



A Plan for an ACM Task Force Working Group into the Ethical and Societal Impacts of Generative AI in Higher Computing Education

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Abstract

Generative AI (GenAI) presents societal and ethical challenges related to equity, academic integrity, bias, and data provenance. This working group will consider the ethical and societal impacts of GenAI in higher computing education. In this paper, we outline the goals, methodology and expected deliverables of the working group. In particular, we will carry out a systematic literature review to address a wide set of issues and topics covering the rapidly emerging technology of GenAI from the perspective of its ethical and social impacts, we will provide an evaluation of university policies on the adoption and guidelines for use of GenAI for computing education and develop a framework to outline the ethical and societal impacts of GenAI in computing education. This work synthesizes

existing research and considers the implications for educational and professional codes of ethics.

CCS Concepts

• **Social and professional topics** → **Computer science education**.

Keywords

Generative AI, Higher Computing Education, Ethical Impacts, Societal Impacts

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1 BACKGROUND AND RELATED WORK

Generative AI (GenAI) significantly impacts society and raises concern on how we access and use information, particularly in educational settings [6]. The use of GenAI raises societal issues, such as

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intellectual property rights and authorship infringement. Within educational settings, there are differences in institutional policies and funding levels for GenAI which can create inequities. These disparities can lead to unequal student access to GenAI tools, varying student knowledge with ethical and responsible AI use and gaps in understanding the capabilities and limitations of GenAI tools. Furthermore, GenAI introduces questions concerning academic integrity, inherent bias, and data provenance [4, 5]. There are underlying questions about the reliability, veracity and trustworthiness of the training data which highlights broader societal implications from the outputs generated by these AI models.

To address and understand the ethical and societal impacts of GenAI, we aim to focus this specifically on higher computing education. We will conduct a landscape analysis exploring the ethical questions on the use of GenAI tools on computing education. This analysis aims to identify promising principles, challenges, and develop a framework for ethical and responsible implementation of GenAI. This work builds on research that aims to understand the ethical and societal impacts of GenAI in higher computing education [1, 8, 11] and the implications of university policies on the use of GenAI tools [2, 3, 7, 10].

2 GOALS OF THE WORKING GROUP

By exploring the implementation of GenAI in higher computing education, this study aims to contribute a landscape study to guide ACM as an organization in its work with higher education institutions and the research community. This builds on the work of the Computer Science Curricula 2023 [9] and will inform future iterations of this critical document. To this end, this ACM task force has identified the following research questions (RQs):

- (1) In what ways does GenAI impact higher computing education through the lens of ethical and societal impact?
- (2) In what ways does GenAI affect the socio-technical dynamics of higher computing education institutions?
- (3) What are the implications (e.g. challenges, opportunities, limitations) of integrating GenAI in higher computing education?

3 METHODOLOGY

This working group aims to analyse and review the literature on ethical and societal questions around using GenAI tools such as ChatGPT in higher education teaching and learning. We will derive a set of challenges and recommendations through literature review and systematic analysis of universities' policies and guidelines on using GenAI in Computer Science education [12]. The working group will also hold community webinars on different case studies on implementing GenAI guidelines, policies, and evaluation frameworks in higher educational institutions. The result of this working group will be to provide findings and recommendations to the ACM's Code of Ethics and institutional policies on GenAI.

4 EXPECTED DELIVERABLES

The working group report will document ethical aspects related to the use of GenAI, potential impacts on the ACM code of ethics, issues to be addressed through research or computing classroom discussion, and highlight how higher education institutions are

implementing ethical GenAI in practice. The specific deliverables will include:

- A systematic literature review that addresses a wide set of issues and topics covering the rapidly emerging technology of GenAI from the perspective of its ethical and social impacts in the context of computing education.
- A global perspective and evaluation of university policies on the adoption and guidelines for use of GenAI for computing teaching, education and research.
- A framework that outlines the ethical and societal impacts of GenAI in computing education. This will highlight the risks, issues and benefits on different communities on use of GenAI in computing education.

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