catalog/discovery system or request it through interlibrary loan at your institution.

### Organizing & Synthesizing Research

- AI can help:
  - Generate outline templates for literature reviews.
  - Identify emerging themes across sources.

## 2. Best Practices for AI-Assisted Research

### Use AI to Support, Not Replace, Your Thinking

- Treat AI as a brainstorming partner, not an author.
- Maintain ownership of interpretation, argumentation, and analysis.

### Verify All AI-Generated Content

- AI tools may fabricate citations, misrepresent theories, or introduce bias.
- Always check:
  - Citations in library databases
  - Factual claims in scholarly sources
  - Definitions through authoritative references

### Stay Updated and Be Curious

- AI tools evolve quickly—regularly revisit new features and best practices.
- Explore multiple tools to understand their strengths and limitations.

### Practice Ethical and Informed Use

- Avoid entering sensitive or personal data (especially of others) into public AI tools.
- Recognize and mitigate algorithmic bias.
- Use closed or institutionally approved tools when handling protected information.

### Be Transparent

- When required, disclose:
  - Which AI tools you used
  - How they contributed (e.g., keyword brainstorming, summarizing)
- Include this information in a methodology, footnote, or acknowledgments.

### 3. Pitfalls, Limitations, and Ethical Considerations

Understand what AI cannot do — or should not do — within academic research.

#### Hallucinations and Inaccuracies

- AI may generate:
  - Fake citations
  - Incorrect quotations
  - Misleading explanations
- Always cross-check against authoritative sources.

#### Overreliance on AI

- Avoid using AI outputs as your primary source of information.
- Maintain critical thinking and scholarly judgment.

#### Bias and Incomplete Knowledge

- AI models may:
  - Reinforce dominant perspectives
  - Miss niche or emerging scholarship
  - Exhibit cultural or methodological bias

#### Data Privacy Issues

- Public AI tools store prompts and may use them for training.
- Do *not* input:
  - Personally identifiable information (PII)
  - Confidential student data
  - Proprietary or unpublished research