AI Tools for Teaching and Learning

Friday January 26, 2024

11:30 am – 1:00 pm

Trinity Hall 105 or via Teams

Center for Research on Teaching and Learning Excellence

OFFICE OF THE PROVOST

Division of Faculty Success

OFFICE OF INFORMATION TECHNOLOGY

Presenters and Facilitators

Center for Research on Teaching and Learning Excellence (CRTLE)

Ann Cavallo, Ph.D., Assistant Vice Provost and Director, Distinguished University Professor of Science Education

Andrew Clark, Ph.D., Associate Director and QEP Director, Professor of Communication

Beth Fleener, Ph.D., Sr. Teaching Innovation Research Associate, Clinical Assistant Professor of Mathematics Education

Nali Kim, Ed.D., Teaching Innovation Research Associate, Instructor Department of Linguistics and TESOL

Office of Information Technology (OIT)

Lee Pierce, Director, Operational Learning and Communications

Douglas Bergère, Assistant Vice President, Innovation and Research, Enterprise Technology Services

Brenna Witt-Marett, Web Software Specialist Learning and Communications

Interactive Session Agenda

1. Welcome and Introductions
2. AI Tools for Faculty Use
3. How Can We Use AI Tools in Teaching and Learning?
4. Discussion of Issues, Challenges, and Ethics with AI
5. Invitation to Contribute
6. CRTLE Upcoming AI Events and Resources
7. Closing and Contact Information

AI TOOLS FOR TEACHING & LEARNING

Session 1: Generative AI Imagery

Lee Pierce & Brenna Witt-Marret

Office of Information Technology

Interactive Feedback

PollEverywhere.com

Join via text

1. Open your texting app
2. In the “To” area, type **22333**
3. Send this text: **leepierce056**
4. You should receive aa message that you’ve joined the session

Or join via web address

1. PollEv.com/leepierce056

Hard or Strong AI

Not Here Yet

AI that is “hard” AI does not just take in information — it actively works to comprehend the information and carry out tasks with its own volition. “Hard” AI is more like the human brain itself. A technological entity with the ability to think and process for itself is more representative of human intelligence and action than algorithms that prompt information and task spitballing.

- Jillian Holbrook
on Medium

Soft or Weak AI

What We Have Today

Weak AI is designed to do one thing really well.

Weak AI systems operate within predefined boundaries and rely on algorithms, rules, or data to accomplish their tasks.

- Dr. Lisa Palmer

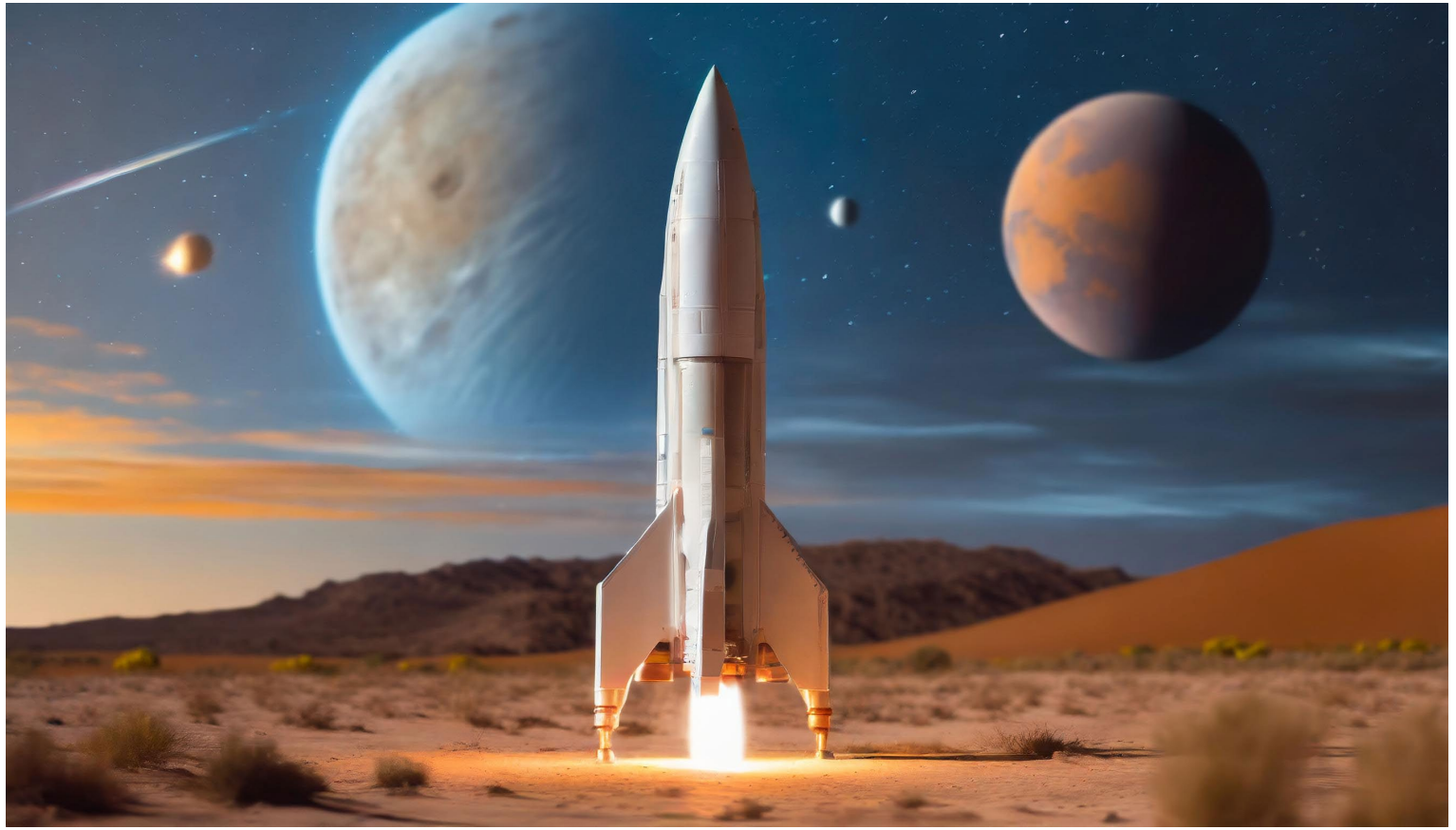
Predictive vs Generative AI

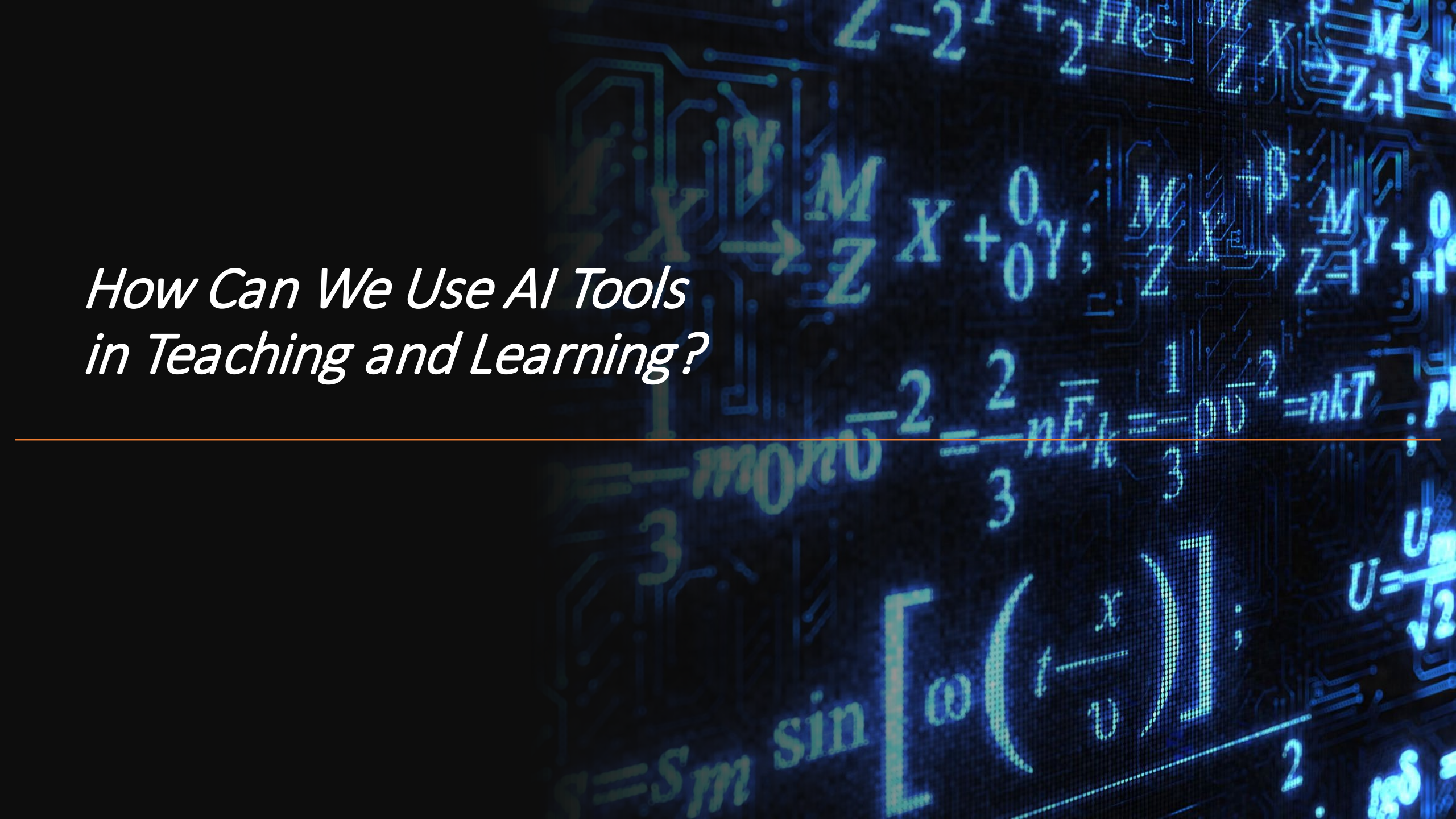
Predictive AI uses large data repositories to recognize patterns across time. Predictive AI applications draw inferences and suggest outcomes and future trends.

Generative AI utilizes sophisticated modeling to add a creative element. Generative AI software creates images, text, video, and software code based on user prompts.

- Aminu Abdullah
from eweek.com

Let’s Generate Something





How Can We Use AI Tools in Teaching and Learning?

Art and Graphics

Prompt, Text to Image: *An Information Technology expert teaching a class of university professors how to use Adobe Firefly.*

UTA: Adobe Creative Cloud - Adobe Firefly




Art and Graphics

Prompt, Text to Image: *An Instructional Technology expert teaching a class of university professors how to use Adobe Firefly.*

UTA: Adobe Creative Cloud - Adobe Firefly

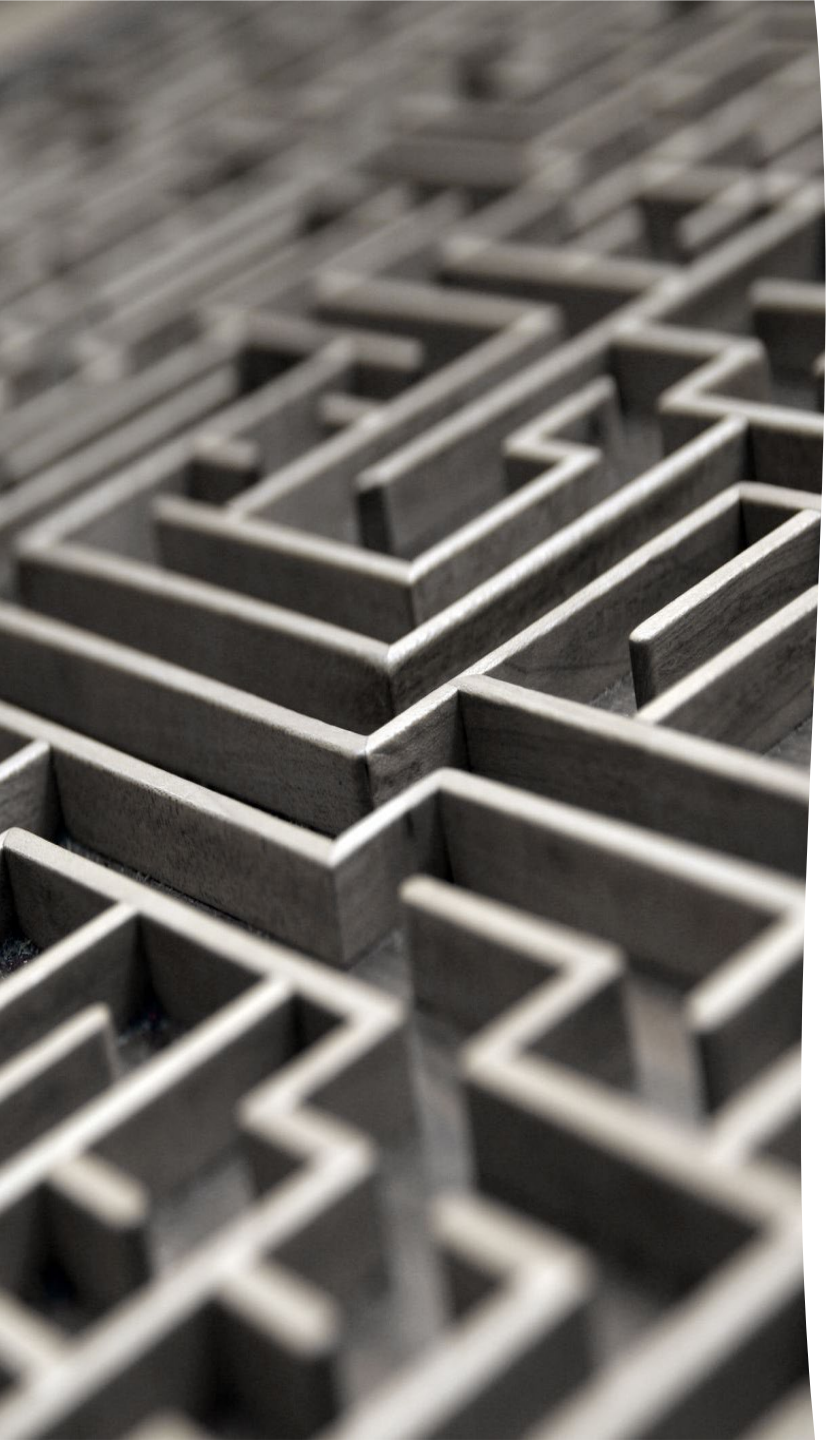



Teaching and Learning Using AI

Ask Students to:

1. Critique outputs ChatGPT generates on topics using logic and reasoning and/or comparing to what is learned in class.
2. Practice prompt engineering (writing prompts) and critique/analyze/compare the different outputs.
3. Design activities that will engage classmates in deliberately using AI in creative ways in class.
4. Compare/cross-check data or information AI provides on selected topics to that collected through sources such as journal articles, films, and library resources.
5. Explain why or how they know an AI generated response is correct or incorrect.
6. Enter original mathematics problems in AI and trade their problems and responses with others in class to discuss and check accuracy.

Discussion of Issues, Challenges, and Ethics With AI



Problems with Detectors

Unethical

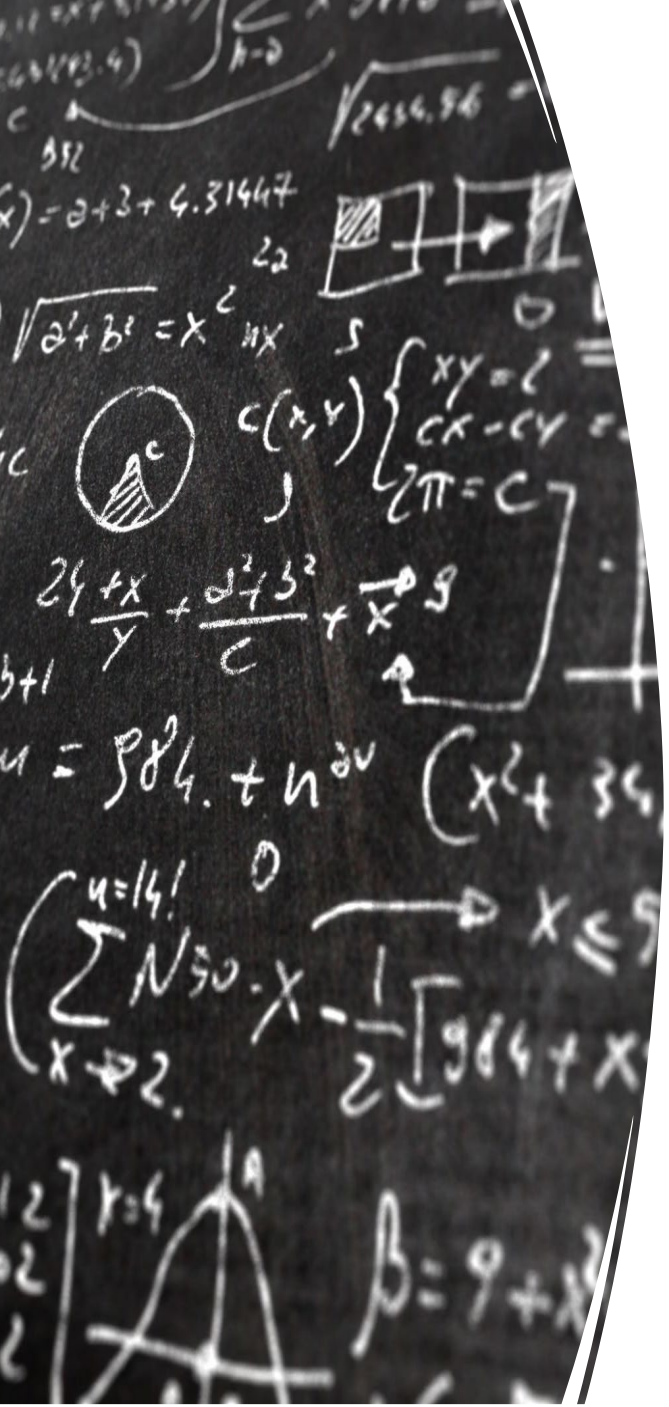
Professors are using ChatGPT detector tools to accuse students of cheating. But what if the software is wrong?

https://www.usatoday.com/story/news/education/2023/04/12/how-ai-detection-tool-spawned-false-cheating-case-uc-davis/11600777002/

Unreliable

Most sites claiming to catch AI-written text fail spectacularly

https://techcrunch.com/2023/02/16/most-sites-claiming-to-catch-ai-written-text-fail-spectacularly/



Problems with ChatGPT Detectors

We tested a new ChatGPT-detector for teachers. It flagged an innocent student.
https://www.washingtonpost.com/technology/2023/04/01/chatgpt-cheating-detection-turnitin/

- Turnitin's detector **"identifies when writing is too consistently average,"** Wang says. This is a problem because sometimes a *human writes in a consistently average way*.
- On **economics, math and lab reports**, "students tend to hew to set styles, meaning they're more likely to be **misidentified as AI writing**, says Wang. That's likely why Turnitin erroneously flagged Goetz's essay, which veered into economics." ("My teachers have always been fairly impressed with my writing," says Goetz.)

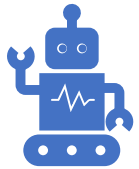
Challenges With AI

- May provide false information (e.g., Traxoline), or make assumptions that the word was misspelled (e.g., Trazine, Trampoline)
- Has limited information base (though continually improving)
- Surface level information, depth and detail come with continual prompting or refinement of prompting
- May give inaccurate or false citations/references
- Detectors are unreliable and potentially unethical

Prompt:
Write a policy statement for a course syllabus on the use of ChatGPT

ChatGPT is a tool that may be used in this course as a resource for generating written responses and facilitating class discussions. However, it is important to note that ChatGPT is not a substitute for critical thinking and independent analysis. Students are expected to use ChatGPT to generate ideas and inspiration, but the final product submitted for assignments must be original work and properly cited. Plagiarism of any kind will not be tolerated and will result in a grade of zero for the assignment.

Opportunity to Contribute



AI in Teaching and Learning Seminar Series and Resource Guide

You are Invited to Contribute!

CRTLE invites you to share your AI teaching practices!

Complete the short form at the link below and describe how you are using AI in teaching. On the form, select if you would like to:

1. Present your strategy for teaching with AI in a CRTLE session this spring semester (optional).

2. Contribute your strategy to a CRTLE AI in Teaching resource guide we are building, where we will credit you as author, on the creative way(s) you use AI in your classes (pending your final review and permission).

To Respond: https://utaedu.questionpro.com/t/AQoqaZ0ODS

OR

CRTLE AI Upcoming Events and Resources

CRTLE AI Session Series

- **AI in Education Guest Speaker Series**

  Dr. John Behrens, The University of Notre Dame
  February 28, 11:30 am – 1:00 pm *(With lunch for in-person attendees)*
  105 Trinity Hall and via Teams (Hybrid)

  RSVP Your Attendance: https://utaedu.questionpro.com/t/AQoqaZ1ORS **OR**

  Generative AI Across the Instructional/Assessment Life Cycle
  Generative AI is a collection of technologies and processes that often produce artifacts indistinguishable from those created by humans. This raises issues in trust, meaning, and interpretation as well as opportunities to augment instructional design and implementation processes. This talk will address core attributes of generative language models, some critical aspects of prompt engineering, and discuss how they can be applied across the instruction and assessment lifecycle.

- **More AI Sessions TBD – Presented/Co-presented by Faculty Using AI in Teaching**

CRTLE AI Resource Page

AI in Education: https://www.uta.edu/administration/crtle/initiatives/ai-in-education **OR**

AI Tools for Teaching and Learning
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Voiceover and Radio AI

Voiceover AI: https://speechify.com/

Radio AI: https://airadio.host/

Artificial Intelligence Radio: https://artificialintelligenceradio.com/

Music AI

Soundraw: https://soundraw.io/

Boomy: https://boomy.com/

AIVA: https://www.aiva.ai/

Johnny Cash AI: https://www.youtube.com/@JohnnyCashAI

Large Language AI

OpenAI with ChatGPT and DALL-E: https://openai.com/

ChatGPT (free): https://chat.openai.com/

Google Bard (a conversational AI tool): https://bard.google.com/chat

Microsoft Azure: https://azure.microsoft.com/

Microsoft Co-pilot: https://www.microsoft.com/en-us/microsoft-copilot

Graphic and Art AI

Adobe Firefly (images) - Available to UTA faculty through Adobe Creative Cloud

Topaz AI (maximizes visual quality of photos and videos): https://www.topazlabs.com/

Stable Diffusion (images): https://stablediffusionweb.com/#demo

Fy! (images): https://www.iamfy.co/studio

Visme (free option, graphics): https://www.visme.co/

Mathematics AI

AI Math Problem Solver: https://www.intmath.com/help/ai-problem-solver-home.php

AI Math Teacher: https://deepai.org/chat/mathematics

Wolfram: https://www.wolfram.com/wolfram-plugin-chatgpt/

Photomath: https://photomath.com/en

MathGPT: https://mathgpt.streamlit.app/

MathGPTPro: https://mathgptpro.com/

AI Resources for Teaching

Resource Guides on Teaching with AI in Higher Education

- ACUE 10 Best Practices for AI Assignments in Higher Ed: https://acue.org/blog/unlocking-human-ai-potential-10-best-practices-for-ai-assignments-in-higher-ed/
- 101 Creative Ideas to Use Ai in Education: https://media-and-learning.eu/type/news/101-creative-ideas-to-use-ai-in-education-a-crowdsourced-collection/

Articles on AI in Teaching in Higher Education

- Howell, C.W., Baker, C. & Stylianopoulos, F. (2023, November). To educate students about AI, make them use it. *Scientific American.* https://www.scientificamerican.com/article/to-educate-students-about-ai-make-them-use-it/
- Sharma, S. (2023, August). Guiding students to assess the merits of artificial intelligence tools. *Edutopia.* https://www.edutopia.org/article/teaching-students-use-ai-tools/
- Professors and Administrators from Five Major Public Universities (2023, December). Indecision about AI in classes is so last week. *Inside Higher Education.* https://www.insidehighered.com/opinion/career-advice/2023/12/01/advice-about-ai-classroom-coming-new-year-opinion
- Salmon, J. (2023, June). How college educators are using AI in the classroom. *The Hechinger Report.* https://hechingerreport.org/how-educators-are-using-ai-in-the-classroom/
- Drozowski, M. (2023, October). 5 ways artificial intelligence will transform higher education. *Best Colleges.* https://www.bestcolleges.com/news/analysis/5-ways-ai-will-transform-higher-education/
- Coffey, L. (2023, October). Students outrunning faculty in AI use. *Inside Higher Education.* https://www.insidehighered.com/news/tech-innovation/artificial-intelligence/2023/10/31/most-students-outrunning-faculty-ai-use

Contact Information

CRTLE Website:

https://www.uta.edu/crtle *or* QR Code:

CRTLE Email:

CRTLE@uta.edu

CRTLE Social Media:

Twitter: @CRTLE_uta

Facebook: @CRTLEUTA

Instagram: @CRTLE_uta

YouTube: CRTLE UTA

Help support, innovate, and advance teaching excellence at UTA!