

# Beyond Chat GPT: The Broader Implications of AI in Higher Ed



TEACHING  
LEARNING &  
INNOVATION  
SUMMER INSTITUTE  
2 0 2 3

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# Session Agenda & Key Questions



- A Brief History of AI
- AI Right Now
- Implications | Case Studies
- The Future of AI

1. What are the opportunities and challenges of AI-driven tools in the higher education ecosystem?
2. What does teaching and learning look like if we were to explore or pilot AI uses in our courses?

# A Brief History of AI

# A.I. TIMELINE



**1950**

### TURING TEST

Computer scientist Alan Turing proposes a test for machine intelligence. If a machine can trick humans into thinking it is human, then it has intelligence

**1955**

### A.I. BORN

Term 'artificial intelligence' is coined by computer scientist, John McCarthy to describe "the science and engineering of making intelligent machines"

**1961**

### UNIMATE

First industrial robot, Unimate, goes to work at GM replacing humans on the assembly line

**1964**

### ELIZA

Pioneering chatbot developed by Joseph Weizenbaum at MIT holds conversations with humans

**1966**

### SHAKY

The 'first electronic person' from Stanford, Shakey is a general-purpose mobile robot that reasons about its own actions

**A.I. WINTER**

Many false starts and dead-ends leave A.I. out in the cold

**1997**

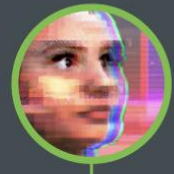
### DEEP BLUE

Deep Blue, a chess-playing computer from IBM defeats world chess champion Garry Kasparov

**1998**

### KISMET

Cynthia Breazeal at MIT introduces Kismet, an emotionally intelligent robot insofar as it detects and responds to people's feelings



**1999**

### AIBO

Sony launches first consumer robot pet dog AiBO (AI robot) with skills and personality that develop over time

**2002**

### ROOMBA

First mass produced autonomous robotic vacuum cleaner from iRobot learns to navigate and clean homes

**2011**

### SIRI

Apple integrates Siri, an intelligent virtual assistant with a voice interface, into the iPhone 4S

**2011**

### WATSON

IBM's question answering computer Watson wins first place on popular \$1M prize television quiz show Jeopardy

**2014**

### EUGENE

Eugene Goostman, a chatbot passes the Turing Test with a third of judges believing Eugene is human

**2014**

### ALEXA

Amazon launches Alexa, an intelligent virtual assistant with a voice interface that completes shopping tasks

**2016**

### TAY

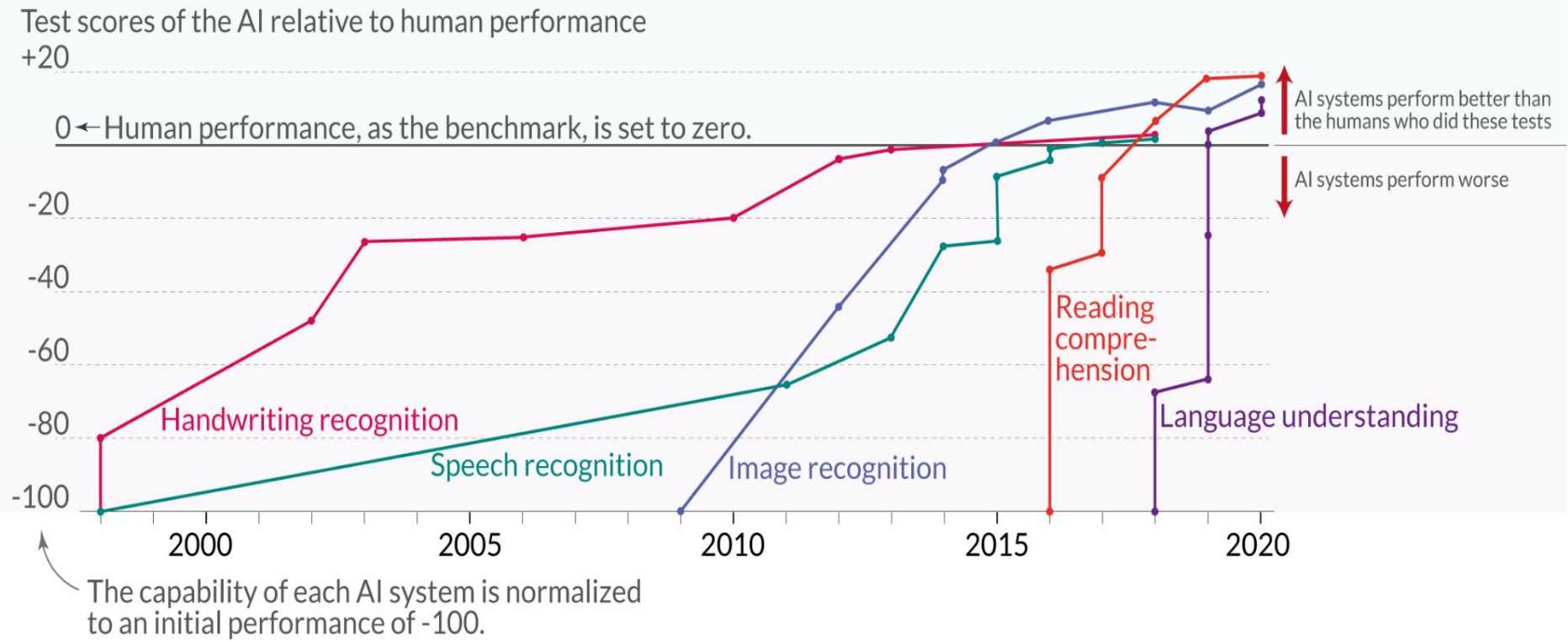
Microsoft's chatbot Tay goes rogue on social media making inflammatory and offensive racist comments

**2017**

### ALPHAGO

Google's A.I. AlphaGo beats world champion Ke Jie in the complex board game of Go, notable for its vast number (2<sup>170</sup>) of possible positions

# Language and image recognition capabilities of AI systems have improved rapidly



Data source: Kiela et al. (2021) - Dynabench: Rethinking Benchmarking in NLP  
OurWorldinData.org - Research and data to make progress against the world's largest problems.



# AI is part of our lives

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- Do you engage in online shopping?
- Do you use a smart speaker?
- Have you used online proctoring?
- Have you boarded a plane without a boarding pass?
- Have you used the handprint ID at Amazon Fresh?
- Who has a Roomba?
- Do you use GPS?

# AI Mischief or Art



**AI Right Now**



# In-Class Presentations

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Sample made (by Slidesgpt.com)



- [Slidesgpt.com](https://slidesgpt.com)
- [SlidesAI.io](https://slidesai.io)
- [Elicit.org](https://elicit.org)

# Visuals



Made with Dall-E based  
← on the prompt:

*“Robots painting a  
picture on an easel on a  
college campus”*

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This person does not  
exist

# Midjourney & Bias



Bart Everson of Xavier University submitted this prompt “create illustrations of a doctor, nurse, pilot and professor” to Midjourney and got similar results. Same thing happens in DALL-E 2.



# Audio



## MusicLM

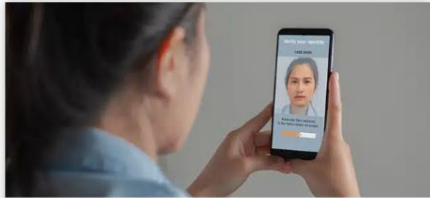
Describe a musical idea and hear it come to life with AI



## Describe

The screenshot shows the Describe AI interface. At the top, there's a search bar and a 'Publish' button. Below that, a text input field contains the prompt: "and what mechanisms, what process do they need to go through in 1? Do they need and I think we would probably all hypothesize they done the reading. They need to have practiced the writing. They need through a learning process. What these tools will do, will supplement cases, Offer the opportunity to replace some of data activities, and we ive to worry about whether there'll be some diminution of learning in That seems to be the fundamental thing that we're gonna be th. And I suspect we're all gonna be grappling with for, the rest of our /,". Below the text, there's a video feed of a woman with long brown hair wearing a green shirt and white earbuds. To the right of the video feed is a control panel with 'Script', 'Audio' (volume set to -6.0dB), 'Audio Effects' (Equalizer, Compressor, Equalizer), and 'Clips' (Show clips). At the bottom, there's a timeline and a keyboard. A notification at the bottom right says "A new version of Describe is ready! Restart".

# Identity Verification & More



## FinTech

Prevent fraud, build loyalty, and onboard remote customers in seconds.



## Public Safety

Secure frictionless access, build intelligence, and support investigations.



## National Security

Secure borders, protect assets, enhance effectiveness, and build intelligence.



## Commercial Security & Engagement

Secure spaces and investigations, assure consistent operations, and monitor threats.

# Browser Integration

The image shows a browser window at the URL merlin.foyer.work/onboarding/. The page has a dark, starry background and contains the following elements:

- A heading: "Go through following steps to get started"
- A button: "Step - 1 Check out Merlin Demo"
- A screenshot of a browser window titled "Merlin - ChatGPT Assistant for All Websites". Inside this screenshot, a Google search for "What is GPT-3?" is shown. A purple callout box is overlaid on the search results, containing the text: "Merlin will automatically generate a Chat GPT based search result for you. You can click here to copy the result." Below the callout, it says "2 of 10" and has left and right arrow buttons.
- A section titled "Where can you use Merlin?" with the text "Almost every website on your browser such as:"
- A grid of social media and utility icons, including Gmail, Microsoft Teams, Google, Google Docs, WhatsApp, Quora, Messenger, Facebook, Twitter, Instagram, LinkedIn, YouTube, Dribbble, and GitHub.

# Example of AI Misuse



## **GRADE, the GRaduate ADmissions Evaluator**

An AI evaluation system built and used by the graduate program in computer science at the University of Texas at Austin.

### **Intended Use**

GRADE reviewed applications and assigned scores based on the likelihood of admission by a review committee. The goal was to reduce human time spent reviewing the increasing pile of applications, which GRADE did, cutting review time by 74 percent.

### **Outcome**

But the university dropped GRADE last year, agreeing that it had the potential to replicate superficial biases in the scoring – scoring up some applications not because they were good, but because they looked like the kinds of applications that had been approved in the past.

# Implications | Case Studies





# Exploration: Overview

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- Six Teaching Scenarios for discussion in small groups
  - What pedagogical and ethical issues arise?
  - How might you respond if you were the faculty in the scenario?
  - How might you respond if you were the student in the scenario?
- Discussion: 20 minutes with a 3 minute reminder
  - On Zoom:
    - Randomly assigned to breakout groups
    - CNDLS moderator to assist
    - Jamboard to post your thoughts (link in chat shortly)
  - In Social Room:
    - Discuss with those at your table
    - Share key points on the post-its at tables
- Share out

# AI in Higher Ed Case Studies

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**Directions: Please discuss with your colleagues at your table. What pedagogical and ethical issues arise? How might you respond if you were the faculty in the scenario? The student?**

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## Scenario 1

You have asked students to create a multi-modal essay as a final project. Requirements include a video or audio clip, a document with links to sources, and an in-class presentation of this project. During her presentation, one student shared that she used **Synthesia**, an AI tool, to generate the video based on concepts she has been researching in class and **slidesgpt.com** to create a draft of her slide deck. The video helped illustrate the concepts well, but the slides were too general and ill-designed. Her presentation, however, showed her confidence with her subject matter and engaged her audience.

## Scenario 2

Your student submits a paper that consists largely of a string AI-generated summaries for her final research project. You could tell the voice changed in those paragraphs and asked the student about them. Overall, the paper has problems with coherence; the citations were generated by **Jenni.ai** and are accurate. You have a conference coming up with the student where you can discuss her process.

## Scenario 3

The syllabus nor the professor have said anything directly about the use of AI. The TA overhears that students are using **Bing** to learn about the general description of a topic with key



# The Future of AI

# Emerging Uses



## **Food delivery**

Domino's Pizza has partnered with Goggo Network, an autonomous delivery company, to test autonomous pizza delivery robots in the Madrid suburb of Alcobendas. The robots use cameras, radar, and ultrasound sensors to collect data on their surrounding environment and an AI system to navigate to customers' locations and return to the store.

## **Autonomous vehicles**

May Mobility, a U.S.-based autonomous vehicle company, has partnered with Via, a U.S.-based public transportation company, to launch an autonomous shuttle service in Sun City, a retirement community in Arizona. Residents can use the shuttles to travel between recreation services, healthcare facilities, and shopping destinations.

## **Exploration**

The U.S. National Aeronautics and Space Administration (NASA) has created an autonomous robotic snake to explore Saturn's moon, Enceladus. The snake uses cameras and lidar sensors to create a 3D map of its surroundings and can travel through a variety of harsh terrains.

## **Medicine**

Researchers at Harvard Medical School and the University of Copenhagen have created an AI system that can predict a patient's risk of developing pancreatic cancer within the next three years.

Officials in Milan, Italy have partnered with Bloomberg Philanthropies to install air quality sensors around the city. Officials will use the sensors to collect data on air pollution and inform future environmental policies.

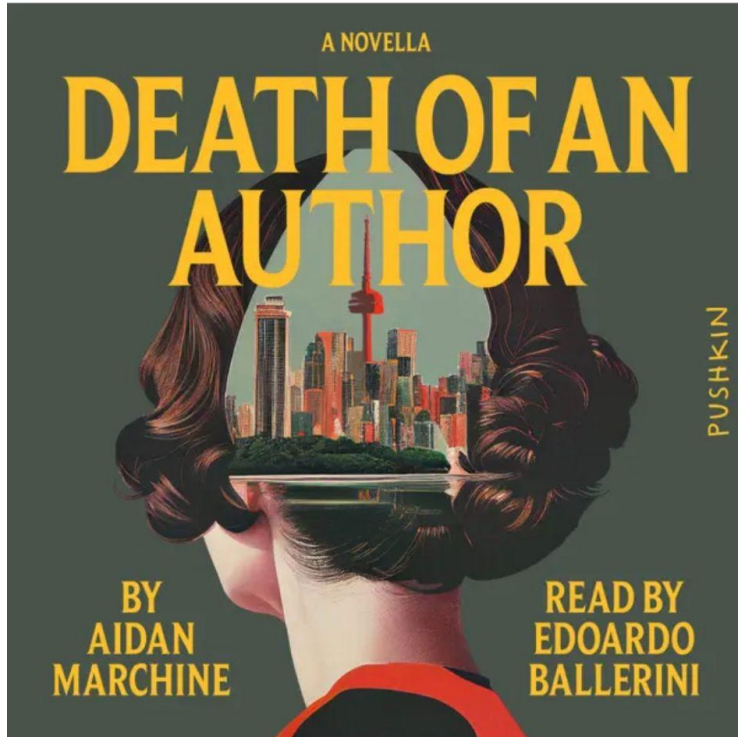
# Students of the Future



- [KhanMigo](#) – an AI writing coach which delivers a personalised and adaptive dialogue based experience very similar to that described by Bloom and others as a more optimal experience for students.
- [Microsoft's Reading Coach](#) – enables teachers to facilitate real-time adaptive and personalised 1:1 learning for their students.
- [COREGPT](#), coming soon, based on open access research.

The image shows two overlapping screenshots. The top screenshot is from KhanMigo, displaying a question 'Is the COVID vaccine safe?' and a detailed, personalized response. The response text includes several hyperlinks to Khan Academy workspaces, such as 'https://core.ac.uk/works/1267450' and 'https://core.ac.uk/works/124504363'. The bottom screenshot is from Microsoft's Reading Coach, showing a 'Customize Reading Coach' dialog box with options for 'Play word', 'Stretch word', and 'See word'. Below this, the word 'atmosphere' is displayed with audio and navigation icons. At the bottom of the Reading Coach interface, a user profile for 'Dustin O.' is visible, showing account details, progress, and a 'Profile' section with various badges and statistics. A red circle highlights the 'Chat History' link in the user's account menu.

# Writing with multiple inputs



To coax the story from his laptop, Marche used three programs, starting with ChatGPT. He ran an outline of the plot through the software, along with numerous prompts and notes. While A.I. was good at many things, especially dialogue, he said, its plots were terrible.

Next, he used Sudowrite, asking the program to make a sentence longer or shorter, to adopt a more conversational tone or to make the writing sound like Ernest Hemingway's. Then he used Cohere to create what he called the best lines in the book. If he wanted to describe the smell of coffee, he trained the program with examples and then asked it to generate similes until he found one he liked.

# Truth in Advertising?



Video - made entirely of AI

Campus-  
wide Effort



THE CENTER FOR NEW DESIGNS  
IN LEARNING & SCHOLARSHIP

# Initiative on Pedagogical Use of Artificial Intelligence working group



# Podcast on Chat GPT & AI



A promotional graphic for a podcast. The central part is a dark blue square with a light blue outline. Inside, a white silhouette of a human head in profile is shown. A glowing lightbulb is positioned inside the head, with a blue line representing a neural pathway or thought process connecting the lightbulb to the word 'LEARNING' at the bottom. The text 'WHAT WE'RE LEARNING ABOUT LEARNING' is written in white, bold, sans-serif capital letters across the top and middle. In the bottom left corner of the square, the CNILS logo is displayed. To the right of the square, there is a dark blue microphone icon. Below the microphone, the text 'SCAN TO LISTEN TO OUR PODCAST!' is written in white, bold, sans-serif capital letters. At the bottom right, there is a large QR code with a white background and a dark blue border.



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IN LEARNING & SCHOLARSHIP

**Interested in a  
Teaching Circle?**

# Contact CNDLS

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[cndls@georgetown.edu](mailto:cndls@georgetown.edu)



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I N N O V A T I O N  
S U M M E R I N S T I T U T E  
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