STUDENT AI HANDBOOK

Wake Forest University

Updated on
12/08/2023

Purpose of the Handbook

This handbook was researched and written by the Fall 2023 semester students of WRI 340, “Writing in the 21st Century.” It was created with the goal of providing more resources for students at Wake Forest who are curious or concerned about the guidelines surrounding AI use in the classroom. While all of the contents of this handbook have been researched and cited, this is not the official policy of Wake Forest, but merely a recommendation based on the students’ opinions and other universities’ official policies.

Student Writers: Claire Bowden, Chase Clark, Anna Gramling, Ian Hutcherson, Kathrine Kiersted, Lily Klett, Andrea Novaria, Jack Szczepanski, Kristin Taylor, George Wilkerson, Eric Zhang, Lexi Zyskowski

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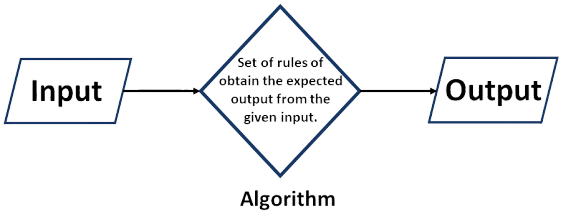
Glossary of AI Terms

This glossary will help describe some of the terms related to Artificial Intelligence that may be discussed throughout this handbook. They can be navigated in alphabetical order.

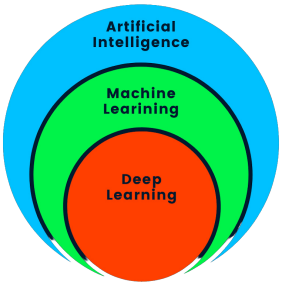
Algorithm: A set of well-defined instructions for solving a specific problem or performing a particular task. In AI and ML, algorithms are used for tasks such as data analysis and pattern recognition.



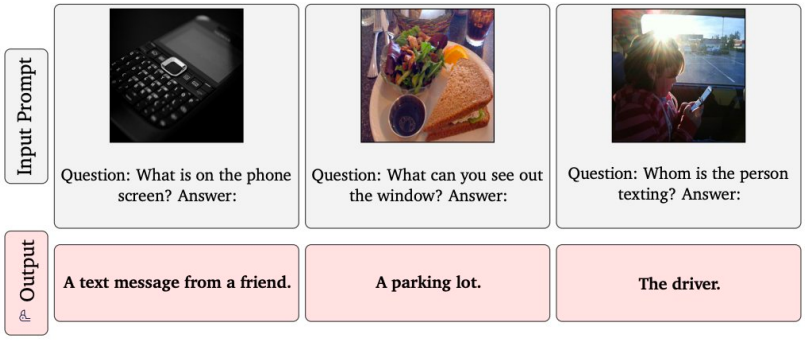
Artificial Intelligence (AI): The theory and development of computer systems that can perform tasks that previously required human intelligence. Examples include autonomous vehicles, facial recognition systems, and intelligent personal assistants like Siri and Alexa.

Chatbot: A computer program that simulates a conversation with human users, utilizing Natural Language Processing to interpret inputs and generative AI to automate responses.

Deep Learning: Part of a broader family of machine learning methods based on artificial neural networks with representation learning, such as convolutional neural networks for image recognition and recurrent neural networks for sequence analysis.



Hallucinations (in connection with LLMs): Refers to the generation of information by the model that wasn't present or implied in the input, representing a challenge for developers and users to ensure accuracy and reliability.



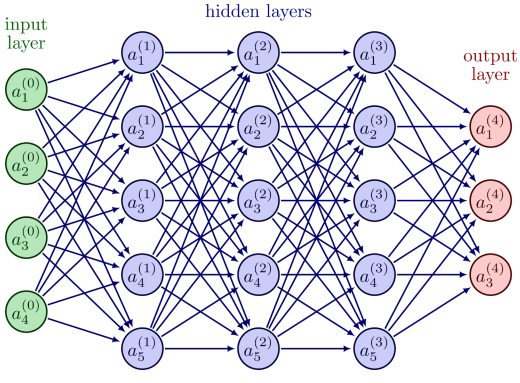
This image is representative of the inaccuracy of information that was not present or implied in the input (Hallucinations)

Large Language Models (LLM): Advanced AI models that process and generate human-like text by analyzing extensive language data. For example, a chatbot trained on examples of text can generate lifelike interactions with people.

Machine Learning: A subset of AI that involves developing algorithms and statistical models that enable machines to identify patterns in large datasets and make predictions (for *example*: identifying images).

Natural Language Processing (NLP): Computer systems utilize an understanding of the structure, grammar, and meaning of language to interpret and generate human language. It's used in applications like speech-to-text, voice-based computer help systems, grammatical correction, summarizing texts, and converting spoken words into editable text.

Neural Networks: A subset of machine learning algorithms inspired by the interconnections of neurons in the human brain. Data enters the input layer, goes through hidden layers where weight optimization occurs, and finally reaches the output layer for results.



Tokenization: The process of converting a sequence of characters into tokens (smaller pieces) for easier processing or analysis in computing, which is crucial for simplifying text analysis in NLP.

Background & History of AI

1950: Alan Turing – "Can Machines Think?"

- Alan Turing's essay, "Can Machines Think?", marks the first ideas of AI and theories surrounding the concept of machine-based thinking. Many refer to Turing's contributions as foundational in the discourse

1955: The Logic Theorist (IT)

- The Logic Theorist is the known AI program invented.

1956: The Dartmouth Summer Research Project

- One of the first time AI was introduced in the academic setting
- One of the attendants, M.L. Minsky coined the term “artificial intelligence”

1963: DARPA Funded AI Research at MIT

- MIT was granted $2.2 Million for AI research, first time funding/interest from the government in AI was shown

1964-1967: Eliza Chatbot Created

- One of the first AI Chatbots was developed by MIT by Joseph Weizenbaum

2011-2014: Personal assistants like SIRI, Google Now, and Cortana are developed and released

- “Personal Assistant” tools powered by AI to answer simple questions and perform simple tasks

2022: Early versions of ChatGPT are released and available for public use

Present and Future:

- AI systems, such as Bard, are continuously being developed and released for public consumption.

Current Major AI Tools

For a basic overview of major AI tools, the following are two brief breakdowns of ChatGPT and DALL-E done by ChatGPT (checked by Dr.Yang of the CS department at Wake Forest University):

How ChatGPT Works:

- Trained on a large set of texts from diverse sources (books, articles, websites).
- Learn to predict the next word in a sequence based on the given context.
- Once trained, it can be fine-tuned for specific tasks.
- Generates text based on patterns learned during training when given a new prompt.
- Can be improved over time with human feedback.

How DALL-E works:

- Purpose: It generates images from textual descriptions.
- Technology Base: Utilizes a type of neural network called a transformer.
- Trained on a vast dataset of images and corresponding textual descriptions.
- Analyzes text prompts to understand the requested content, style, and details.
- Employs a neural network to process the input text and correlate it with visual elements.
- Predicts and generates images based on the interpreted text, creating pixels and elements to match the description.

Pros of AI Use

Throughout history, education has shifted and evolved with the advent of new technological changes. From the introduction of word processors to computers, to online class facilitators such as Canvas, the curriculum has molded in tandem to maximize the utility of new

technology within the classroom and ensure students can function and take advantage of their available resources. While the advent of AI threatens to impact the future of education in many different ways than previous advancements, and it is important to recognize the potential harm that AI can cause and take precautions to mitigate risks, it is important to educate students about responsible AI practices, as well as the potential benefits of utilizing artificial intelligence's strengths.

As AI has increasingly permeated various aspects of the professional world and society in general in recent years, It is clear that AI will continue to take larger and larger roles in our everyday lives. Thus, it seems inevitable that it will work its way into the education system. As noted by several universities' AI handbooks, such as OSU and UNC, promoting student AI literacy, or "the ability to understand, use monitor, and critically reflect on AI models themselves", is critical in preparing students for rapidly changing workforce needs. Additionally, by utilizing AI throughout their work, students might better understand how they interact with AI on a day-to-day basis. The Pew Research Center surveyed 11,004 American adults with six examples of common technologies that use AI, only 30% of those surveyed knew AI was involved in all six examples. Thus it is clear that there is a need to educate the general public on human-AI interactions.

Integrating AI literacy into the education system offers numerous advantages for students as they navigate an increasingly AI-driven world. AI literacy not only empowers students with the knowledge to responsibly engage with AI technologies but also enhances their critical thinking skills. Understanding how AI models function enables students to analyze and evaluate the information generated by these systems, fostering a more discerning approach to the data they encounter.

As the workforce continues to undergo rapid transformations, possessing AI literacy becomes a valuable asset for students entering various professional fields. By incorporating AI into educational practices, students gain hands-on experience with AI tools, preparing them to adapt to the evolving technological landscape. Furthermore, AI literacy promotes a deeper comprehension of ethical considerations and societal impacts associated with AI applications. Educated individuals are better equipped to contribute meaningfully to discussions about AI's role in shaping our societies and can actively participate in decision-making processes that influence its development and implementation. In essence, fostering AI literacy within education not only equips students with practical skills for the future but also cultivates a well-informed and conscientious generation capable of navigating the complexities of an AI-infused world.

Practical Applications of AI

There are a variety of ways to utilize ChatGPT and similar text-generators in ways that enhance academic success while maintaining academic integrity. In this section, these practical uses will be explained.

Time Management and Organization:

There are many ways students can use ChatGPT and other text generations to help them with time management and organization. ChatGPT can create study schedules and

provide tips on how to best organize study material.

Example Command: Could you build me a study schedule for a day studying for my Chemistry final exam?

Research and Information Retrieval:

AI can assist students in their research process by using ChatGPT or other text generators to assist in their research process. While ChatGPT cannot access real-time databases for current information, including academic articles, it can provide students with guidance on how to find these resources. If the topic is academic, ChatGPT will provide database names, such as JSTOR or Project MUSE. If the topic strays from academic research, ChatGPT will provide everything from books and documentaries to sports archives.

Example Command: Could you provide me with some resources to consult on the topic of David Beckham's life and career?

Study Recommendations:

Students can use AI to compile a list of resources to help them study either broad or specific topics. For example, you could ask it to provide a list of video tutorials on the American Revolution or an interactive diagram of the Krebs Cycle.

Example Command: "Can you give me some resources I can consult to study the Krebs Cycle?"

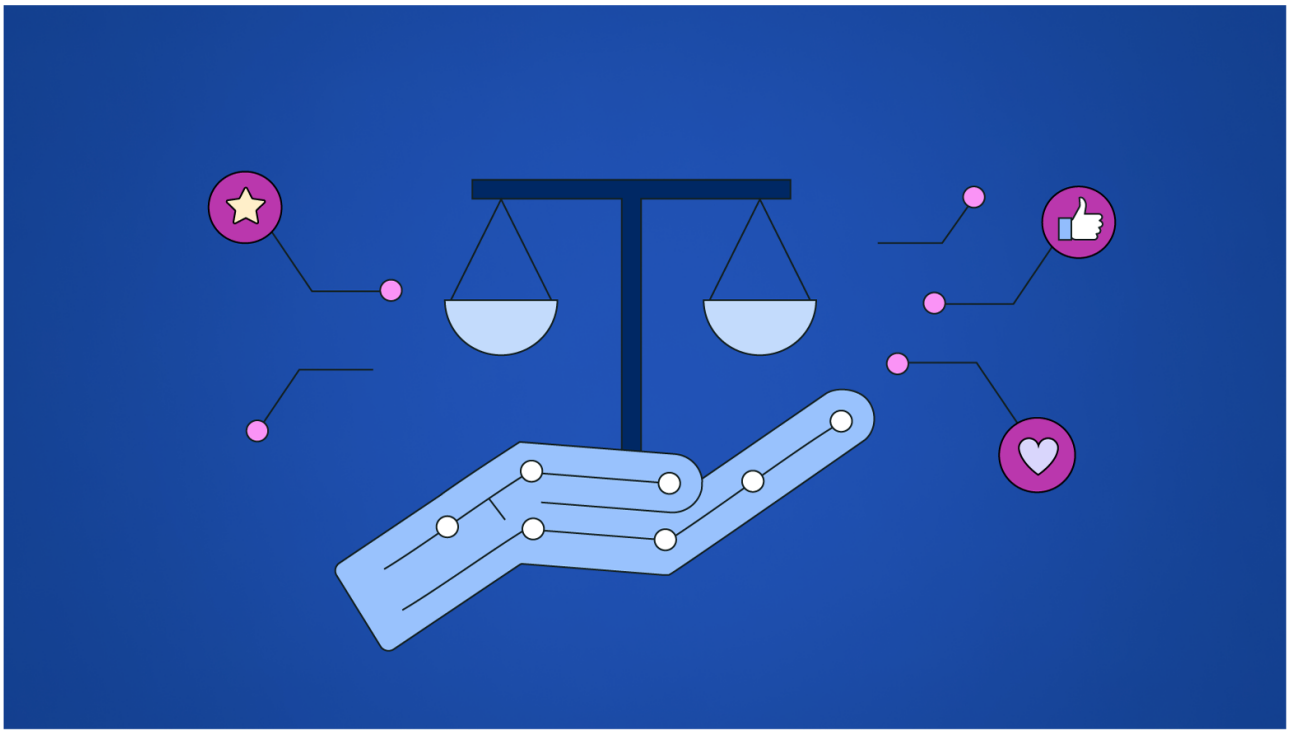
Exam Preparation and Study Assistance

Students can use AI to generate practice questions and exams to help them study for upcoming assessments.

Example Command: "Can you provide me with a 20-question multiple choice test on the War of 1812?"

While these are all effective and appropriate ways to use text-generating AI platforms, it must be noted that when attempting to use AI in an academic context, students should remain aware of privacy and data security. Additionally, AI should not be a replacement for independent thought and research and should, instead, be used as a tool to enhance their learning. It is important for students to not exclusively rely on AI recommendations to remain strong critical thinkers.

Ethical Considerations



Transparency and accountability are of the utmost importance in submitting work for which AI was used. Generative AI has its ethical issues such as biases and discrimination due to the limitations of the code and data that programmers input into machine learning algorithms. To mitigate these ethical concerns, any AI used for submitted coursework must include proper citations. If any submitted work for which AI was consulted and/or used does not include proper citations, the AI Violation Framework will be consulted and the appropriate action will be taken.

At Wake Forest University, there are two types of violations: academic and non-academic violations. Individuals who violate the academic standards set out by WFU are subject to be reviewed by the Honor and Ethics Council. Individuals who violate prohibited behaviors as outlined in the Student Handbook are predisposed to Code of Conduct violation(s) and are likely to face disciplinary consequences reviewed by the Office of the Dean of Students. Any violation of the Honor Code or the Code of Conduct will be reflected on the student's conduct record. The violations are separated on level of severity ranging from low to high level violations in terms of usage of AI. The first and subsequent offenses were taken from the Student Handbook's section of the General Outcome Framework.

Additionally, WFU has a policy on the Responsible and Ethical Use of Computing Resources. The policy seeks to promote the responsible use of computing resources and systems of the University. Thus, all computer and communication systems owned by the University are subject to this policy. This includes tablets, personal computers, phones, and software. Subsequently, ChatGPT or any other AI software is susceptible to the policy. As students, we must obey University Policies unless otherwise noted through a faculty or staff member or any other authority figure from the University. Failure to comply with the University's policies can result in Student Conduct violations.

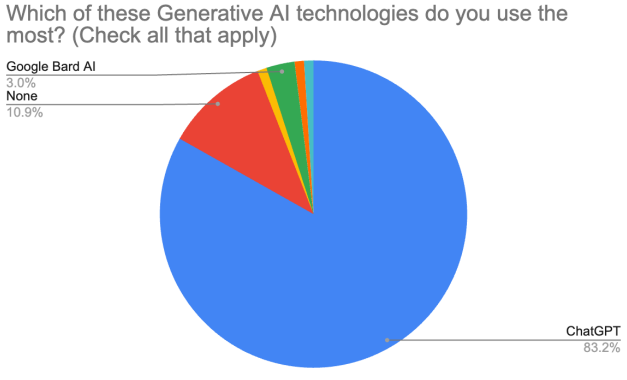
Disclaimer: These are not official policies. Professor discretion would trump the aforementioned framework and policies.

N.A. "Undergraduate Student Handbook." *Student Conduct*, 15 Sept. 2023,

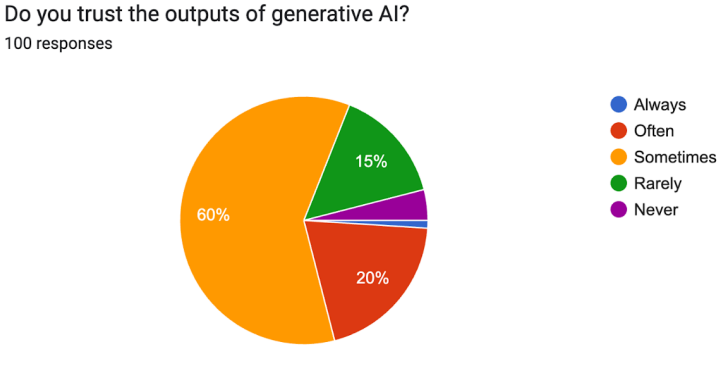
"Policy on the Responsible and Ethical Use of Computing Resources."

Wake Forest Student Perspectives

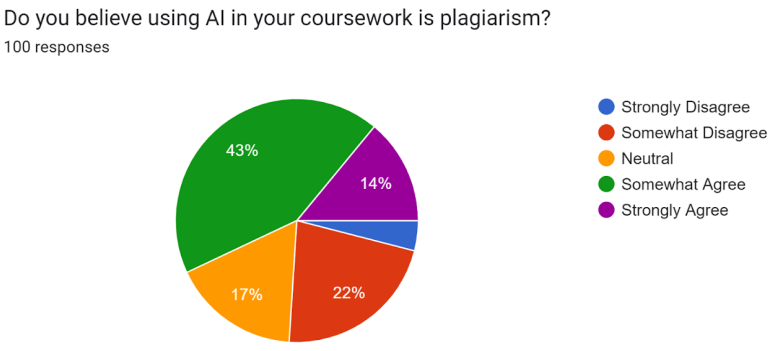
The following are synthesized results from an anonymous survey distributed to the Wake Forest student body, which collected a total of 102 responses, that aimed to gain a better understanding of feelings towards AI use on campus. It consisted of 17 questions, all of which prompted responses surrounding opinions about the ethical, practical, and academic applications of artificial intelligence.



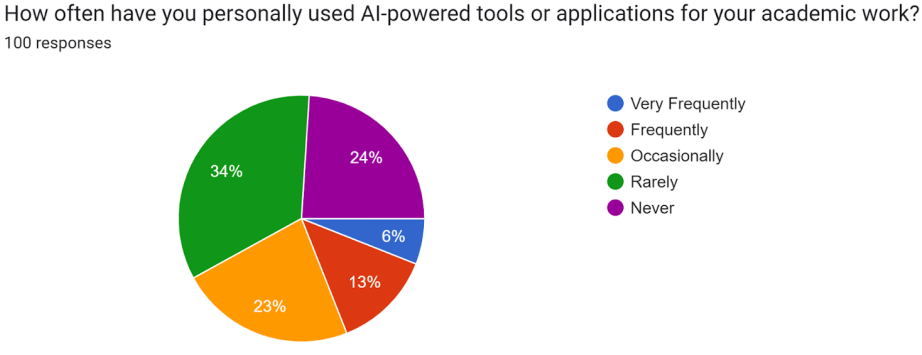
A vast majority of Wake Forest students use ChatGPT. This is most likely due to its prevalence in the news and the fact that many people only know of ChatGPT when talking about Artificial Intelligence, as well as the fact that it is very accessible and easy to learn.



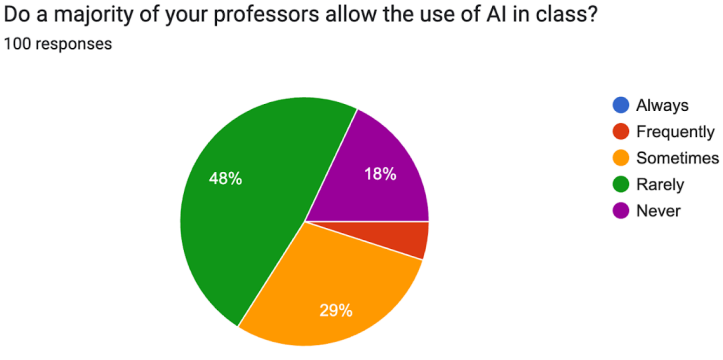
The majority of students responded they only sometimes trust the outputs of generative AI. Another 15% of survey respondents indicated that they rarely trust the outputs of generative AI.

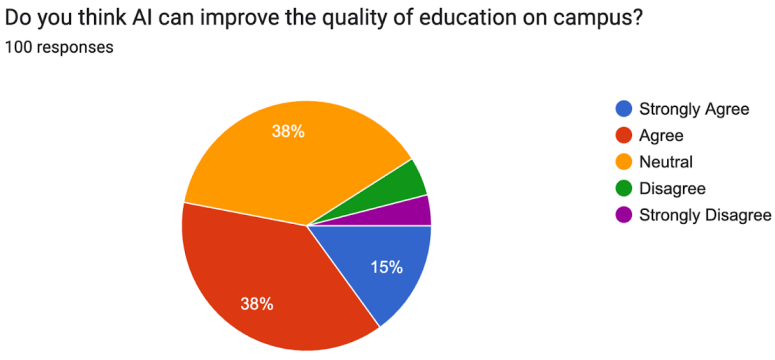


Furthermore, a majority of the respondents to the survey indicated that they somewhat or strongly agree that using AI in the classroom is plagiarism. 26% of students responded that they either somewhat disagree or strongly disagree that the use of AI on assignments is plagiarism.

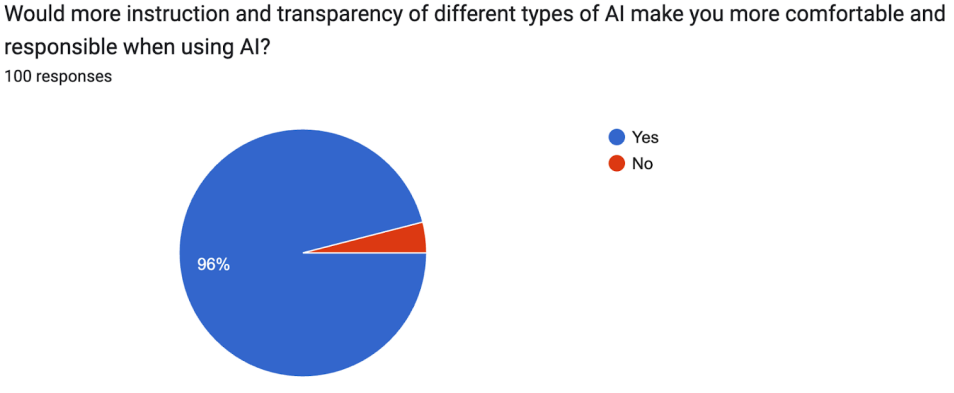


When students were asked if or how often they use AI on assignments, 34% said that they rarely use AI and another 24% responded that they never use AI in their coursework. 19% of respondents either frequently or very frequently use AI in their coursework. We speculate students are reluctant to use AI in their coursework due to the trustworthiness of the programs' outputs or academic penalties. 20% of students who are consistently using and trusting AI in their courses do not believe that it is plagiarism.





Our survey also found that a large percentage of respondents agree that the use of Artificial Intelligence on Wake Forest University's campus would improve the quality of education. In the final, open-ended question of our survey, many students commented that they believed that AI was a great starting place for assignments for generating starting ideas, but it is nothing more than a "glorified search engine" (in its current state). However, professors seem to not express any desire for these tools to be a part of their classes.



While many students are hesitant to use AI with the current/lack of clear AI academic structures, the data from this graph demonstrates that they are more than willing to learn to use these tools that are rapidly evolving in today's world.

Wake Forest Recommended Policy

AI Violation Outcome Framework

Low-Level AI Violations (Honor and Ethics Council)	First Offense	Subsequent Offense(s)
• Deception in the classroom setting; professor sees AI being used for low-stake assignments (homework, in-class activities, etc.) • Improper AI citations	• Mandatory discussion with the professor concerning actions	• Behavioral or Educational Requirement - reflection paper or workshop on proper usage of AI

Mid-Level AI Violations	First Offense	Subsequent Offense(s)
• Biases produced through AI-generated responses (religion, gender/sex, socio-economic, racial)	• Behavior or Educational Requirement - reflection paper or workshop on the biases produced by AI	• Restorative action by engaging in restorative justice conferences with members of Honors and Ethics Council and/or Wake Forest administration

High-Level AI Violations (Conduct)	First Offense	Subsequent Offense(s)
• Cheating on an exam(s) with AI • Plagiarism on high-stakes assignments	• Disciplinary probation and/or disciplinary warning	• Repeated offenses can result in suspension or expulsion, depending on the severity of the situation • University can withhold Degree under extraneous circumstances (see Ethical Considerations section)

Proposed Scale of Allowed Use

Vanderbilt's policy divides AI usage into four categories: permissive, slightly, moderately, and severely restrictive. Also included are a few quotes from syllabi

of existing professors' AI policies at Vanderbilt (see Vanderbilt's full policy by clicking HERE).

Vanderbilt's Principles for Determining AI Use:

- Faculty should decide whether and how generative AI is used in courses.
- Faculty should clearly communicate expectations to students.
- Faculty should clearly communicate what constitutes academic dishonesty.
- Students are responsible for understanding the rules of engagement for using AI in each of their courses and seeking out information if they do not understand or are unsure how to comply.
- Faculty and students are responsible for using AI appropriately and ethically.
- Faculty and students should disclose the use of AI in their work if such disclosure is expected.
- Faculty and students are the authors of content generated by AI and are responsible for that content as they are with content that they author.
- AI should be used in ways that respect confidentiality and privacy.
- AI should be used legally, ethically, and reasonably.

Permitted:

Generative AI can be used to complete assignments within the course. The use of AI should be cited and failure to do so could count as plagiarism. Facts and sources given by AI should be vetted independently by the student to ensure the accuracy of the work.

Somewhat Limited:

AI can be used in certain aspects of the course as clearly outlined by the professor. AI outputs should not be inserted directly into assignments, any use of AI for organizing data or generating sources should be thoroughly checked by the student for accuracy. Improper use of AI can result in deducted points and can be viewed as plagiarism.

Strongly Limited:

The outputs of generative AI should not be used in the process of completing assignments. Any use of AI should be with the permission of the instructor. Generative AI should not be used to complete assignments at any stage unless permitted by the professor.

Restricted:

AI is not allowed, no matter what. Using AI degrades the quality of a student's learning experience of processing the material for themselves. Using AI in any form is a violation of the honor code.

Faculty vs Student Use

Faculty Use and Knowledge of Artificial Intelligence Tools

Given the rising presence of AI, it is important for faculty members to be prepared to discuss the use of AI in the classroom and employ it when applicable. First, faculty members should familiarize themselves with different AI programs so that they may have a working knowledge of how the programs are used. Depending on the course subject, using an AI program to assist in teaching may be beneficial. This is true particularly in classes that are largely centered around writing, or in computer science classes (anything involving coding). Knowing the function of AI will assist faculty in creating compelling writing prompts. This might mean requiring a reflection section in addition to a traditional essay or writing assignment, requiring the student to infuse their personal influence and avoiding something completely written by AI. Overall, faculty should remain open towards and flexible with the use of AI in the classroom. It is the faculty's responsibility to educate themselves on the potential uses of AI in their teaching plans, but also as it may be used by the student.

Faculty Use of Detection Tools

AI detection tools quickly emerged in response to the growing popularity of AI chatbots. These detectors, also powered by AI, claim to discern whether text originated from chatbots like Chat GPT, boasting relatively high success rates. With an increasing number of students tapping into the potential of chatbots, it comes as no surprise that educators may feel the need to employ detection tools. However, because these tools aren't a foolproof method for detecting the authenticity of content, they pose an ethical dilemma for professors striving to foster an environment of honesty and trust in the classroom.

Some universities and professors have chosen to forgo the use of detection tools altogether. Duke University, for instance, actively encourages professors to abstain from their use, citing various concerns. Detection tools have shown biases against non-native speakers and novice writers. Additionally, their inability to keep pace with the rapid advancements in AI chatbot technology raises significant concerns, including reliability issues.

In response to the inherent unreliability of detection tools, educators have sought alternative approaches, such as implementing multiple detection tools to create a threshold. This threshold acts as a criterion that students must meet to demonstrate the originality of their work. A professor at Wake Forest writes in his syllabus, “The threshold for automatic failure of an assignment I will utilize is that if (a) all of the detectors suggest that artificial intelligence has been utilized, (b) Turnitin suggests that more than 20 percent of your submission has been generated by artificial intelligence, and (c) you do not provide proper citation.”

Some of the most commonly used AI detectors are Turnitin, Copyleaks, and GPTZero.

Students will likely encounter professors who use AI detection tools in more than one of their classes before they graduate. While detection tools can be used responsibly to help engender

a fair learning environment, it is important to think about how they affect the teacher-student relationship. Students should consider initiating an open dialogue with their professors if they think the utilization of detection tools is compromising the inherent trust that should characterize a strong student-teacher relationship.

Rules of AI Citation

AI Citation Rules: Students should consult their professors before using AI functions in their coursework. If AI is allowed to be used in coursework, it is important to cite it like any other source. Some AI tools, like ChatGPT, keep archives of conversations which may be useful to save because AI can generate unique responses even with the same prompt input. It also must be noted that AI can provide inaccurate information, so extra verification of the information provided by AI may be necessary. Below are guidelines for citing AI under common styles: APA, MLA, and Chicago. These are the only common citation styles that have posted guidelines for citing AI as of July 2023.

APA Citation:

For reference, APA recommends treating the company or individual who developed the AI model as the author.

In Text Citations:

(Author/creator of AI model, Year of version used)

Example:

(OpenAI, 2023)

Reference List Entry:

Author/creator of AI model. (Year of model). *Name of model* (Version of model) [Type of description of model]. Web address of model.

Example:

OpenAI. (2023). ChatGPT (November 1 version) [Large language model]. https://chat.openai.com/

MLA Citation:

For reference, MLA does not recommend treating AI tools as authors, so the author element of citations is skipped. Additionally, MLA recommends using the general link to the AI tool, but if possible, sharing the direct link to the content created by the AI might be more useful.

In Text Citations:

Include the "title of source" element. This is usually a description of what was generated by the AI tool.

Example:

("Explaining Alliteration in 3 Words")

Works Cited List Entry:

"Title of source" prompt. *Name of AI Tool*, version, Company, Date content was generated, Web address of tool.

Example:

"Explaining Alliteration in 3 Words" prompt. *ChatGPT*, 1 Nov. version, OpenAI, 2 Nov. 2023, https://chat.openai.com/

Chicago:

For reference, the Chicago Manual of Style recommends citing AI in a note, or a parenthetical citation, not in a bibliography. The Chicago Manual of Style treats the AI model as the author.

Footnote or Endnote (Notes-Bibliography System):

Note number. Author, description of prompt, date content was generated, publisher.

Example:

1. ChatGPT, response to "Explain alliteration to me," November 2, 2023, OpenAI.

In Text Citation (Author-Date System):

Parenthetical citations should include any information not included in your text.

Example:

(ChatGPT, November 2, 2023)

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