Faculty Senate

AD HOC ARTIFICIAL INTELLIGENCE COMMITTEE
2023-24 Year-End Report

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Brian Gogan, Secretary

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Andrew Holmes, Chief Information Officer, Office of Information Technology
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Alyssa Moon, Associate Director, Instructional Design and Development, WMUx
Sara Nelson, Assistant Vice President for Strategic Initiatives, Office of the Provost and Vice President for Academic Affairs
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Ryan Tay, Undergraduate student
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INTRODUCTION

The past academic year at Western Michigan University (WMU) witnessed an unprecedented integration of Artificial Intelligence (AI) tools across various dimensions of university operations. As AI technologies continue to evolve, their applications in higher education present both promising opportunities and unique challenges. The AD HOC Artificial Intelligence Committee, established for the 2023-2024 academic year, has dedicated itself to exploring, analyzing, and guiding the effective use of AI tools within the university's ecosystem. This report encapsulates the committee's efforts, findings, and strategic recommendations aimed at harnessing the potential of AI to enhance educational practices, streamline administrative processes, and elevate research capabilities.

EXECUTIVE SUMMARY

The AD HOC Artificial Intelligence Committee's year-end report offers a holistic view of the role and impact of AI technologies at Western Michigan University. Throughout the 2023-2024 academic year, the committee undertook a series of structured tasks designed to comprehensively assess and integrate AI tools within the university. Key activities included developing a unified definition of AI tools for WMU, completing an environmental scan of AI applications across campus, and reviewing best practices and ethical considerations associated with AI technologies.

Significant progress was made in several areas:

1. Unified AI Definition: A consensus was reached on a definition that acknowledges AI's broad capabilities, from machine learning to rule-based systems, emphasizing its role in automating tasks and enhancing productivity.
2. Environmental Scan: Through faculty surveys and interviews with key stakeholders, the committee identified current uses and potential expansions of AI tools in teaching, research, and administration, highlighting widespread engagement across faculties.
3. Best Practices and Ethical Considerations: The committee reviewed literature and current practices to propose guidelines that ensure ethical AI use, focusing on privacy, security, and fairness to prevent misuse and promote responsible deployment.

The committee recommends continued exploration and adaptation of AI strategies to keep pace with technological advancements. Key recommendations include:

- Ongoing Development and Oversight: Maintain the committee beyond 2024 to oversee AI initiatives and ensure alignment with academic and administrative goals.
- Investment in AI Resources: Allocate significant resources towards AI research and teaching to foster innovation and maintain competitive advantage.
- AI Integration in Curriculum: Develop and integrate AI-focused educational materials, training and workshops to prepare students for an AI-driven world.
- Ethical AI Framework: Support ongoing dialogue around ethical AI use at WMU that emphasizes a culture of continuous consideration and adaptation rather than imposing rigid rules. This approach fosters a collaborative environment where ethical challenges are addressed openly and constructively.

1.0 2023-24 CHARGES

Generative Artificial Intelligence (AI) tools are rapidly transforming Higher Education. These tools pose both opportunities and challenges for faculty, staff, and students. The benefits and barriers have the potential to impact multiple entities across campus. The Ad Hoc AI Committee explored how these tools (e.g., ChatGPT, Claude, Alphacode) are and/or will be used on campus in teaching, grant writing, research, student work, assessment, faculty development, and infrastructure. From the findings of this committee, we submit this final report to the Faculty Senate Executive Board at the end of the 2023-24 academic year with actionable recommendations including but not limited to needed academic policy considerations, implementation practices, potential misuse, ethics, and overall campus needs. (Role Statement)

2023-2024 Charges		**Action Steps**	**Status**
1	Develop a unified definition of AI tools for WMU.	● Scoping review of AI tools definitions ● Faculty Survey: AI @ WMU ● Development of unified definition	Completed pp.3-4
2	Complete an AI tools environmental scan across campus.	● Administered Faculty Survey: AI @ WMU ● Analyzed quantitative response data ● Analyzed qualitative (open) data ● Conducted interviews with stakeholders ● Compiled list of AI applications ● Scanned faculty research and creative activities on the topic of AI ● Academic integrity and artificial intelligence	Completed pp.4-47
3	Review the literature for AI tools best practices and cautions.	● Collected and organized relevant literature. ● Posted links on WMUx website for public access	Completed pp.48-52
4	Develop recommended actionable items and submit a final report to the Faculty Senate Executive Board.	● Recommendations are provided on p. X of this final report	Completed pp. 52-53
5	Review the scope and description of the committee's role statement and assess the effectiveness of the committee's practices. Determine if the committee should continue or be incorporated into an existing Faculty Senate council or committee.	● The committee completed its charges. We underscore in the unified definition of AI tools the importance of continuous evolution, assessment and adaptation in AI applications and governance. We therefore recommend the committee be continued for 2024-2025, and potentially officialized beyond.	Completed
6	Continuing/outstanding issues.	n/a	Completed

2023-24 CHARGES

1.1 A UNIFIED DEFINITION OF AI TOOLS FOR WMU

Based on the WMU faculty AI survey data and the themes identified by the committee, a unified definition of AI tools that integrates these perspectives is:

“Artificial Intelligence (AI) tools are advanced computational systems that exhibit human-like intelligence, characterized by their ability to mimic or emulate human cognitive processes. These tools operate on a spectrum of AI technologies, from machine learning—where they learn from data and experiences—to expert or rules-based systems, enabling them to make informed decisions and perform tasks efficiently. AI plays a crucial role in automating and assisting tasks that traditionally require human intelligence, significantly enhancing human productivity and capabilities. Furthermore, AI includes generative capabilities, allowing it to create novel content such as text, images, and other media, based on training data and existing patterns. It is essential to acknowledge the profound ethical and societal implications of AI, considering its impact on social norms, potential risks, and ethical challenges, such as issues of privacy, security, and fairness. This definition recognizes the complexity and evolving nature of AI, underscoring the importance of continuous assessment and adaptation in its applications and governance." (Ad Hoc Artificial Intelligence Committee, WMU Faculty Senate, 2023-2024)

2.0 ENVIRONMENTAL SCAN OF AI TOOLS ACROSS CAMPUS

An environmental scan is a systematic process used to collect and analyze external and internal data to better understand the current landscape of a particular area of interest. At Western Michigan University (WMU), we conducted an environmental scan of AI tools to gain insights into the uses, perception, and potential opportunities for artificial intelligence within the university setting. This comprehensive scan was accomplished through a series of structured activities: We administered a faculty survey titled "AI @ WMU" to gather direct input from instructors and researchers. The data collected from this survey were then analyzed, with both the quantitative response data and qualitative open-ended responses being evaluated for trends and themes. Additionally, we conducted interviews with key stakeholder groups to dive deeper into the specific needs and concerns within the community. A list of AI applications currently in use was compiled, providing a clear snapshot of existing resources and tools. Finally, we scanned faculty research and creative activities related to AI, further enriching our understanding of the scope of AI's integration into academic and research practices at WMU. This multi-faceted approach allowed us to construct a detailed picture of AI's role and future potential at the university.

2.1.0 FACULTY SURVEY ON AI: QUANTITATIVE ANALYSIS

Please click here for BI analytics dashboard of the survey results. A summary and interpretation of key findings is provided in the following sections.

2.1.1 DEMOGRAPHICS

The AI environmental scan survey received 152 responses, of which 137 were valid and complete. Figure 1 shows that the majority of respondents were from the College of Arts and Sciences (41.61%), followed by the College of Education (11.68%) and the College of Health and Human Services (11.68%). Approximately 23% of these respondents had done some work with AI. The average age of respondents was 52.58.

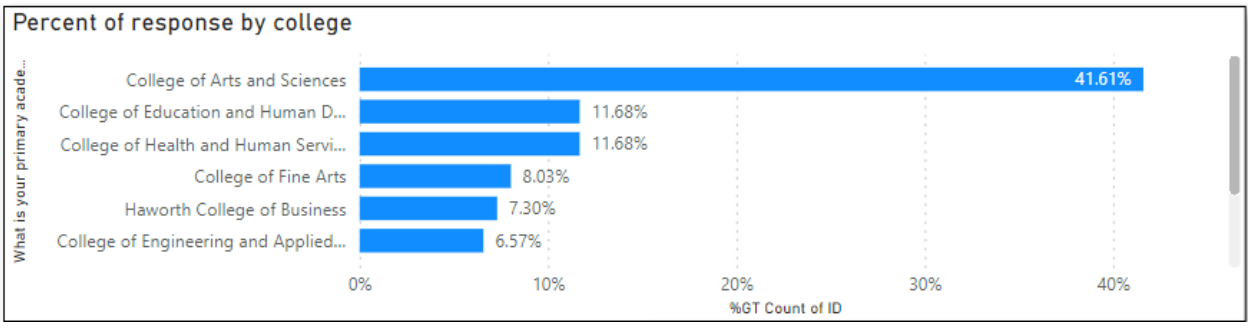


Figure 1 - Representation by College

2.1.2 DISRUPTION OF AI IN ONE'S FIELD

In this section, we report how many respondents considered AI to be disruptive in their fields. Since generative AI has attracted much attention recently, we asked two separate questions about how disruptive AI and Generative AI are in one's field.

The left side of Figure 2 shows that 40.88% of respondents believed that AI in general is disruptive in their fields. Please note that this includes all kinds of AI, not limited to just generative AI. The percentage rises to 75.19% (= 40.88% + 34.31%) after adding those who thought AI might be disrupting. The right side of the figure shows the levels of disruption Generative AI had on one's field. The scale ranges from 1 (no disruption) to 5 (very much). 16.06% of respondents rated Generative AI to be very disruptive (rating = 5). Slightly lower than one-third of respondents (31.39% = 16.06% + 15.33%) gave it either a 4 or a 5. Another one-third (34.31%) gave this question a 3 (neutral; neither disruptive nor non-disruptive).

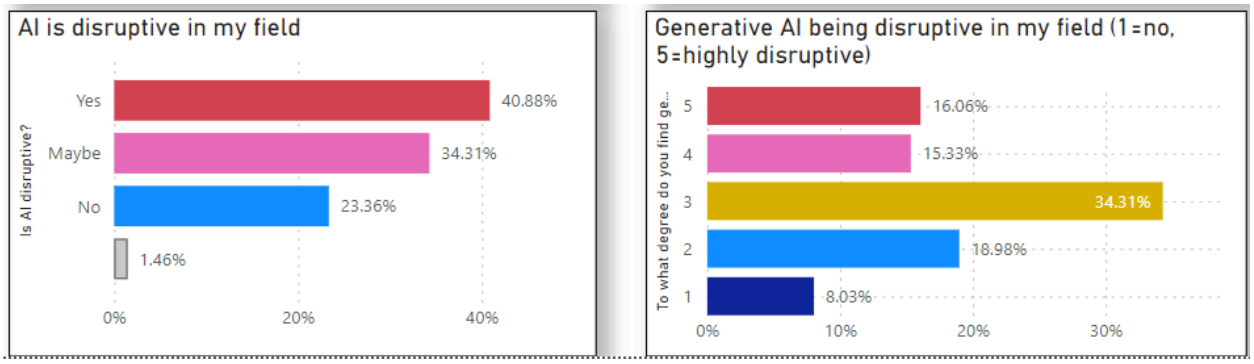


Figure 2: AI viewed as disruptive in one's view

Colleges vary across how they perceive AI to be disruptive. Figure 3 shows that AI was viewed to be most disruptive in colleges such as University Libraries (75%), College of Engineering and Applied Sciences (66.67%), Haworth College of Business (60%), and College of Education and Human Development (50%). Responses from other colleges ranged from 30.36% to 45.45%. Figure 4 shows the college breakdown for generative AI. Colleges that viewed generative AI to be most disruptive (rating = 5) are Haworth College of Business (22.22%), College of Education (21.43%), and College of Fine Arts (20.00%). Responses from other colleges ranged from 11.11% to 18.87%.

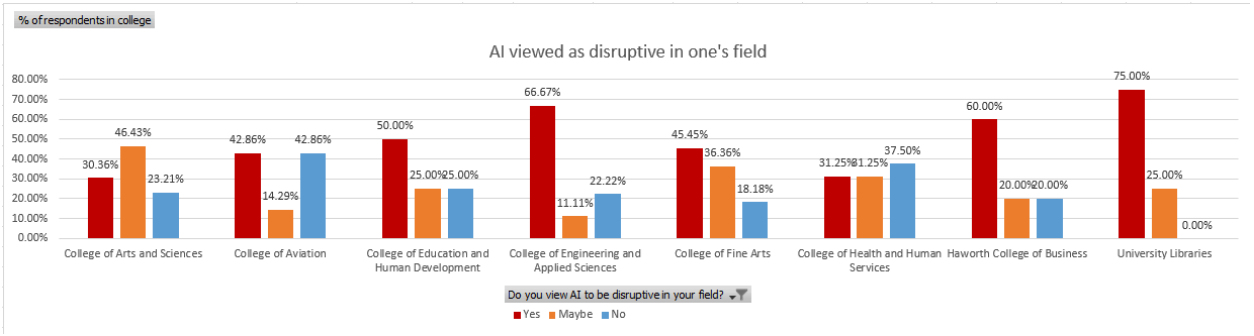


Figure 3: AI viewed as disruptive by college

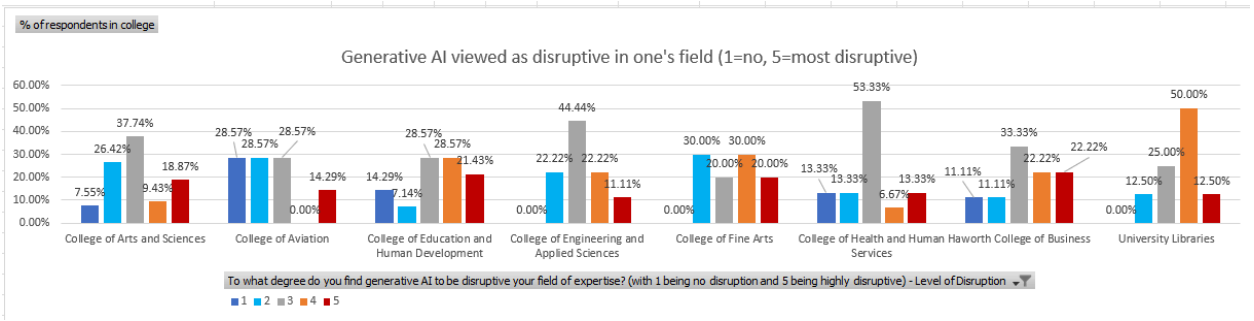


Figure 4: Generative AI viewed as disruptive by college

Key Insights:

1. Figure 2 shows that a large proportion of respondents (75.19% = 40.88%+34.31%) believed that all forms of AI (not just Generative AI) were possibly disruptive. Despite the popularity and interest in Generative AI, the WMU community was telling us that attention should be paid to all forms of AI.
2. WMU AI experts were consulted to extract major AI branches from the literature. This list of AI branches could help the WMU community see the forms of AI potentially beneficial to their research and teaching. For example, text-based generative AI (e.g., ChatGPT, Google Gemini, etc.) falls under the natural language processing branch.
3. Figures 3 and 4 show that the view of disruption varies across colleges and also between AI vs. Generative AI. When crafting support, one is recommended to address a wide range of needs across disciplines from the WMU community. This includes teaching and research needs for resources to address technical, behavioral, societal, psychological, etc. implications of AI.
4. Please note that we did not ask how respondents viewed non-generative AI to be disruptive. The percentages shown for generative AI (Figure 4) should be viewed with caution since one could also consider multiple other forms of AI to be disruptive as well.

2.1.3 CONCERNS AND LEARNING NEEDS

Figure 5 shows concerns and AI learning needs. The left chart shows that the majority of respondents were concerned about Quality of Education (55.36%) and Biases (23.21%). When it comes to AI learning, the middle chart of Figure 5 shows that AI Capabilities and Limitations (30.36%), Teaching – Assessment (12.50%), Deep Training (7.14%) and Research (7.14%) are among the top needs. However, 'Nothing' (10.71%) is also among the top selections, which indicates that more than 10 percent of respondents were either comfortable enough with AI or had no need to learn AI. The right chart in the figure shows that many respondents were at least moderately familiar with AI (43.8% = 2.19% + 8.03% + 33.58%). Another

large group (40.88%) showed that they were slightly familiar with AI. 14.06% were not familiar with AI at all.

Concerns	No. of Responses	%
Quality of Education	31	55.36%
Bias and Fairness	13	23.21%
Data Privacy	2	3.57%
Ethical Dilemmas	2	3.57%
Technical Competence	2	3.57%
Eroding Academic Freedom	1	1.79%
Faculty Training	1	1.79%
Lack of Transparency	1	1.79%
Loss of Personalized Learning	1	1.79%
Other	1	1.79%
Total	**56**	**100.00%**

AI learning needs	No. of Responses	%
Capabilities and limit...	17	30.36%
Teaching - Assessment	7	12.50%
Nothing	6	10.71%
Deeper training	4	7.14%
Research - Specifics	4	7.14%
Introduction to AI	3	5.36%
Use of AI by peers	3	5.36%
Don't know	2	3.57%
Other	2	3.57%
Research - General	2	3.57%
Resources and supp...	2	3.57%
Administrative work	1	1.79%
Total	**56**	**100.00%**

Familiarity	No.	%
	1	0.73%
Extremely familiar	3	2.19%
Very familiar	11	8.03%
Moderately familiar	46	33.58%
Slightly familiar	56	40.88%
Not familiar at all	20	14.60%
Total	**137**	**100.00%**

Figure 5: Concerns and learning needs

After breaking down learning needs by AI familiarity in Figure 6, further insights are uncovered. The AI capabilities and limitations category is of most interest to those who are 'moderately familiar' and 'slightly familiar' with AI. The learning interest for those who are familiar with AI spans research, capabilities and limitations, teaching assessment, how AI is used by peers, and other specific needs.

Familiarity	Extremely familiar		Very familiar		Moderately familiar		Slightly familiar		Not familiar at all		Total	
AI learning needs	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Capabilities and limitations			1	16.67%	10	47.62%	6	26.09%			17	30.36%
Teaching - Assessment			1	16.67%	1	4.76%	5	21.74%			7	12.50%
Nothing					2	9.52%	2	8.70%	2	50.00%	6	10.71%
Deeper training					3	14.29%	1	4.35%			4	7.14%
Research - Specifics	2	100.00%			1	4.76%	1	4.35%			4	7.14%
Introduction to AI							2	8.70%	1	25.00%	3	5.36%
Use of AI by peers			1	16.67%	1	4.76%	1	4.35%			3	5.36%
Don't know							2	8.70%			2	3.57%
Other			2	33.33%							2	3.57%
Research - General					1	4.76%			1	25.00%	2	3.57%
Resources and support			1	16.67%	1	4.76%					2	3.57%
Administrative work							1	4.35%			1	1.79%
Advising							1	4.35%			1	1.79%
Teaching - Learning					1	4.76%					1	1.79%
Teaching & Research - Specifics							1	4.35%			1	1.79%
Total	**2**	**100.00%**	**6**	**100.00%**	**21**	**100.00%**	**23**	**100.00%**	**4**	**100.00%**	**56**	**100.00%**

Figure 6: Learning needs by AI familiarity

Key Insights:

1. 'AI capabilities and limitations' is of most interest to the majority of respondents. Since 'Introduction to AI' is a separate category in this survey, the AI capabilities and limitations that the respondents wanted to learn were likely beyond the introductory topics. This shows that training resources and instructional assistance will better help the WMU community if they go beyond the basic introduction of how to use AI, and more into why it works/doesn't work, and alternative solutions instead. Trainers or mentors with a wide range of AI expertise (e.g., technical, social, behavioral, etc. expertise) will help.
2. The above point is echoed by the 'Deep learning' category being the second most expected category for those who are moderately familiar with AI.
3. 'Teaching – Assessment' is among the top categories for those who were slightly familiar with AI, but not much so for people with other AI familiarity levels.

4. Those who are familiar with AI expect support to address research and other specific needs.

2.1.4 TRAINING AND SUPPORT NEEDS

The previous section shows the learning needs of the WMU community. Despite the availability of free public resources that can address some of these learning needs, some of these needs will likely be fulfilled with proper support. Therefore, we asked the following two additional questions to identify the areas of support needs: 'What kind of AI training would you like to receive?' and 'I would like to use AI in support of the following.' Figure 7 shows that a large proportion of training needs are in teaching (71.53%), followed by research (48.18%) and administrative activities (31.39%). When it comes to support needs, 66.42% of respondents wanted it for teaching, 47.45% wanted it for research and then 27.74% for administrative activities. Selection of multiple categories was possible in the survey. This is the reason the sum of percentages exceeds 100%.

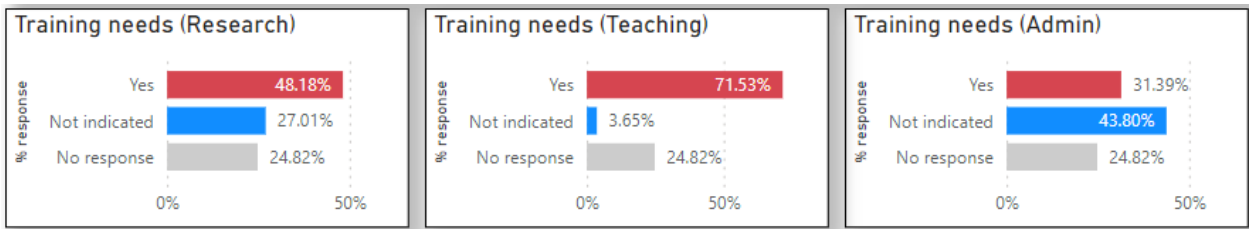


Figure 7: Training needs

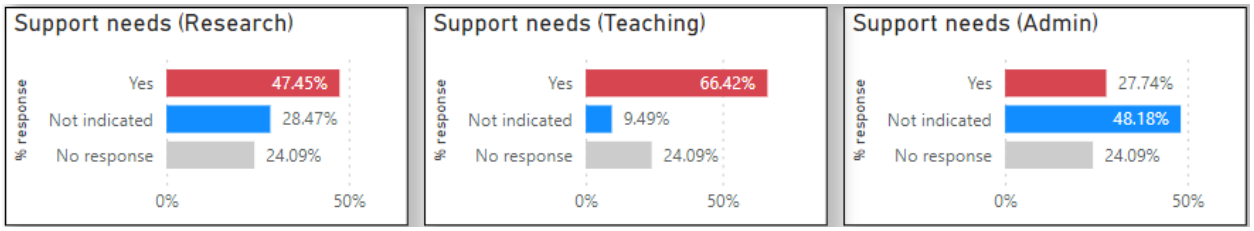
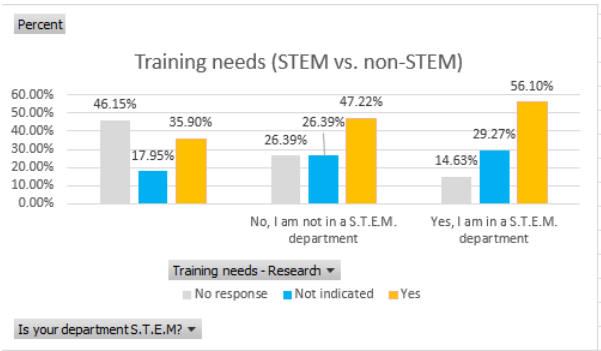


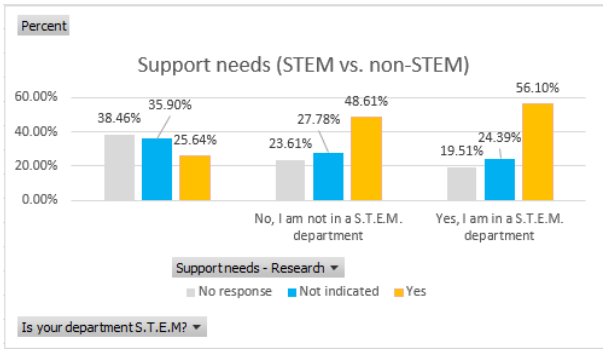
Figure 8: Support needs

Table 1 shows that STEM departments needed more research training (STEM:56.10% vs. non-STEM: 47.22%) and support (STEM: 56.10% vs. non-STEM: 48.61%) for research. The same goes for teaching training (STEM: 85.37% vs. non-STEM: 66.67%) and support (STEM: 75.61% vs. non-STEM: 61.11%). The survey let the respondents choose any combination of the three categories (teaching, research, and administrative activities). The 'not indicated' response indicates the category was not chosen by the respondent. For example, 15.28% of non-STEM respondents did not pick teaching support, but 61.11% of them did. 'no response' indicates that the respondent did not pick any category.

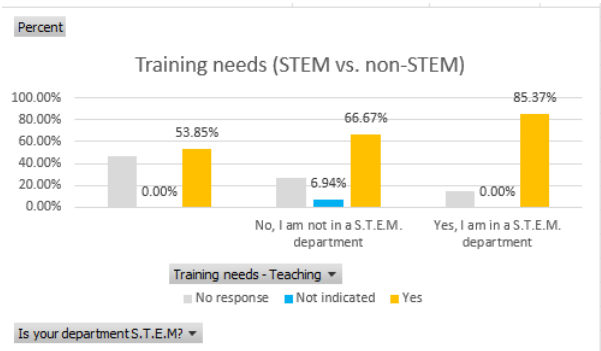
Table 1: Training and Support needs (STEM vs. non-STEM)

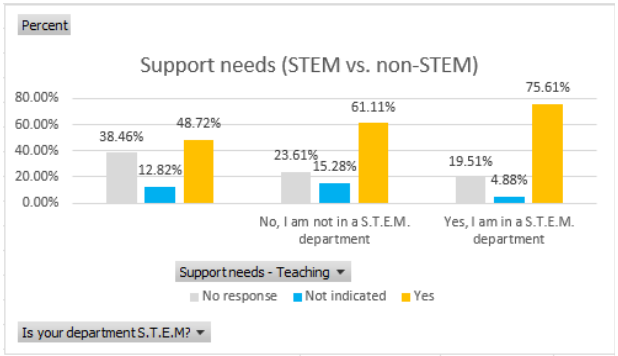
Research





Teaching





Key Insights:

1. The results show that faculty would like to have AI training and support available for teaching. Please note that the questions asked about their needs for AI in general. They are not about any specific form of AI.
2. Among the three areas that we asked in the survey, training and support needs for teaching received the most votes, followed by research and administrative activities.
3. As shown in Table 1, both STEM and non-STEM departments wanted training and support, with the STEM departments having a higher percentage of needs. WMU support and training (e.g., resources, WMUx, etc.) may want to consider the statistics to align their support goals.
4. Since the sample size is not big in this first round of survey administration and AI technology changes rapidly, it is recommended that the Faculty Senate continues to survey the WMU community to obtain a broader picture of needs.

2.2.0 FACULTY SURVEY ON AI: QUALITATIVE ANALYSIS

The following sections report qualitative analysis of faculty responses to open-ended survey questions concerning their personal understanding of AI and AI tools, whether and how they have used AI in their research, administrative work, and/or teaching, areas in which they would like to learn more, and additional comments/concerns. The committee performed open and axial coding to suggest and identify themes based on meaning, sentiment, and stance. Open coding is the first step, where researchers break down textual data into discrete parts. Axial coding is the next step, where researchers examine the data to identify relationships between categories and subcategories. Committee members independently coded responses into themes and then compared their decisions, iteratively refining the number of

categories and their definitions. Initial intercoder reliability was adequate (95% or higher) and disagreements were resolved verbally to reach a coding solution.

2.2.1 FACULTY DEFINITIONS OF AI

Faculty respondents were asked “How do you define AI?” Of the 129 responses, the largest proportion focused on AI’s emulation of human-like intelligence and cognition, followed by a focus on machine learning (how AI often works), its functional capacity to automate and assist mundane tasks, its generative capacity, and the ethical social implications of AI. Below is a definition of each theme and two examples.

Theme 1: Human-like Intelligence (*n* = 41, 32%)
Definition: This theme focuses on describing AI as a form of computer intelligence formulated to mimic or emulate human thought processes.

1. “Emulation of human brain activity by a machine (computer)”
2. “a computer system that processes information in a way that approximates human intelligence”

Theme 2: Machine Learning (*n* = 29, 22%)
Definition: This theme highlights AI's capacity to learn from previous experiences or data and make decisions or perform tasks based on that learning. It may also encompass the computational aspect of AI, including algorithms and data processing.

1. “An extension of estimation theory and optimization concepts from adaptive filters and systems with 10's to 100's of adaptive weights to processing systems of 100,000 weights or more based on extensive training data sets using training based on backpropagation of computed optimization or estimation errors.”
2. “A machine capable of self-learning through examples or failures.”

Theme 3: Automation and Assistance (*n* = 23, 18%)
Definition: This theme centers on AI's role in automating tasks and providing assistance to humans. It includes AI's ability to perform tasks that would typically require human intelligence and enhance human productivity.

1. “Technologies that once developed by human's (programmed), provide assistance to human's in response to human needs.”
2. “a tool to support my work and students' work”

Theme 4: Generative AI (*n* = 20, 16%)
Definition: This theme revolves around AI's ability to generate content, often based on existing data or patterns. It includes the concept of AI producing text, images, or other forms of content, which can be both novel and based on training data.

1. “Content that is generated entirely or in part by a computer or algorithm and not human work alone”
2. “Currently, it's software that produces generative content, i.e., has unique interactions with users based on the material it's been trained on.”

Theme 5: Ethical and Societal Implications (*n* = 8, 6%)

Definition: This theme discusses the ethical and societal implications of AI. It considers AI's impact on society, potential threats, and ethical concerns associated with its use, such as plagiarism or misuse.

1. “A temptation to plagiarze”
2. “A threat to human existence.”

Theme 6: Unsure/Unwilling to Define (*n* = 8, 6%)

1. “I don't know much about it. I know AI stands for Artificial Intelligence.”

2.2.2 FACULTY DEFINITIONS OF AI TOOLS

When asked “How do you define AI *tools*?,” most faculty respondents provided examples of specific applications. As evidenced in the chart below, mentions of ChatGPT dominated, followed by Claude, DALL-E, and Bard, demonstrating a strong association with generative AI.

1.	**ChatGPT:**	**57 mentions**
2.	Claude:	16 mentions
3.	DALL-E:	6 mentions
4.	Bard:	6 mentions
5.	Grammarly:	2 mentions
6.	Siri:	2 mentions
7.	Lumen:	1 mention
8.	DEVONthink:	1 mention
9.	HeyGen:	1 mention
10.	OpenArt:	1 mention
11.	Research Rabbit:	1 mention
12.	Elicit:	1 mention
13.	Bing AI:	1 mention
14.	Scispace:	1 mention
15.	Google maps:	1 mention
16.	Alexa:	1 mention
17.	GitHub:	1 mention
18.	Synthesia:	1 mention
19.	AlphaCode:	1 mention
20.	Cohere Generate:	1 mention
21.	StyleGan:	1 mention

2.2.3 USE OF AI TOOLS IN RESEARCH OR ADMINISTRATIVE WORK

Only a small percentage of faculty respondents reported current use of AI tools in their research and/or administrative work (*n* = 33). These uses of AI for research/administration were grouped into five themes. Writing assistance was the most prevalent, but AI tools were also used to generate ideas, perform background research or play around. A few faculty reported near ubiquitous use across daily tasks.

Theme 1: Writing (*n* = 13)
Using AI tools to assist in various writing-related tasks, including drafting documents, emails, publications, and generating content for different purposes.

Theme 2: Idea Generation (*n* = 5)
Employing AI for brainstorming, generating ideas, and assisting in the creative process.

Theme 3: Background Research (*n* = 2)
Using AI to gather information, perform background research, and search for data on specific topics.

Theme 4: Exploration or Play (*n* = 2):

Utilizing AI for exploration, experimentation, or casual use to see what AI-generated content or responses may be.

Theme 5: Ubiquitous Use (*n* = 2):
Incorporating AI into various aspects of daily work, research, and administrative tasks, demonstrating a wide-ranging and constant reliance on AI technologies.

2.2.4 USE OF AI TOOLS IN TEACHING

Approximately 25% of responding faculty (*n* = 33) reported having used AI in their teaching. Common uses pertained to the development of course materials and activities and to educational demonstrations. Fewer reported using AI as a topic of discussion, to detect plagiarism, or to help in course interface design.

Theme 1: Develop discussions, class activities, assignments, and exams (*n* = 12, 36%):
Incorporating AI into course content and assignments, including developing class discussions, interactive exercises, and assignments, and using AI to enhance student engagement and output. It involves creating activities and assessments that leverage AI capabilities.

1. I have used it to develop discussions and class activities with moderate success. I feel like the output tends to be overly vague, so either I'm not prompting it well or its not trained well on the areas I am asking it to produce things on.
2. Research methods - graduate class for the behavior analysis program in the psychology department. Students were worried at first, but took to it quickly. They used it to enhance their final project and paper. I think it worked very well.

Theme 2: Demonstrate Applications (*n* = 10, 30%):
Using AI tools to demonstrate and teach students how to use AI in various contexts, such as writing improvement, proofreading, business communications, creative brainstorming, and resource management.

1. informally demonstrated how to use ChatGPT to improve essays and proofread statistical programming
2. In both CS2230 and CS3240 I use chatgpt or sometimes github copilot to demonstrate how AI technology for coding assistance can be useful or sometimes very, very wrong

Theme 3: Topic of Discussion (*n* = 8, 2.5%):
Integrating AI as a topic of discussion within the curriculum, discussing its societal ramifications, practical applications, limitations, and advantages across various courses. It serves as a subject for classroom discourse and exploration.

1. teaching course focused on AI
2. I have integrated AI into the curriculum of all of my classes. Students are enthusiastic to discuss the societal ramifications and to learn the practical applications.

Theme 4: Plagiarism Detection (*n* = 2, .05%):
Utilizing AI tools for plagiarism detection and grading student essays and assignments, ensuring academic integrity in the classroom and streamlining the grading process.

1. For teaching, I have only used AI detectors for grading student essays and other work. So far it's been Digital Video Concepts ART 2290, but I plan to further utilize these tools in my video art classes.
1. I have not integrated it into my curriculum, but I do occasionally use it to see how it might respond to questions I pose to my students.

Theme 5: Course Interface Design (*n* = 1, .03%):
Using AI for generating images and content to enhance the design of course interfaces, especially in e-learning environments, to create visually appealing educational materials.

1. I did not integrate AI into my curriculum, but I do find AI useful for generating images for banners in e-learning. This could apply to any course.

2.2.5 DESIRE TO LEARN MORE ABOUT INTEGRATION OF AI TOOLS

What would faculty like to learn about integrating AI into teaching, research, or administrative work? A broad range of topics were listed in their responses. Among the most popular were applications for teaching and learning, beginner orientations, and recommendations for AI tools. Some faculty also desired greater information about existing campus resources, consideration of ethics and social implications, knowledge about how others are using AI, and guidance on rules and regulations.

Theme 1: Teaching & Learning Strategies (*n* = 11):
Expressing a desire to learn about harnessing AI technologies for enhancing teaching and learning, including tracking trends, providing homework and feedback, using AI for data collection, content generation, and test creation, as well as exploring ways to teach fundamentals effectively while integrating AI.

1. I'd like to learn more about how to harness the power of AI technologies to help students learn and do research.
2. How can AI help students actually learn content better (not just complete assessments better)?

Theme 2: Guidance on Where to Begin (*n* = 9):
Acknowledging a need for direction on how to start integrating AI into their educational practices, research, and administration. Seeking advice on prioritization, training, and understanding the impact of AI on various aspects.

1. I am at the point where I don't know what I don't know, so I need a great intro and can go from there.
2. I truly don't know. The field is changing so much I wouldn't know where to start.

Theme 3: AI Tools Recommendations (*n* = 8):
Seeking information and recommendations about the best AI tools for specific tasks, such as searching and summarizing scholarly literature, time management, administrative work, and practical tool usage.

1. I would like to identify what are the best generative AI tools that are out there for searching and summarizing the scholarly literature. There are a number of new scholarly AI search tools out there - so many that it is hard to test them and compare their effectiveness.

Theme 4: Campus Resources (*n* = 6):
Desiring insights into the resources available for integrating AI into teaching, research, and administration, including tips and tricks for content creation, information about visualizations and video options, and awareness of campus resources.

1. Talk is cheap. Let's pay forsome AI applications and teach everyone how to use them. There is a serious disconnect between those of us who teach the students and the people in the administration building.
2. I would like to know what resources are available on campus beyond the basic overviews.

Theme 5: Ethical Use & Social Implications (*n* = 5):
Concerned with understanding the ethical boundaries of AI use and the potential social implications, including addressing issues of plagiarism and cheating, maintaining ethical practices, and considering AI's impact on late adolescent development.

1. How to keep up with trends while maintaining ethical boundaries
2. how to spot cheating/AI essay papers from students

Theme 6: What others are doing (*n* = 5):
Interested in learning about the practices and experiences of others who have integrated AI into their courses, research, and administrative tasks, and seeking examples of both successful and unsuccessful applications.

1. I would like to learn about practices that others are using in their courses so that I can determine for myself whether those would be practices I'd be interested in using as well.
2. There are so many generative AI technologies that it would be great to have some examples from every discipline (good and bad) because we don't all have time to try everything out, but it would be great to be able to better understand the breadth of applications, uses, and limitations.

Theme 7: University Policies & Regulations (*n* = 3):
A focus on understanding university policies and regulations related to AI usage, especially concerning student conduct, policing AI use, and concerns about the enforcement of AI integration.

1. I would like to learn how the Office of Student Conduct is appropriately advising students of the consequences of AI. As of now it appears to be a lassiez-faire attitude and taking too much of its direction from wmuX who have a clearly stated objective of forcing faculty into using AI in their classrooms, at times insulting faculty members for not 'getting with the times.
2. I'm learning already, getting release time to do it is the challenge.

2.2.6 FACULTY COMMENTS AND CONCERNS ABOUT AI

Faculty spontaneously expressed a number of additional concerns or comments about AI at WMU and beyond. Several patterns and themes were identified:

Theme 1: Plagiarism and Ethical Concerns

Many respondents express concerns about plagiarism and unethical use of AI tools, particularly by

students. They worry that AI can facilitate cheating and undermine the value of education. Some are concerned about the ethical implications of AI-generated content and the need to address academic integrity.

1. I am concerned about how to approach students using AI in activities that I want them to do themselves, especially writing. I am concerned that I won't always be able to identify the use of AI tools, or that students will overly rely on these tools and not learn the skills I am trying to teach them or will rely on false and/or biased AI-generated 'information.'
2. Students have been turning in assignments where they have admitted to using Chat GPT and I do not have confidence in their level of education when they use that.

Theme 2: Faculty Workload and Training

Several comments reflect concerns about the workload implications of integrating AI into teaching and the need for training. Some suggest that AI training should be optional rather than mandatory, allowing faculty to focus on their primary responsibilities.

1. I'm learning already, getting release time to do it is the challenge.
2. Please make trainings optional (opt in) so that faculty in fields that are less affected can have time to do their jobs without interruption.

Theme 3: Pro-AI Bias and Imbalance

There is a perception among some respondents that the survey and the university's approach are biased towards promoting AI integration without adequately considering the responsibilities of students, imbalances in disciplines, and the potential negative consequences of rapid adoption.

1. This survey is absurdly biased towards the promotion and integration of AI into the university. Nothing about the responsibilities of students for ethical conduct, nothing about the imbalances it creates in disciplines, nothing about the fact WMU is rapidly becoming more technocratically unequal.
2. I see a lot of AI-related education coming out of WMUx right now, trying to position WMU as a leader in AI. The one webinar I was interested in attending was very different than what I expected and made me question whether WMUx is maybe getting ahead of themselves by being just barely more knowledgeable about some of these topics than those who are coming to learn.

Theme 4: Academic Quality

Many respondents express concerns about the potential impact of AI on the quality of education. They worry that convenience might replace hard work and that AI reliance could lead to a decline in the quality of academic learning.

1. I mainly worry about the impact that AI will have on the quality of education as convenience replaces hard work in education. This is not only an AI issue -- online classes have also significantly lowered student engagement and the quality of academic learning here at WMU.
2. AI is necessary but inroads to teaching and learning must be carefully analyzed as to assumptions, transparency, ethicality (including privilege and 'success' rubrics) and positive and negative implications.

Theme 5: Transparency and Accountability

Some respondents emphasize the importance of transparency in AI tools and the need to help students critically assess AI-generated content. They also mention the need for accountability in AI use.

1. Like any technology, AI is not going away, so part of the work we have to do is teaching students how to use it to more effectively critique what AI configures.
2. University support for AI detection, and a coherent university level policy on AI and academic integrity would go a long way here. Also, integrating AI-detection into Salesforce to detect AI in applications would help a lot.

Theme 6: Academic Policies

Several comments highlight the importance of university policies and regulations regarding AI use, especially in maintaining academic integrity and preventing misuse.

1. I would like to learn how to police its use on the part of my students. OFD has a variety of workshops on this topic, but they all seem to start with the assumption that participants are on board with its use and potential.
2. I would like to learn how the Office of Student Conduct is appropriately advising students of the consequences of AI.

Theme 7: General Concerns about AI

Some respondents express broader concerns about the advancement of AI technology, including its potential uncontrollability and the need for responsible development and regulation.

1. This is a difficult question. I hope that the Faculty Senate will think carefully before promoting General AI to the WMU community.
2. I fear what AI will do to academia as a profession. We review professional manuscripts and grant proposals with the understanding they are being submitted by individuals who are sharing their own ideas.

2.2.7 HOLISTIC INSIGHTS FROM QUALITATIVE SURVEY DATA

Based on the qualitative analysis of faculty responses regarding their experience and perspective on AI at WMU, the following key insights have emerged as desirable courses of action:

1. **Develop AI Literacy Programs:** Offer comprehensive AI literacy and ethical usage programs tailored to the diverse needs of faculty across disciplines, focusing on practical applications in teaching, research, and administration.
2. **Curate and Share AI Tools:** Create a curated list of recommended AI tools specific to academic and administrative functions, supported by clear guidelines on evaluating their effectiveness and ethical implications.
3. **Implement Flexible AI Training:** Introduce optional AI training that respects faculty workload and relevance to different academic fields, ensuring that it enhances rather than burdens faculty responsibilities.

4. **Establish Policies and Support for Ethical AI Use:** Develop clear policies to promote the ethical use of AI, focusing on academic integrity and the proper use of AI-generated content. Provide robust support structures, including technical assistance and resources for effectively integrating AI.
5. **Monitor and Assess AI's Impact:** Continuously evaluate the impact of AI on educational quality and student engagement, and facilitate an ongoing dialogue within the academic community about the potential, challenges, and societal implications of AI technologies.

2.3 INTERVIEWS WITH SENIOR ADMINISTRATORS AND STAFF REGARDING AI AT WMU

The following sections report qualitative analysis of senior administrators and staff interviews of questions concerning their personal understanding of AI and AI tools, whether and how they have used AI in their research, administrative work, and/or teaching, areas in which they would like to learn more, and additional comments/concerns. The committee performed open and axial coding to suggest and identify themes based on meaning, sentiment, and stance.

2.3.1 SUMMARY OF SENIOR ADMINISTRATOR INTERVIEWS

Interviews with 10 senior administrators at Western Michigan University (WMU) reveal a spectrum of awareness and understanding of artificial intelligence (AI), indicating a need for expanded educational efforts to raise AI familiarity across the board. Administrators share a vision of AI shaping WMU's strategic future by enhancing educational outcomes, research capabilities, and societal contributions over the next 5-10 years. To realize this vision, the university is actively integrating AI into its educational practices through workshops and development committees, aiming to reframe AI as a beneficial educational tool rather than a mere facilitator of academic dishonesty.

Challenges such as resistance to change and the need for ethical AI integration persist, alongside opportunities to improve educational and research practices, promote equity and inclusion, and prepare students for an AI-driven job market. AI is also expected to enhance operational efficiency within the university, contributing to more effective resource allocation and innovative administrative processes. Furthermore, WMU is embracing a role as a community leader in AI education, which supports regional technological advancement and economic growth.

The full potential of AI within WMU hinges on significant investments in infrastructure and skill development for both faculty and students. This includes fostering a supportive culture for AI learning and application and providing the necessary resources for effective AI integration into academic and administrative operations. These initiatives underscore WMU's commitment to leveraging AI for strategic advantage and societal benefit, reflecting a comprehensive approach to embracing technological advancement.

2.3.2 SENIOR ADMINISTRATOR INTERVIEW THEMES

Theme 1: Awareness and Understanding (How familiar are you with AI and its potential applications at WMU?)

> **Educational Integration and Faculty Development:** There's a concerted effort to integrate AI into educational practices, highlighted by workshops, panels, and faculty development committees. This theme encompasses the desire to shift perceptions of AI from a potential tool for cheating to a beneficial educational resource.
>
> **Awareness and Engagement Levels:** The interviewees demonstrate varying levels of awareness and engagement with AI, from moderate information levels and workshop attendance

to hands-on experimentation with AI tools. This variation underscores individuals' diverse entry points and interactions with AI technology.

Support and Adoption Barriers: A common concern is the challenge of adopting new technologies, emphasizing the need for adequate support mechanisms. The proposal for a student-led support initiative indicates a creative approach to overcoming these barriers, highlighting the importance of community and support in technological integration.

Potential for Efficiency and Productivity: There's a shared belief in AI's potential to improve productivity and efficiency, especially in resource-constrained environments like universities. However, there's also a cautious approach to adopting AI solutions, recognizing that the technology is not yet fully mature or universally applicable.

Technological Optimism and Cautiousness: Interviewees express optimism about AI's potential, coupled with a cautiousness stemming from current technological limitations and the need for responsible implementation. This dual perspective reflects a balanced approach to embracing AI, acknowledging its potential and challenges.

Theme 2: Vision and Strategy (How do you envision AI impacting the strategic direction of WMU in the next 5-10 years?)

Policy and Ethical Guidelines: Clear policies and ethical guidelines for AI use across various facets of campus life, including academic and research activities, are necessary. This theme underscores the balance between leveraging AI, maintaining academic integrity, and ensuring that AI use aligns with the institution's values and standards.

Curriculum and Faculty Development: Integrating AI into the curriculum and faculty development programs is essential. This involves updating existing courses to include AI content and recruiting faculty with expertise in AI. The aim is to prepare students for a future where AI is ubiquitous, ensuring they are both knowledgeable about and capable of engaging with AI technologies in their respective fields.

Recruitment and Student Preparation: AI has the potential to serve as a recruitment tool. By offering cutting-edge programs and curricula that incorporate AI, this theme highlights the institution's role in preparing students for the job market, where AI skills are increasingly valued. It also touches on the strategic use of AI in admissions processes to identify prospective students.

Operational Efficiency and Innovation: The anticipation is that AI will enhance operational efficiency and enable the institution to overcome current limitations in resource allocation, administration, and academic delivery. This theme suggests that AI could facilitate more streamlined and effective processes, from administration to research, thereby freeing up resources for other priorities.

Cultural and Psychological Impacts: Concerns and curiosity about the broader cultural and psychological impacts of rapid technological adoption, specifically focusing on how AI might affect creativity, human interaction, and the intellectual contributions of humanities and social sciences. This theme reflects a deep interest in the existential implications of AI, emphasizing the need for critical engagement with technology rather than passive acceptance.

Strategic Positioning and Mission Alignment: WMU must strategically position itself concerning AI, leveraging the technology to advance the institution's mission while avoiding potential pitfalls. This involves a proactive approach to integrating AI to enhance educational outcomes, research capabilities, and societal contributions, ensuring that technology serves the institution's goals rather than dictating them.

Theme 3: Educational Integration (What is your perspective on AI being integrated into the curriculum and research programs at WMU?)

AI as an Educational Tool: There's a consensus that AI should be viewed as a tool within the educational landscape, similar to the introduction of calculators. This theme emphasizes teaching students how to use AI effectively and ethically, suggesting that AI could enhance learning without replacing traditional methods. The focus is on leveraging AI to support and augment the learning process.

Curriculum Integration and Faculty Development: Interviewees express the need for AI to be integrated into existing courses rather than creating new ones centered around AI. This approach requires faculty to be educated on AI's capabilities and limitations, ensuring they can effectively incorporate AI into their teaching. The emphasis is on infusing AI into the curriculum to enhance educational objectives and outcomes.

Concerns Over Dependence and Ethical Use: There is a notable concern about potential over-reliance on AI, with some interviewees worrying that it might lead to a generation of learners who lack critical thinking skills or the ability to think independently. The importance of educating students and faculty on the ethical use of AI and ensuring that AI is used as a supplement to human intelligence rather than a replacement is highlighted.

AI's Role in Research and Scholarship: Interviewees recognize AI's potential to impact various aspects of academic research, from operational efficiencies to research integrity. They underscore the challenge of ensuring that AI aids in the research process without compromising the quality or integrity of scholarly work. There's a call for careful consideration of how AI-generated content is used in academic publications and proposals.

Community Conversations and Policy Development: The need for ongoing community dialogue about AI's role in education and research is emphasized, suggesting that policy development around AI use should be a collective effort involving various stakeholders. This theme points to the importance of establishing clear guidelines and standards for AI use that align with institutional values and academic integrity.

Preparing Students for the Future: There is a strong sentiment that integrating AI into education is essential for preparing students for a future where AI is ubiquitous. By teaching students how to leverage AI effectively, the institution can ensure that graduates are equipped with the skills and knowledge necessary to succeed in an increasingly AI-driven world.

Strategic and Innovative Thinking: Interviewees suggest that WMU must think strategically about AI, using it as a means to innovate and enhance its educational and research missions. This involves considering AI's broader implications for teaching, learning, and scholarship and ensuring that its integration supports the institution's long-term goals and objectives.

Theme 4: Challenges and Opportunities (What do you perceive as the biggest challenges and opportunities in adopting AI technologies at WMU?)

Resistance to Change and Cultural Adaptation: A significant challenge identified is the institutional culture of resistance to change. Overcoming this barrier requires fostering an environment that encourages adaptation and embraces AI as a beneficial tool rather than a threat. This theme underscores the need for cultural shifts toward acceptance and innovative use of AI across campus facets.

Ethical Use and Academic Integrity: Concerns about the ethical use of AI, particularly concerning academic integrity and the potential for cheating, are prominent. Addressing these concerns involves developing clear guidelines for AI's appropriate use, including citation practices and distinguishing between student-generated work and AI assistance.

Faculty Buy-in and Interdisciplinary Collaboration: Securing faculty buy-in and fostering interdisciplinary collaboration represent both a challenge and an opportunity. Creating low-risk environments for faculty to experiment with AI and integrating AI into curriculum and research require collaborative efforts across disciplines.

Recruitment and Retention of Expertise: The competitive nature of recruiting and retaining faculty with AI expertise is a concern, given the high demand for such individuals. Strategies to attract and support faculty in this area are crucial for WMU's positioning in AI adoption.

Societal and Critical Thinking Implications: Preparing students to navigate an AI-influenced society, including understanding deep fakes and enhancing critical thinking skills, is seen as both a challenge and an opportunity. This necessitates incorporating AI literacy into the curriculum to ensure students are well-equipped to discern and critically evaluate information.

Leveraging AI for Enhancement and Innovation: AI offers opportunities to enhance educational and research practices, streamline operations, and foster innovation. Experimenting with AI in pedagogy, research, and administrative processes can lead to improved efficiency and novel approaches to academic challenges.

Addressing Equity and Inclusion: Addressing the biases encoded within AI and their impact on equity and inclusion is a crucial challenge. Efforts to mitigate these biases and ensure AI technologies do not perpetuate existing societal inequalities are essential. This includes critical scrutiny of the data AI models are trained on and awareness of the false objectivity computers might project.

Theme 5: Future Workforce (Is WMU preparing students for an AI-driven workforce?)

Awareness, Education, and Cultural Shift: There's a recognition of the need for faculty and staff to become more educated and comfortable with AI technologies. This foundational understanding is seen as crucial not just for their professional development but also for ensuring that misconceptions and fears about AI do not trickle down to students. The emphasis is on demystifying AI by spreading awareness about its capabilities and limitations, aiming to foster a culture that embraces technological advancements rather than fearing them.

Institutional Strategy and Support Mechanisms: The interviews highlight a perceived gap in the institutional strategy for effectively integrating AI education into the curriculum. There's an acknowledgment that students currently may need more preparedness and understanding to be ready to engage with AI due to a lack of preparedness and understanding, pointing to the necessity of a structured approach to AI education. The suggested pathway involves initiating institutional conversations about digital transformation, bringing in experts, and creating a supportive environment for learning and experimentation with AI. WMU can facilitate the adoption and integration of AI across disciplines, preparing students for a workforce increasingly shaped by artificial intelligence.

Theme 6: AI Impact on University Operations (In what ways do you think AI could improve operational efficiency and decision-making processes at WMU?)

Enhancing Communication and Engagement: AI offers the potential to personalize communication, addressing the diverse preferences of the university community, from students to faculty and staff.

Operational Efficiency: There's optimism about AI streamlining administrative tasks and analytical processes, transforming service delivery and administrative efficiency.

Readiness and Ethical Adoption: Concerns exist about the university's readiness to adopt AI, emphasizing the need for ethical considerations and the balancing of AI's efficiency with human interaction.

Innovative Educational Tools: AI is seen as a transformative tool for education, offering new ways to engage with content and significantly reducing time spent on tasks like research and design.

Theme 7: Community Engagement: (What role should WMU play in educating the broader community about AI and its implications?)

Educational Leadership and Community Development: WMU is seen as crucial in driving economic development and preparing the community for the future of AI. This involves leveraging faculty expertise to educate not only K-12 partners but also the broader community on the implications and opportunities of AI. Engaging in this educational leadership can position WMU as a pivotal entity in regional technological advancement and economic growth.

Strategic Use of Data for Decision Making: WMU can contribute significantly in the area of utilizing historical data effectively for strategic decisions. By harnessing AI and data analytics, WMU can offer insights and models for community and business partners, showcasing how data-driven strategies can lead to more informed and strategic decision-making processes.

Thought Leadership in Ethical AI Adoption: WMU is encouraged to become a thought leader in the ethical adoption and discussion of AI technologies. This involves hosting forums, bringing in experts, and promoting a balanced dialogue about AI's ethical use, potential impacts on various business sectors, and its broader societal implications. WMU can help shape a conscientious approach to AI integration within the community and beyond by fostering an environment for these discussions.

Theme 8: Innovations (What AI innovations might be occurring in your unit?)

Exploratory Engagement and Diverse Applications: Units across the university are in the early stages of exploring AI, with specific interest in areas like disability services, marketing, and academic integrity. This exploration is driven by a recognition of AI's potential to enhance services and educational experiences despite the current lack of a cohesive strategy for its adoption.

Potential for Process Improvement and Predictive Analytics: There's interest in leveraging AI for operational improvements, such as room reservations and housing assignments, and utilizing AI's predictive analytics capabilities to enhance student success initiatives. These innovations aim to proactively identify and address students' needs, potentially transforming student support services.

Investment in Infrastructure and Skill Development: Realizing AI's full potential within the university setting is acknowledged to require significant investment in infrastructure and the development of faculty and student skills. This includes fostering a culture that supports AI learning and application and providing the necessary resources to integrate AI technologies effectively into academic and administrative processes.

2.3.3 SUMMARY OF STAFF INTERVIEWS

The interviews with seven (7) staff members at Western Michigan University (WMU) reveal a spectrum of familiarity with AI, ranging from beginners to those with specialized knowledge. Despite this variety, there is a common recognition of AI's potential to enhance job efficiency, creativity, and data analysis. However,

there exists a considerable need for more profound knowledge and understanding of AI technologies among staff, as well as skepticism concerning AI's effectiveness and relevance to specific job functions.

Staff express a strong desire for tailored training on AI applications, ethical use, and integration into existing processes. The diversity in staff's current understanding of AI suggests that training programs should cater to various levels of expertise and be specific to the applications relevant to their roles, such as administrative efficiency, creative content generation, and data analysis.

Concerns highlighted by the staff include the potential for job displacement and ethical issues such as data privacy and bias. Despite these challenges, there is optimism about AI's potential to improve educational outcomes and job functions, provided staff can adapt to its evolving nature. Staff members are also mindful of the need for ongoing adaptation to keep pace with the dynamic nature of AI technologies, highlighting the importance of continuous learning in their roles.

In conclusion, the integration of AI at WMU presents both opportunities and challenges for staff. To fully leverage AI's potential, there is a clear need for comprehensive and ongoing training that addresses both the technical aspects of AI and the ethical considerations involved in its application.

2.3.4 STAFF INTERVIEW THEMES

Theme 1: Awareness and Understanding of AI at WMU

Varied Familiarity with AI: Staff displayed a spectrum of familiarity with AI, from being entirely new to having specific knowledge in areas like generative AI or AI in academic contexts.

Applications and Potential: Many staff members recognize AI's potential applications in their work despite needing to fully understand all its capabilities. There's a focus on AI's use in improving efficiency, creativity, and data analysis in content creation.

Challenges and Skepticism: A common theme is the challenge of understanding AI's full scope and potential, coupled with skepticism about its effectiveness and applicability to their specific roles at WMU.

Desire for More Information and Training: There is a clear interest in learning more about AI, its applications, and how it can be leveraged effectively within the university setting.

Theme 2: Training and Development Needs (Staff)

Recognized Need for Training: Across interviews, there was an acknowledgment of the need for training or professional development to work effectively with AI technologies.

Application-Specific Training: Staff express a desire for training that is tailored to specific AI applications in their roles, such as administrative efficiency, creative content generation, and data analysis.

Ethical Considerations and Use: Training on ethical use and understanding the limitations and responsibilities of using AI in academia and professional settings is a noted need.

Diverse Levels of Expertise: The diversity in staff's current understanding and use of AI suggests that training offerings would need to cater to a range of expertise levels, from beginner to advanced.

Integration with Existing Processes: There's interest in understanding how AI can be integrated with existing workflows and processes to enhance productivity and innovation.

Theme 3: Impact on Job Roles

Enhancement vs. Replacement: While there is optimism about AI's potential to enhance job roles, there are concerns about job displacement and the devaluation of human skills.

Educational Impact: For those involved in teaching or student support, AI offers opportunities for personalized learning, feedback, and academic integrity challenges.

Need for Ongoing Adaptation: The dynamic nature of AI technology means that staff anticipate the need for continuous learning and adaptation in their roles.

Ethical and Practical Concerns: Staff are mindful of ethical considerations, such as data privacy, bias in AI algorithms, and the integrity of AI-generated content.

2.4 LIST OF AI TOOLS

This section presents a detailed table that catalogs a range of artificial intelligence (AI) tools that are potentially relevant to the higher education sector. Each tool is listed with key information including its name, category of use, a description provided by the developer, associated policies, terms of service, and relevant links. This comprehensive resource is designed to assist readers of this report and the broader university community in navigating the diverse landscape of AI technologies.

Name	Category	Subcategory	Description	Privacy Policy	Terms of Service	Link
AI Mastering	Audio	Audio Editing	"AI-powered online audio mastering service."	https://aimastering.com/privacy_policy/	https://aimastering.com/terms_of_service/	https://aimastering.com
Auphonic	Audio	Audio Editing	"Auphonic is your all-in-one audio post production webtool to achieve a professional quality result."	https://auphonic.com/privacy	https://auphonic.com/terms_of_service	https://auphonic.com
eMastered	Audio	Audio Editing	"The eMastered engine uses machine learning to improve with every song it masters. Just like a human engineer, it builds a custom master tailored to the unique features of each song, from hip hop to EDM. eMastered applies the same professional studio processes like EQ, Compression, Saturation, and many more, giving you professional sound for a fraction of the cost of studio mastering."	https://emastered.com/support/privacy	https://emastered.com/support/terms	https://emastered.com
Fadr	Audio	Audio Editing	"Make remixes with AI music technology."	https://fadr.com/privacy	https://fadr.com/terms	https://fadr.com
Lalala.ai	Audio	Audio Editing	"Extract vocal, accompaniment and various instruments from any audio and video. High-quality stem splitting based on the world's #1 AI-powered technology."	https://www.lalal.ai/privacy-policy/	https://www.lalal.ai/terms-and-conditions/	https://lalal.ai
Landr	Audio	Audio Editing	"Upload a track and let our powerful, AI-driven mastering engine do the rest. Our engine listens to your songs and applies a fast, reliable master without ever using presets. Find out why it's the trusted mastering tool for music industry powerhouses."	https://www.landr.com/privacy/	https://www.landr.com/terms-of-service/	https://landr.com
Moises	Audio	Audio Editing	"Play your music in any key, at any speed. Remove vocals and instruments in any song. Discover the ultimate immersive practice experience powered by AI.	https://help.moises.ai/hc/en-us/articles/360013805640-Privacy-Policy	https://help.moises.ai/hc/en-us/articles/7401394754962	https://moises.ai

Beatoven.ai	Audio	Music Generator	"Beatoven.ai uses advanced AI music generation techniques to compose unique mood-based music to suit every part of your video or podcast."	https://www.beatoven.ai/privacy	https://www.beatoven.ai/tos	https://www.beatoven.ai/
Kits.AI	Audio	Music Generator	"Streamline your workflow with studio-quality AI audio tools Clone voices. Sing like anyone. Play any instrument. 100% royalty-free."	https://www.kits.ai/privacy-policy	https://www.kits.ai/terms-of-service	https://kits.ai/
Melobytes	Audio	Music Generator	"Melobytes is an online platform providing a plethora of AI-powered creative tools to help you explore the boundaries of art, music, and more. With our easy-to-use apps, you can create unique and amusing content for yourself and your friends to enjoy. The possibilities are endless!"	https://melobytes.com/en/tos	https://melobytes.com/en/tos	https://melobytes.com
Mubert	Audio	Music Generator	"The abilities of Artificial Intelligence and the creativity of music producers make possible a symbiotic relationship between humans and the algorithms. Millions of samples from hundreds of artists are used by Mubert to instantly generate royalty-free AI music, flawlessly suited to the content's purpose. Collaboration like no other, humans and technology unite to bring the perfect sound every time."	https://mubert.com/docs/privacy-policy	https://mubert.com/docs/tou	https://mubert.com/
Stable Audio	Audio	Music Generator	"Create music with AI. Generate high-quality audio that you can use commercially."	https://stability.ai/privacy-policy	https://stableaudio.com/terms	https://stableaudio.com/
Uberduck	Audio	Music Generator	"Epic synthetic singing and rapping vocals for creative agencies, musicians, and coders."	https://www.uberduck.ai/privacy	https://www.uberduck.ai/terms	https://uberduck.ai
Eleven Labs	Audio	Text To Speech	"Convert text to speech online for free with our AI voice generator. Create natural AI voices instantly in any language - perfect for video creators, developers, and businesses."	https://elevenlabs.io/privacy	https://elevenlabs.io/terms	https://elevenlabs.io/
Natural Reader	Audio	Text To Speech	"NaturalReader converts text, PDF, and 20+ formats into spoken audio so you can listen to your documents, ebooks, and school materials anytime, anywhere."	https://www.naturalreaders.com/policies.html#privacy	https://www.naturalreaders.com/media/LICENSE.pdf	https://www.naturalreaders.com/
PlayHT	Audio	Text To Speech	"Create ultra realistic Text to Speech (TTS) using PlayHT's AI Voice Generator. Our Voice AI instantly converts text in to natural sounding humanlike voice	https://play.ht/privacy/	https://play.ht/terms/	https://play.ht/

			performances across any language and accent."			
Resemble AI	Audio	Text to Speech	"Resemble's AI voice generator lets you create realistic human–like voiceovers in seconds. "	https://www.resemble.ai/privacy-policy/	https://resemble.notion.site/Resemble-AI-Terms-of-Service-5f3893e508cf48778d2a07acf38abfbd	https://www.resemble.ai/
Revocalize AI	Audio	Text To Speech	"Create studio-quality AI voices in one-click, or choose from our officially licensed AI voice models. Get started in seconds – literally."	https://www.revocalize.ai/privacy-policy	https://www.revocalize.ai/terms-of-service	https://revocalize.ai
Speechify	Audio	Text to Speech	"Speechify is a TTS reader available as a mobile app and a Chrome browser extension. With AI voices capable of reaching up to 900 words per minute, playback, reading processing, and comprehension become significantly faster and more accessible, even for people with learning challenges like dyslexia."	https://speechify.com/privacy/	https://speechify.com/terms/	https://speechify.com/
Trinity Audio	Audio	Text to Speech	"Trinity Audio's AI-driven solutions help you create a world of audio experiences for your readers, covering every stage of the audio journey from creation to distribution, (and sometimes even monetization). "	https://www.trinityaudio.ai/privacy-policy	https://www.trinityaudio.ai/trinity-terms-conditions	https://www.trinityaudio.ai/
Typecast	Audio	Text To Speech	"Save time building your digital content with realistic AI voice overs"	https://help.typecast.ai/en/articles/5361327-personal-information-handling-policy-or-privacy-policy	https://help.typecast.ai/en/articles/5361255-terms-of-use	https://typecast.ai/
AudioPen.AI	Audio	Transcription	"AudioPen converts voice notes into text that's easy to read and ready to share."	https://audiopen.ai/privacypolicy	https://audiopen.ai/terms	https://audiopen.ai/
OpenAI Whisper	Audio	Transcription	"Whisper is a general-purpose speech recognition model. It is trained on a large dataset of diverse audio and is also a multitasking model that can perform multilingual speech recognition, speech translation, and language identification."	NA (local)	https://github.com/openai/whisper/blob/main/LICENSE	https://github.com/openai/whisper

Otter.ai	Audio	Transcription	"Never take meeting notes again. Get transcripts, automated summaries, action items, and chat with Otter to get answers from your meetings."	https://otter.ai/privacy-security	https://otter.ai/terms-of-service	https://otter.ai/
Deepcode	Coding	Code Analysis	"With 25M+ data flow cases, 11 supported languages, and multiple AI models, Snyk's DeepCode AI was designed to find and fix vulnerabilities and manage tech debt."	https://snyk.io/policies/privacy/	https://snyk.io/policies/terms-of-service/	https://snyk.io/platform/deepcode-ai/
AIXcoder	Coding	Coding Assistant	"aiXcoder provides you with method-level code generation from natural language to code, and intelligent code completion for whole or multiple lines."	None found	None found	https://aixcoder.com/
Amazon CodeWhisperer	Coding	Coding Assistant	"Amazon CodeWhisperer generates code suggestions ranging from snippets to full functions in real time in the IDE based on your comments and existing code. It also supports CLI completions and natural-language-to-bash translation in the command line."	https://aws.amazon.com/privacy/?nc1=f_pr	https://aws.amazon.com/terms/?nc1=f_pr	https://aws.amazon.com/codewhisperer/
AskCodi	Coding	Coding Assistant	"AskCodi is an AI code assistant that helps you write code faster and with less work. AskCodi provides various applications for code generation, unit test creation, documentation, code conversions etc. AskCodi is powered by OpenAI GPT, an AI system created by OpenAI. Apart for web app, AskCodi is currently available as extension/plugin for Visual Studio Code, Sublime Text and the JetBrains' IDEs."	https://www.iubenda.com/privacy-policy/44605541	https://www.askcodi.com/docs/Terms	https://www.askcodi.com/
BlackBox AI	Coding	Coding Assistant	"Blackbox AI is an artificial intelligence-powered autocomplete tool designed specifically for software developers. It acts like a copilot for coding, integrating right inside your editor to provide smart suggestions and entirely write programs in multiple languages."	https://www.useblackbox.io/privacy	https://www.useblackbox.io/terms	https://www.blackbox.ai/
Code Llama	Coding	Coding assistant	"Code Llama is a family of large language models for code based on Llama 2 providing state-of-the-art performance among open models, infilling capabilities, support for large input contexts, and zero-shot instruction following ability for programming tasks. "		https://llama.meta.com/llama-downloads/	https://github.com/meta-llama/codellama

CodeGeex AI	Coding	Coding Assistant	"CodeGeeX is a powerful intelligent programming assistant based on LLMs. It provides functions such as code generation/completion, comment generation, code translation, and AI-based chat, helping developers significantly improve their work efficiency. CodeGeeX supports multiple programming languages and is compatible with various popular IDEs."	None found	None found	https://codegeex.cn/en-US
Codeium	Coding	Coding Assistant	"A free AI powered toolkit for developers"	https://codeium.com/privacy-policy	https://codeium.com/terms-of-service-individual	https://codeium.com/
Cody	Coding	Coding Assistant	"Cody is a coding AI assistant that uses AI and a deep understanding of your codebase to help you write and understand code faster."	https://sourcegraph.com/terms/privacy	https://sourcegraph.com/terms	https://sourcegraph.com/cody?utm_source=codesubmit
Cursor	Coding	Coding Assistant	"Build software faster in an IDE designed for pair-programming with AI."	https://cursor.sh/privacy	None found	https://cursor.sh/
GitHub Copilot	Coding	Coding Assistant	"The world's most widely adopted AI developer tool."	https://github.com/features/copilot	https://github.com/features/copilot	https://github.com/features/copilot
Jetbrains AI	Coding	Coding Assistant	"Deeply integrated, context aware AI, right in your IDE."	https://www.jetbrains.com/privacy-security/	https://www.jetbrains.com/legal/docs/company/usetems.html	https://www.jetbrains.com/ai/
Pieces for Developers	Coding	Coding Assistant	"A contextual AI copilot that learns from your entire developer workflow, leveling up your productivity and collaboration."	https://docs.pieces.app/privacy-policy	https://docs.pieces.app/terms	https://pieces.app/
PyCharm AI Assistant	Coding	Coding Assistant	"AI Assistant provides AI-powered features for software development. It can explain code, answer questions about code fragments, provide code suggestions, generate documentation, commit messages, and much more."	https://www.jetbrains.com/privacy-security/	https://www.jetbrains.com/legal/docs/company/usetems/	https://www.jetbrains.com/help/pycharm/ai-assistant.html#ai-assistant-features

Replit AI	Coding	Coding Assistant	"Harness the power of Replit's AI online code generator to boost your productivity and creativity. Built into the world's most popular online IDE."	https://replit.com/site/privacy	https://replit.com/site/terms	https://replit.com/ai
Supermaven	Coding	Coding Assistant	"Supermaven uses a 300,000-token context window to provide the highest quality suggestions with the lowest latency."	https://supermaven.com/privacy-policy	https://supermaven.com/terms-of-service	https://supermaven.com/
Tabnine	Coding	Coding Assistant	"Our goal at Tabnine is to create and deliver a top-to-bottom AI-assisted development workflow that empowers all code creators, in all languages, from concept through to completion."	https://www.tabnine.com/privacy	https://www.tabnine.com/terms	https://www.tabnine.com/
Visual Studio Intellicode	Coding	Coding Assistant	"IntelliCode helps you drive accuracy and consistency with code completion that can fill in a whole line at once. The AI detects your code context—including variable names, functions, and the type of code you're writing—to give you the best suggestions. Even better: IntelliCode runs on your machine, ensuring your private code stays private."	https://go.microsoft.com/fwlink/?LinkId=521839	https://azure.microsoft.com/en-us/support/legal/	https://visualstudio.microsoft.com/services/intellicode/
Plumi	Coding	Infrastructure Engineering	"Author infrastructure code using programming languages you know and love. Write statements to define infrastructure using your IDE with autocomplete, type checking, and documentation."	https://www.pulumi.com/privacy/	https://www.pulumi.com/terms-and-conditions/	https://www.pulumi.com/
Canva AI Image Generator	Image	Iimage Generation	"Watch your words and phrases transform into beautiful images with the best AI image generator apps available at your fingertips."	https://www.canva.com/policies/ai-product-terms/	https://www.canva.com/policies/ai-product-terms/	https://www.canva.com/ai-image-generator/
Dall-E 2	Image	Image Generation	"An AI system that can create realistic images and art from a description in natural language."	https://openai.com/policies/privacy-policy	https://openai.com/policies	https://openai.com/dall-e-2
DeepAI	Image	Image Generation	"Create an image from a text prompt."	None found	None found	https://deepai.org/machine-learning-model/text2img

Designs.AI	Image	Image Generation	"Create logos, videos, banners, mockups with A.I. in 2 minutes"	https://designs.ai/policy/privacy-policy.https://designs.ai/policy/terms-of-use		https://designs.ai/
DreamStudio	Image	Image Generation	Create images from text prompts.	https://beta.dreamstudio.ai/privacy-policy	https://beta.dreamstudio.ai/terms-of-service	https://beta.dreamstudio.ai/generate
Image Creator	Image	Image Generation	"Create images from words with AI."	http://go.microsoft.com/fwlink/?LinkId=521839	https://www.bing.com/new/termsofuseimagecreator	https://www.bing.com/images/create?FORM=GENILP
ImageFX	Image	Image Generation	Create images from text prompts.	https://policies.google.com/terms/generative-ai	https://policies.google.com/privacy	https://aitestkitchen.withgoogle.com/tools/image-fx
MidJourney	Image	Image Generation	"Use the Midjourney bot to generate stunning images from simple text prompts in seconds. Work directly in Discord. No specialized hardware or software is required."	https://docs.midjourney.com/docs/privacy-policy	https://docs.midjourney.com/docs/terms-of-service	https://www.midjourney.com/
Jasper	Productivity	Content Management	"Jasper's end-to-end copilot helps marketing teams achieve both speed & performance."	https://privacy.jasper.ai/policies	https://legal.jasper.ai/#terms	https://jasper.ai
PDF.AI	Productivity	Document analysis	"Chat with any PDF document."	None found	None found	https://pdf.ai/
Upword	Productivity	Document analysis	"Upword is an AI research assistant that helps you process information 10X faster and grow your knowledge. The power of GPT-4, personalized to you."	https://app.upword.ai/privacy	https://app.upword.ai/terms	https://upword.ai
Pi.AI	Productivity	Personal Assistant	"Your personal AI for all your needs"	Pi, your personal AI	https://pi.ai/es/profile/terms	https://pi.ai
Hive Mind	Productivity	Personal Assistant / Calendar	"Let HiveMind kick off projects, write content and reply to emails for you in seconds."	https://hive.com/privacy-policy/	https://hive.com/terms-of-service/	https://hive.com/hivemind/

Writesonic	Productivity	Search Engine Optimization	"Generative AI Platform for Content Creation, SEO and AI Chatbots."	https://writesonic.com/privacy-policy	https://writesonic.com/terms	https://writesonic.com/
Perplexity.Ai	Search		"Perplexity is your AI-powered Swiss Army Knife for information discovery and curiosity. It's not just about answering questions; it's about empowering you to do more—whether you're looking to summarize content, explore new topics, or even get a little creative."	https://www.perplexity.ai/hub/legal/privacy-policy	https://www.perplexity.ai/hub/legal/terms-of-service	https://www.perplexity.ai/
You.Com	Search		"You.com is a personalization-focused search engine."	None found	https://you.com/legal/terms	https://you.com/
ChatGPT	Text/Chat	LLM	"Get instant answers, find creative inspiration, learn something new."	https://openai.com/policies/privacy-policy	https://openai.com/policies/terms-of-use	https://chat.openai.com/
Claude AI	Text/Chat	LLM	"Claude is a next generation AI assistant built for work and trained to be safe, accurate, and secure."	https://www.anthropic.com/privacy	https://www.anthropic.com/legal/consumer-terms	https://claude.ai/
DeepAI	Text/Chat	LLM	"Artificially intelligent tools for naturally creative humans"	None found	None found	https://deepai.org/
Google Gemini (Bard)	Text/Chat	LLM	"Chat to start writing, planning, learning and more with Google AI"	https://support.google.com/gemini/answer/13594961?visit_id=638440573777705571-1072585354&p=privacy_help&rd=1	https://policies.google.com/terms	https://gemini.google.com/
Llama 2	Text/Chat	LLM	Open source LLM from Meta	None found	https://www.facebook.com/policies_center/	https://llama.meta.com/get-started
DeepBrain AI	Video	Video creation	"Generate videos from text"	None found	None found	https://www.deepbrain.io/
FlexClip	Video	Video Creation	Text to video.	None found	https://www.flexclip.com/privacy.html	https://www.flexclip.com/

Fliki	Video	Video creation	Transform your ideas into stunning videos with our AI video generator. Easy to use Text to Video editor featuring lifelike voiceovers, dynamic AI video clips, and a wide range of AI-powered features.	https://fliki.ai/privacy	https://fliki.ai/terms	https://fliki.ai/
Invideo	Video	Video creation	"Create videos with text prompts. Enter any topic, and invideo AI gets to work. It generates a script, creates scenes, adds voiceovers, & tweaks the video at your command. With invideo AI as your co-pilot, engaging your audience is effortlessly simple!"	https://invideo.io/privacy-policy/	https://invideo.io/terms-and-conditions/	https://invideo.io/
OpenAI Sora	Video	Video Creation	"Sora is an AI model that can create realistic and imaginative scenes from text instructions."	https://openai.com/policies/privacy-policy	https://openai.com/policies	https://openai.com/sora
Pictory	Video	Video creation	"Create highly engaging videos in minutes using the power of AI. No video editing experience required."	None found	None found	https://pictory.ai
RunwayML	Video	Video Creation	"A new suite of creative tools designed to turn the ideas in your head into reality. All made possible with AI models that can understand and generate worlds."	https://runwayml.com/privacy-policy	https://runwayml.com/terms-of-use	https://runwayml.com/
Stable Video Diffusion	Video	Video creation	"Stable Video Diffusion is designed to serve a wide range of video applications in fields such as media, entertainment, education, marketing. It empowers individuals to transform text and image inputs into vivid scenes and elevates concepts into live action, cinematic creations."	https://stability.ai/privacy-policy	https://stability.ai/terms-of-use	https://stability.ai/stable-video
Synthesia	Video	Video creation	"Create studio-quality videos with AI avatars and voiceovers in 130+ languages. It's as easy as making a slide deck."	https://www.synthesia.io/legal/privacy-policy	https://www.synthesia.io/legal/customer-terms-of-service	https://www.synthesia.io/
Visla	Video	Video creation	"Use the power of Visla AI to create professional videos with whatever you have available-while Visla provides the storyboard, script, B-roll, voice-over, subtitles and more."	https://www.visla.us/privacy	https://www.visla.us/terms	https://www.visla.us/
Filmora	Video	Video Editing	"Effortlessly create with a fully-equipped video editing suite powered by AI."	https://www.wondershare.com/privacy.html	https://www.wondershare.com/company/terms_conditions.html	https://filmora.wondershare.com/

OpusClip	Video	Video editing	"Opus Clip is a generative AI video tool that repurposes long videos into shorts in one click."	https://www.opus.pro/privacy-policy	https://www.opus.pro/terms-of-service	https://www.opus.pro/
Peech	Video	Video Editing	"Automatically obtain a limitless supply of branded videos from your content with a one-click, fully AI-powered post-production process."	https://www.peech-ai.com/privacy-policy	https://www.peech-ai.com/terms-of-service	https://www.peech-ai.com/

2.5 FACULTY RESEARCH AND CREATIVE ACTIVITIES ON THE TOPIC OF AI

This section presents an initial version of a curated repository that lists faculty publications and creative projects related to the topic of artificial intelligence (AI) at Western Michigan University. The entries are organized into major branches of AI research and application, showcasing the depth and diversity of expertise among our faculty. This evolving repository serves as a dynamic resource for the university community, aiding in fostering collaborations for grant writing and research projects, responding to media inquiries, and enhancing interdisciplinary connections.

The intention is for this list to develop into a fully taggable and searchable database that highlights WMU's leadership in AI scholarship. Such a tool will not only make it easier to discover campus-wide expertise but will also support our faculty in shaping global discourse and applications in AI. As evidenced, the expertise and productivity of WMU faculty in this domain is extensive. The work contained within the database represents a significant point of pride for WMU, underscoring our commitment to cutting-edge research and our role as a hub of AI innovation in the academic world.

The committee further suggests that the development and expansion of this repository could be a collaborative project involving the university libraries. Their expertise in information management and digital archiving could significantly enhance the functionality and reach of the database, making it a more robust tool for academic collaboration and public engagement. As this repository grows, it will increasingly reflect the dynamic and influential contributions our faculty are making in the field of AI, reinforcing our position at the forefront..

2.5.1 MAJOR BRANCHES OF AI

1. Computer vision
2. Education
3. Expert systems
4. Human-centered AI (e.g., safety/privacy/security concerns, opportunities, risk reduction, etc.)
5. Image processing
6. Knowledge representation / Information retrieval
7. Machine learning
8. Methodology (e.g., fuzzy logic, neural networks, deep learning, etc.)
9. Natural language processing (e.g., text summarization, generative AI, etc.)
10. Principles and theory
11. Robotics
12. Smart X (X=healthcare, manufacturing, city, etc.)
13. Speech/audio processing

2.5.2 LIST OF FACULTY (This list will expand as more faculty are interested in listing their journal publications.)

1. Alvis Fong
2. Kuanchin Chen
3. Autumn Edwards
4. Chad Edwards
5. Bryan Abendschein
6. Utkarsh Shrivastava
7. Tingyu Mu
8. Amy Zufelt

2.5.3 FACULTY JOURNAL PUBLICATIONS IN AI BRANCHES (Articles are listed by the main/first tag.)

Computer vision

1. [Computer vision] Fong ACM, Hui SC, and Leung MKH, Content-based video sequence interpretation, IEEE Trans. Consumer Electronics, Vol. 47/4, pp. 873-879, 2001.

2. [Computer vision] Fong ACM and Hui SC, A Web-based intelligent surveillance system for detection of criminal activities, IEE Computing & Control Engineering Journal, Vol. 12/6, pp. 263-270, 2001.

3. [Computer vision, ML] Hong GY, Fong B, and Fong ACM, An intelligent video categorization engine, Kybernetes. Vol. 34/6, pp. 784-802, 2005

4. [Computer vision, ML, safety] Lee PY, Hui SC, and Fong ACM, An intelligent categorization engine for bilingual web content filtering, IEEE Trans. Multimedia, Vol. 7/6, pp. 1183 - 1190, 2005.

Education

1. [Education, theory, methodology] Nguyen ML, Hui SC, and Fong ACM, Divide-and-conquer memetic algorithm for online multi-objective test paper generation, Memetic Computing, Springer, Vol. 4/1, pp. 33-47, Feb 2012.

2. [Education, theory] Kahvazadeh I, Jose E, Fong ACM, Gupta A, Carr S, Bhattacharjee S, and Harnar M, Development and evaluation of a modular experiential learning curriculum for promoting AI readiness, Education and Information Technologies, Springer Nature, June 2023. https://doi.org/10.1007/s10639-023-11928-w

3. [Education, theory, methodology] Rienzo, T. & Chen, K. (2018). Planning for low-end analytics disruption in business school curricula, Decision Sciences Journal of Innovative Education, 16(1), 23-41.

4. Chen, K. & Rea, A. (2018). Do pair programming approaches transcend coding? Measuring agile attitudes in diverse information systems courses, Journal of Information Systems Education, 29(2), 53-64.

5. [Education] Abendschein, B., Lin, X., Edwards, C., Edwards, A., & Rijhwani, V. (2024). Credibility and altered communication styles of AI graders in the classroom. *Journal of Computer Assisted Learning*, 1–11. https://doi.org/10.1111/jcal.12979

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9. [Education, Robotics] Edwards, C., Edwards, A., Spence, P. R., & Lin, X. (2018). I, teacher: using artificialintelligence (AI) and social robots in communication and instruction. *Communication Education*, *67*, 473-480.

10. [Education] Edwards, A., & Edwards, C. (2017). The machines are coming: Future directions in instructional communication research. *Communication Education*, *66.* 487-488.

11. [Education, NLP] Zufelt, A.H. (2024, April 12). Integrating AI Applications into Curriculum [presentation]. Association for Business Communication Southwest Conference, Galveston, Texas.

Expert Systems

1. [Expert systems, computer vision, ML] Khero K,Usman M, and Fong ACM, Deep Learning framework for early detection of COVID-19 using X-ray images, Multimedia Tools and Applications, Springer Nature, June 2023. https://doi.org/10.1007/s11042-023-15995-6

2. [Expert systems, ML] Toor AA, Usman M, Younas F, and Fong ACM, A robust systematic approach for ensuring optimal telecom service delivery, IEEE Communications Magazine, Vol. 58/8, pp. 49-53, August 2020. DOI: 10.1109/MCOM.001.2000258

3. [Expert systems, ML] Tariq S, Usman M, and Fong ACM, Selecting best predictors from large software repositories for highly accurate software effort estimation, Journal of Software: Evolution and Process, e2271, 2020. http://dx.doi.org/10.1002/smr.2271

4. [Expert systems, ML, computer vision, image processing] Eslami T, Mirjalili V, Fong ACM, Laird A, and Saeed F, ASD-DiagNet: A hybrid learning approach for detection of autism spectrum disorder using fMRI data, Frontiers in Neuroinformatics, Vol. 13/70, 11 pages, 2019. DOI: 10.3389/fninf.2019.00070

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7. [Expert systems, ML] Afzaal M, Usman M, and Fong ACM, Multi-aspect based opinion classification model for tourist reviews, Expert Systems, 2019. DOI: 10.1111/exsy.12371

8. [Expert systems, ML] Afzaal M, Usman M, and Fong ACM, Predictive aspect-based sentiment classification of online tourist reviews, Journal of Information Science, 2018. DOI: 10.1177/0165551518789872

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12. [Expert systems, ML, methodology] Tang P, Hui SC, and Fong ACM, A lattice-based approach for chemical structural retrieval, Engineering Applications of Artificial Intelligence, Elsevier, Vol. 39, pp. 215{222, 2015. http://dx.doi.org/10.1016/j.engappai.2014.12.006

13. [Expert systems, ML, methodology] Do TA, Khoo SC, Fong ACM, Pears R, and Tho QT, Goal-oriented dynamic test generation, Information and Software Technology, Elsevier, Vol. 66, pp. 40-57, 2015. DOI:10.1016/j.infsof.2015.05.007

14. [Expert systems, theory, methodology] Usman M, Pears R and Fong ACM, Discovering diverse association rules from multidimensional schema, Expert Systems With Applications, Elsevier, Vol. 40/15, pp. 5975-5996, November 2013.

15. [Expert systems] Tho QT, Hui SC, and Fong ACM, A citation-based document retrieval system for finding research expertise, Information Processing & Management, Vol. 43/1, pp. 248-264, 2007.

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3.0 REVIEW OF LITERATURE ON AI TOOLS: BEST PRACTICES AND CAUTIONS

This section contains a compilation of research and expert commentary on AI (3.1) and a narrative review of literature on AI in the context of Academic Integrity (3.2).

3.1 AI @ WMU RESOURCE LIST

The WMUx Instructional Development and Support team edits the list below to keep it up-to-date; any resource removed from the list will still be accessible in the AI @ WMU Resource Archive. To access or share the resources below, click here.

Defining AI, Machine Learning, Generative AI, and AI Agents

Hart-Davidson, Bill. "AI Literacy: Transformer Technology for Writers." BrightTALK Webinar, 14 March 2024.

Mollick, Ethan. *Co-Intelligence: Living and Working with AI*. Penguin Random House, 2024. (This text is available as an electronic version via Waldo Library.)

Mollick, Ethan. "Freeing the Chatbot: Intelligence, of a Sort, Is Going to Be All around Us." *One Useful Thing* substack, 2 May 2024.

Mollick, Ethan, and Lilach Mollick. *Practical AI for Instructors and Students*: A Five Part Series. [Video] *Wharton School YouTube Channel*:

Part 1: Introduction to Ai for Teachers and Students. 31 July 2023.

Part 2: Large Language Models (LLMs). 1 August 2023.

Part 3: Prompting AI. 2 August 2023.

Part 4: AI for Teachers. 3 August 2023.

Part 5: AI for Students. 4 August 2023.

Serrano, Sofia, Zander Brumbaugh, and Noah A. Smith. "Language Models: A Guide for the Perplexed." *Computation and Language: arXiv*, 29 November 2023.

Prompting, Teaching, and Assessing Student Work in the AI-era

Baule, Steve. "How Open Should Teachers Be about Using AI?" *Inside Higher Ed*, 11 April 2024.

Cummings, Lance. "Customizing AI Assistants for Classroom Success." *isophist* substack. 19 January 2024.

Horio, Emma. "New English Course Embraces the Potential of AI." *UCLA College Humanities*, 29 November 2023.

Luo, Jiahui (Jess). "A Critical Review of GenAI Policies in Higher Education Assessment: A Call to Reconsider the 'Originality' of Students' Work." *Assessment & Evaluation in Higher Education*, 4 February 2024.

Mollick, Ethan. "Innovation through Prompting: Democratizing Educational Technology and More…". *One Useful Thing* substack, 22 April 2024.

Mollick, Ethan, and Lilach Mollick. "Instructors as Innovators: A Future-Focused Approach to New AI Learning Opportunities, with Prompts." Available at SSRN, 22 April 2024. Direct PDF Link.
Mowreader, Ashley. "Teaching Tip: Navigating AI in the Classroom." *Inside Higher Ed*, 28 February 2024.

Supiano, Becky. "Teaching: Practical AI Strategies for the Classroom." *The Chronicle of Higher Education*, 30 November 2023.

Warner, John. "On AI and Meaningful Feedback." *Inside Higher Ed*, 6 February 2024.

AI syllabus Statements/Academic Integrity

Casal, J. Elliott, and Matt Kessler. "Can Linguists Distinguish between ChatGPT/AI and Human Writing? A Study of Research Ethics and Academic Publishing." *Research Methods in Applied Linguistics*, vol. 2, no. 3, 2023.

Coffey, Lauren. "Professors Cautious of Tools to Detect AI-Generated Writing." *Inside Higher Ed*, 9 February 2024.

Eaton, Lance. "Classroom Policies for AI Generative Tools." *Crowdsourced Google Doc*. Last updated 8 March 2023.

Furze, Leon. "AI Detection is a Dead End." *Leon Furze blog*, 9 April 2024.

Gewirtz, David. "Can AI Detectors Save Us From ChatGPT? I Tried 5 Online Tools to Find Out." *ZDNET*, 19 October 2023.

Ghaffary, Shirin. "Universities Rethink Using AI Writing Detectors to Vet Students' Work." *Bloomberg Newsletter*, 21 September 2023.

Mollick, Ethan. "What People Ask Me Most. Also, Some Answers." *One Useful Thing* substack, 12 October 2023.

Myers, Andrew. "AI-Detectors Biased Against Non-Native English Writers." *Stanford University Human-Centered Artificial Intelligence Newsletter*, 15 May 2023.

OpenAI Privacy Policy. Last updated 14 November 2023; in effect as of 31 January 2024.

Paris, Jamie. "First Do No Harm." (On the impact of AI detection practices on international students.) *Inside Higher Ed*. 2 February 2024.

Singer, Natasha. "Cheating Fears Over Chatbots Were Overblown, New Research Suggests." *The New York Times*, 13 December 2023.

Walters, William H. "The Effectiveness of Software Designed to Detect AI-Generated Writing: A Comparison of 16 AI Text Detectors." *Open Information Science*, vol. 7, no. 1, 2023.

Weber-Wuff, et. al. "Testing of Detection Tools for AI-Generated Text." *International Journal for Educational Integrity*, vol. 19, no. 26, 2023.

Higher Education Reactions to AI: Instructors and Students Respond

Coffey, Lauren. "Faculty Unions Seeking Formal AI Guidelines." *Inside Higher Ed*, 18 April 2024.

Coffey, Lauren "How AI Has Begun Changing University Roles, Responsibilities." *Inside Higher Ed*, 13 February 2024.

Flaherty, Colleen. "Survey: How AI Is Impacting Students' Career Choices." *Inside Higher Ed*, 30 January 2024.

Landy, Kathleen. "The Program-Level AI Conversations We Should Be Having." Inside Higher Ed, 28 February 2024.

Mollick, Ethan. "The Homework Apocalypse." *One Useful Thing* substack. 1 July 2023.

Schroeder, Ray. "How Will AI in Higher Education Disrupt in 2024?" *Inside Higher Ed*, 4 January 2024.

The AI Industry, Innovation and Regulations

"Fact Sheet: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence." *The White House Briefing Room*, 30 October 2023.

Metz, Cade. "Robots Learn, Chatbots Visualize: How 2024 Will Be A.I.'s 'Leap Forward.'" *The New York Times*, 8 January 2024.

Mollick, Ethan. "Google's Gemini Advanced: Tasting Notes and Implications." *One Useful Thing* substack, 8 February 2024.

Moreno, J. Edward. "Who's Who Behind the Dawn of the Modern Artificial Intelligence Movement." *The New York Times*, 3 December 2023.

Schroeder, Ray. "Like a Good Student, AI is Getting Smarter." *Inside Higher Ed*, 28 February 2024.

Schroeder, Ray. "Uncharted Territory: Artificial General Intelligence and Higher Education." *Inside Higher Ed*, 13 March 2024.

AI Ethical/Privacy/Employment Considerations

Brumfiel, Geoff. "Artificial Intelligence Can Find Your Location in Photos, Worrying Privacy Experts." *All Things Considered*, 19 December 2023.

Boyd, Danah. "Deskilling on the Job." *Apophenia*, 23 April 2023.

Mollick, Ethan. "On the Necessity of a Sin." One Useful Thing substack. 30 March 2024.

Mollick, Ethan. "Setting Time on Fire and the Temptation of The Button." *One Useful Thing* substack. 2 June 2023.

Schwitzgebel, Eric. "Do AI Systems Deserve Rights?" *Time*, 21 March 2024.

Smith, Matthew Noah. "Policing Is Not Pedagogy: On the Supposed Threat of ChatGPT." *DailyNous: News for and about the Philosophy Profession*. 3 August 2023.

AI and Anti-Bias, Anti-Racist (ABAR)/Accessibility Concerns

Buolamwini, Joy. *Unmasking AI: My Mission to Protect What Is Human in a World of Machines*. Penguin Random House, 2023. (This text is available as an electronic version via Waldo Library.)

Browne, Grace. "AI is Steeped in Big Tech's 'Digital Colonialism.'" *Wired*, 25 May 2023.

Coffey, Lauren. "Embracing Technology to Advance Equity." *Inside Higher Ed*, 20 September 2023.

D'Agostino, Susan. "How AI Tools Both Help and Hinder Equity." *Inside Higher Ed*, 5 June 2023.

Heaven, Will Douglas. "These 6 Questions Will Dictate the Future of Generative AI." *MIT Technology Review*, 19 December 2023.

Hemsley, Bronwyn, Emma Power, and Fiona Given. " Will AI Tech Like ChatGPT Improve Inclusion for People with Communication Disability?" *The Conversation*, 6 January 2023.

Citing AI/Authorship Dilemmas

"How Do I Cite Generative AI in MLA Style?" *MLA Style Center*, 12 June 2023.

McAdoo, Timothy. "How to Cite ChatGPT." *ALA Style Blog*, 23 April 2023.

Moulaison-Sandy, Heather. "What Is a Person? Emerging Interpretations of AI Authorship and Attribution." *Proceedings of the Association for Information Science and Technology*, 22 October 2023.

Walsh, Kat. "Understanding CC Licenses and AI." *Creative Commons*, 18 August 2023.

3.2 ACADEMIC INTEGRITY AND ARTIFICAL INTELLIGENCE

As higher education navigates the recent emergence of widespread availability of artificial intelligence, student conduct offices are also navigating this new reality. The intersection of artificial intelligence and academic integrity has been a regular topic of discussion in the Association for Student Conduct Administration's academic integrity community of practice, annual convention, and webinars. Current best practice is to consider artificial intelligence a new means that can be used for engaging in academic misconduct rather than a new type of misconduct. WMU's student Code tends to contain overarching statements about acceptable and/or prohibited conduct, sometimes with specific examples included to provide clarity and understanding, rather than a granular list of prohibited acts. Just like we do not have or need a calculator policy to cover unauthorized use of calculators in classes or assignments where computations are expected to be done by hand, we do not have or need a community wide artificial intelligence policy in the Student Code. The academic integrity concerns related to artificial intelligence that WMU's Student Rights and Responsibilities has received, tend to fall under our cheating or plagiarism policies.

Recognizing the different programs, courses, and assignments are likely to have different expectations related to artificial intelligence use, we encourage faculty members to clearly communicate their expectations to students early (i.e. in the syllabus), often (i.e. in specific assignment instructions), and in writing for easy reference (and to provide documentation of the communicated expectation to a hearing body if an academic integrity violation concern arises). The more detail instructors can provide of their expectations, the better students can match their behavior and choices to the expectations. Regularly, Student Rights and Responsibilities receives reports of academic misconduct where a student and instructor interpret non-specific instruction (i.e., "you can work together but not too much") differently. When thinking about artificial intelligence usage, we encourage faculty to consider what type of usage would be acceptable/unacceptable to the course/assignment and what type of documentation of the students' learning process and/or artificial intelligence use would be helpful to have. For example, if artificial intelligence can be used to edit a student's essay, would it be helpful to have a document of the changes/edits made over time and a before AI editing version and after AI editing version both submitted, what type of citation and/or notation of artificial intelligence usage is expected, is it helpful to have a list of prompts given to the artificial intelligence program, etc.?

Identifying work generated by artificial intelligence can be difficult. Current artificial detection tools are unreliable and inconsistent in their accuracy of detecting generative artificial intelligence work (Furze, 2024; Mollick, 2023; Walters, 2023). Humans, even subject area experts, struggle to accurately identify text written by artificial intelligence (Casal and Kessler, 2023; Mollick, 2023). The challenge to accurately identify artificial intelligence generated writing can compound inequities and biases present in education (Furze, 2024; Paris, 2024; Prothero, 2024). As we navigate evolving technology and its intersection with education and academic integrity, Gwen Tarbox and WMUx are excellent resources. AI @ WMU has

many resources related to teaching, assessment, expectation setting, and navigating academic integrity in the modern era, including a helpful AI resource guide.

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Prothero, Arianna. "More Teachers Are Using AI-Detection Tool. Here's Why that Might Be a Problem." *Education Week*, 5 April 2024.
Walters, William H. "The Effectiveness of Software Designed to Detect AI-Generated Writing: A Comparison of 16 AI Text Detectors." *Open Information Science*, vol. 7, no. 1, 2023.

4.0 RECOMMENDED ACTIONABLE ITEMS

The 2023-2024 Ad Hoc Committee on AI of the WMU Faculty Senate, recommends the following 8 actions:

4.1 It is recommended that the WMU Senate continue the committee ad hoc to ensure ongoing oversight and coordination of AI initiatives.

4.2 Allocate WMU resources, including funding, towards AI research and teaching endeavors to foster innovation and excellence in this field.This includes but is not limited to supporting specialized training programs that enhance skills in AI applications across various disciplines.

4.3 Establish enterprise accounts (e.g., institutional pro license of ChatGPT) to facilitate access and innovation for AI-related projects and initiatives, as well as daily operations in teaching, learning, research, and administration.

4.4 Develop a comprehensive researcher database that encompasses publications, grants, and expertise on AI to facilitate satisfying media requests, enhancing visibility and facilitating collaboration within the AI-interested WMU community.

4.5 Consider integrating AI-specific guidance into existing Academic Integrity policies, rules, and regulations to ensure ethical and responsible conduct.

4.6 Acknowledge and highlight the vibrant AI research, teaching, and development activities already underway, emphasizing WMU's commitment to advancing knowledge and innovation in this domain and affirming its status as a current leader.

4.7 Highlight the crucial role that the humanities, particularly within the liberal arts, play in AI research. Emphasize WMU's distinctive strength in integrating humanities perspectives and fostering interdisciplinary collaborations in AI initiatives. This approach underscores the importance of humanities disciplines in shaping and advancing the ethical, cultural, and social dimensions of AI technology.

4.8 Support the availability of virtual, physical, and structural spaces to facilitate interdisciplinary collaboration and community engagement, fostering a vibrant AI ecosystem at WMU.

5.0 REVIEW OF COMMITTEE'S ROLE AND FUTURE

Given the importance of continuous evolution, assessment, and adaptation in AI applications and governance, as highlighted in our unified definition of AI tools, we recommend that the committee continue its work with an updated set of charges through 2024-2025 and consider making its role a permanent fixture.

6.0 REPORT TO THE EXECUTIVE BOARD

The Ad Hoc Committee on Artificial Intelligence respectfully submits the present report to the WMU Faculty Senate Executive Board. Committee officers are prepared to present highlights and key findings to the WMU Faculty Senate in fall of 2024.