# CapitalUniversity

## AI Guidebook:

## **Using Generative AI in Scholarly Research**







### Using Generative AI in Scholarly Research

This AI Guidebook section is written for faculty, students, and staff members who engage in scholarship and research.

Everyone engaging in scholarly work is encouraged to stay current with how Generative AI (GenAI) is used, or not used, within their discipline. Consult disciplinary and interdisciplinary societies and publishing venues for whether any use of GenAI in the scholarly research is permissible. If the use of GenAI is allowed, then identify how it can be used and how should GenAI's use be cited. Scholars and researchers need to ascertain and comply with the policies of the journals, websites, publishers, etc., where their works are published<sup>1</sup>. In addition, faculty should consult with their college and university promotion and tenure committee to determine how use of AI in scholarly research is assessed<sup>2</sup>.

#### **Best Practices**

**Define the Role of AI**: Clearly define the purpose and scope of using generative AI in the research process. Use it for tasks that enhance research quality, such as generating ideas or summarizing data.

**Verify Outputs**: Critically assess AI-generated content for accuracy, reliability, and relevance to the topic. Avoid over-reliance on AI and ensure human oversight at all stages.

**Data Integrity**: Ensure that AI tools are used responsibly in handling data, particularly with sensitive information. Adhere to all relevant ethical guidelines when working with datasets. Consider privacy and confidentiality concerns; GenAI tools do not have to comply with laws and regulations, including but not limited to FERPA (Federal Educational Rights and Privacy Act) and HIPPA (Health Insurance Portability and Accountability Act of 1996).

Using AI tools to analyze data from human participants in research poses a threat to the confidentiality of research participants' data and to research participants' anonymity and privacy. Obtain IRB (Institutional Review Board) approval for AI use in the analysis of human subjects' data prior to conducting the research. Disclose AI use for data analysis to participants in the informed consent procedure prior to data collection.<sup>3</sup>

**Collaborative Use**: Consider AI as a collaborative tool for enhancing productivity and fostering creative solutions, but not as a replacement for human intellectual input.

**Document and Reflect**: Keep records of how AI is used throughout the research process, including specific tasks it performed. This can provide transparency and aid in later stages of documentation.

Remain Informed: Stay abreast of changes, as requirements regarding AI-generated content are frequently evolving.

**Follow Specific Policies:** Abide by policies set by journals, publishers, funding agencies, and professional societies regarding the use of AI-generated material.

#### AI in Libraries and Research

Al as a Research Tool: Leverage AI for literature review, data mining, and text analysis, enabling researchers and scholars to uncover patterns or trends that might be otherwise difficult to detect.

Access and Training: Librarians can help to identify workshops and resources on best practices for using AI in research and scholarship, ensuring that AI literacy is part of researchers' and scholars' skillsets.

<sup>&</sup>lt;sup>1</sup> Thank you to the faculty who reviewed this AI Guidebook section for providing this suggestion.

<sup>&</sup>lt;sup>2</sup> Thank you to the faculty who reviewed this AI Guidebook section for raising this issue.

 $<sup>^{\</sup>rm 3}$  Thank you to the faculty who reviewed this AI Guidebook section for identifying this concern.



**Ethical Use**: Librarians can help researchers and scholars understand how to properly use AI tools, focusing on the responsible application of AI in research and scholarship, such as avoiding biases, considering the environmental impact of AI tools, and maintaining the integrity of scholarly processes and products.

**Data Curation and Management**: AI can assist in organizing, tagging, and managing research data, especially when working with large datasets. Librarians should ensure that AI tools respect data integrity and ethical standards.

#### **Maintaining Authorship**

**Human Contribution**: The core intellectual contribution to the research should remain human. Al can assist in drafting or analyzing text, but the researcher or scholar is responsible for the content, conclusions, and the scholarly direction of the work.

**Clear Distinction**: When AI tools are used in generating or refining text, clearly distinguish between human authorship and AI-generated contributions in the manuscript.

**Ethical Authorship**: Ensure that all individuals who contribute to the intellectual design, execution, and writing of the research are appropriately acknowledged. Researchers should not credit AI or AI-assisted technologies as an author or co-author of the work.

#### Integrity/Accountability of Work

**Ensure Validity**: Researchers and scholars should ensure that Al-generated content aligns with scientific standards, methodologies, and ethical guidelines. Al should never compromise the integrity of the research process, and researchers should check all Al outputs to ensure accuracy and avoid fabrication and bias.

**Avoid Plagiarism**: Researchers and scholars should ensure that AI-generated content does not inadvertently replicate or plagiarize existing work. Using AI-generated text without proper validation could lead to unintentional intellectual property violations.

**Be Accountable**: Even when using AI, researchers and scholars are accountable for the validity, quality, and ethical implications of the work. Researchers are responsible for verifying AI-generated content and conducting critical assessments.

#### **Transparency and Explaining AI Contributions**

**Disclose AI Use**: Clearly document and disclose the extent to which AI tools were used in the research. This includes how AI assisted in data collection, analysis, writing, and any other relevant processes.

**Explain AI Contributions**: In scholarly papers, describe how AI was used, including which tasks were automated and how the outputs were evaluated. This enhances transparency and allows others to understand the role of AI in the research process.

**AI Limitations**: Discuss the limitations of AI tools, including potential biases, inaccuracies, and areas where AI might not be suitable for the task at hand. Acknowledge the need for human oversight to ensure the quality and integrity of the research.

#### **Citation Guidelines**

**Cite AI Tools**: When using AI tools or platforms, researchers and scholars should cite the software, dataset, or algorithm used in the research process, as they would any other source. Provide the name of the tool, version number (if available), and the company or organization behind it.

**Cite Al-Generated Content**: If AI has generated significant portions of text or content, it should be cited in the acknowledgments or methods section. Cite the specific AI tool used and its contribution to the research.



Adhere to Citation Standards: Follow the appropriate citation format required by the journal or publisher, which may include specific guidelines for citing AI tools. For example, provide the name of the tool, its release version, and a URL or DOI if applicable.

Attribution for AI-Generated Data: If AI-generated content is used in research datasets, acknowledge the AI source. For example, if an AI model was used to analyze data or generate insights, this contribution should be clearly identified and cited according to the relevant guideline.

#### Sources

AI @ UMD (n.d.). Guidelines for the Use of Generative Artificial Intelligence (GenAI) Tools at UMD. <u>https://ai.umd.edu/resources/guidelines#:~:text=Research%20and%20Scholarship,-</u> <u>Researchers%20are%20encouraged&text=All%20users%20should%20review%20and,professional%20societies%20when</u> <u>%20reporting%20research</u>

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#### **Document History**

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