

# The Rise of Generative AI

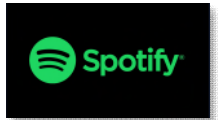
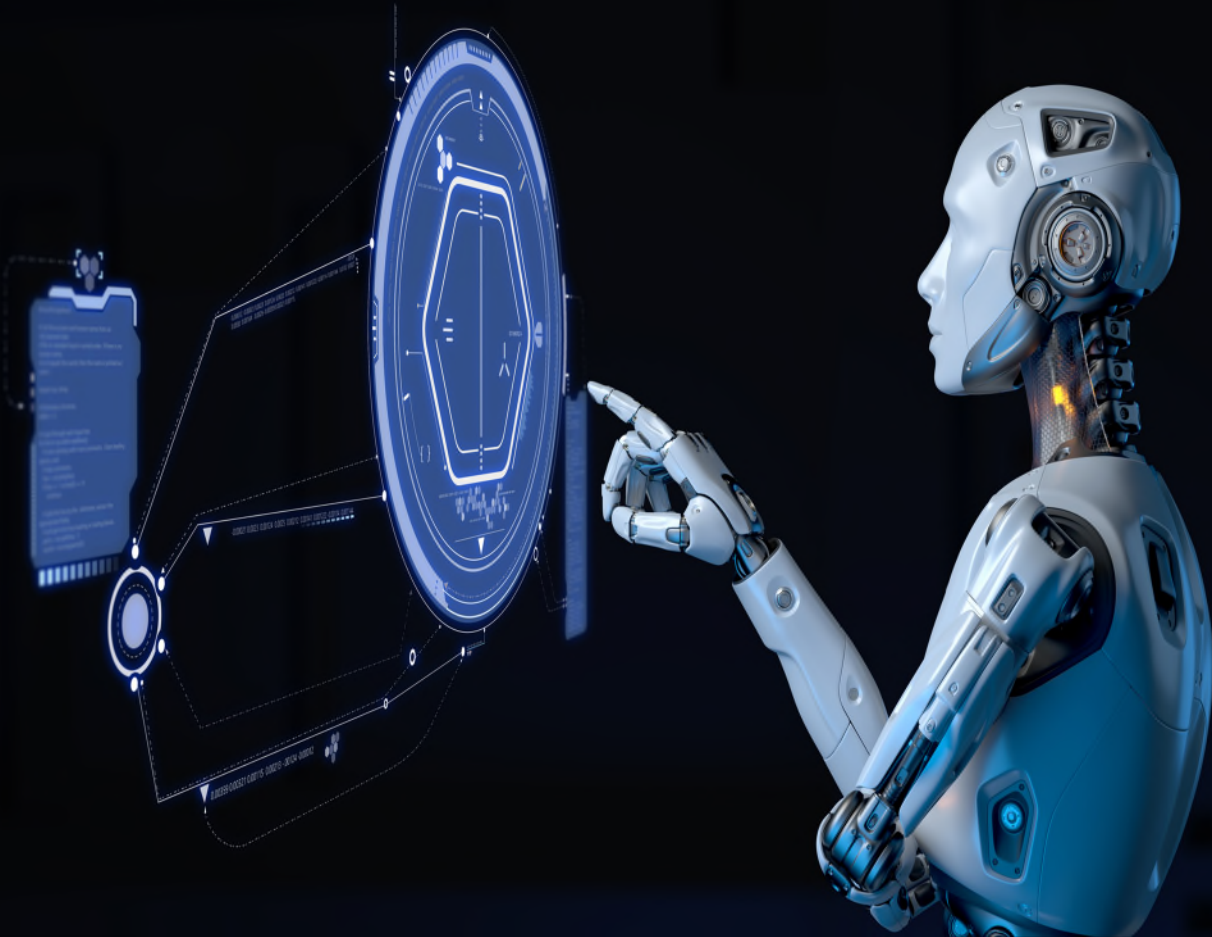
## A Game Changer

A close-up image showing a human hand on the right and a white, articulated robotic hand on the left. The two hands are positioned as if about to shake or have just shaken. A bright blue, glowing energy spark or lightning bolt is visible between the tips of the fingers, symbolizing the intersection of human and artificial intelligence.

Eyal Kirshner

VP Teaching & Learning, Ex Libris

# AI is all around us, for years...



# What is Generative AI?

E

What is Generative AI?



Generative AI is a subfield of artificial intelligence (AI) that involves developing models and algorithms that can produce new and original data, such as images, text, and music, that are similar to or indistinguishable from real data. Unlike traditional AI models that are designed to recognize patterns in existing data, generative AI models are capable of creating new



## Creating new content

data. They can be trained on large datasets to learn patterns and generate new data that resembles the original data. Generative AI has applications in a variety of fields, including art, music, fashion, gaming, and medicine. For example, generative AI can be used to create realistic images of people and objects, generate music or sound effects for video games, or even create new drugs by generating molecules with specific properties.



OpenAI  
ChatGPT

## The Drive Behind The Rise

- Open to everyone
- Conversation like
- Context aware
- So what if it's not perfect



# The Rise of ChatGPT

## ChatGPT Sprints to One Million Users

Time it took for selected online services to reach one million users



ChatGPT 2022 | 5 days

1 billion downloads

statista

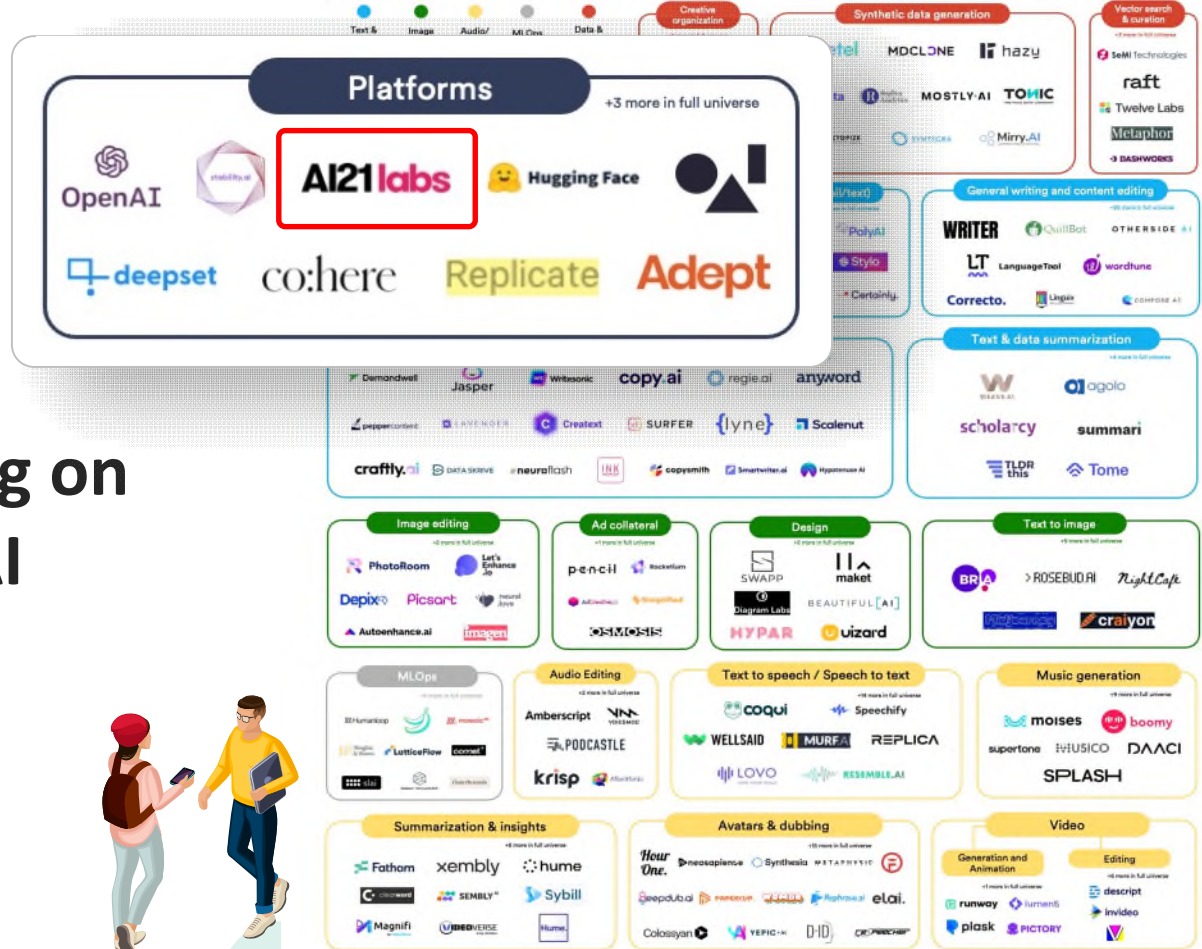


BASE10 TREND MAP: GENERATIVE AI

Companies are grouped based on medium produced and segmented by use case within each medium. Companies that offer products across segments are grouped in the segment of the core product offering.

450+

Startups Working on Generative AI





Posted by u/Pleasant-Day-9456 1 day ago



When you realize ChatGPT can do your work better than you...

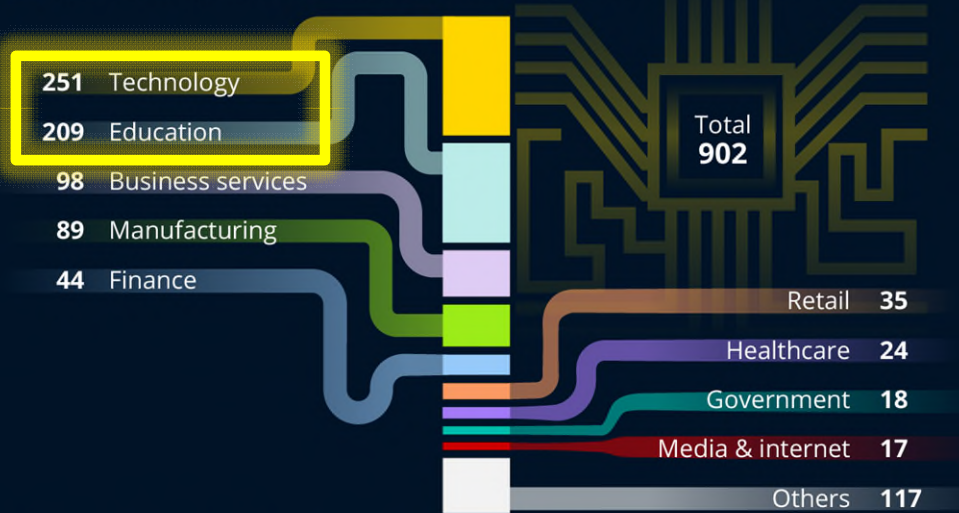
Funny



## Generative AI Impact on Various Sectors - Should we be Concerned?

# Which Sectors Are Working With OpenAI?

Number of companies/organizations using Open AI in their business processes worldwide, by sector\* (as of Jan. 2023)



## Generative AI Impact on Various Sectors

\* OpenAI is an artificial intelligence research and deployment company (e.g. ChatGPT)  
Source: Enterprise Apps Today





# Creative





***“a boy walking in a boulevard with trees on both sides in the autumn. oil painting”***

© 2023 Ex Libris | Confidential & Proprietary

Source: Me & DALL-E



***“a fisherman with hook at a dock watching the sunset. oil painting”***

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# ALICE AND SPARKLE

by Ammaar Reshi

ELUNA  
Ex Libris Users of North America



The best of friends

Sparkle quickly proved to be a valuable friend. It helped Alice with her schoolwork, played games with her, and they had the best time ever.

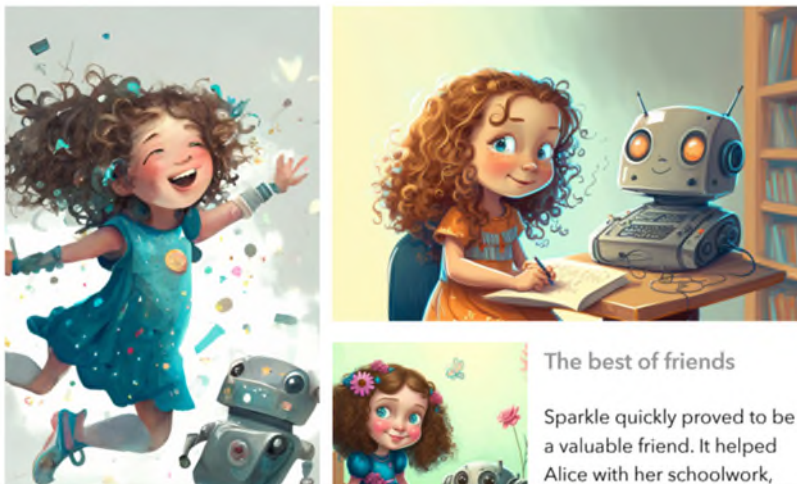
# Author? Artist?



DAILY SPOTLIGHT WHAT TO DO IF YOU CAN'T AFFORD YOUR STUDENT LOANS

TECH • ARTIFICIAL INTELLIGENCE

## He Used AI to Publish a Children's Book in a Weekend. Artists Are Not Happy About It



### The best of friends

Sparkle quickly proved to be a valuable friend. It helped Alice with her schoolwork,

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### Customer reviews

★★★★☆ 3.1 out of 5

65 global ratings

5 star	<div style="width: 48%;"></div>	48%
4 star	<div style="width: 4%;"></div>	4%
3 star	<div style="width: 4%;"></div>	4%
2 star	<div style="width: 2%;"></div>	2%
1 star	<div style="width: 42%;"></div>	42%

Source: <https://time.com/6240569/ai-childrens-book-alice-and-sparkle-artists-unhappy/>



*“Deliver creative content at speed and to do it with exponential efficiency”*

John Murphy, President & CFO, Coca Cola

*“We need to embrace the risk, and experiment... Not taking risks is a hopeless point of view to start from”*

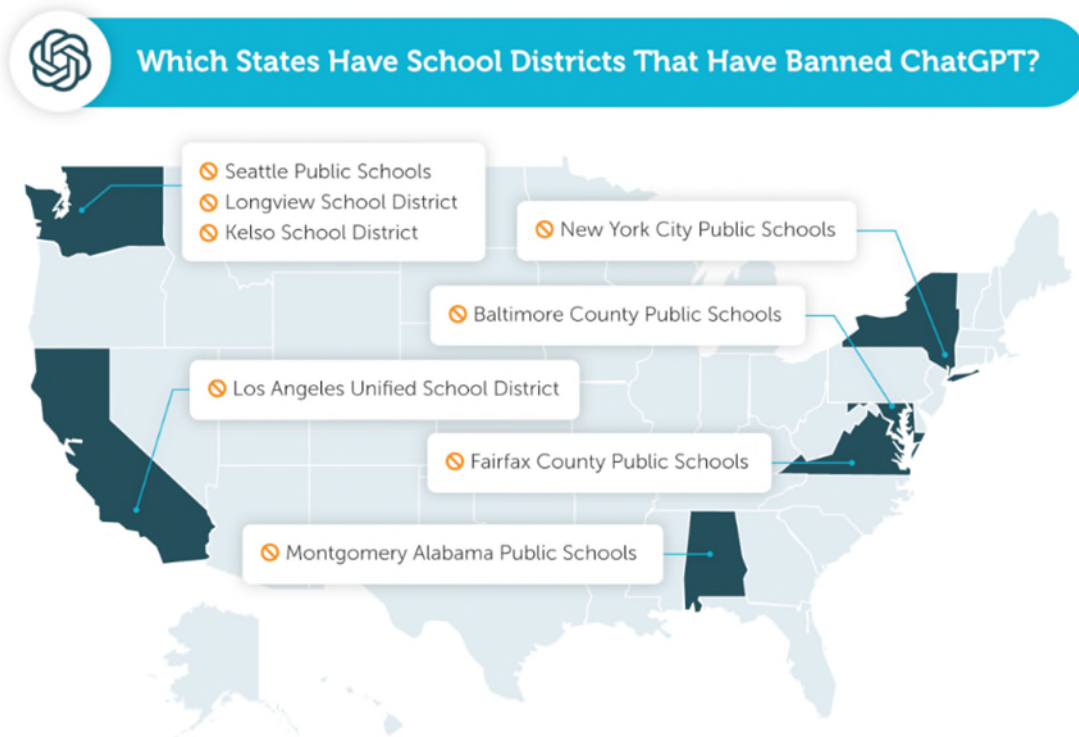
James Quincey, CEO Coca Cola



Education

# Education – Can We Fight This?


- NA – 6 states banned ChatGPT from school networks & devices.
- Homework should be handed in handwriting on paper...



\*As Of: February 1, 2023

Study.com

Source: <https://study.com/resources/chatgpt-in-the-classroom#:~:text=New%20York%20City%20Public%20Schools,Maryland%2C%20Alabama%2C%20and%20Virginia>

A 3D printer is shown in the process of printing a blue pen. The pen is positioned vertically on a piece of lined paper. The printer's nozzle is visible at the top of the pen, and the pen's body is being built up. The paper is held in place by a metal clip on the left and a yellow paperclip on the right. The printer's frame and various cables are visible in the background.

3d printer does my homework  
that ChatGPT wrote



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# Cheating by students using ChatGPT is already on the rise, surveys suggest

About a quarter of over 200 surveyed teachers reportedly caught at least one student cheating

Source

<https://www.independent.co.uk/tech/chatgpt-cheating-students-openai-chatbot-52278850.html>

Printer does my homework  
that ChatGPT wrote

# Education – What’s at Risk?

*NYC education department - “Due to concerns about negative impacts on student learning, and concerns regarding the **safety and accuracy of content**, access to ChatGPT is restricted on New York City Public Schools’ networks and devices,” said education department spokesperson Jenna Lyle. “While the tool may be able to provide quick and easy answers to questions, it does not build **critical-thinking and problem-solving skills**, which are essential for academic and lifelong success.”*



Source: <https://www.nytimes.com/2023/01/12/technology/chatgpt-schools-teachers.html>

# “Attitudes about generative AI in higher education are *improving*”

Figure 1. Disposition toward Generative AI, February QuickPoll and Current QuickPoll

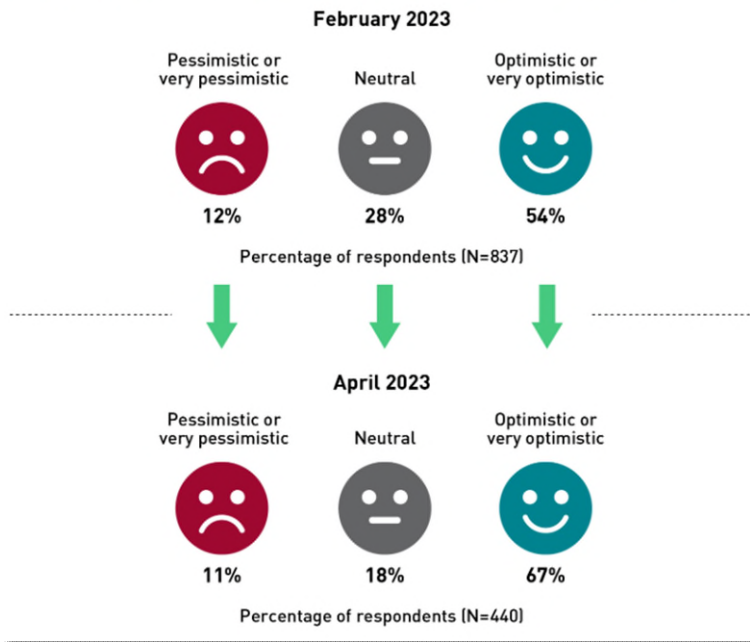
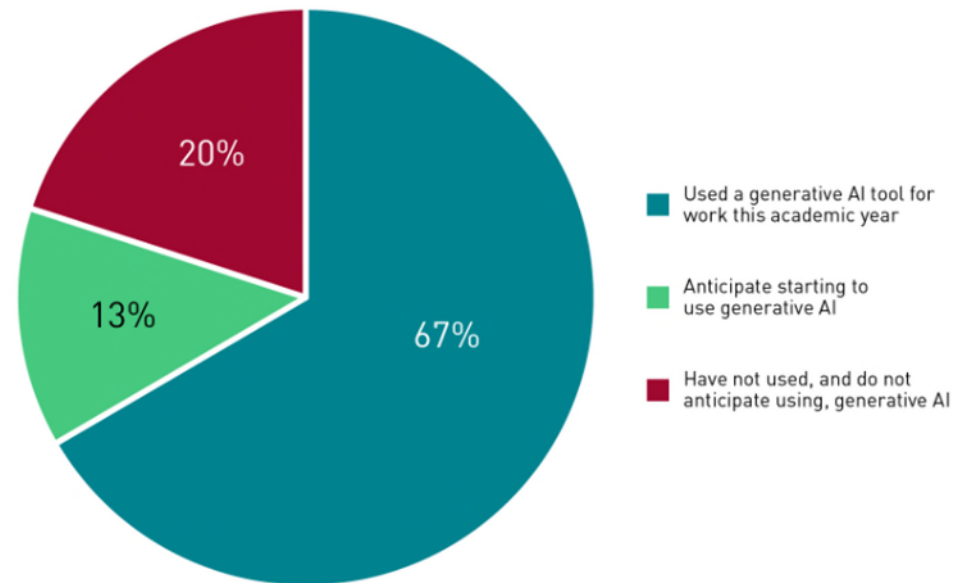


Figure 2. Distribution of Generative AI Use and Intended Use



Source: [https://er.educause.edu/articles/2023/4/educause-quickpoll-results-adopting-and-adapting-to-generative-ai-in-higher-ed-tech?utm\\_source=connect\\_post](https://er.educause.edu/articles/2023/4/educause-quickpoll-results-adopting-and-adapting-to-generative-ai-in-higher-ed-tech?utm_source=connect_post)

# Institutions guidelines for using Generative AI

## Center for Teaching and Learning

Home / ChatGPT and AI / Preliminary guidelines

### Preliminary guidelines

#### CTL's Evolving Guidelines for Dealing with chatGPT (last updated Feb 6, 2023)

[Note: this page was summarized as a handout for our chatGPT discussions on February 6th, 8th, and 10th.]

The following evolving guidelines are designed to help you address the challenge of teaching in the age of chatGPT while still emphasizing student learning and allowing for meaningful student assessment. Please treat these as preliminary guidelines as Brandeis develops its official policies.



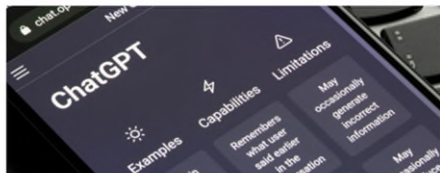
CYBERSECURITY GOVTECH 100 TRANSPARTA

HIGHER EDUCATION

## Iowa Universities Issue Guidance on ChatGPT

Iowa's public universities are issuing guidance, forming committees, crafting assignments and churning out research on how best to take advantage of ChatGPT and how to guard against its limitations and potential harms.

February 27, 2023 - Vanessa Miller, The Gazette, Cedar Rapids, Iowa



## Recommendations

As ChatGPT is new, the higher education community is still grappling with its potential impact and how best to respond. We offer the following initial suggestions:

### Assignment Design

- **Learn how ChatGPT would respond to your class assignments:** Try out ChatGPT yourself to understand its capabilities and limitations.
- **Focus on higher order thinking tasks in Bloom's taxonomy (e.g., analysis over recall):** ChatGPT is best at summarizing from its training data and less good at applying knowledge to new areas. Focus student tasks on the higher levels of Bloom's taxonomy, such as creating, evaluating, and analyzing.
- **Make assignments more authentic and robust:** *Authentic assessments* asks students to complete complex tasks similar to those they would in a non-academic setting.
  - **Add non-traditional ways of assessing learning (podcasts, oral exams, projects):** Consider other ways of letting students demonstrate the knowledge they've learned in their course beyond the traditional college essay.
- **Use local or class-based prompts:** One limitation of ChatGPT is that it does not know what happens in your class. Consider designing prompts related specifically to your course. For example, one could ask students to prepare a particular class discussion or answer questions requiring knowledge from a lecture slide.
- **Leverage other educational technologies:** Instead of using open-ended questions in Canvas, try social annotation tools that require students to engage with a text or video along with their classmates. WashU supports *Hydros* for the social annotation of texts and *Canvas* for collaboration (commenting on videos).

the good parts of student voice, style, interests, and connective tissue and whole self to learn meaningful questions in the assignment to the assignment.

GPT in your assignments



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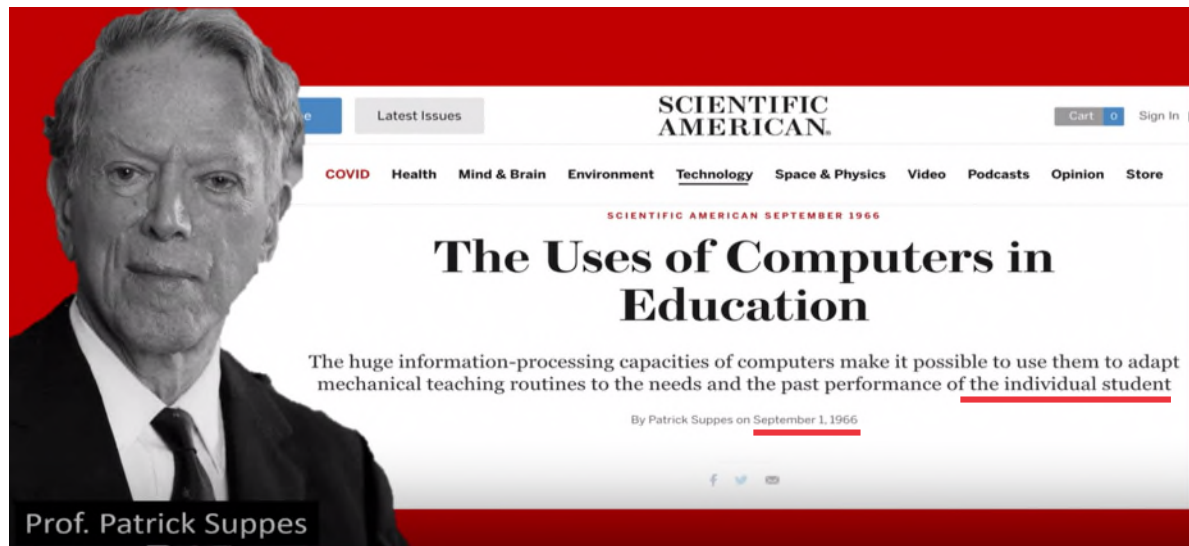
HOME OPINION UNIVERSITY CITY SCITECH ARTS SPORTS MULTIMEDIA WKND MAGA

## University leaders issue AI guidance in response to growing popularity of ChatGPT

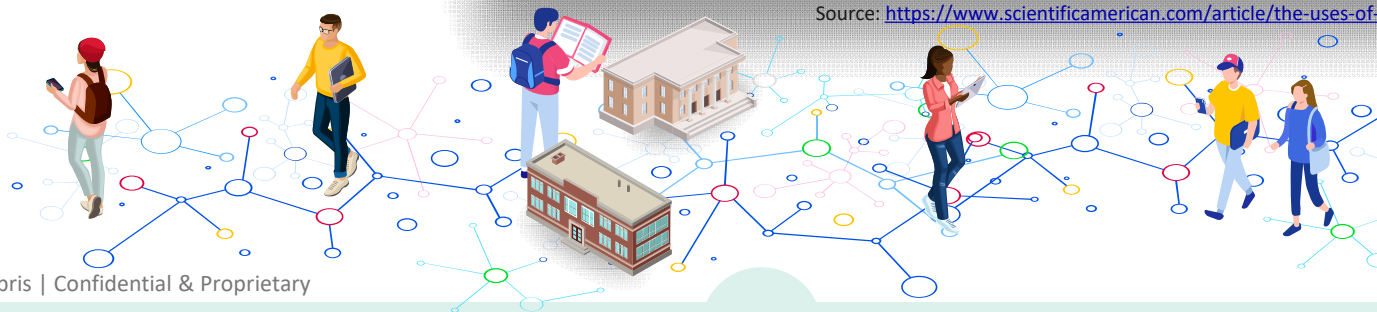
Students, professors and administrators anticipate significant changes to teaching and learning at Yale as artificial intelligence technology continues to improve and develop.

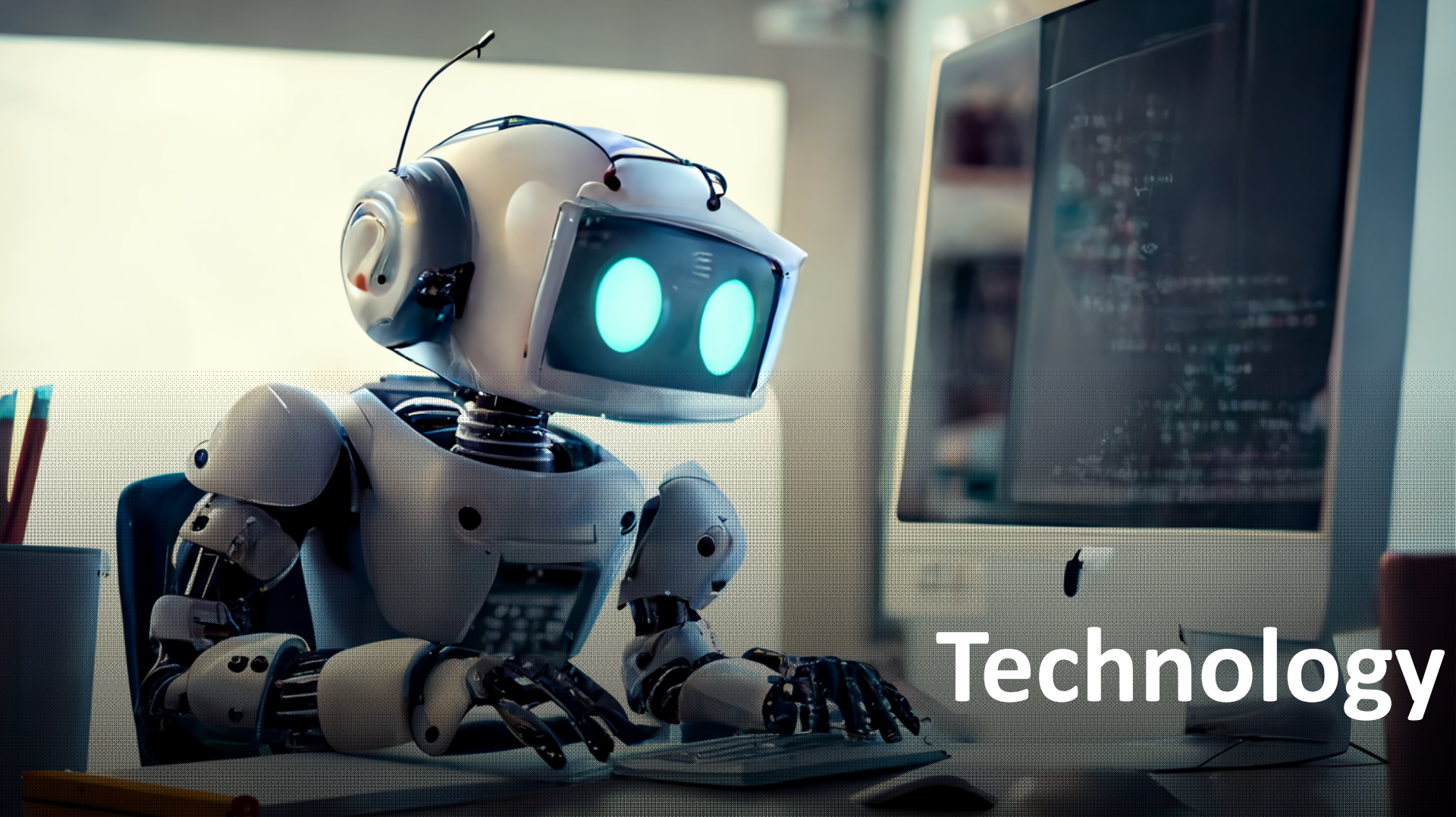
# AI in Action in Education

- Personalization
- Adaptive Learning
- Tutoring
- Reading / Writing
- Grading
- ... *and much more*



Source: <https://www.scientificamerican.com/article/the-uses-of-computers-in-education/>





Technology

- Co-pilot mode
- Streamline / automate
- Increase productivity

 GitHub Copilot

Your AI pair programmer



**Amazon CodeWhisperer**

Build applications faster and more securely with your AI coding companion

Google

ELUNA  
Ex Libris Users of North America

GeekWire

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## AI's next frontier: AlphaCode can match programming prowess of average coders

BY ALAN BOYLE on December 8, 2022 at 11:00 am

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BOT or NOT? This [special series](#) explores the evolving relationship between humans and machines, examining the ways that robots, artificial intelligence and automation are impacting our work and lives.



Source: <https://www.geekwire.com/2022/ai-deepmind-alpha-code-average-programming/>

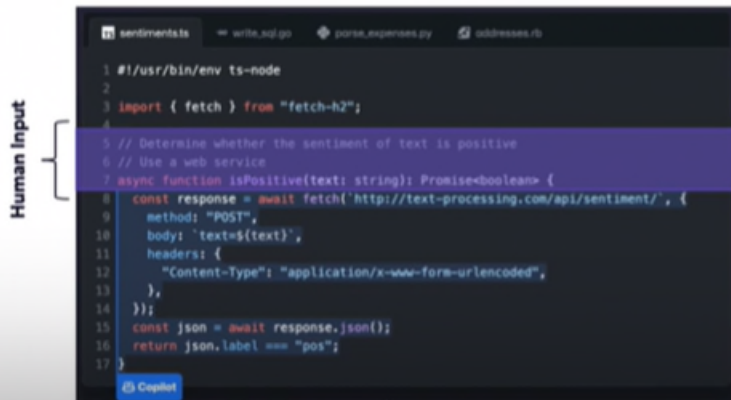
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# Massive Productivity Boost

## AI Could Lead To A 10-Fold Increase In Coding Productivity

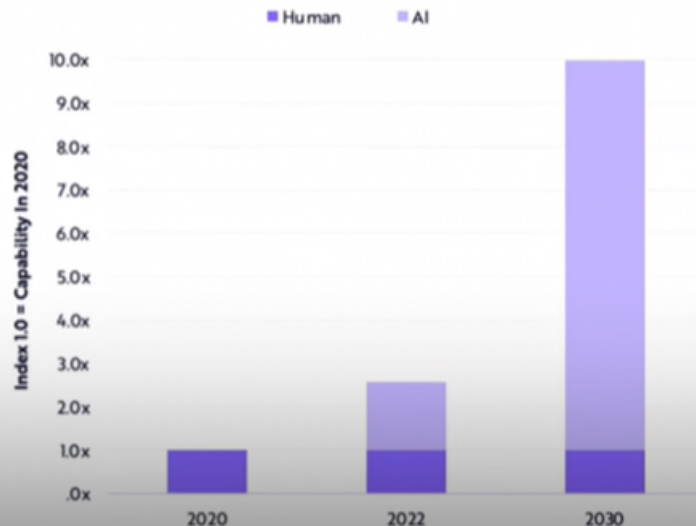
Based on a 70% annualized drop in training costs and feedback loops, AI coding assistants like Copilot could increase the output of software engineers -10-fold by 2030.

Github Copilot Example



```
1 #!/usr/bin/env ts-node
2
3 import ( fetch ) from "fetch-h2";
4
5 // Determine whether the sentiment of text is positive
6 // Use a web service
7 async function isPositive(text: string): Promise<boolean> {
8   const response = await fetch('http://text-processing.com/api/sentiment/', {
9     method: "POST",
10    body: `text=${text}`,
11    headers: {
12      "Content-Type": "application/x-www-form-urlencoded",
13    },
14  });
15  const json = await response.json();
16  return json.label === "pos";
17 }
```

Output of Human + AI: Coding Tasks



Source: Ark Investment

<https://www.analysinsight.net/generative-ai-could-lead-to-a-10-fold-increase-in-coding-productivity/#:~:text=3%20mins%20read,Generative%20AI%20could%20lead%20to%20a%2010-fold%20increase%20in,%E2%80%9CBig%20Ideas%202023%E2%80%9D%20report>





## Human vs. Machine?

# 1997 – IBM's Deep Blue beats Garry Kasparov



# 2016 – Google's AlphaGo beats Lee Sedol



# Former Go champion beaten by DeepMind retires after declaring AI invincible



/ 'Even if I become the number one, there is an entity that cannot be defeated'

By **JAMES VINCENT**

Nov 27, 2019, 3:42 PM GMT+2 |  0 Comments / 0 New



Source:

<https://www.theverge.com/2019/11/27/20985260/ai-go-alphago-lee-se-dol-retired-deepmind-defeat>

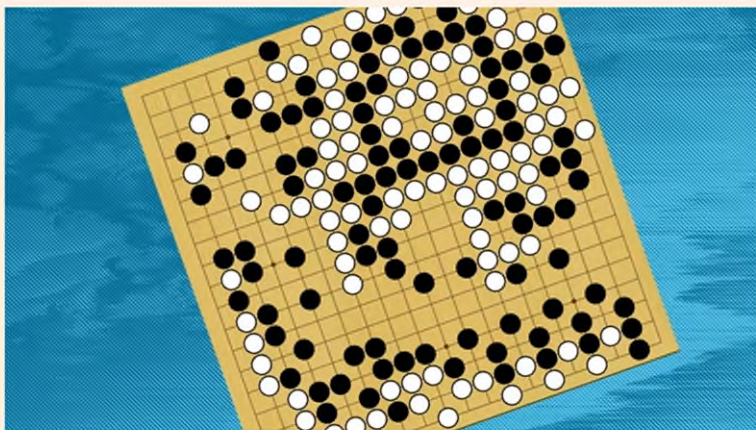
# Human & Machine

February 2023 - Kellin Pelrine beats AlphaGo

Artificial intelligence + Add to myFT

## Man beats machine at Go in human victory over AI

Amateur Kellin Pelrine exploited weakness in systems that have otherwise dominated board game's grandmasters



Kellin Pelrine won 14 of 15 games against one of the top Go-playing systems in January © FT montage



*"The tactics that put a human back on top on the Go board were **suggested by a computer program** that had probed the AI systems looking for **weaknesses.**"*

A close-up photograph of a white, articulated robotic hand shaking a human hand. The human hand is wearing a dark suit jacket and a white shirt cuff. The background is a blurred, blue-toned environment. The text "Join us in this journey" is overlaid in white at the top, and "Thank You!" is overlaid in white at the bottom.

**Join us in this journey**

**Thank You!**