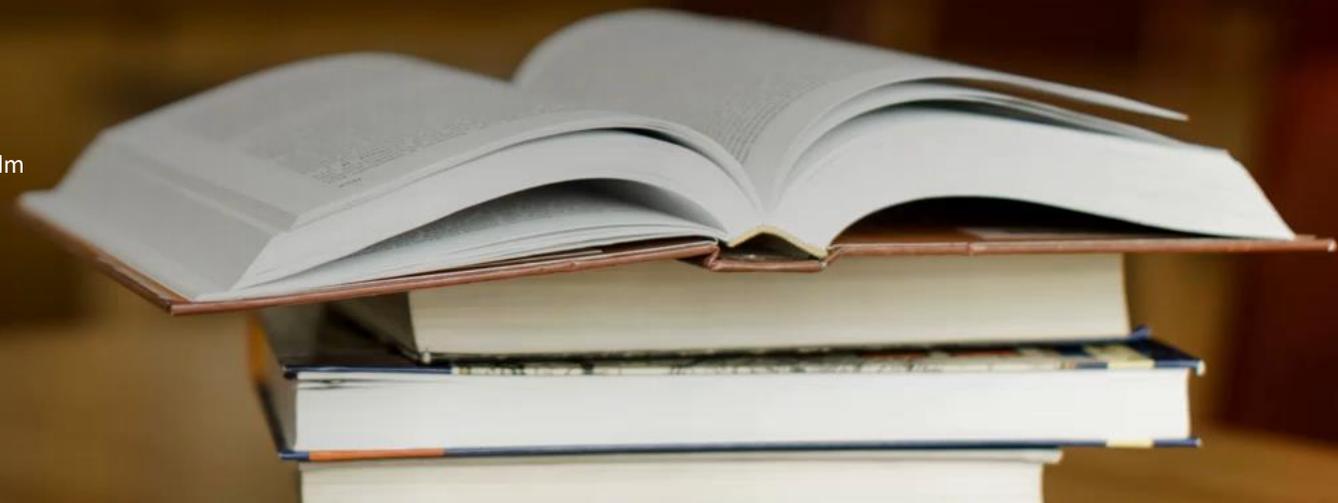# AI in Education: Unlocking its potential, and igniting further questions

Unleashing the AI Monster: Terrors and Triumphs in the Digital Realm

30th October

Fiona McConnell Digital Skills Training Officer at UHI Inverness

@feefeeMcConnell

Agenda

- Introduction – **What types of AI tools exist**
- Current Uses – **How staff and students are using AI tools already**
- Challenges – **Lack of digital skills, access to affordable AI resources and bias in AI systems**
- Importance of AI literacy – **Understanding AI to use it properly**
- Other Institutional Responses – **Examples of how others are addressing AI**
- Assessment – **AI can help, but not replace student work**
- Teaching with AI - **Promote critical thinking by questioning AI outputs**
- Looking Ahead - **AI's impact on education and jobs is still unfolding**

Generative and Assistive AI tools

Generative AI tools:

- Use large datasets and algorithms
- Creates text, images and audio.
- AI will look patterns in the dataset
- Create new outputs/content
- Prompts and instructions from the user.

Assistive AI tools:

- Aid and enhance human capabilities.
- Text-to-speech & Immersive reader Office 365
- These tools can automate or improve

What is Chat GPT?

Built by OpenAI, released in November 2022

GPT stands for generative pre-trained transformer.

Natural language processing (NLP) application. Think of Siri or Alexa

Checks the probability of what words comes next, relying on math and probability

It doesn't think – it doesn't know what's its saying or doing, however is adept at recognizing context and meaning, transforming these into actions.

Free version Chat GPT – 3.5 , uses data from 2021 and earlier that has been fed into it – it doesn't access the internet, its trained via data it has and people using it.

ChatGPT - 4 (plus). Approx £20 per month.

Why is ChatGPT (AI) so popular

- ChatGPT itself says, its use, especially in education has been accelerated by Covid-19, due to the adoption of technologies needed to move quickly online for teaching (Baidoo-Anu & Ansah 2023)
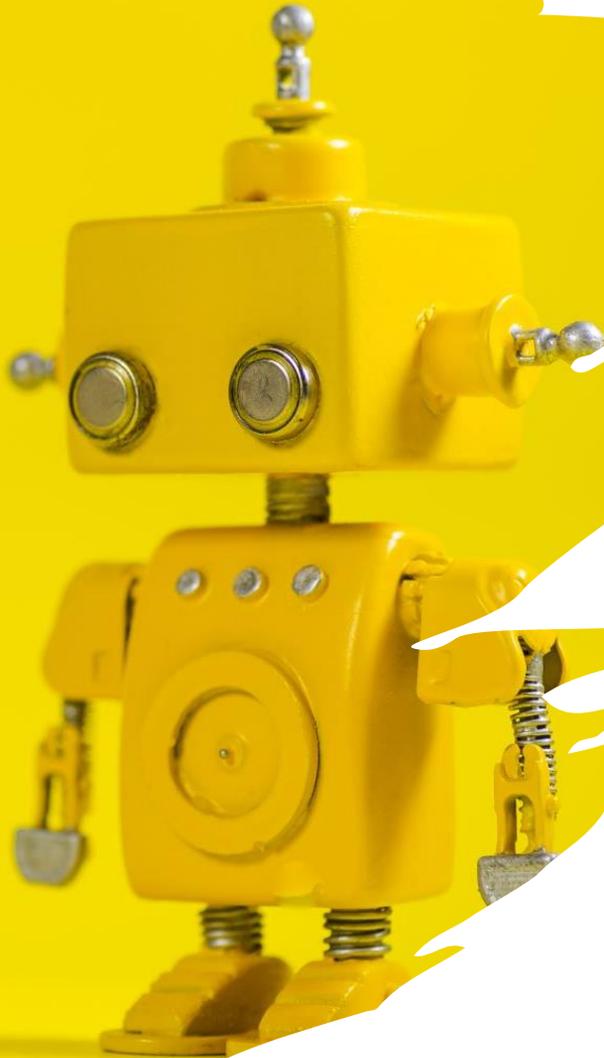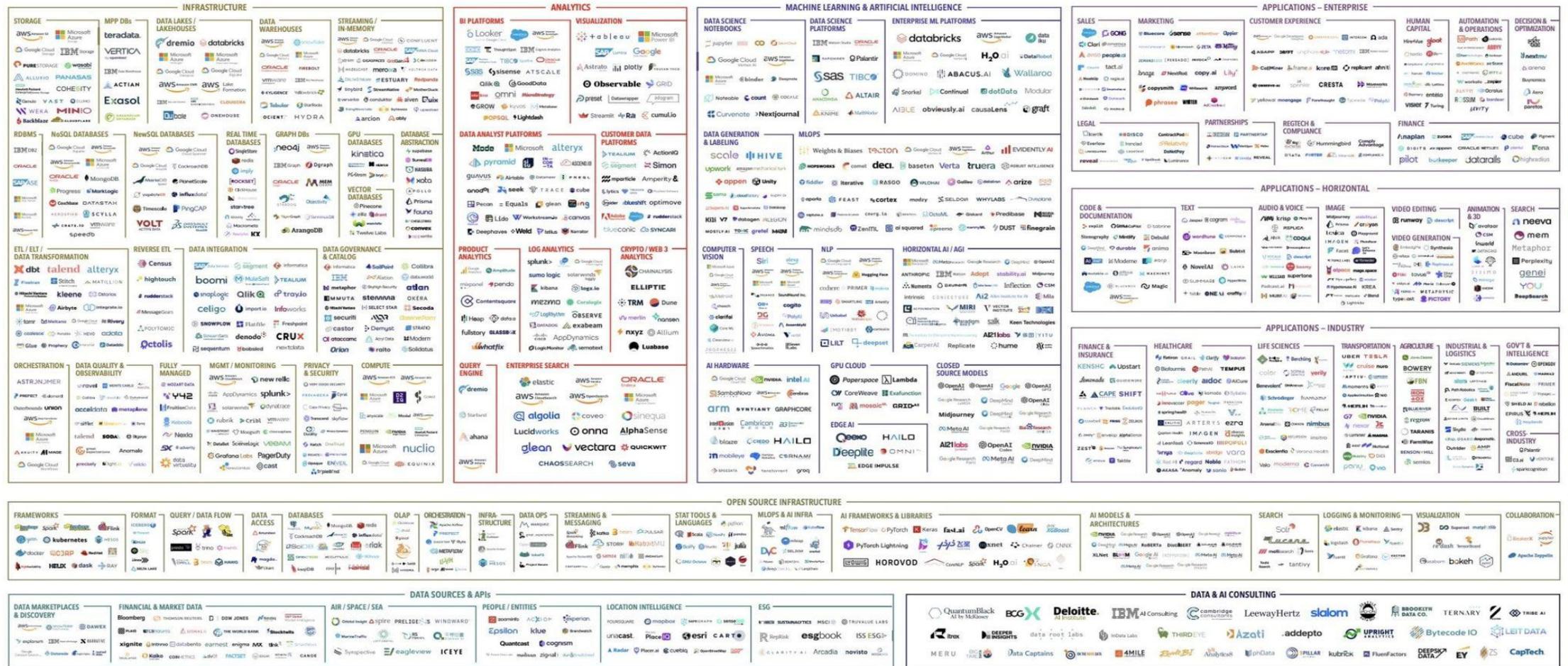
Other popular AI tools

- Bing from Microsoft Office.
- Google BARD
- Co-pilot Microsoft Office (TBC)
- Claude - Anthropic

The current MAD (Machine learning, Artificial Intelligence & Data) landscape: from @AIBreakfast

AI Breakfast (2023) tweeting a picture of all AI tools from February 2023

So, who uses these AI tools?

- Over half the population have heard of generative AI with 26% having used the technology (Deloitte 2023)

- With 32% of those that have used these tools have so for work (Deloitte 2023)

Students may (are) already using AI tools

AI makes knowledge easier to access

'Students recognised that ChatGPT was helpful for summarising, brainstorming, explaining and suggesting. They mentioned how it made it easier to learn difficult topics in a conversational way' (The Conversion 2023)

With over 50% of 16–19-year-olds using AI for educational reasons (Deloitte 2023).

Examples of use -

- Inspiration
- Create study plans
- Practice questions
- Study Buddy
- Collaborative coach

Ideas for use with ChatGPT

Academic staff

- Generate Lesson Plans

- Generate quizzes

- Personalised learning

- Generating prompts for discussion and debate

- Creating Rubrics

Professional Services

- Writing emails

- Engagement ideas

- Newsletters

- Marketing Ideas

UHI AI policy

- Using OpenAI – ChatGPT-3.5 for staff

Following the UHI AI policy you can only use ChatGPT-3.5 and sign up with your UHI credentials and work purposes, if you follow the correct processes detail in the document.

..Staff may not request students to sign up for AI accounts but recognise students maybe using these tools.

Existing challenges to using AI

- To use AI, there must be existing knowledge around digital literacies, e.g., using computers. So, this can be effectively built upon (Long & Magerko 2020).

- However, there is already existing lack of digital skills and literacies, so persons may already lack in the skills and confidence to use AI to teach with effectively or critically (Su et al 2023).

- Inequality - In having access to right digital tools, including AI – such as ChatGPT-4 at £20 per month
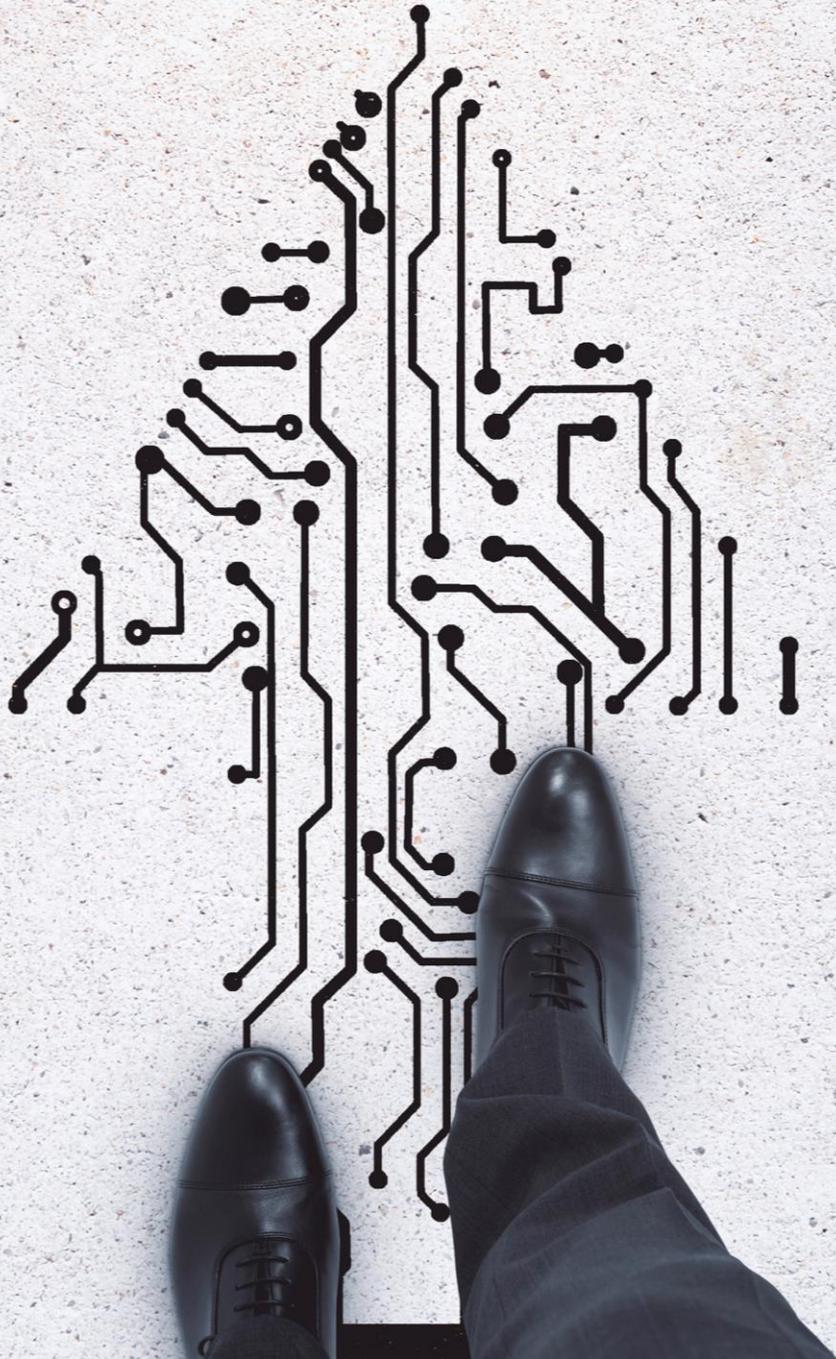
AI in the workplace and issues beyond

- Not everyone is afraid of using AI, those who see the potential and its benefits – which include saving time, making them more creative and better at their job (Vox 2023)

AI writing songs and creating art – who owns the copyright and what are the implications?

With four in ten people stating they would be less inclined to listen to music if it had been produced by AI. (Deloitte 2023)

Why it's important to understand AI?

'The Bank of England has warned that the risk of artificial intelligence-driven models producing biased outcomes could pose a threat to financial stability' (The Times 2023)

It's important to identify and mitigate sources and the impacts of bias that exist.

- UK Government – **'New innovation challenge launched to tackle bias in AI systems.'(UK Government 2023)**
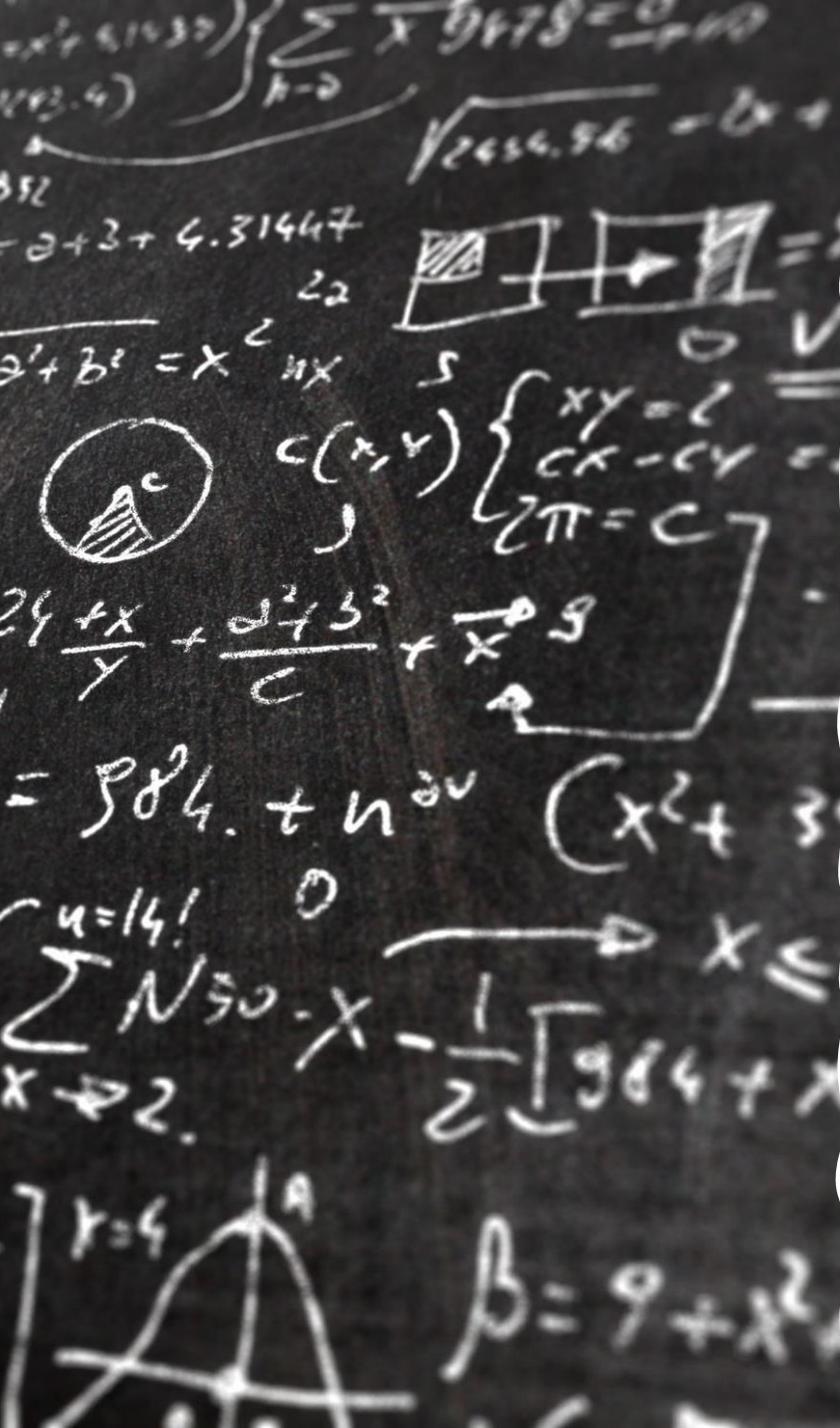
Why is understanding AI important?

'Like writing, AI has entered the system of everyday life and become a target of basic literacy'. (Yi 2021:353)

AI Literacies

There must be a balance of understanding and not being too overwhelmed.

- Having the basic skills and knowledge to determine what generative AI tools and assistive AI tools are, so to use these at home and in the workplace.

- Data literacies, recognising where the data and outputs come from, so to be critical and examine the results.

- Ability to creatively use and collaborate with others using AI tools, but take into consideration any ethical issues, which would impact on the integrity of human based work

(Long & Magerko 2020)
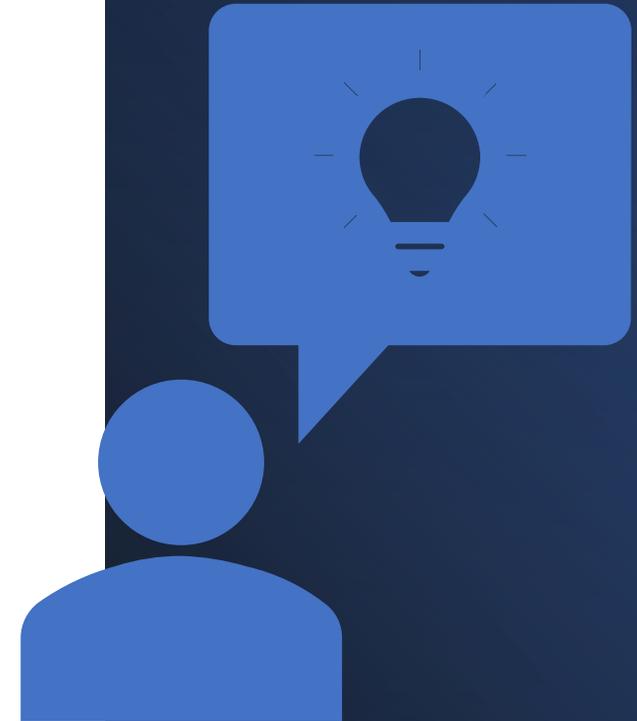
How other institutions are responding – Policies and examples

- Using AI tools in Assessments – giving examples of tools that can and cannot be used – University College London.

- University of Delaware list various options when to use AI tools from, when use is prohibited, to using it freely without acknowledgement.

CITY Learning & Teaching ACADEMY

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Using Artificial Intelligence

We think you all need to be aware of Artificial Intelligence

We know you will all be discovering these tools and it is important that you know how to use these ethically.

Glasgow City College – Policies with staff & Student guidance

A couple of the key points from there resource

•Learn how to use the relevant AI tools to support your learning.

•Never try to pass off work done by AI as your own work.

Draft of an AI policy by Prof. Drew Loewe from St Edward's University

An honest and transparent take on using generative AI tools

Generative AI technologies (GAIs) are any artificial intelligence technology that can produce or summarize digital content (e.g., text, images, video, audio) from a prompt. Current examples include ChatGPT, Bard, Claude, Perplexity, the Google Docs "Help me write" feature, Dall-E, and Midjourney.[1]

- Unless I say otherwise in a particular context, this policy applies to all of your work in the classes that I teach.
- I don't make policy for other classes. You will have to ask your other professors about their policies.
- Because GAIs are fast-emerging and are evolving constantly, I may revise this policy at any time.

1. If a Particular Assigment Prohibits GAI

If I prohibit the use of GAI for a particular item, I will state so and use this symbol:

I will use this designation mostly in WRIT 3330: The Craft of Editing, where you are learning hands-on proofreading and editing.

Submitting a text that is all or mostly the output of a GAI when prohibited will result in a grade of 0 and my reporting you for violating the university's academic integrity policies.

2. If a Particular Assignment Permits GAI

If I permit the use of GAI for a particular item, I will state so and use the symbol below, but you have to follow the rules:

GAI OK WITHIN RULES

Other institutions student guidance
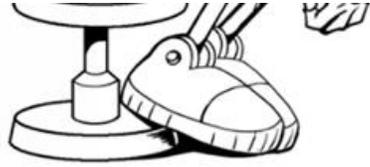
WARNING! Always fact-check what Artificial Intelligence produces. It commonly makes mistakes or invents information, such as fake references.

▸ ℹ How To Use Artificial Intelligence

▾ 🧠 AI Thinking Partner
- ▸ Bouncing ideas
- ▸ Converse with experts from history
- ▸ Challenge your ideas using the Socratic method
- ▸ Develop your arguments using Aristotle's Appeals
- ▸ Map ideas and concepts
- ▸ Reword content for different audience levels
- ▸ Summarise video content (copy+paste video transcript)
- ▸ Summarise written content

▾ 👨‍🏫 AI Personal Tutor
- ▸ Analogies to aid understanding
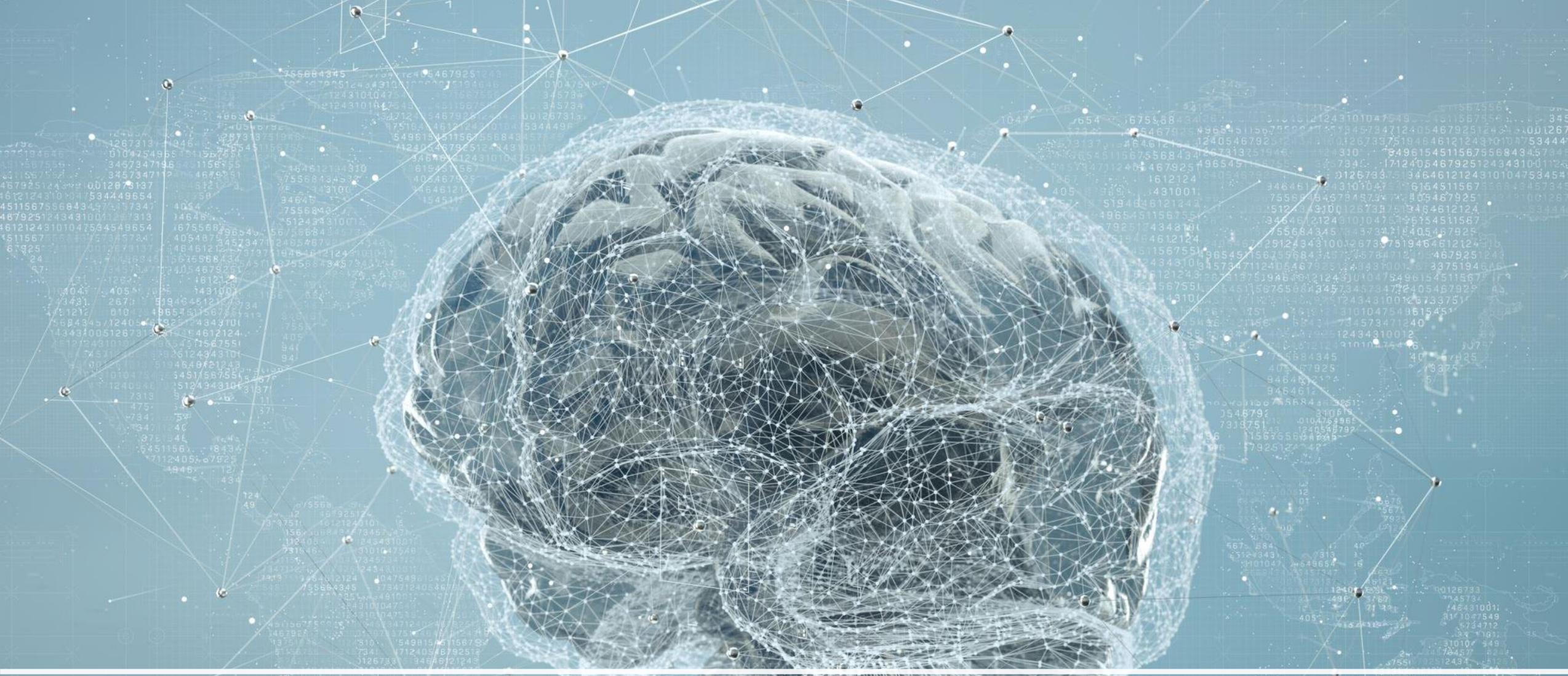- ▸ Check if your work is accurate
- ▸ Check code
- ▸ Delve deep into concepts

- How to use AI
- AI thinking partner
- AI personal tutor
- Help with assessments
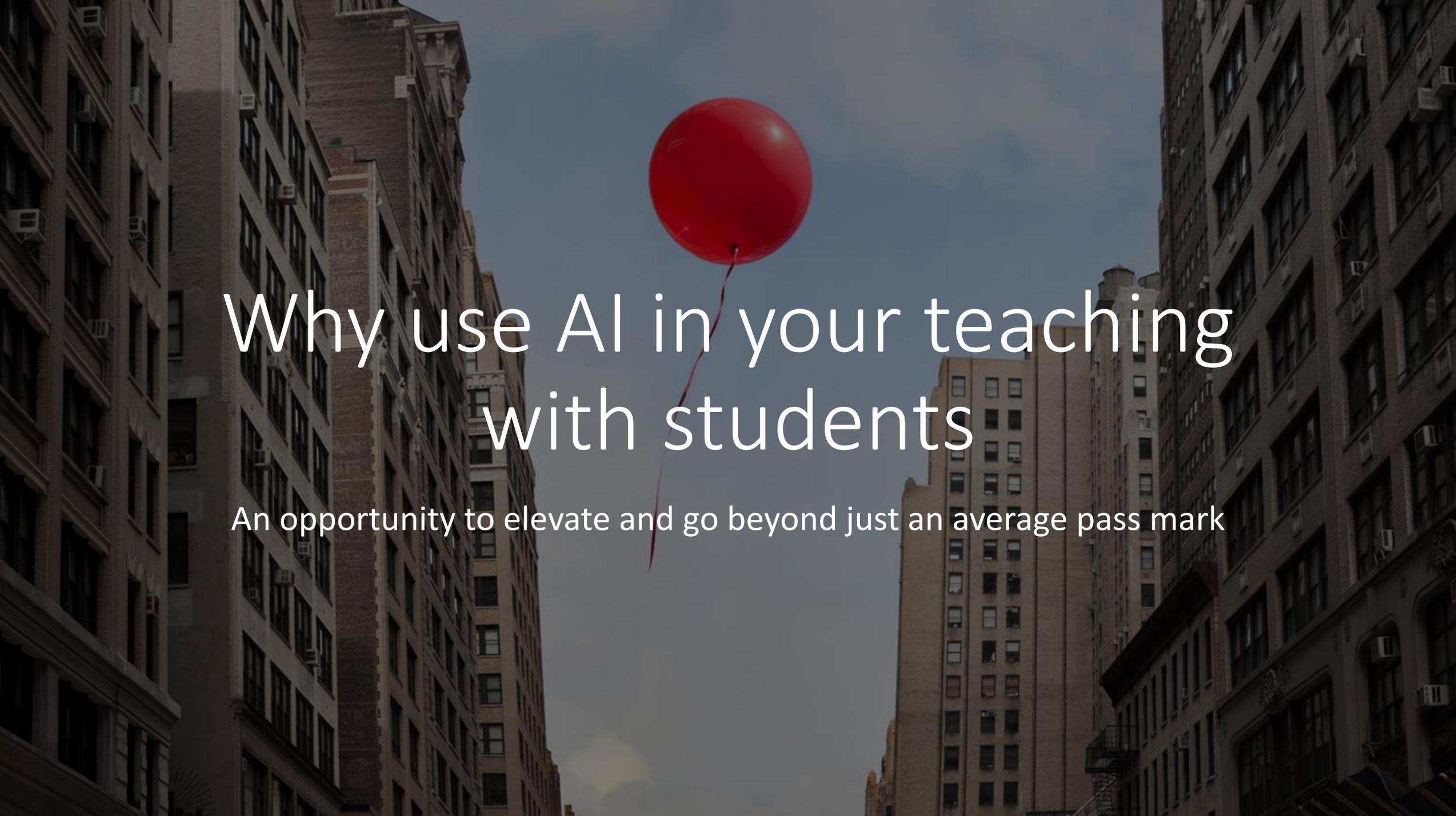- Support for common learning needs
- Useful links & Tools

AI and assessments

It's about the journey and not the end goal – the assessment.

AI is great at creating...But

Why use AI in your teaching with students

An opportunity to elevate and go beyond just an average pass mark

Future of using AI tools in academia

- Cognitive Offloading and Assessment

'Cognitive offloading refers to using tools like notes, calculators or spellcheckers to reduce the cognitive demands of a task. Assessment has a patchy history in attending to cognitive offloading. In some settings, such as exams, there are explicit rules that relate to cognitive offloading, such as the allowance or prohibition of textbooks and notes. However, in other settings, particularly authentic open-ended tasks there is less clarity' (Dawson 2020:37-48)

Thomas Lancaster
@DrLancaster

Don't rely on detection tools for #ArtificialIntelligence #ChatGPT, warns
@phillipdawson (I agree completely) #CSAI23 #academicintegrity

Detecting GenAI

- It's unclear how effective GenAI detectors are now, and there are claims that it'll never be possible
- Claims of very high detection rates haven't been verified by independent researchers
- If you take one thing from this talk: don't upload student work to random GitHub/HuggingFace ChatGPT detectors or ChatGPT itself
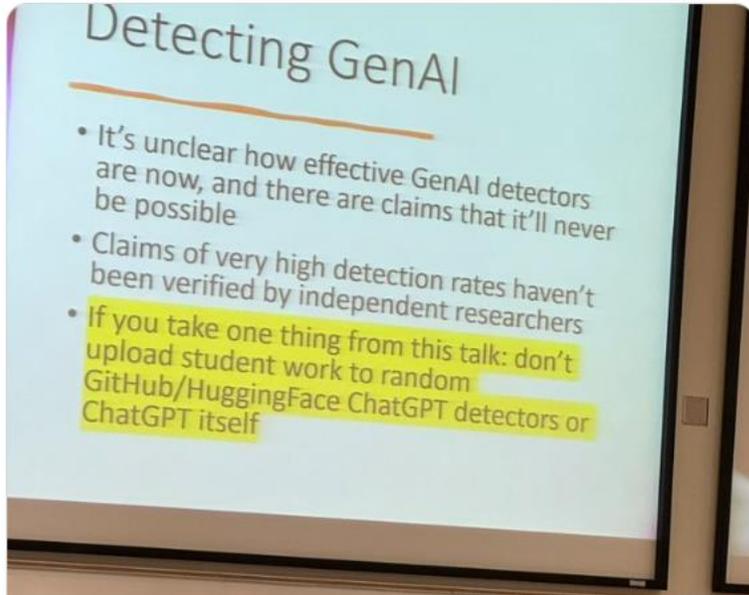
TECH IN YOUR LIFE

Detecting AI may be impossible. That's a big problem for teachers.

Turnitin has acknowledged a reliability problem with AI cheating-detection software used on 38 million student papers. Computer scientists warn we may never be able to reliably detect AI.

Analysis by Geoffrey A. Fowler
Columnist | + Follow

June 2, 2023 at 12:30 p.m. EDT

Rebecca Dell, AP English teacher, in front of her classroom at Concord High School with student Lucy Goetz. Goetz helped The Post test Turnitin's AI detectors earlier this year — and found the system inaccurately flagged her original essay as AI-generated. (Andria Lo for The Washington Post)

Can AI tools be used to detect plagiarism?

- No AI detection system can give results that are reliable enough. "Detecting AI may be impossible. That's a big problem for teachers."

AI is a tool, so why not use it as one

AI (ChatGPT) does not know everything, so let's view it as something else.

- Ask it – then build upon it

- Question it answers – critique it

- Create and build upon it to create better and new ideas.

Ask AI better questions. (prompts)

Prompts and clear instructions are key to getting successful outputs

AI taking over the world and taking jobs.. Maybe?

'Rogue AI will learn to 'manipulate people' to stop it from being switched off, predicts British 'Godfather of AI' (Fortune 2023)

Top AI researchers and CEOs warn against 'risk of extinction' in 22-word statement (The Verge 2023)

CEO roasts human workers he fired and replaced with ChatGPT "It was [a] no-brainer for me to replace the entire team with a bot" (The Byte 2023)

ChatGPT took their jobs. Now they walk dogs and fix air conditioners (The Washington Post 2023)

So, is AI worth the hype?

Thank you

Disclaimer

Various AI tools were used in the drafting and ideas stage of this presentation, including the formatting of referencing.

These include the below:

- Chat GPT 3.5
- Claude
- Google Bard
- Bing Chat

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