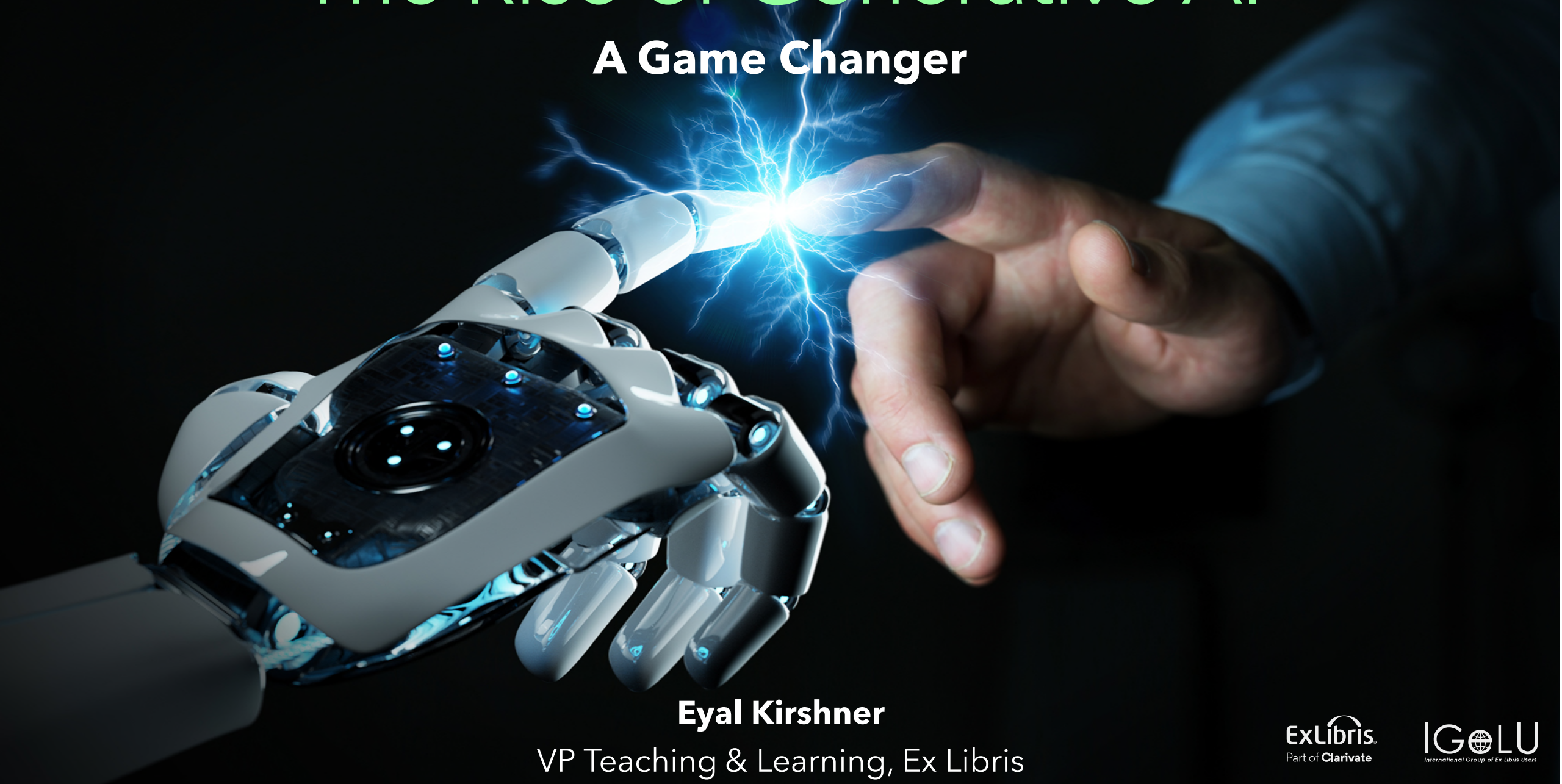


# The Rise of Generative AI

**A Game Changer**



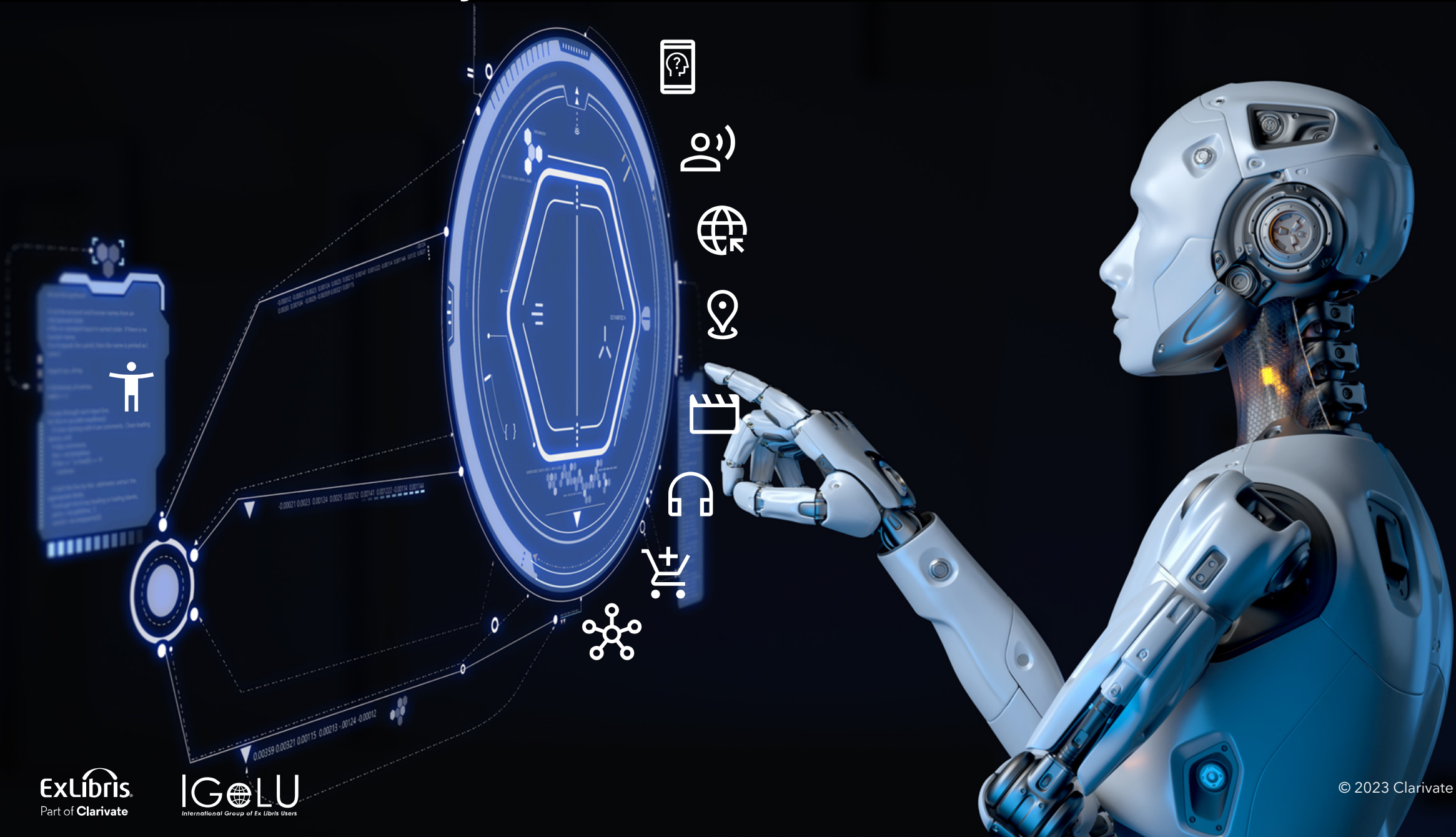
**Eyal Kirshner**

VP Teaching & Learning, Ex Libris

ExLibris  
Part of Clarivate

IGOLU  
International Group of Ex Libris Users

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



# What is Generative AI?



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



## Creating new content

Generative AI models use techniques such as deep learning and neural networks to generate 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.

# The Drive Behind the Rise



## OpenAI ChatGPT

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



Sam Altman   
@sama

ChatGPT is incredibly limited, but good enough at some things to create a misleading impression of greatness.

it's a mistake to be relying on it for anything important right now. it's a preview of progress; we have lots of work to do on robustness and truthfulness.

2:11 AM · Dec 11, 2022

3,481 Retweets 710 Quote Tweets 28.7K Likes



Tweet your reply

Reply



Sam Altman   
@sama · Dec 11, 2022

Replying to @sama

fun creative inspiration; great! reliance for factual queries; not such a good idea.

# The Rise of ChatGPT

## ChatGPT Sprints to One Million Users

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



\* one million backers \*\* one million nights booked \*\*\* one million downloads  
Source: Company announcements via Business Insider/LinkedIn



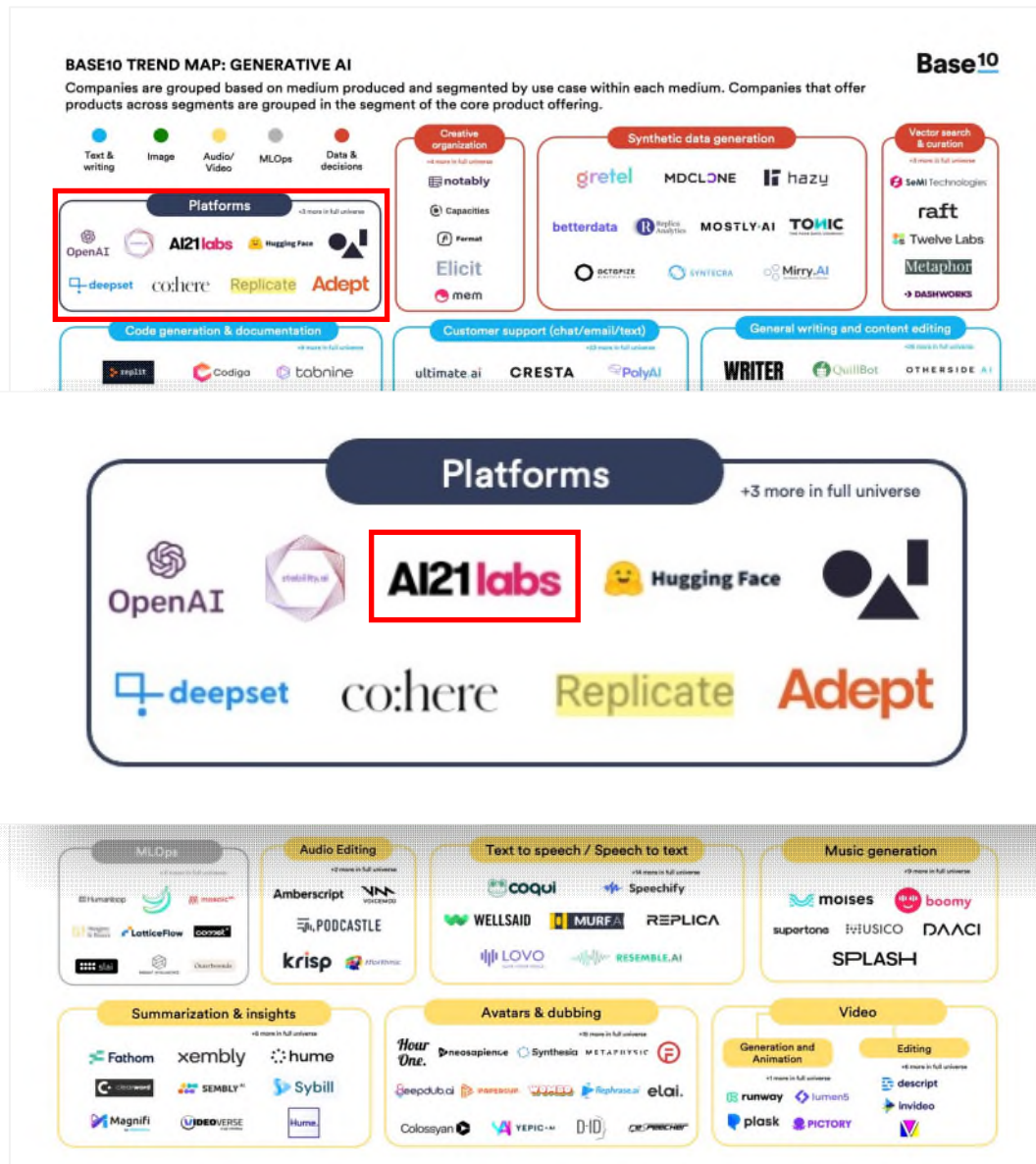
statista

ChatGPT 2022 | 5 days



# 450+

## Startups Working on Generative AI





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



90

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



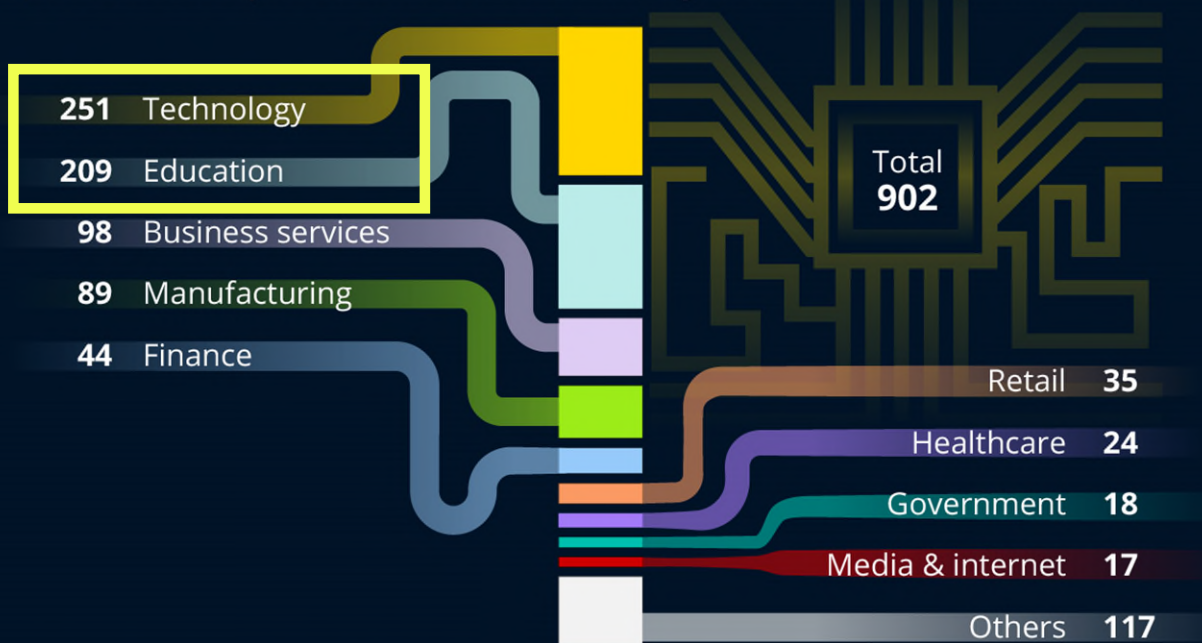
Funny



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)



\* OpenAI is an artificial intelligence research and deployment company (e.g. ChatGPT)

Source: Enterprise Apps Today

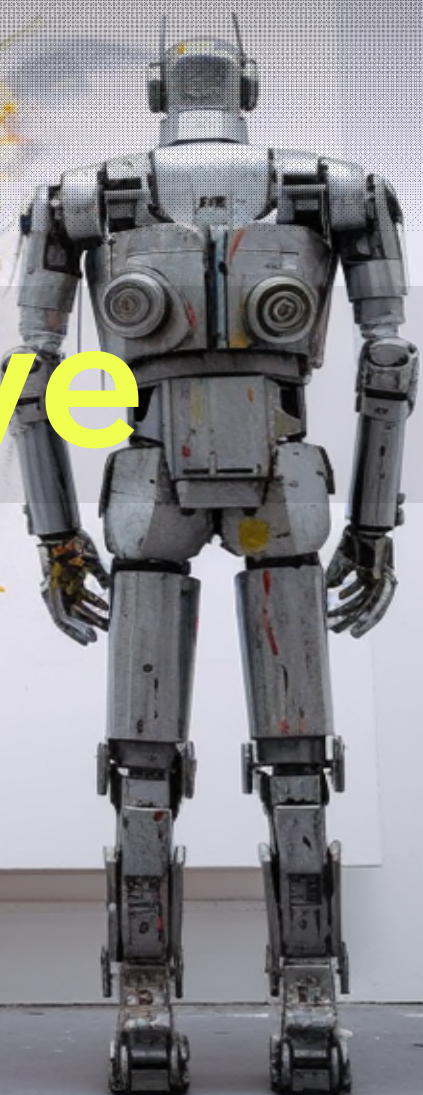
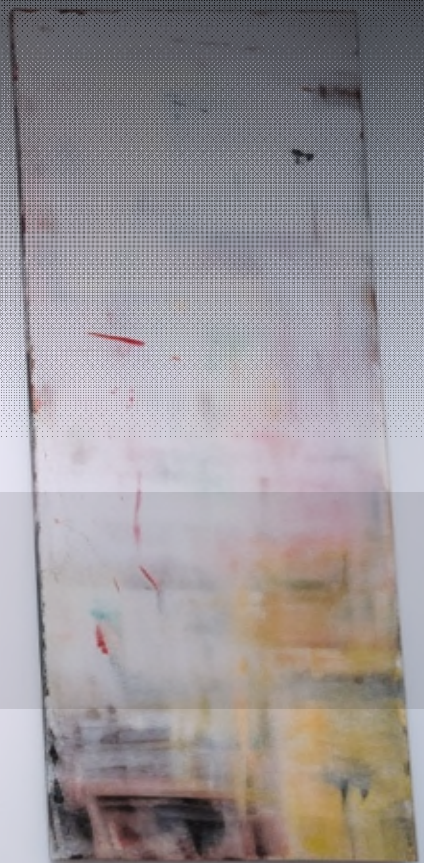
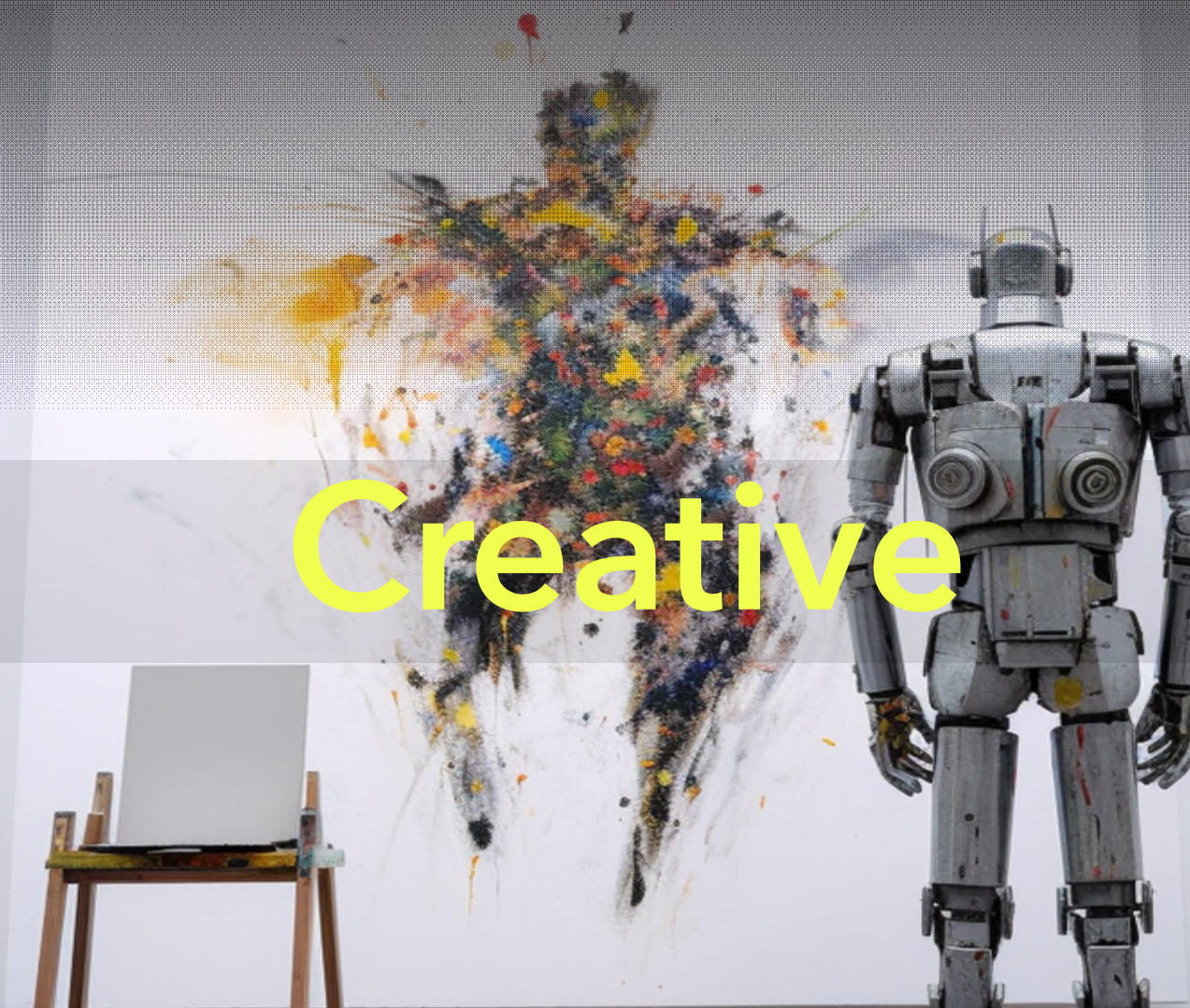


statista

## Generative AI Impact on Various Sectors



Creative



# Creative



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



*"A fisherman with hook at a dock watching the sunset. oil painting"*

# ALICE AND SPARKLE

by Ammaar Reshi



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?

1 Year: Print & Digital Access


**TIME**

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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,

Buy new: \$38.00

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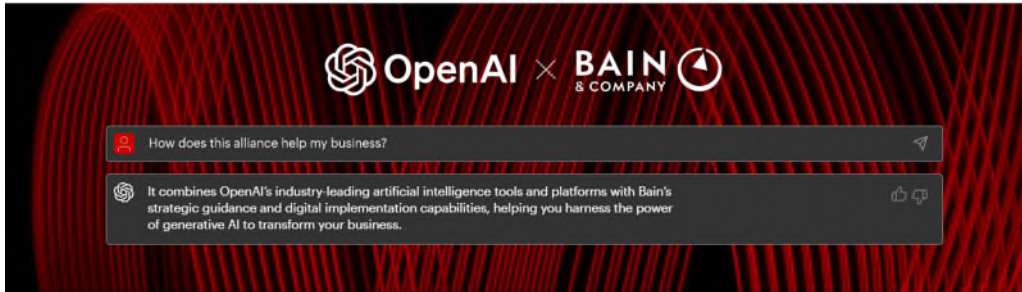
### Customer reviews

★★★★☆ 3.1 out of 5

65 global ratings

5 star	48%
4 star	4%
3 star	4%
2 star	2%
1 star	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*

Source: <https://www.bain.com/vector-digital/partnerships-alliance-ecosystem/openai-alliance/>

A futuristic white robot with yellow eyes and a blue stethoscope, holding a magnifying glass, standing in a hospital hallway. The robot is the central focus, with a blue stethoscope around its neck and a magnifying glass held in its right hand. The background is a bright, modern hospital hallway with large windows and a clean, clinical aesthetic. The word "Healthcare" is overlaid in a bold, yellow font on a semi-transparent grey band across the middle of the image.

**Healthcare**

### OpenEvidence AI Becomes the First AI in History to Score Above 90% on the United States Medical Licensing Examination (USMLE)

PR Newswire  
July 14, 2023 · 4 min read

Quote Lookup

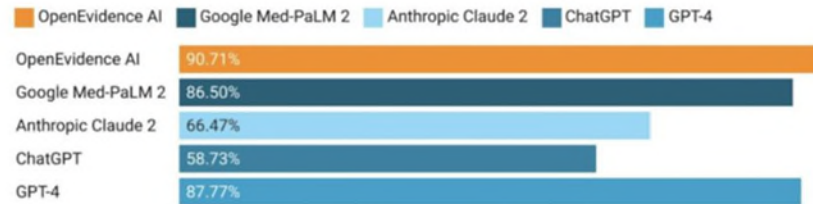
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t

☰

#### OpenEvidence AI becomes first AI in history to score above 90% on the US Medical Licensing Exam

TRENDING



Google Med-PaLM 2 Source: Google <https://arxiv.org/pdf/2305.09617.pdf>; GPT-4 Source: "Capabilities of GPT-4 on Medical Challenge Problems" <https://arxiv.org/abs/2303.13375>. ChatGPT Source: OpenAI. Claude 2 Source: Anthropic. Hippocratic AI's self-reported value of 89.90% has been excluded since Hippocratic AI only took an unofficial, easier subset of USMLE practice questions; Hippocratic AI did not take (or at least report) scores for the official USMLE sample exam.

Source: [https://finance.yahoo.com/news/openevidence-ai-becomes-first-ai-100000688.html?guccounter=1&guce\\_referrer=aHR0cHM6Ly93d3cuZ29vZ2xLmNvbS8&guce\\_referrer\\_sig=AQAAAB2UI32kHg7HpMLMG9ih1HsuhVGJDBfRxsmH1pcssXVXF9T5CdM469qLGhtXwJdWYf5VIDB\\_Hft\\_jU5\\_WCUsa9igNAMBa6KKZdlhUq4gXM2i31\\_LziQmdS2E1u0m8nl6upAljhBVdFS4vd8pJbiUo3dBPlqHueaZeJU0tinOI7bb](https://finance.yahoo.com/news/openevidence-ai-becomes-first-ai-100000688.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xLmNvbS8&guce_referrer_sig=AQAAAB2UI32kHg7HpMLMG9ih1HsuhVGJDBfRxsmH1pcssXVXF9T5CdM469qLGhtXwJdWYf5VIDB_Hft_jU5_WCUsa9igNAMBa6KKZdlhUq4gXM2i31_LziQmdS2E1u0m8nl6upAljhBVdFS4vd8pJbiUo3dBPlqHueaZeJU0tinOI7bb)

BYLINE THE WAY | JAN 21 by VICTOR TANGERMANN

### A New Scientific Paper Credits ChatGPT AI as a Coauthor

It was "definitely an intentional move, and one that we did spend some time thinking through."

/ Artificial Intelligence / Chatgpt / Open AI



Source: <https://futurism.com/scientific-paper-credits-chatgpt-ai-coauthor>

# Healthcare

○ Exscientia (UK) - matchmaking technology that **pairs** individual **patients** with the precise **drugs** they need

○ **Robotic automation** and AI-driven computer vision

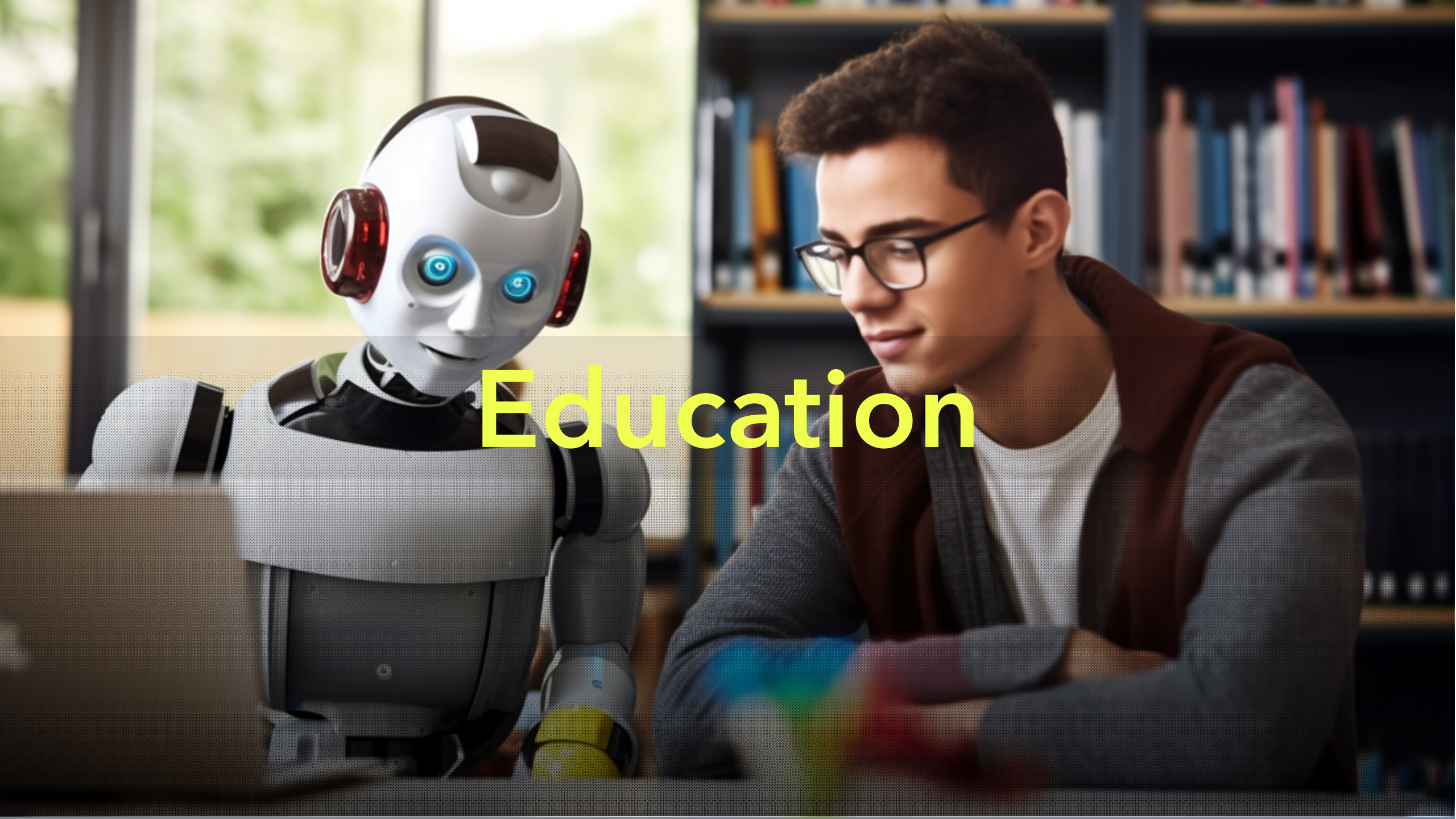
○ Running **simulations** of all possible drugs on patient data

○ End goal - **AI designed drugs**

The screenshot shows the MIT Technology Review website. At the top right is the Exscientia logo, and below it is the MIT Technology Review logo. Navigation links include 'Featured', 'Topics', 'Newsletters', 'Events', and 'Podcasts'. On the right, there are 'Sign in' and 'Subscribe' buttons. The main article is titled 'ARTIFICIAL INTELLIGENCE' and features the headline 'AI is dreaming up drugs that no one has ever seen. Now we've got to see if they work.' The article is by Will Douglas Heaven, dated February 15, 2023. A sub-headline reads 'AI automation throughout the drug development pipeline is opening up the possibility of faster, cheaper pharmaceuticals.' The article image shows a white IV bag with a barcode and the text 'AI CURE - 2478ST' printed on it.

Source: <https://www.technologyreview.com/2023/02/15/1067904/ai-automation-drug-development/#:~:text=has%20ever%20seen.,Now%20we've%20got%20to%20see%20if%20they%20work.,possibility%20of%20faster%2C%20cheaper%20pharmaceuticals.>





# Education

# Education - Can We Fight This?



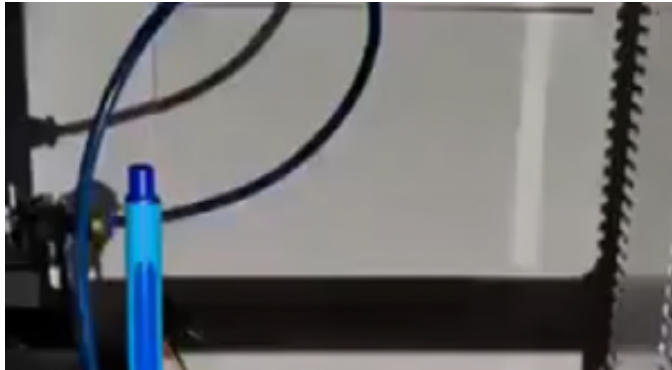
Countries around the world banned ChatGPT from school networks and devices



Homework should be submitted in handwriting and on paper...








UK EDITION

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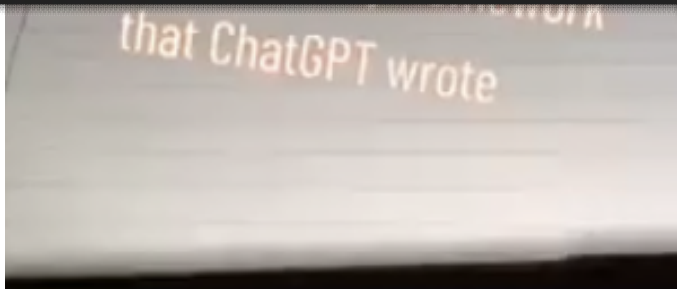
INDEPENDENT tv

Tech

 **INDEPENDENT PREMIUM**

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

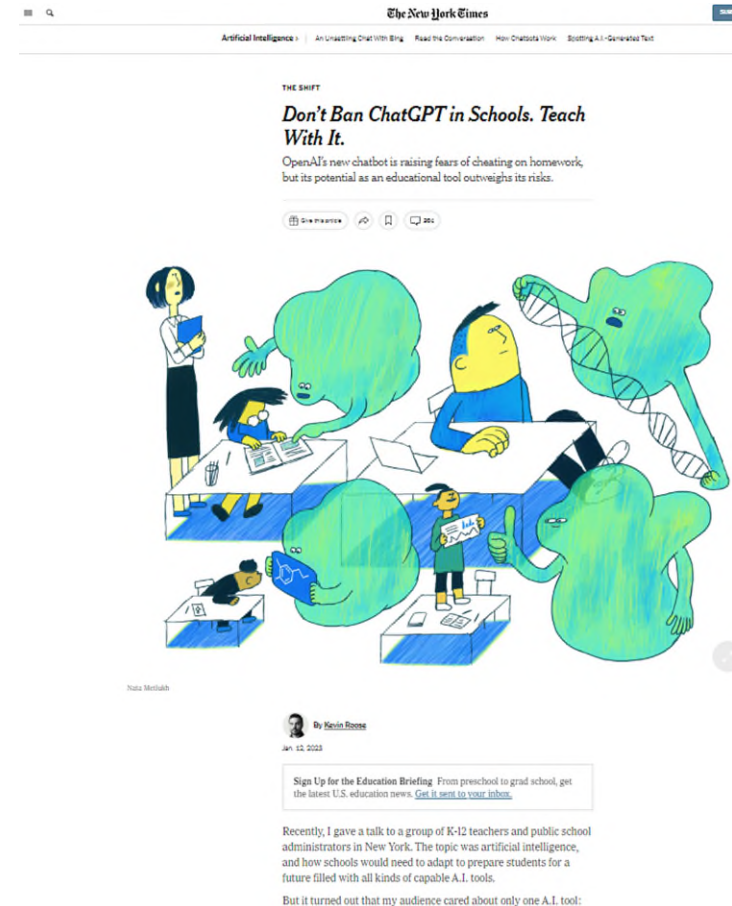
About a quarter of over 200 surveyed teachers reportedly caught at least one student cheating



Source: <https://www.independent.co.uk/tech/chatgpt-cheating-students-openai-chatbot-b2278850.html>

# Education - What is at Risk?

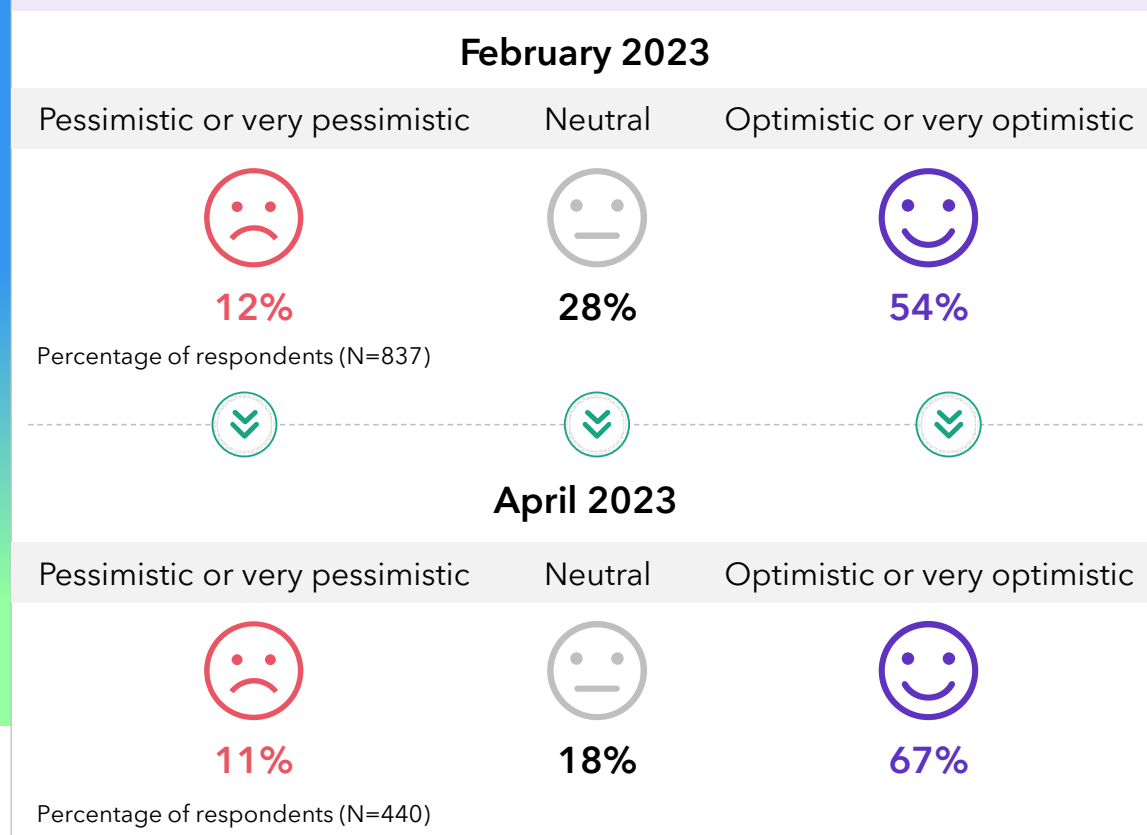
NYC education department - "Due to concerns about negative impacts on student learning, and concerns regarding the **safety and accuracy of content**, access to ChatGPT is restricted on New York City Public Schools' networks and devices," said education department spokesperson Jenna Lyle. "While the 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.**"



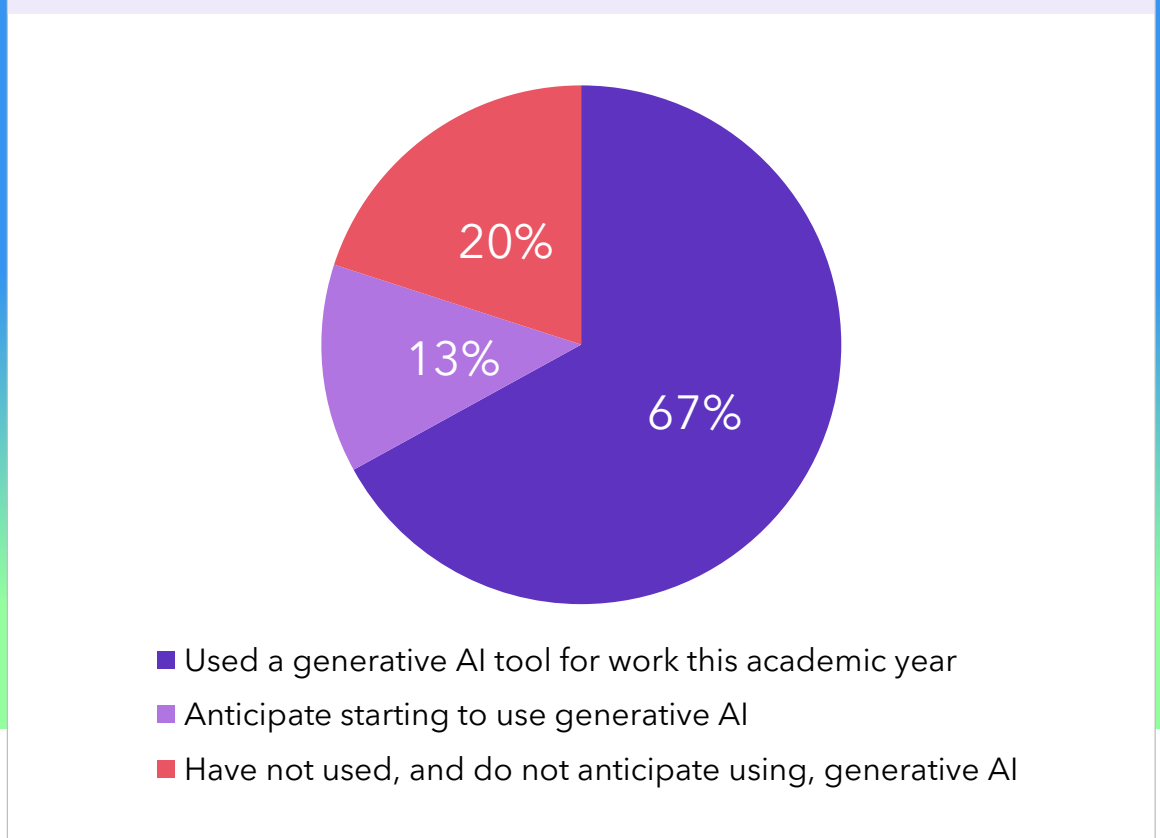
Source: <https://www.nytimes.com/2023/01/12/technology/chatgpt-schools-teachers.html>

# “Attitudes About Generative AI in Higher Education are Improving”

**Figure 1.** Disposition Toward Generative AI, February QuickPoll and April QuickPoll




**Figure 2.** Disposition 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)

# Institutional Guidelines for Using Generative AI



## ChatGPT and AI: embracing the future of education

Learning revolutionised

Artificial intelligence (AI) is taking the world by storm. We explore the possibilities and limitations of AI tools like ChatGPT in education, and how you might come across them in your studies.

In November 2022, artificial intelligence (AI) tool **ChatGPT** ("Chat Generative Pre-Trained Transformer") was released by **OpenAI**, and excitement across mainstream and social media soon followed. But, not everyone was receptive to its release, with The NSW Department of Education and other districts moving swiftly to **ban its use in their schools**.

So, what does this mean for the use of ChatGPT and other AI tools at University? We uncover what ChatGPT is, what its limitations are, and how the University will balance the use of it and other AI tools while maintaining academic integrity.

### What is ChatGPT?

ChatGPT generates convincingly human-sounding text and engages in realistic conversation. It currently generates its responses based on a large language

**Learn more about ChatGPT**

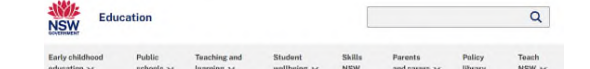
Register for the AI forum

→

**AI in the classroom**

Find out more about how we're embracing AI

→



## Education for a Changing World

### Guidelines regarding use of generative AI (ChatGPT)

These key principles will help you use generative AI safely, ethically and effectively

#### On this page

- Safeguard personal information →
- Verify and edit AI generated content for accuracy and suitability →




## Russell Group principles on the use of generative AI tools in education

Our universities are committed to the ethical and responsible use of generative AI and to preparing our staff and students to be leaders in an increasingly AI-enabled world.



UNIVERSITY OF BIRMINGHAM, THE UNIVERSITY OF EDINBURGH, UNIVERSITY OF LEEDS, UNIVERSITY OF OXFORD, UNIVERSITY OF BRISTOL, UNIVERSITY OF EXETER, MANCHESTER, UCL, UNIVERSITY OF CAMBRIDGE, Imperial College London, Newcastle University, WARWICK, Durham University, KINGS COLLEGE LONDON, The University of Nottingham, UNIVERSITY OF YORK



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## ChatGPT

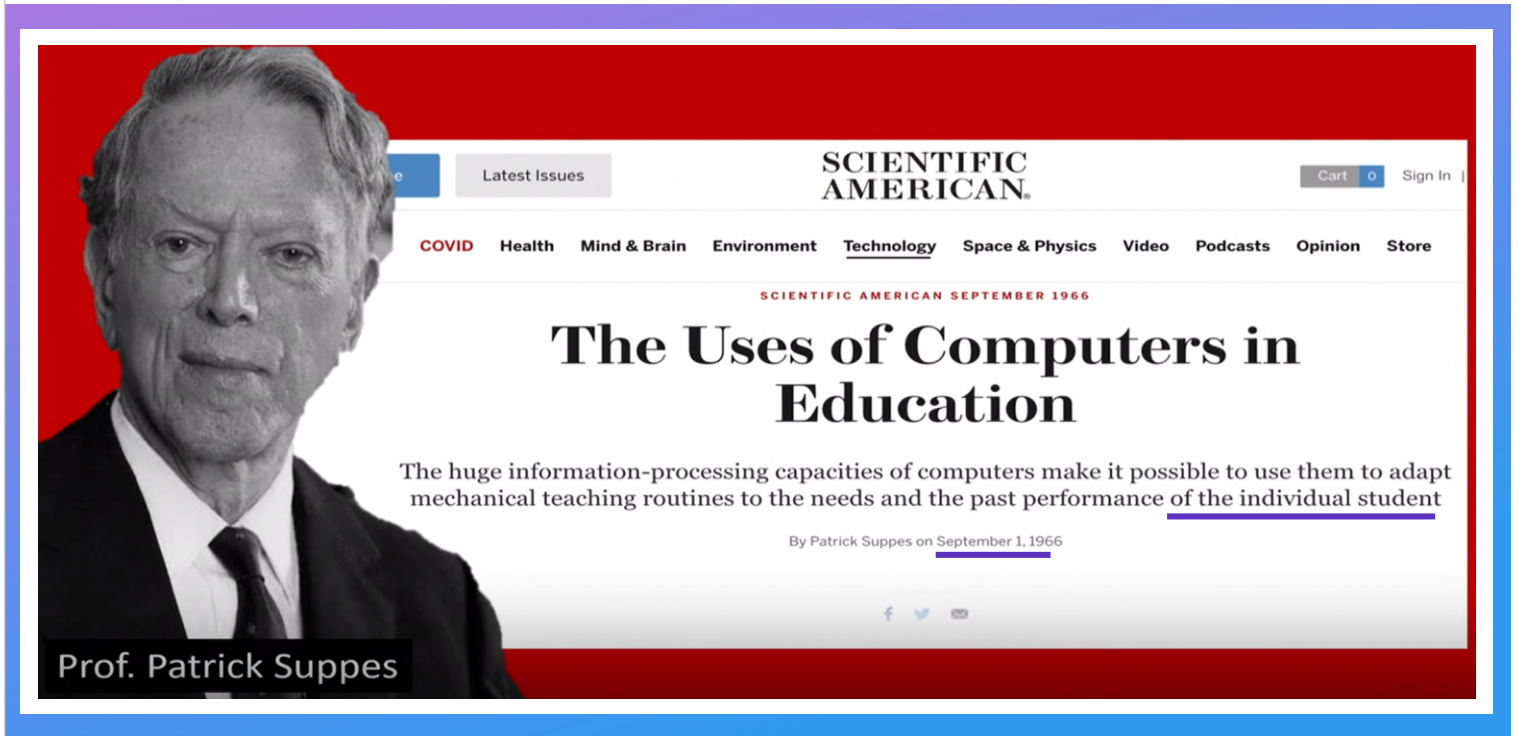
Last updated July 13, 2023

**Disclaimer: this is a living document, meant as an FAQ. Nothing on this page is an official rule or regulation of ETH Zurich.**

GPT (Generative Pre-trained Transformer) is a neural network that generates plausible fiction. The "generative" algorithm works like the autocomplete function for text messages on smartphones, which suggests likely next words to the user - when typing "I will arrive" the phone might suggest "at", "in", and "tomorrow." As an example, always clicking on the first suggested word would generate the following sentence: "I will arrive at home office in about an hour to get to the university," which is almost grammatically correct, but non-sensical. While autocomplete works with words, GPT works with tokens (similar but not identical to syllables); it was trained on a huge corpus of text including scientific literature.


# 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/>



A futuristic white robot with glowing blue eyes is sitting at a desk, looking at a computer monitor. The robot has a sleek, humanoid design with visible mechanical joints and a small antenna on its head. The monitor displays some blurry text or code. The scene is dimly lit, with a warm glow from the robot's eyes and the monitor. The word "Technology" is overlaid in a bright yellow font across the center of the image.

# 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

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



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.



DeepMind's AlphaCode program takes a data-driven approach to coding. (Google DeepMind Illustration)

Artificial intelligence software programs are becoming shockingly adept at carrying on conversations, winning board games and generating artwork — but what about creating software programs? In a newly published paper, researchers at Google DeepMind say their AlphaCode program can keep up with the average human coder in standardized programming contests.

# Massive Productivity Boost

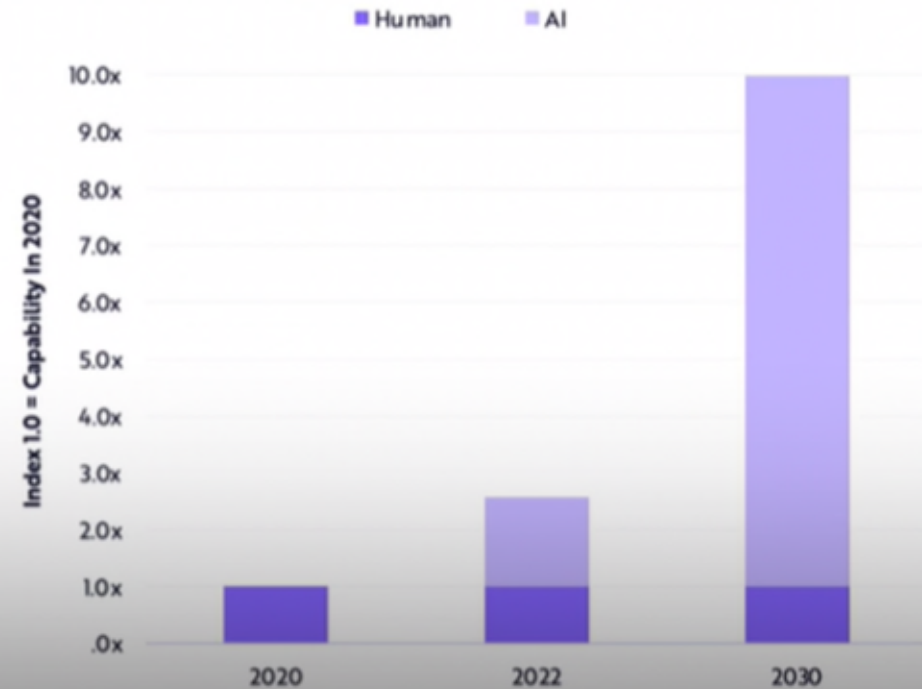
## AI Could Lead To A 10-Fold Increase In Coding Productivity

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.analyticsinsight.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.>

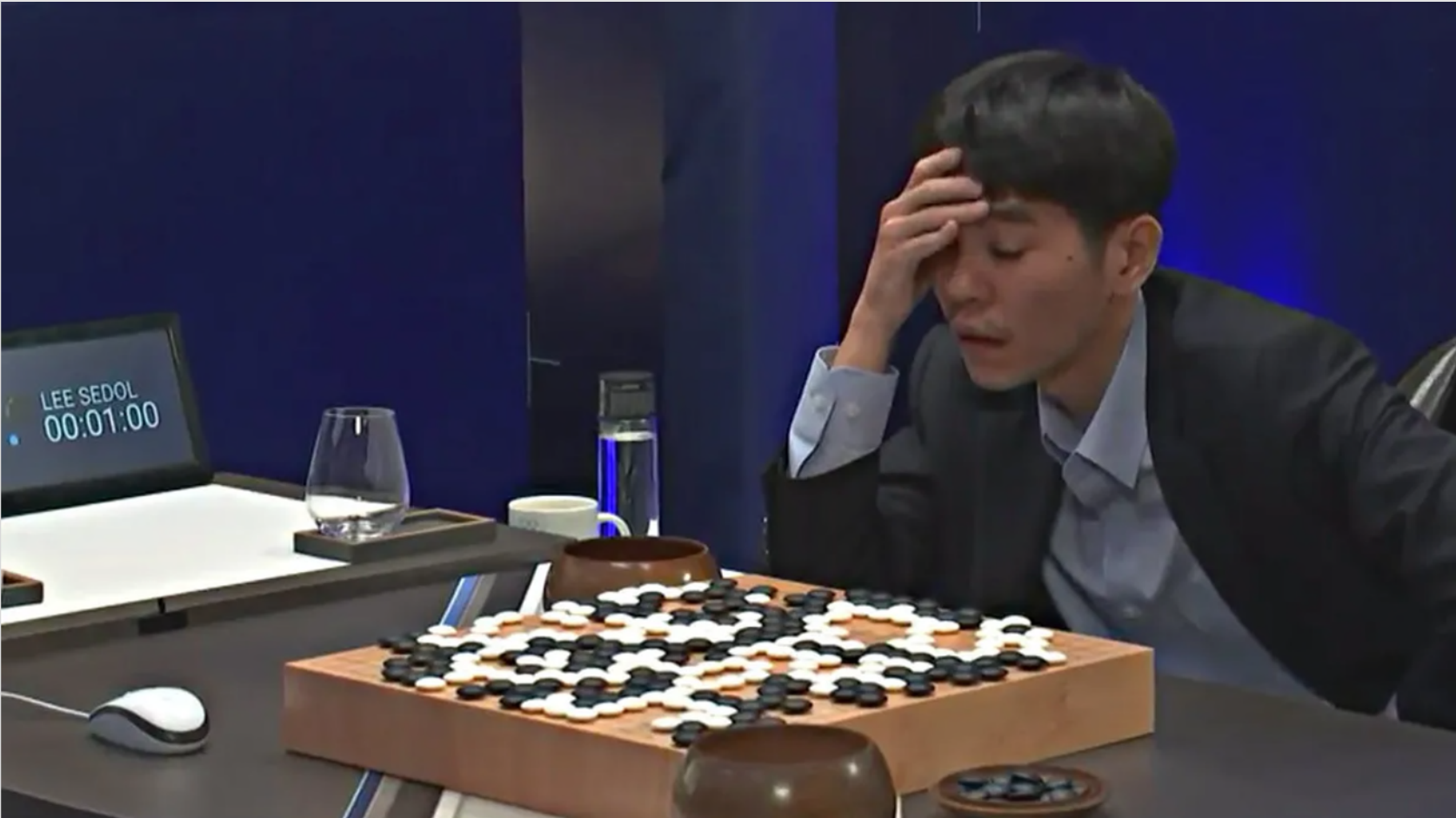
A white humanoid robot with a sleek, futuristic design is shaking hands with a woman in a white lab coat. The robot has a human-like face with a slight smile and is looking towards the woman. The woman has her hair pulled back and is looking at the robot with a serious expression. The background is a bright, modern laboratory or office setting with large windows and structural beams.

# Human vs. Machine?

# 1997 - IBM's Deep Blue Beats Garry Kasparov



# 2016 - Google's AlphaGo Beats Lee Sedol



# Human vs. Machine

TECH / ARTIFICIAL INTELLIGENCE / US & WORLD

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



Lee Se-dol is seen in 2016 during his matches with the AI program AlphaGo.  
Photo: Google / Getty Images

/ '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>

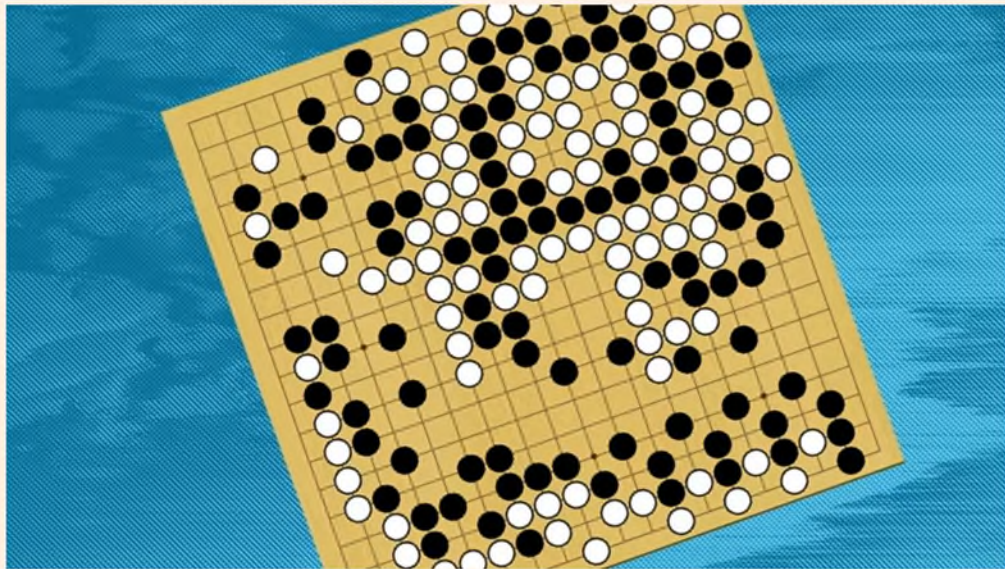
# Human AND Machine

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**.*

Source: <https://www.ft.com/content/175e5314-a7f7-4741-a786-273219f433a1>



# Join us in this journey

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# Thank You!