

GPS GUIDELINES: Responsible and Ethical Use of Generative AI in Graduate Thesis, Research, and Writing

The emerging and increasing role of generative artificial intelligence (AI) for academic purposes opens opportunities for creativity and innovation that require careful attention. As universities navigate the complexities of AI, they will need to ensure that its use is in line with their academic goals, ethical commitments, and legal requirements. Use of generative AI in research and writing must conform to clear ethical guidelines in order to ensure academic integrity. The following guidelines provide general guidance on the responsible use of generative AI tools by graduate students with references to a number of University of Alberta institutional policies and regulations. Graduate students who intend to use generative AI tools in their thesis research and writing must seek prior permission and approval from their supervisors and supervisory committee members. They must transparently disclose the use of generative AI tools and technologies in the preface to their thesis and in any publications resulting from their research to ensure academic integrity. Graduate programs and units may develop subject or discipline-specific guidelines that graduate students must comply with.

Can I use generative AI tools for writing and editing my candidacy proposals, qualifying exams, comprehensive exams, thesis, and scholarly publications?

The [University of Alberta Code of Student Behaviour](#) states: “No Student shall represent another’s substantial editorial or compositional assistance on an assignment as the Student’s own work.” Submitting work created by generative AI and not indicating such would constitute cheating as defined above. The University of Alberta [Research and Scholarship Integrity Policy](#) section 4.a stresses “the obligation on the part of researchers to apply standards of honesty and of scholarly and scientific practice in the collection, recording and analysis of data, whether quantitative or qualitative, and other information and in the dissemination of information, findings, and discoveries.”

According to the GPS institutional graduate regulations, “master’s thesis research should be an original contribution” and “a doctoral thesis “must embody the results of original investigations and analyses” ([University Calendar](#)). If your program has established discipline-specific regulations for the use of AI, you must follow them. You must also seek prior permission and approval from their supervisor and supervisory committee members in order to make use of any generative AI tools. As a graduate student you are responsible for the ethical and responsible use of AI tools in your thesis.

Academic misconduct related to the use of generative AI in comprehensive exams, thesis or publications would be addressed in accordance with the GPS academic misconduct disciplinary process.

Can I make use of generative AI tools to research and write my graduate course papers, project reports, and assignments?

You must familiarize yourself with any statement of expectations that your instructor may have included in the course syllabi or on eClass about the use of generative AI tools. A statement of expectations makes explicit the various ways in which students can use generative AI tools and systems that are acceptable in the context of your course. If there is no specific information about the instructor's expectations, you must seek prior permission and approval from your instructor in order to use AI tools for research and writing purposes.

Can I use generative AI tools for my research, including literature review, data analysis, or simulation?

Different scholarly disciplines may have specific requirements for the use of generative AI tools in various steps of the research process. Graduate programs may have discipline-specific expectations/regulations about when it is appropriate, or not, to utilize AI in data analysis, modelling, simulation, or academic writing for graduate program requirements. If your program has established discipline-specific regulations for the use of AI, you must follow them. You must seek prior permission and approval from your supervisor and supervisory committee members in order to make use of any generative AI tools.

If I use any generative AI tools in my research and writing, how should I disclose my usage?

Use of generative AI in research and writing must conform to clear ethical guidelines in order to ensure academic integrity and rigorous conduct of research. You must provide a transparency statement explaining how AI algorithms, tools, or applications were utilized in your research and writing process. Different scholarly disciplines may have specific requirements for authors to transparently disclose the use of generative AI. You must disclose your use of generative AI tools in the preface to your thesis. In addition, depending on your disciplinary norms, a transparency statement could appear in the methodology or materials and methods sections, acknowledgement, or in an appendix. Your academic program and faculty may have additional and specific disclosure requirements.

Can generative AI tools be used for preparing a manuscript for submission to scholarly publications?

An increasing number of the scholarly journals and conferences are developing editorial policies and author guidelines on providing a disclosure statement on the use of AI tools and technologies. You must consult those guidelines and policies to learn about the requirements for the use and reporting of AI tools. Examples of disclosure statements by scholarly publishers and associations can be found on the websites of [Elsevier](#), [Nature](#), [Oxford University Press](#), and the [Association for Computing Machinery \(ACM\) Policy on Authorship](#).

How do I formally acknowledge if I use any generative AI tools in my research and writing?

If you use any generative AI tools, you must clearly and explicitly acknowledge and cite the tool/application, using well-known citation styles. The American Psychological Association (APA) citation guide for in-text citations and references provides specific examples for this purpose. ([How to Cite ChatGPT](#))

Can I use and include citations recommended by generative AI tools in my research?

Generative AI tools are known to fabricate (hallucinate) citations and references that do not exist or contain inaccurate publication information. Before using any of the recommended sources or citations by a generative AI tool, you should verify their reliability, authenticity, and accuracy by using credible scholarly and academic digital libraries and databases such as the University of Alberta Library Website, Scopus, Web of Science, Google Scholar, and WorldCat. In addition, the University of Alberta Libraries resource [Evaluating AI Generated Content](#) provides particularly useful information and advice on the verification and critical evaluation of AI generated content.

Is the output of generative AI applications reliable, accurate, and trustworthy?

The output results from generative AI tools could be biased, discriminatory, incomplete, and inaccurate. For instance, they may recommend references solely based on citation counts that are gender-biased, culturally insensitive or geographically inequitable. Machine learning models and algorithms are susceptible to the biases inherent in the data used to train them. If the data contains biases, the generative AI tool may replicate and amplify them, affecting the validity of research outputs and perpetuating existing biases in academic scholarship. Lack of transparency around the nature and types of underlying data used to train machine learning models and algorithms is a major concern.

Are there any risks associated with the use of Generative AI tools in my research?

Data privacy and confidentiality are two key areas of concern that may pose risks related to your personal information and your research work and data. Generative AI tools may collect and share your personal and identifying data as well as the research data uploaded for the purpose of analysis, writing, and editing. It is important to be aware of privacy and confidentiality policies of a given generative AI tool before its use. If you decide to use a generative AI tool for data analysis, writing or editing, you should be aware that there is a risk that it may generate outputs that reveal confidential information from your research. When using generative AI tools in your research and scholarly work, be cognizant of your privacy preferences.

What are the intellectual property implications for the use of generative AI, including copyright and patents related to my thesis research and publications?

As a graduate student, you are responsible for the intellectual, artistic, compositional, and creative content of your research and thesis. There are generative AI tools that have made use of copyrighted materials to train models and algorithms and have been legally challenged for copyright and intellectual property infringement. You are responsible to ensure that you are not violating any copyright or intellectual property rights of any authors, creators, composers, software developers, inventors, etc. Section 3.f of the University of Alberta [Research and Scholarship Integrity Policy](#) states that it is the responsibility of the principal investigator “to acknowledge the prior art, intellectual property of others (including copyrights and patents); to cite appropriately the work of others; to use their writings, discoveries, findings, conceptual developments, unique methods and data with proper attribution.”

Can I use generative AI tools in my awards and scholarship applications?

If you apply for awards and scholarships, you must adhere to the above guidelines on the ethical and responsible use of generative AI tools. You should also stay informed of changing funding agency expectations for grants, funding proposals and applications, expressions of interest, notices of intention, and other academic tasks. For example, the Canadian Institutes of Health Research have updated their [Fall 2023 Project Grant Competition](#), clarifying questions about authorship, peer review, and the need for ongoing adaptations as technology evolves.

Acknowledgements:

The above guidelines are developed based on a report from the Western Canadian Deans of Graduate Studies (WCDGS) [Working Group on Generative AI and Graduate and Postdoctoral Research and Supervision](#) and are modeled on the [University of Toronto Guidance on the Appropriate Use of Generative Artificial Intelligence in Graduate Theses](#).