

Using Artificial Intelligence (AI) in Research and Research Writing

One of the core tenets of Lipscomb University is a commitment to an ongoing search for truth. As researchers and Christ followers, we strive to progress toward what is true and to do so with integrity. To this end, Lipscomb researchers, including faculty, staff, and students must carefully consider the use and scope of Artificial Intelligence (AI) in research-related endeavors and research writing.

The terms “research-related endeavors” and “research writing” can apply broadly to many academic contexts including systematic investigations designed to contribute to scholarly or academic knowledge, creative works, inquiry-based activities, academic research assignments in courses, and research processes that contribute to knowledge, understanding, and innovation within a wide range of disciplines. Researchers engaged in scholarly and/or creative works must meticulously evaluate how the opportunities, obstacles, and ethical considerations surrounding the use of AI pertain to their specific context.

AI presents both opportunities and pitfalls for members of the Lipscomb community. The following guidance highlights both. As AI tools evolve, so too may the guidance and best practices for its use in order to remain true to the core tenets of the university.

General Philosophy

Researchers within the Lipscomb University community are called to highest ethical standards, and they should keep ethical principles top-of-mind as they make decisions about incorporating generative AI into their research activities and scholarly work products.

Research should embody the researcher’s originality and creativity and be derived from a thorough analysis and integration of data, peer-reviewed academic literature, and other reputable sources. While AI can be a supplementary tool in some cases, it should not replace the essential elements of critical thinking, creativity, analysis, and knowledge inherent to research endeavors. In all situations, researchers must maintain a primary role in conducting background research, collecting and analyzing data, reporting research findings, and information presented as fact must be verifiable and true.

Researchers are encouraged to embrace the potential of emerging technologies for enhancing academic exploration while thoughtfully weighing the advantages and disadvantages of AI tools. There is a range of appropriate uses for AI in research. In some scenarios, using AI to brainstorm initial ideas, subjects, or titles may be

appropriate. In other scenarios, it may be suitable to utilize AI to organize, edit, and critique researcher-created content or to generate topics, ideas, or perspectives for further investigation. Regardless of how AI is used, research and academic products must represent the unique voice, originality, creativity, and perspective of the researcher.

Since the implications of AI use related to research and academic writing are inherently fluid, the guardrails presented below are designed to provide current guidance.

Potential Pitfalls

Navigating the landscape of AI in research and academic writing comes with potential pitfalls. Although defining the exact boundaries of where AI can be ethically and effectively applied poses challenges, researchers at Lipscomb University are required to carefully consider the following potential pitfalls and guardrails related to AI.

Confidentiality of Data and Protected Information

A researcher's primary responsibility in research is to safeguard the safety and privacy of participants and the confidentiality of participant data.

Using AI tools to analyze data may compromise the security of research participants' data and protected personal information. As discussed by the National Science Foundation, any information shared with generative AI tools should be considered to be shared in the public domain and the control and confidentiality of that content cannot be protected. The loss of control of uploaded information can pose significant risks to the researchers and research participants. <https://new.nsf.gov/news/notice-to-the-research-community-on-ai>

Use of AI can potentially result in a violation of applicable protection laws including the unauthorized disclosure of Intellectual Property (IP) and be a violation of the IP rights of others, including the university.

Guardrails: Researchers are responsible for the proper storage, protection, and confidentiality of research participant data and protected personal information at all times.

Researchers are prohibited from uploading confidential or protected personal information with non-IRB-approved generative AI tools. As part of the research proposal to the IRB, researchers must provide a clear description of how AI will be used to engage with participants or participant data, prior to collecting data. Lipscomb's IRB will review the use of AI to ensure that potential participants will be treated ethically and that their privacy rights and welfare will be adequately protected. Lipscomb's IRB may also require researchers to complete relevant

training modules prior to conducting research with human subjects.

Researchers must be cognizant of how their research relates to the University's Intellectual Property Policy and guard against the unauthorized sharing of IP through the use of AI to avoid violation of copyright, patent laws, data protection regulations, and/or contracts that the university has with 3rd party entities.

Bias

AI bias refers to the tendency of algorithms to reflect human biases. It is known that despite a user's best efforts, AI-generated content may automate and perpetuate bias. Bias within AI may be influenced by a variety of variables such as algorithms that utilize data that fails to be diverse or representative or that have reliance on vast quantities of data that contain biased information.

Guardrails: Researchers should educate themselves about AI bias and monitor AI-generated content for biases and errors throughout the research process and be prepared to adjust research activities as needed.

Researchers should carefully validate AI-generated content against established knowledge, empirical evidence, and diverse perspectives to ensure that biases are not inadvertently perpetuated or amplified. This is especially important when the research may impact vulnerable populations.

Inaccurate information

AI has been found to produce fabricated data that appears to be authentic and has done so to such an extent that the technology sector has labeled the phenomenon as "hallucinations".

Guardrails: Researchers should not consider AI tools a reputable source of information. Researchers must take full responsibility for the accuracy of material presented in research works. Researchers should fact-check any AI generated information they include in their work using reputable sources. Verifying and citing information that extends beyond common knowledge is a fundamental research principle that must be adhered to, irrespective of the utilization of AI tools.

Invention of citations/sources that do not exist

AI has been found to produce fabricated citations and quotes from sources that never existed.

Guardrails: Researchers should not rely on AI to accurately reflect what is in academic literature or to generate citations for real and reputable sources.

Researchers have the ethical responsibility to access, read, watch, listen, and evaluate every source they cite in their research.

Alteration of content meaning

Some of the functions performed by generative AI, such as paraphrasing, rewording, summarizing, and/or refining researcher-generated text may change the meaning or content of the material in a way that is not aligned with the researcher's original thinking.

Guardrails: Researchers should exercise caution and carefully vet all AI-generated material to ensure that the intended meaning of content has not been altered.

Because AI-generated content requires a high level of scrutiny, certain AI tools/practices may be better suited for use by researchers who are intimately familiar with the topic/construct being studied since they may be better equipped to evaluate the validity of the generated content.

Masking the researcher's unique voice

AI generated text frequently alters a writer's voice by influencing the tone, word choice, and sentence structure to be neutral, generic, or even robotic to such an extent that it lacks the nuanced perspective and personal style that the human writer or researcher would naturally bring through original writing.

Guardrails: AI-generated wording must be used cautiously to avoid alteration of the writer's original ideas and to ensure the researcher's voice remains prominent and consistent. This does not preclude writers from using AI to check spelling and grammar (unless prohibited by a course instructor); however, caution must be used to not lose the researcher's personal style, creativity, or originality in the written work.

Researchers must avoid directly copying and pasting significant portions of AI generated text into their written work unless appropriate authorization is obtained, and full transparency is provided.

Publisher Requirements

Researchers who are interested in publishing their work in academic journals/books or presenting their work at conferences must be familiar with the requirements of the respective publishers or conference organizers. Publishers or partnering institutions

may have different requirements for using AI in research.

Guardrails: Before starting any research activities, researchers are encouraged to familiarize themselves with the AI-related policies of any publishers to whom they plan to submit or conferences they wish to present at.

Transparency

Researchers are responsible for being fully transparent and openly disclose to users and stakeholders the way AI was used, processes utilized, data used, and the potential limitations of the AI system so that they can understand its impact and make informed decisions about its application. Great caution must be exercised since there is no guarantee that AI will produce identical results with each use.

Guardrails: Researchers must keep careful records and be prepared to fully describe all procedures utilized during the use of AI.

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