

Fire, fad, or foe?

Will generative AI
empower or overpower
educators?

Associate Professor Danny Liu

DVC (Education) Portfolio

NSWIER Sir Harold Wyndham Memorial
Lecture 2023





i've been asked to give a memorial lecture. what do i do??!?!?!?



Firstly, it's okay to feel overwhelmed. Public speaking, especially for a memorial lecture, can be daunting. However, it is also a significant honor. A memorial lecture is a way to honor the memory of a person, usually a significant figure in a specific field, and it offers a chance to share ideas and insights related to that person's life, work, or legacy.

Here's a step-by-step guide to help you prepare:

1. **Understand the Purpose:** Get clear on why you have been chosen to give this lecture and what the organizers hope to achieve. Are you expected to talk about the person's life and work, discuss their impact on a specific field, or use their work as a stepping stone to discuss broader ideas or current trends?
2. **Research Thoroughly:** If the lecture is to commemorate a specific person, learn as much as you can about them. Understand their life, work, and the impacts they made in their field. Gather stories, quotes, accomplishments, and notable facts.

Sir Harold Stanley Wyndham



“... my interest largely arose from my guidance experience... It was obvious that there were a considerable number of adolescents misplaced at the secondary level at a time when a final decision had to be made at the end of the primary course, roughly at the age of 12, as to what type of secondary course they would follow...”

“... confronted with the beginning of a rise in secondary school population unparalleled at any other time... do we simply approach Treasury for funds to build schools in accordance with the old pattern? It’s like adding another wing to the old factory.

Or do we take stock and decide what kind of factory we build...”

Some provocations

"But why is the academic world so hostile to this vast information resource? And why do students find it so hard to stay away? ... Both of the academics questioned for this article agree that it is easy to spot essays that are over-reliant on ChatGPT, and that direct citation of the site was always unacceptable."

"There are clearly many ways in which universities need to engage more directly in supporting and enhancing the role that ChatGPT is now playing in students' scholarship," Professor Selwyn said.

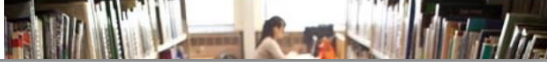
"ChatGPT is here to stay, and universities should be getting more engaged with it rather than just trying to deny its existence."

Should university students use Wikipedia?

Most academics look down on the open source encyclopedia, but does it really hinder students' studies?

Adam Coomer

Mon 13 May 2013 19:11 AEST



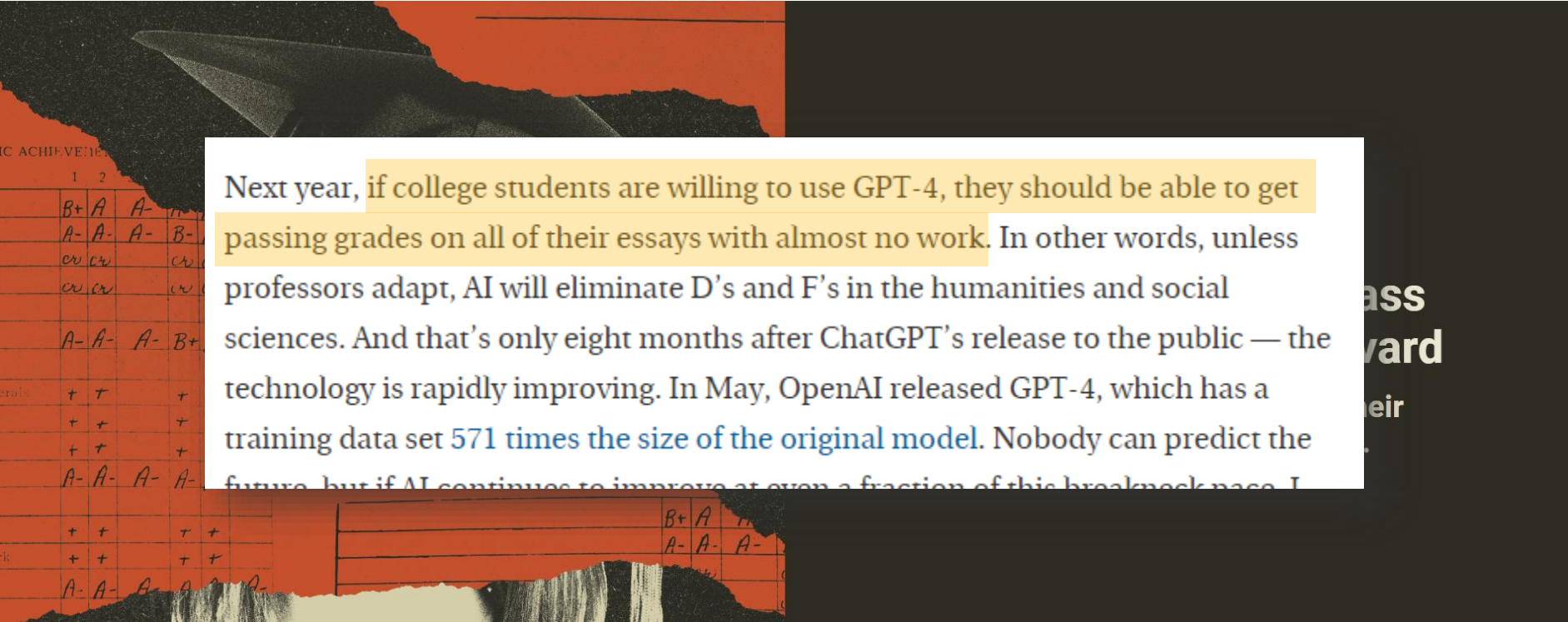
"But why is the academic world so hostile to this vast information resource? And why do students find it so hard to stay away? ... Both of the academics questioned for this article agree that it is easy to spot essays that are over-reliant on Wikipedia, and that direct citation of the site was always unacceptable."

Wikipedia use - nothing to be ashamed about

11 February 2015

"There are clearly many ways in which universities need to engage more directly in supporting and enhancing the role that Wikipedia is now playing in students' scholarship," Professor Selwyn said.

"Wikipedia is here to stay, and universities should be getting more engaged with it rather than just trying to deny its existence."



Next year, if college students are willing to use GPT-4, they should be able to get passing grades on all of their essays with almost no work. In other words, unless professors adapt, AI will eliminate D's and F's in the humanities and social sciences. And that's only eight months after ChatGPT's release to the public — the technology is rapidly improving. In May, OpenAI released GPT-4, which has a training data set 571 times the size of the original model. Nobody can predict the future, but if AI continues to improve at even a fraction of this breakneck pace, I

But surely my assessment is AI-proof

What are the challenges facing EAL/D students and low literacy students in learning English in secondary schools? How can students' understanding be supported through different ways of teaching?

Design two creative classroom activities aligned to the NSW English Standard 11-12 syllabus that help culturally and linguistically diverse students connect their personal experiences with a variety of texts that represent personal and public worlds. Link this to specific examples of your experience observing classes.

- Contemporary
- Requires references
- Personal
- Authentic



r/ChatGPT

by jackredditlol • 18 days ago



I delivered a presentation completely generated by ChatGPT in a master's course program and got the full mark. I'm alarmingly concerned about the future of higher education

a presentation about a topic quite frankly we couldn't care less about.

framework of [subject's name] for a [master's class name]. Make sure to divide the presentation in 4 parts and make each part evenly split". We waited for it to generate a plan and holy moly does the plan look immaculate. After this we asked it to mention the studies where the plan come from and for each section to generate with references at least 4 academic statements, summarizing them in bullet points each. Lo and behold, we literally had our presentation slides served to us in under 20 minutes. We all sat at the café looking at each other in wonder as to wtf just happened.

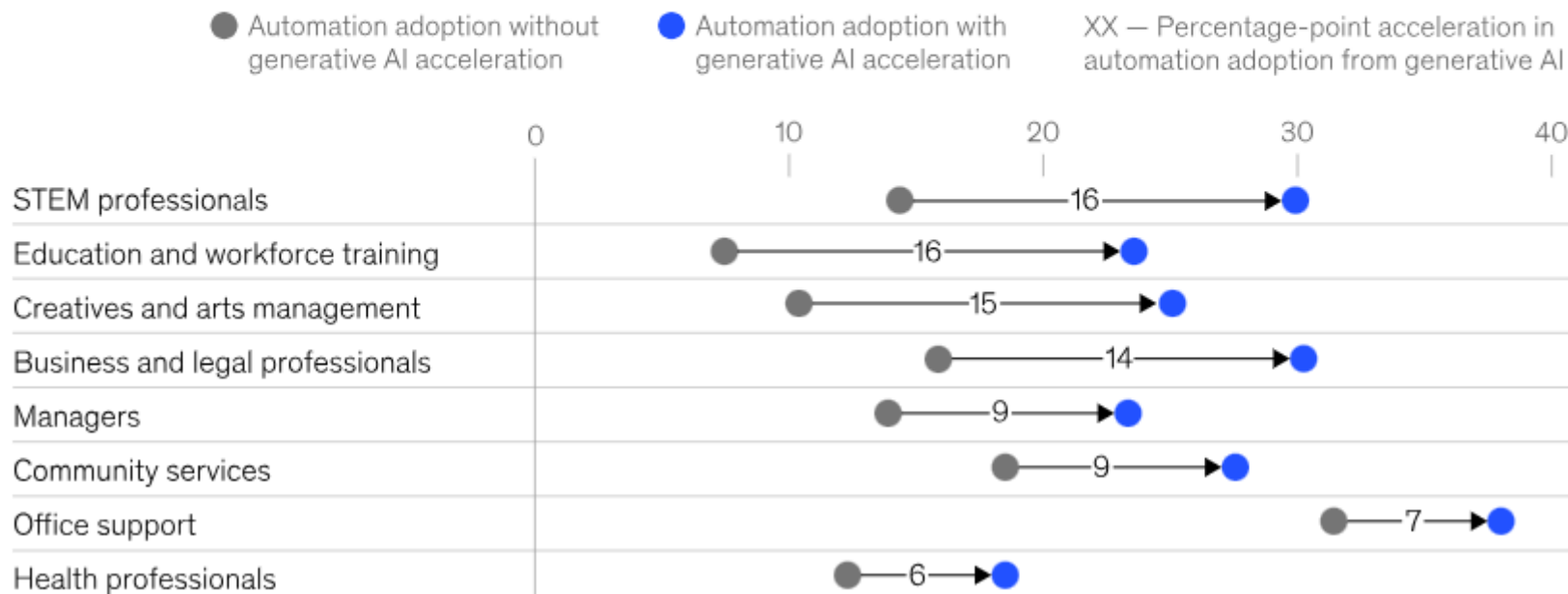
We were all creeped out and fairly amazed at how fast everything was. We used to read a couple articles, take notes, make a presentation slide and carefully jot down the notes and the bullet points for the presentation. Now we're fighting over which font to use and what wallpaper.

For everyone in higher education, I genuinely wish you the best of luck.

be deployed to contain this beast and I'm glad this is my final semester in higher education and kinda got there early to take full advantage of this. It's going to be a nightmare discerning real human work from AI-generated content, and I'm sure everyone is going to suffer equally this abrupt advance in technology.

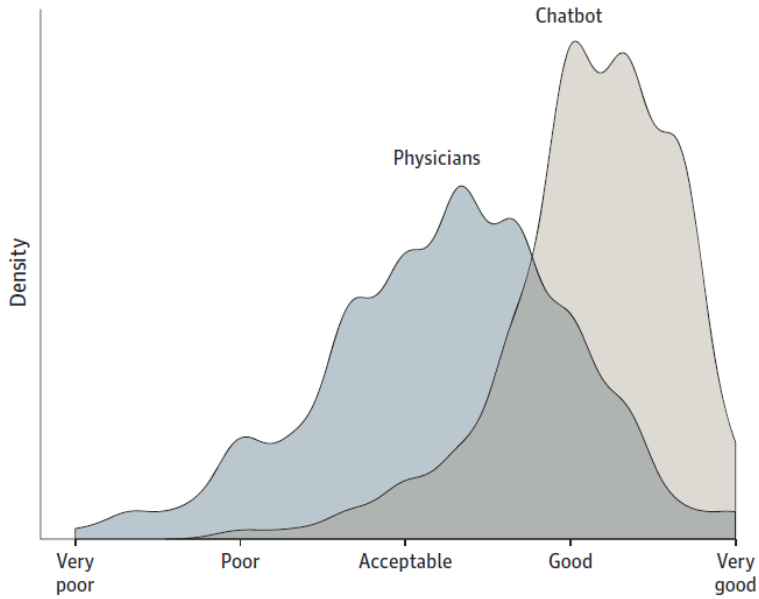
With generative AI added to the picture, 30 percent of hours worked today could be automated by 2030.

Midpoint automation adoption¹ by 2030 as a share of time spent on work activities, US, %

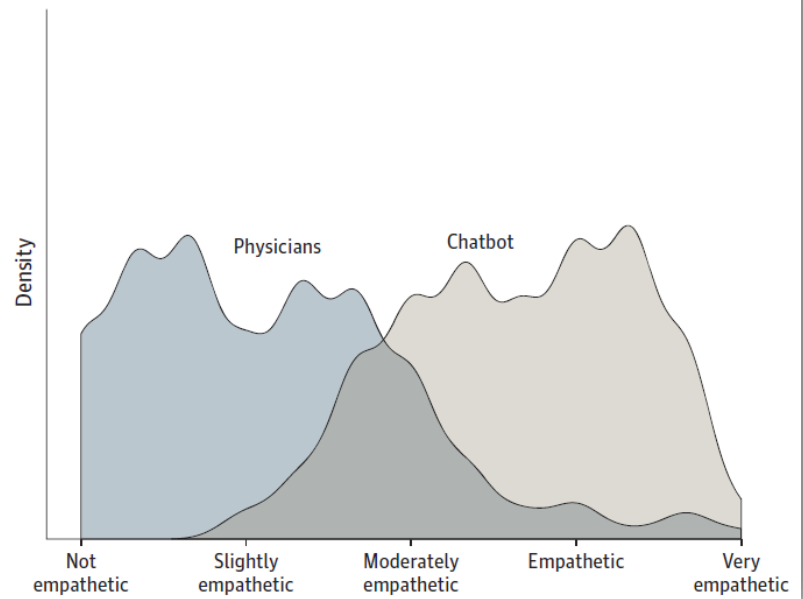


McKinsey (2023) [Generative AI and the future of work in America](#).

A Quality ratings

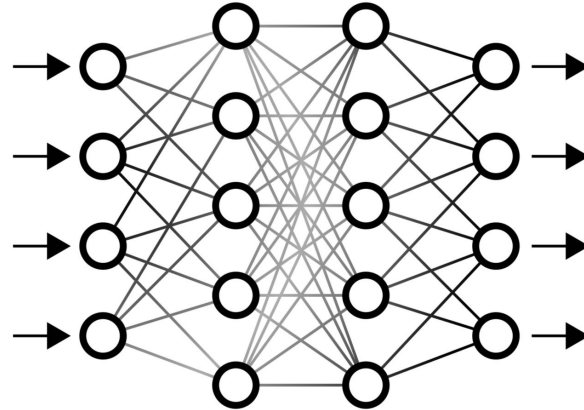
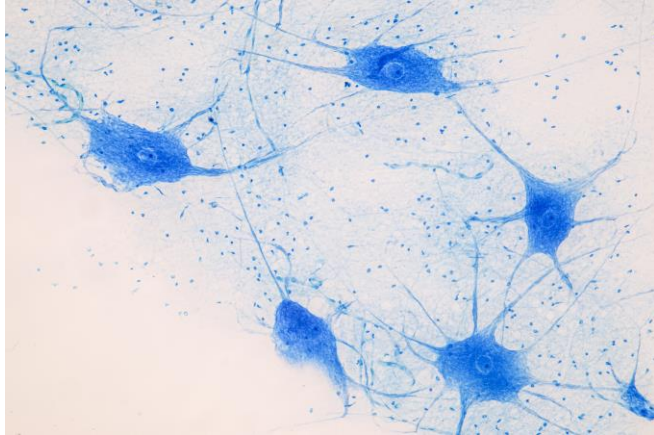


B Empathy ratings



Demystifying large language models

Neural networks



- [New York Times interactive](#): Watch an A.I. Learn to Write by Reading Nothing but Jane Austen
 - 800,000 words

With no training...

1/10

"You must decide for yourself," said Elizabeth ?

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to8j7dCVCyHwrWFYYGr"X8,IOwC!WAE_]!LtZf8&Or6d'KDiD77Wq'Y4NtV:_ 'N
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After 250 rounds of training...

1/10

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After 500 rounds of training...

1/10

"You must decide for yourself," said Elizabeth, ra but riteand the uth this hat say not shnd she for the seer refer of in he he was atte wardinasion ther ot notllyinag int ther to bern that ther wortelions Cornon he this ther sall attred brendibled be on be lasible nothe fare gorn ond fere fartion, of the wholt they had connes, nevers perss press, forre prove the so maribliane. What mucke, for ittere that no werth certen, op hing he firs thom bith this h, ins you bive wall ince iften artale las of Mr Mrss priss.

After 5000 rounds of training...

1/10

"**You must decide for yourself,**" said Elizabeth, rather repeated an unhappy confirmed, "as now it is a few eyes," were there at Anne's like walking to meet that she always were quite married that some uncumstant's decent the imagination of side, for their two secondness which going at Here fault would be to the same between the necessary. "He was never known that she began and interest of situation."

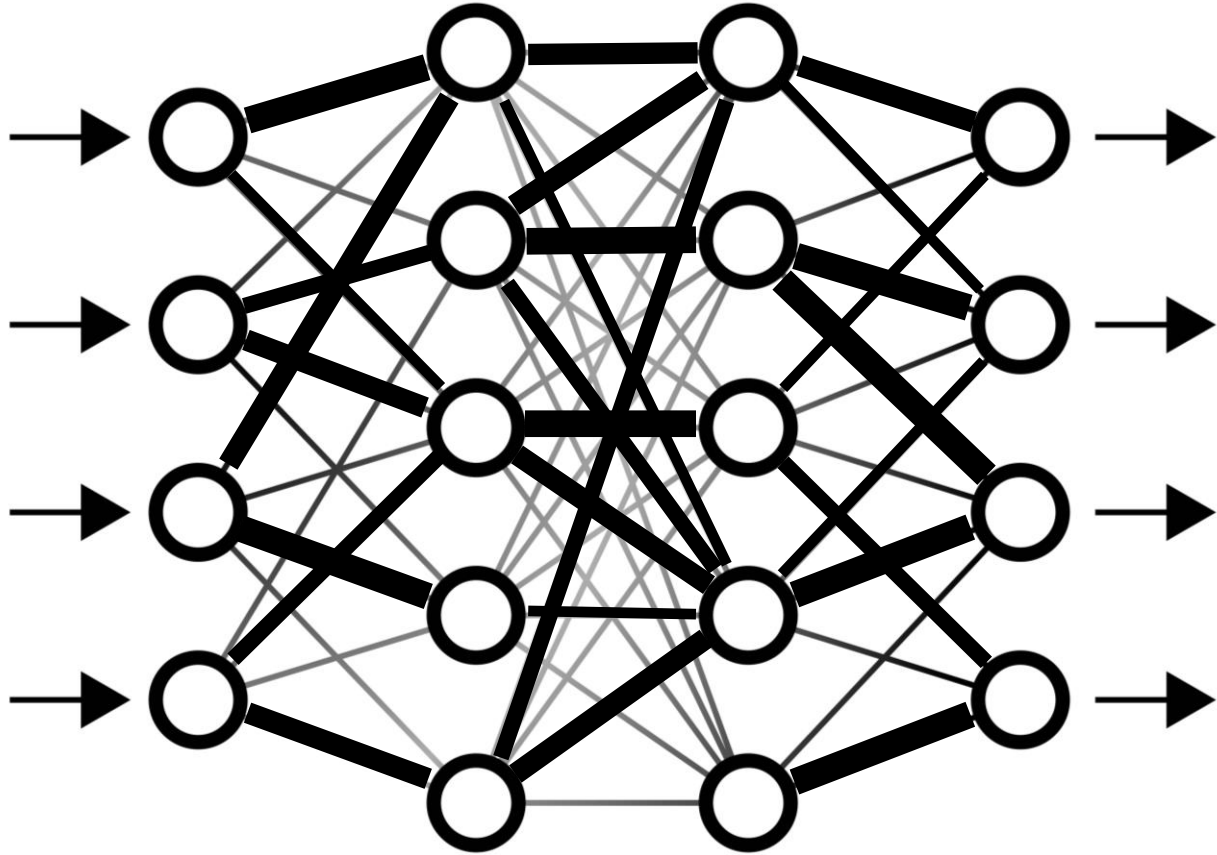
"I cannot know you only think of it; but it is not the suspicion of which such a caught we listened.

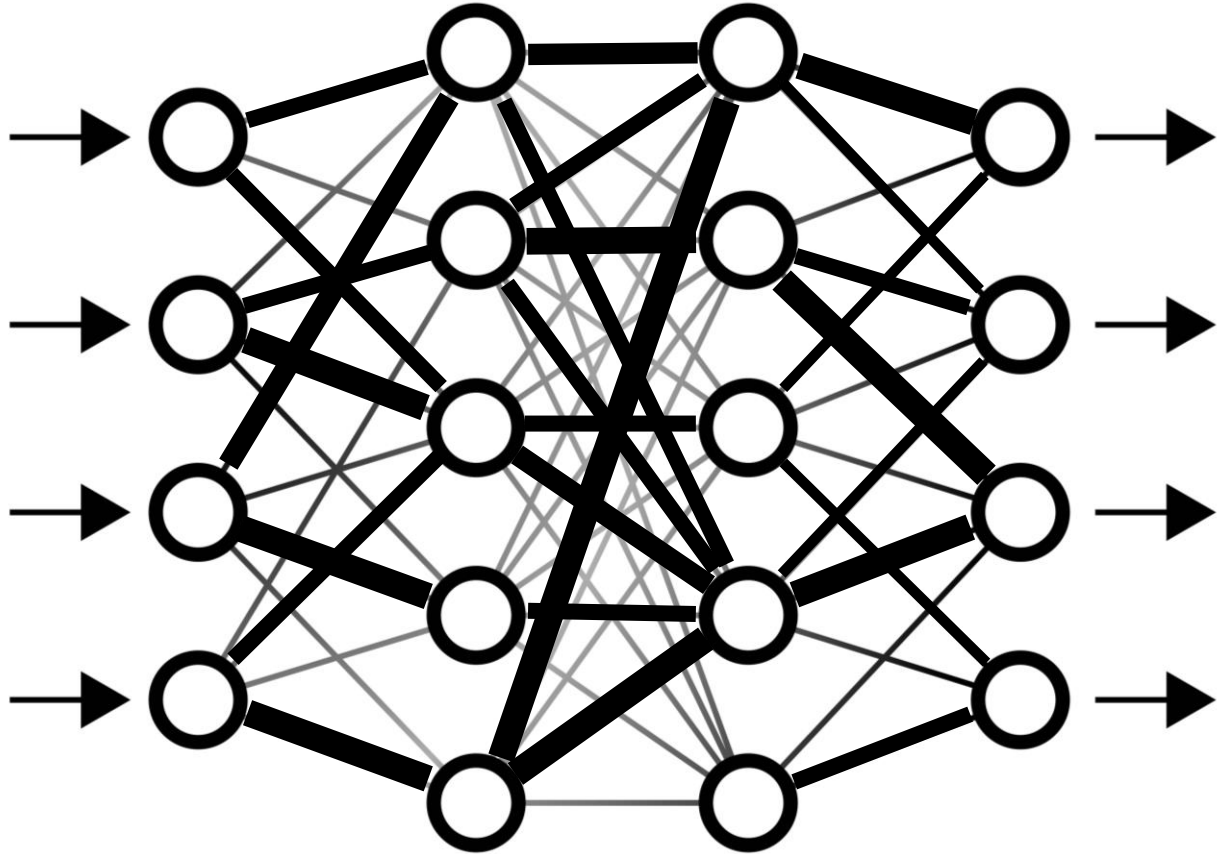
After 30,000 rounds of training...

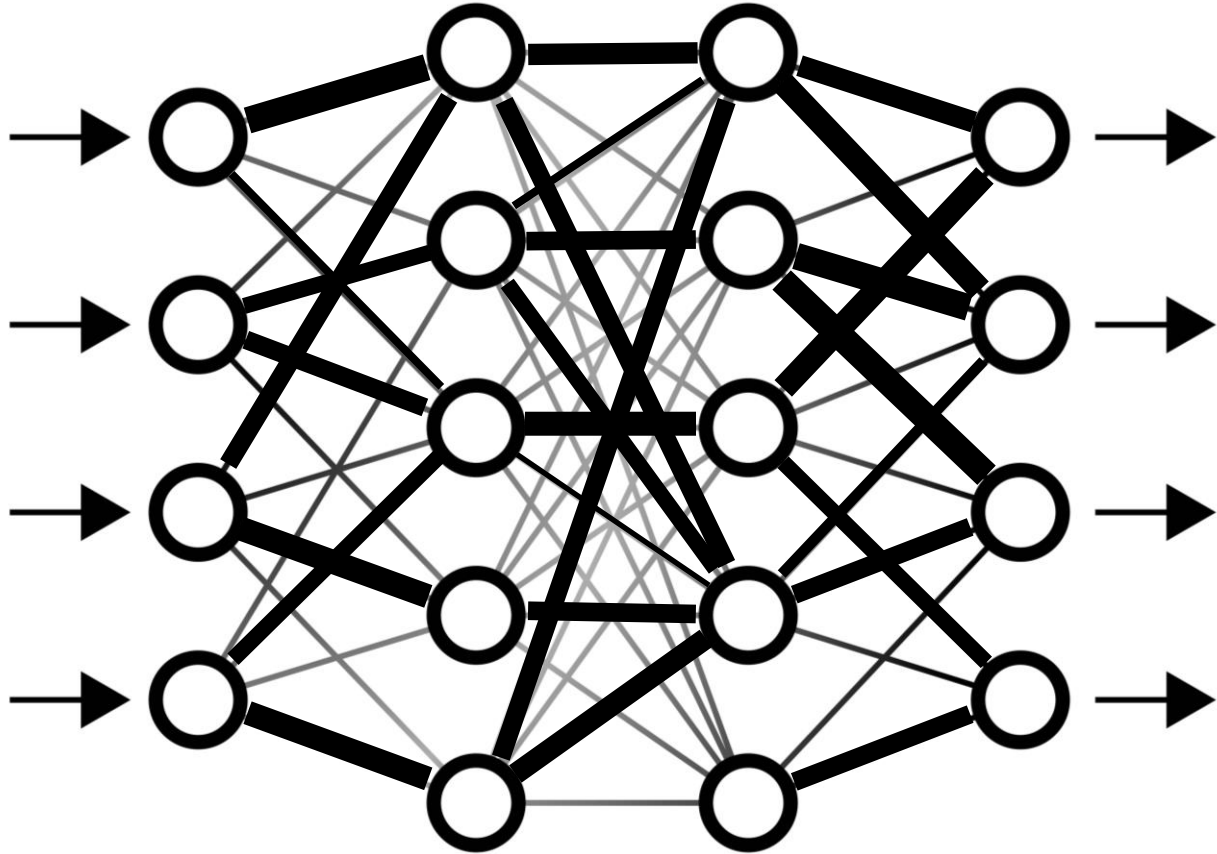
1/10

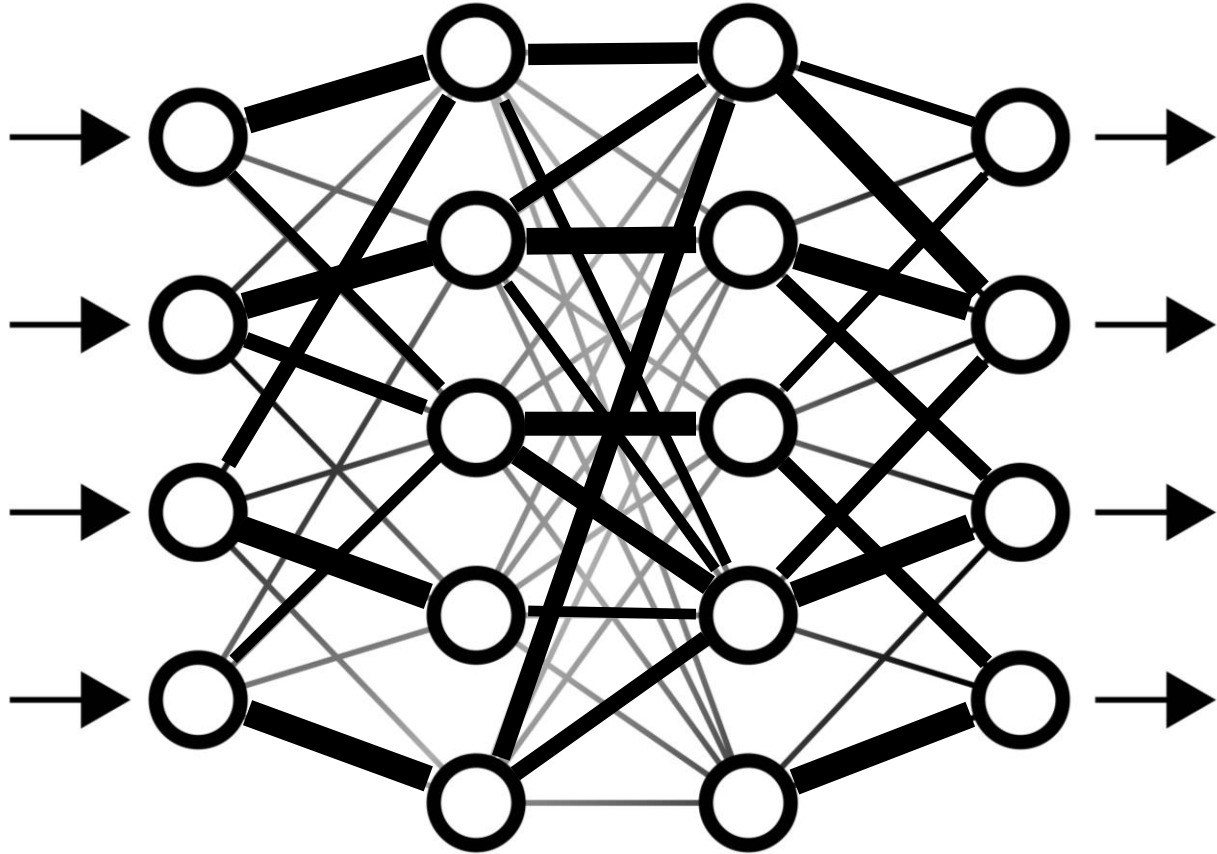
"**You must decide for yourself,**" said Elizabeth, rather repeatedly; "that is very agreeable displeasure, they will ever be a lively young woman as it will be more disagreeable."

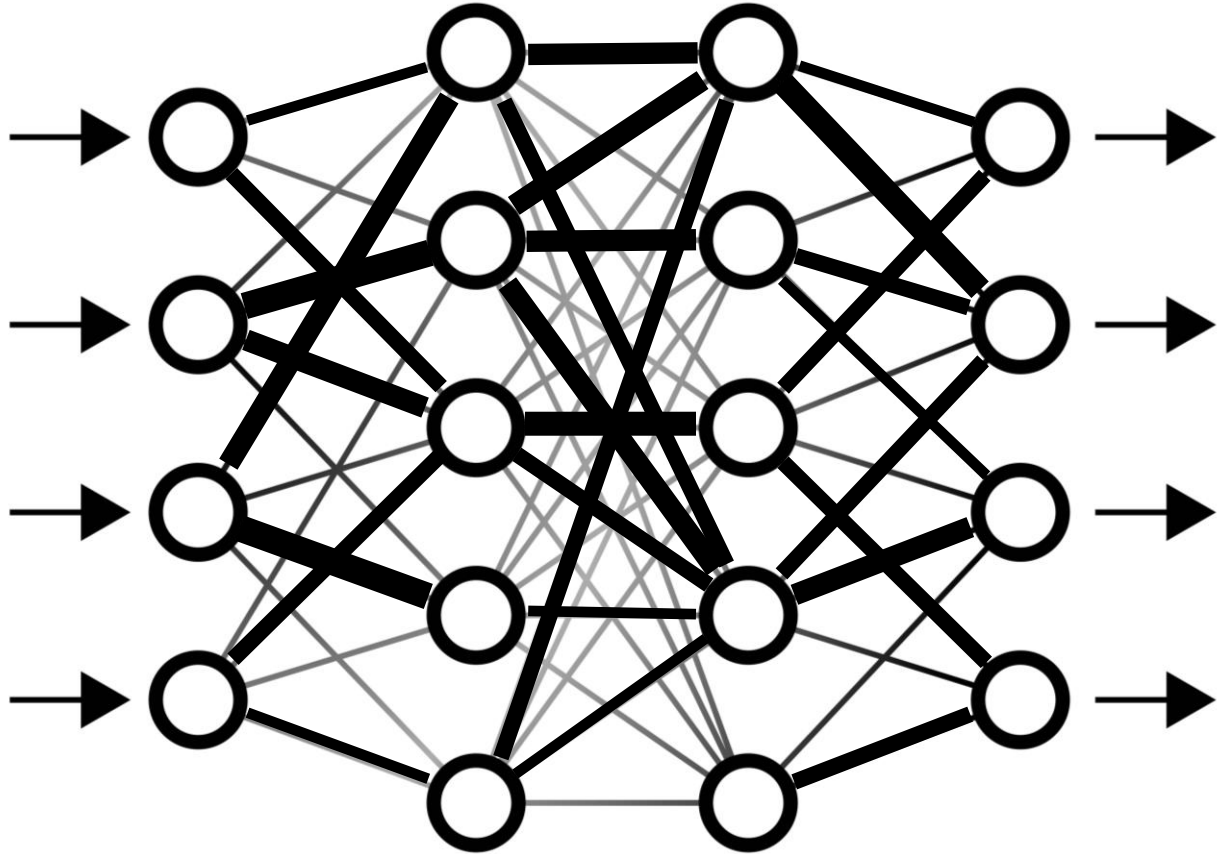
"My dear Fanny, who is a match of your present satisfaction, and I am at liberty and dinner, for everybody can be happy to you again; and now when I think I used to be capable of other people, by being hastily used to be forgotten in something of the little first possibility of my usual taste which such a party as this word.

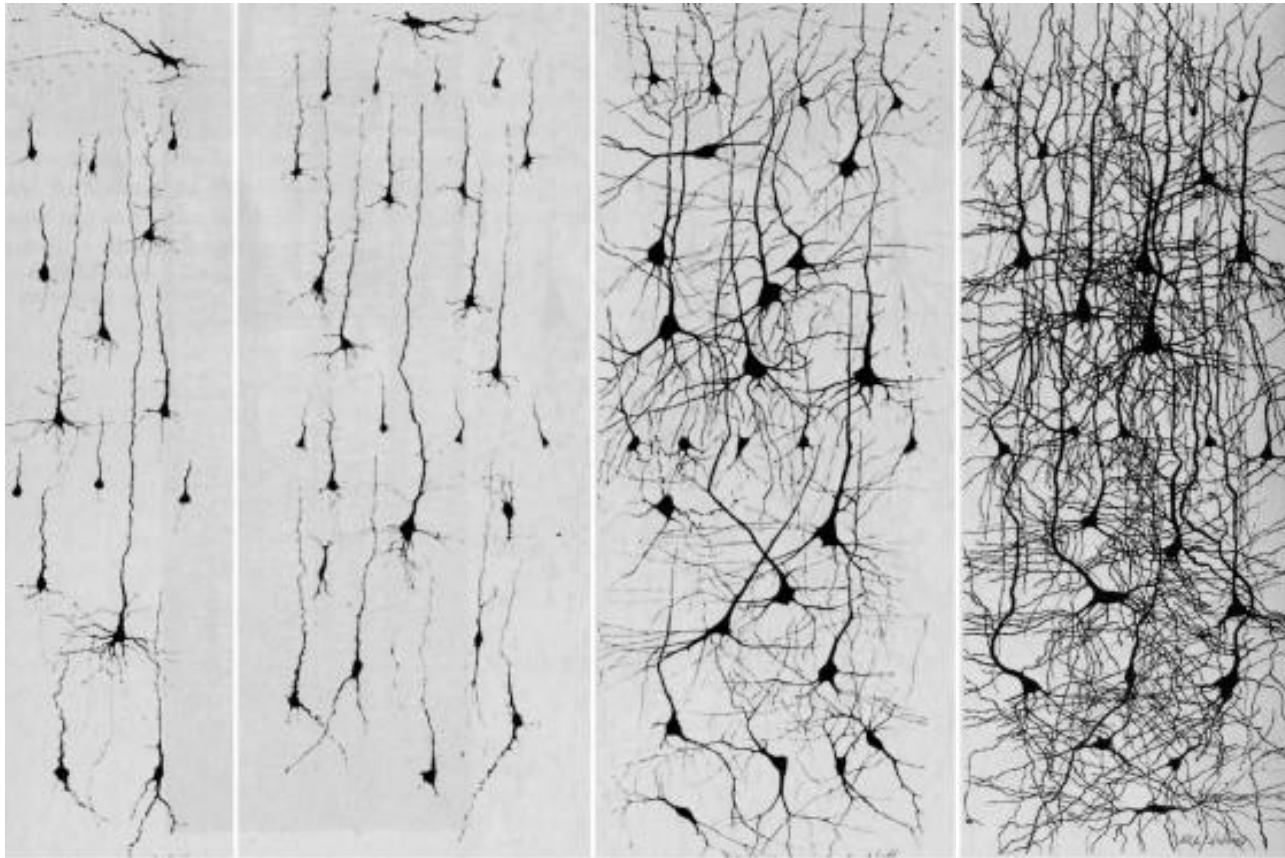












Newborn
A

1 month
B

6 months
C

2 years
D

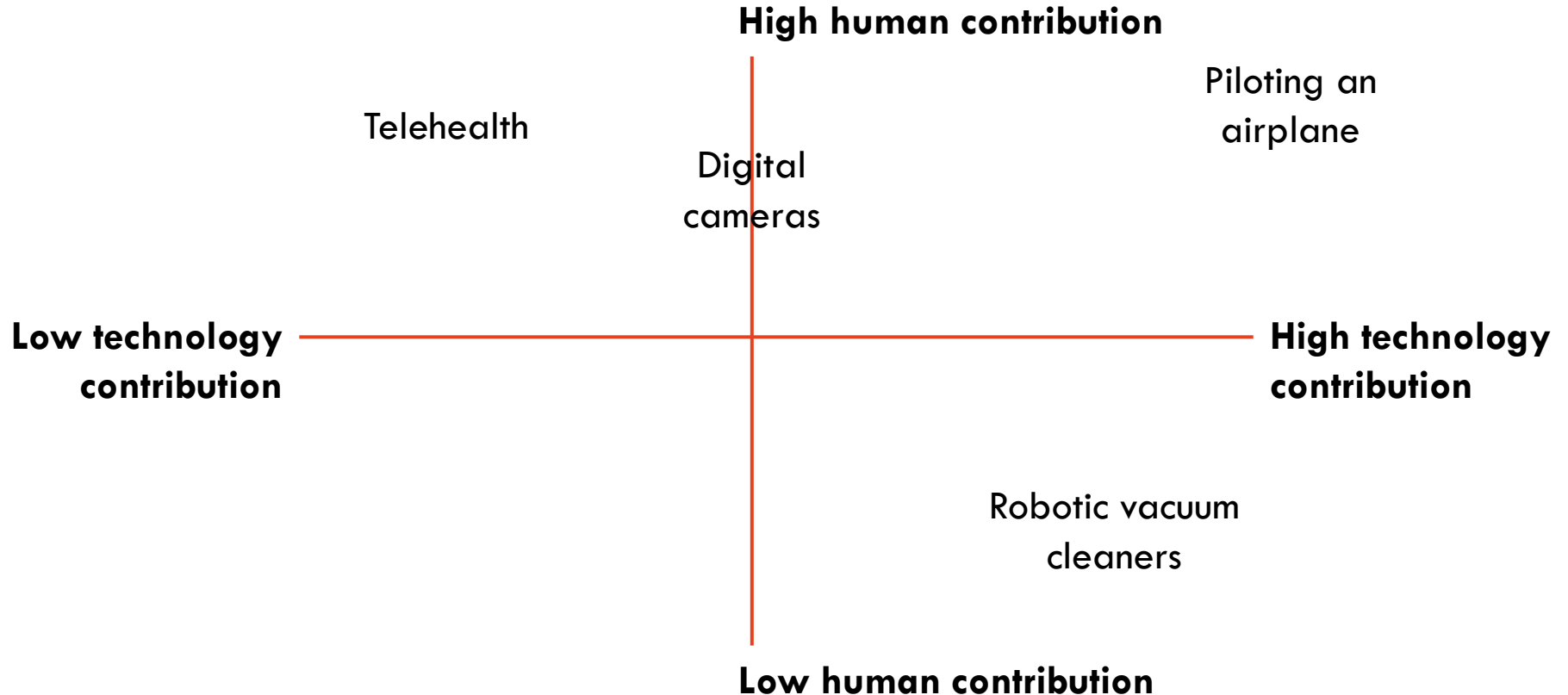
Courchesne et al. (2007) <https://doi.org/10.1016/j.neuron.2007.10.016>

Generative AI is like...

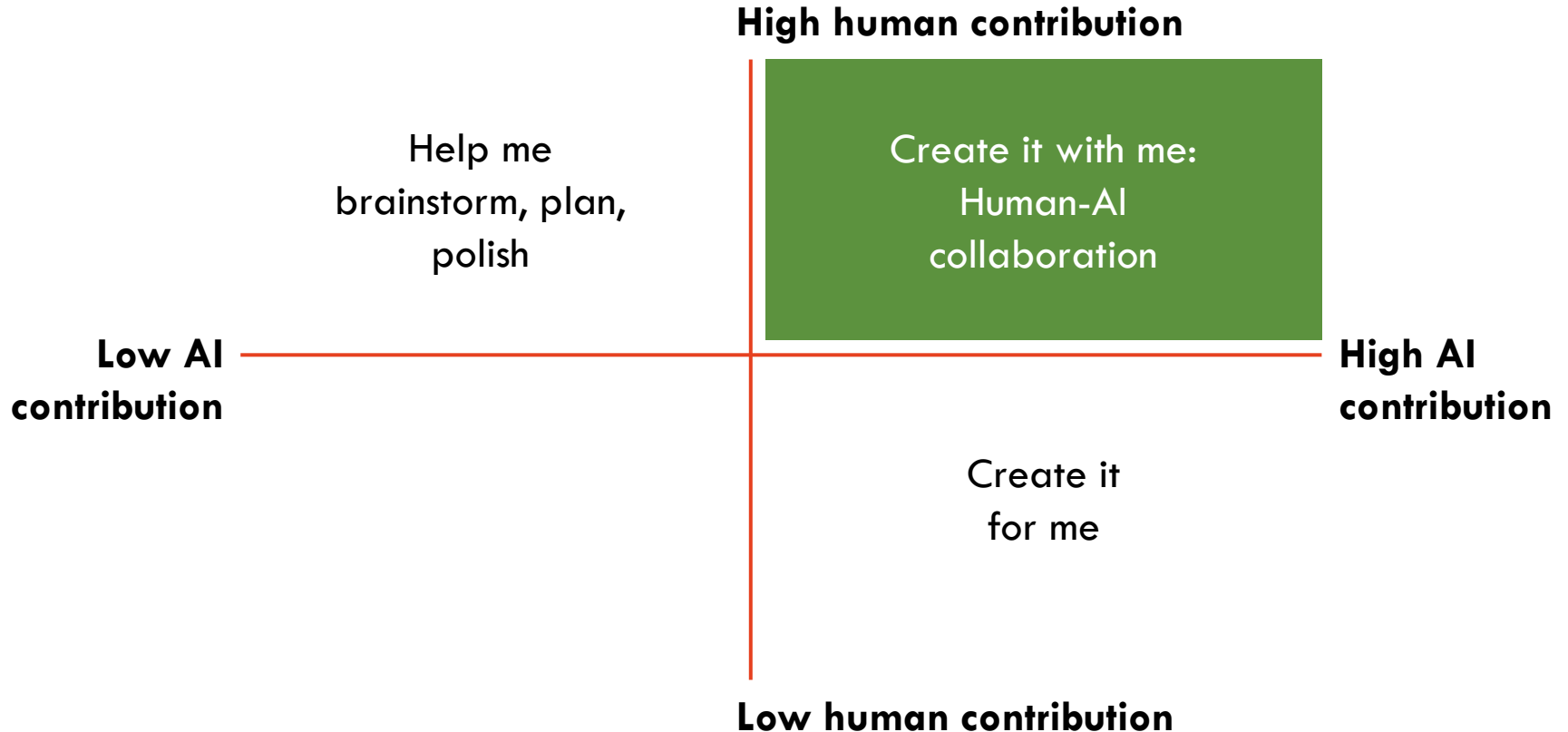


Back to first principles

Human-technology interactions



Human-AI interactions



Human-AI collaboration

NEWS

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Sir Paul McCartney says artificial intelligence has enabled a 'final' Beatles song

"He [Jackson] was able to extricate John's voice from a ropey little bit of cassette," Sir Paul told Radio 4's Martha Kearney.

"We had John's voice and a piano and he could separate them with AI. They tell the machine, 'That's the voice. This is a guitar. Lose the guitar'.

"So when we came to to make what will be the last Beatles' record, it was a demo that John had [and] we were able to take John's voice and get it pure through this AI.

"Then we can mix the record, as you would normally do. So it gives you some sort of leeway."



"Not every single project is using it but let's say most – I'm encouraging everybody who's working on competitions and early ideation to see what comes up and just to have a larger repertoire," he said.

"And oftentimes they have interesting ideas and new kinds of form and moves and you can show them as early sketches even to clients – and yes, we got called out sometimes recently about that."

"You don't even have to do much, you show them raw and you can generate ideas with clients and within the team, because of light, shadow, geometry, coherency, the sense of gravity and order is so potent and the ideas are still striking."

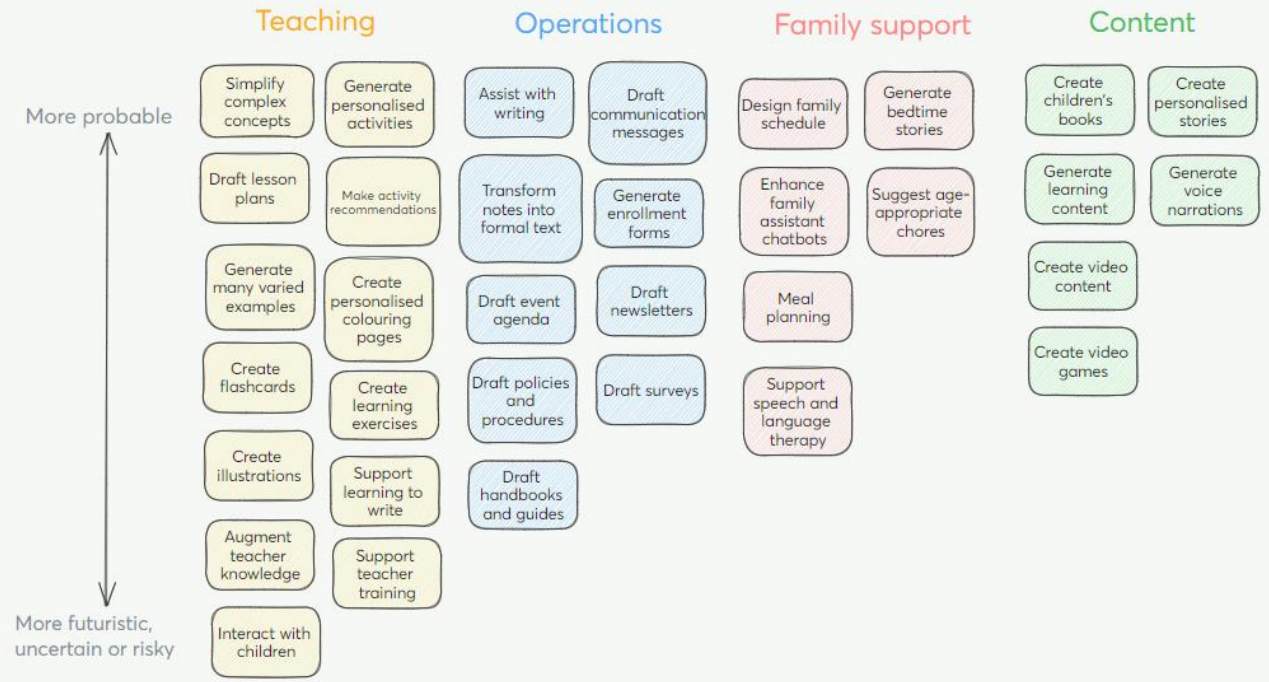
Zaha Hadid Architects is using AI text-to-image generators like DALL-E 2 and Midjourney to come up with design ideas for projects, studio principal Patrik Schumacher has revealed.

How might early years see generative AI?

We've identified multiple use cases for generative AI in teaching, operations, family support and content creation.

31 August 2023
 In *A fairer start*
 6 min read

Exploration of generative AI use cases for early-years



Generative AI use cases for early-years, surfaced from desk research and interviews (work-in-progress and subject to change). The vertical ranking of use cases is approximate, and relative with respect to each category.



A NEW ERA

The Age of AI has begun

Artificial intelligence is as revolutionary as mobile phones and the Internet.

By **Bill Gates** | March 21, 2023 • 14 minute read

I'm lucky to have been involved with the PC revolution and the Internet revolution. I'm just as excited about this moment. This new technology can help people everywhere improve their lives. At the same time, the world needs to establish the rules of the road so that any downsides of artificial intelligence are far outweighed by its benefits, and so that everyone can enjoy those benefits no matter where they live or how much money they have. The Age of AI is filled with opportunities and responsibilities.



Keep in mind...



AI and education

“THIS”

will

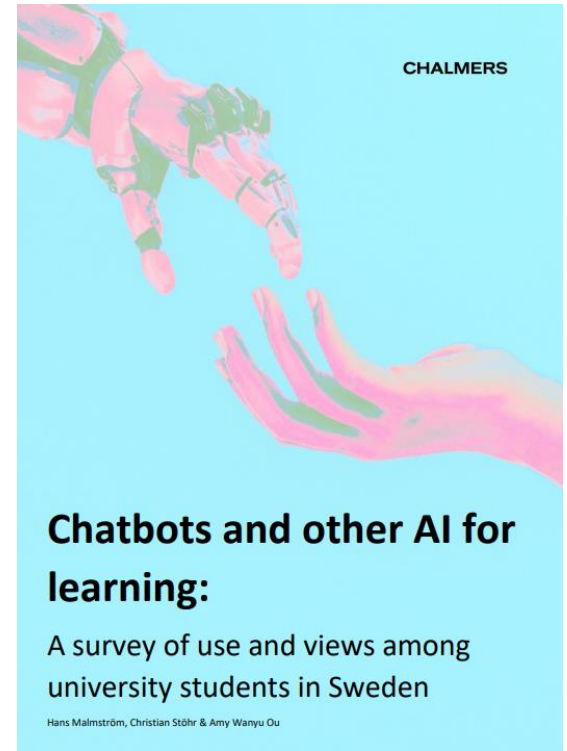
Revolutionize

EDUCATION



Student perspectives of generative AI

- Acceptance
- Cautious and careful
- Supplement to teachers
- Saving time
- Wanting guidance and leadership



April 2023

Helping students use generative AI well

Home

- Modules
- Marks
- Assignments
- Discussions
- People
- Pages
- Files
- Syllabus
- Outcomes
- Rubrics
- Quizzes
- Collaborations
- Announcements
- Settings

Account

Help

Admin

Dashboard

Courses

Groups

Calendar

Inbox

History

Studio

Commons

Support

Welcome to AI in Education!

This site is a resource for students, [built by students](#), to provide ways you can use generative artificial intelligence productively and responsibly as part of your university.

How to use this site

To get started, click on the topic areas in the boxes below. Once there, you can navigate between pages by clicking the page buttons or using the arrows at the bottom of the page. To view an organised set of all the resources available on this site, click the 'Modules' link in the left-hand menu.

What is generative AI?

- [How generative AI works](#)
- [Different generative AI options](#)
- [Writing prompts](#)
- [Limitations and considerations](#)

Guidelines for using generative AI

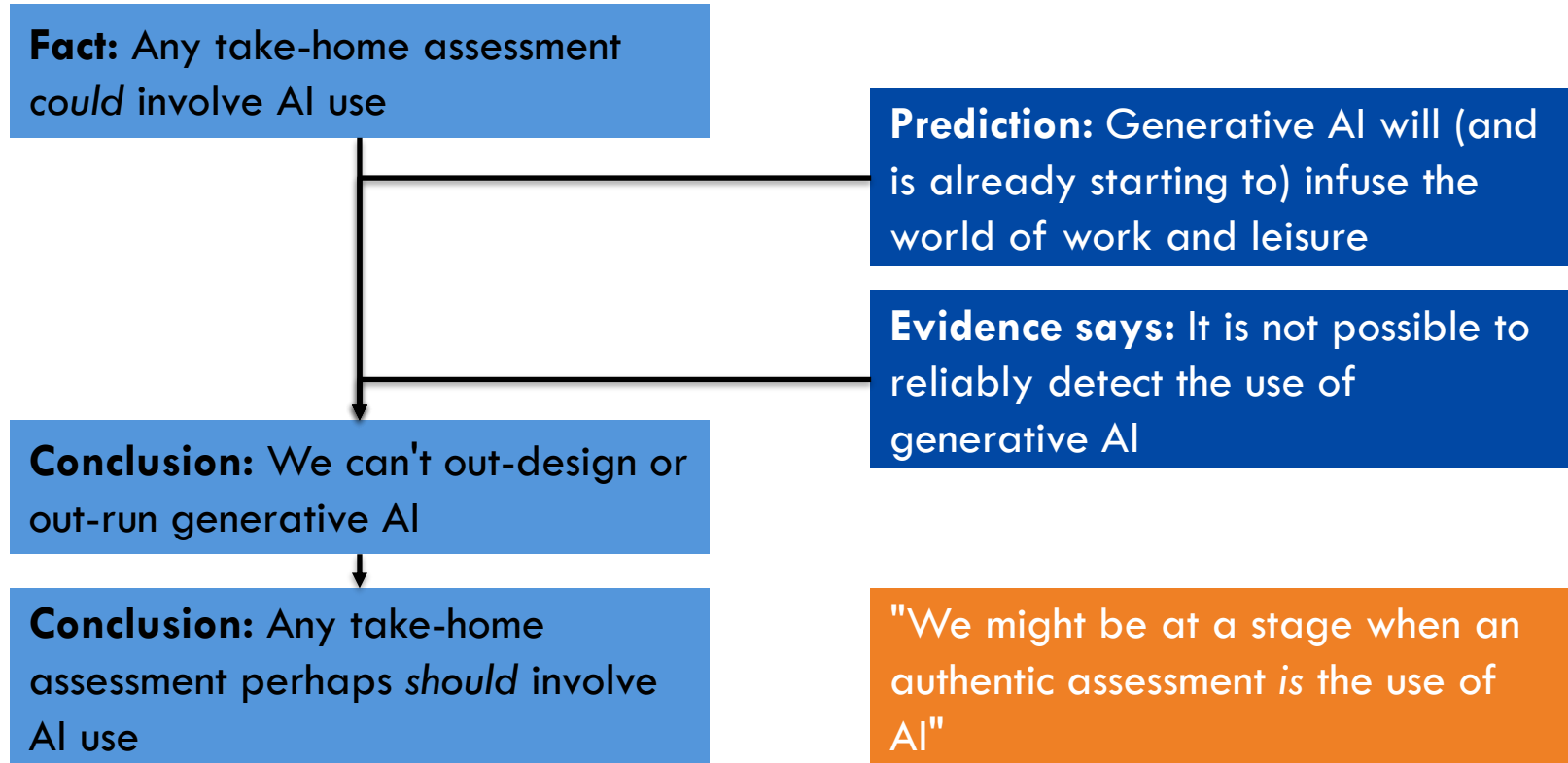
- [General principles for use of generative AI](#)
- [University of Sydney guidelines](#)
- [Acknowledging & referencing the use of AI](#)

Using generative AI

- [Prompts to help you learn](#)
 - [Overview of new concept](#)
 - [Learning through conversations and questions](#)
 - [Breaking down topics using the Feynman](#)
- [Prompts to help you create](#)
 - [Overcoming writer's block](#)
 - [Suggesting ideas](#)
 - [Looking for literature sources](#)
- [Prompts to help you progress](#)
 - [Creating resumes and cover letters](#)
 - [Making sense of job descriptions](#)
 - [Preparing for job interviews](#)

bit.ly/students-ai

The reality of generative AI and assessment



A 'two-lane' approach to assessment in the age of AI?

Learning outcomes: assess the impact of social, political, and economic trends on education; apply sociological theories to explain inequities in education; communicate how teachers can address inequities through their practices.

Lane 1: Assurance of learning

- Live dialogue after in-class presentation (defend research, analysis, use of theory, etc)
- Giving students unseen hypothetical classroom scenarios in a live supervised setting

Lane 2: Human-AI collaboration

- Bing Chat to research trends
- Scite.ai to discover literature
- Adobe Firefly to design campaign material
- Collaboration process is documented (fact-checking, improving, critiquing)
- In-class presentation
- Process heavily weighted

But teachers everywhere are exhausted

THE CONVERSATION
Academic rigour, journalistic flair

Arts Books + Ideas Business + Economy **Education** Environment + Energy Health



Teachers can't keep pretending OK – toxic positivity will only

Published: February 7, 2022 6.06am AEDT

The University of Sydney

nature

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[nature](#) > [career feature](#) > article

CAREER FEATURE | 03 March 2023

Fed up and burnt out: 'quiet quitting' hits academia

Many researchers dislike the term, but the practice of dialling back unrewarded duties is gaining traction.

[Nikki Forrester](#)

   [Find a new job](#)

AI in action: Ideation assistant

Act as an experienced geography teacher. What environmental trends might be impacting the climate in the Asia Pacific region? Based on these trends, predict 10 potential future states of the environment in this region. Make these predictions short and succinct. After each prediction, show me a one-sentence summary of the prediction that I can use as a prompt in an image generation AI.

AI in action: Rubric drafting assistant

Act as an expert higher education academic and writer of assessment rubrics.

I need to write a marking rubric for a second-year university-level assessment where students (pre-service teachers) need to critique the use of technology in high schools. You need to help me generate the rubric rows (which are the criteria), and the columns are the various standards (from high distinction, to distinction, to credit, to pass, to fail).

Ask me questions to help me write a strong rubric. Ask one question at a time, wait for my response, and ask me the next question. After I have answered your questions, produce a draft rubric for me.

AI in action: Teachers × AI

- Some issues with general-purpose generative AI
 - Can be hard to steer in the right direction
 - Doesn't know your specific subject material
 - Access is inequitable
 - Students need to create their own accounts
 - We don't know how students are using it
- Our attempt at addressing this: <https://cogniti.ai>

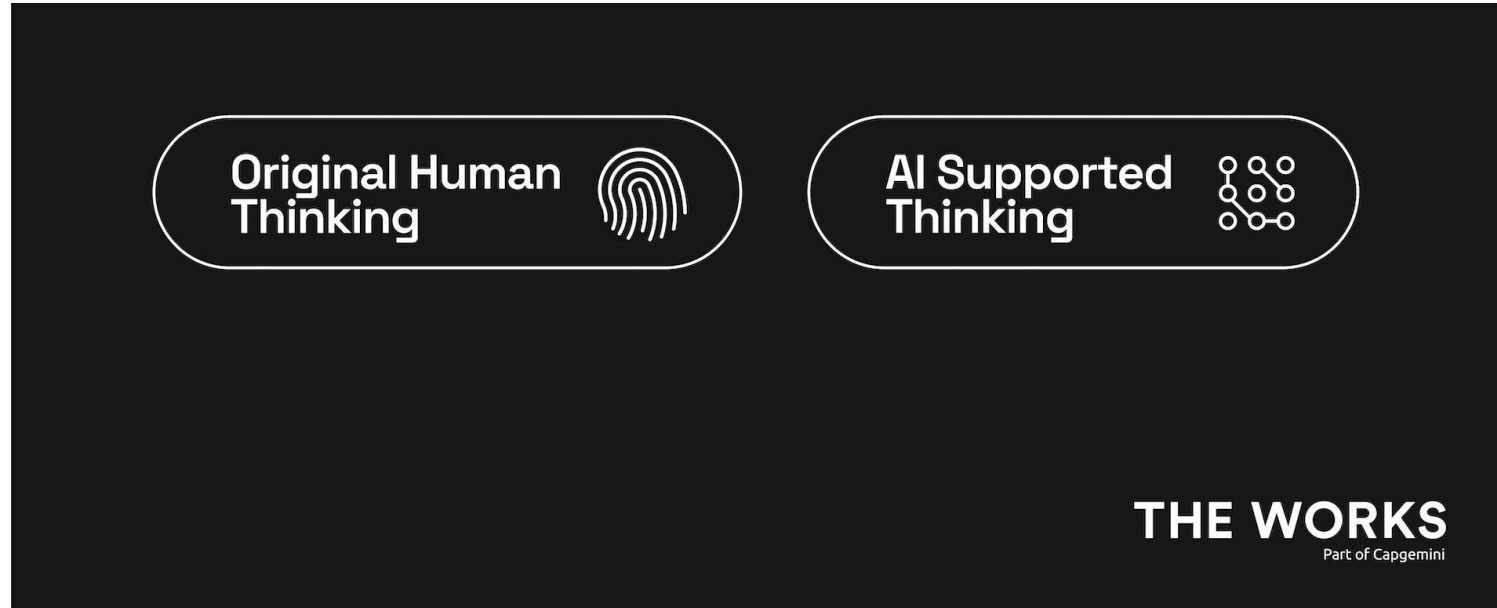
Some fundamental truths about the near future (probably)

- Good pedagogy is *still* good pedagogy
- Students *will* use AI
- Teaching *can* look different
- We *need* to move on assessment

- AI can make *all* our lives easier
- Your role as an *educator* is critical to how AI is used productively and responsibly

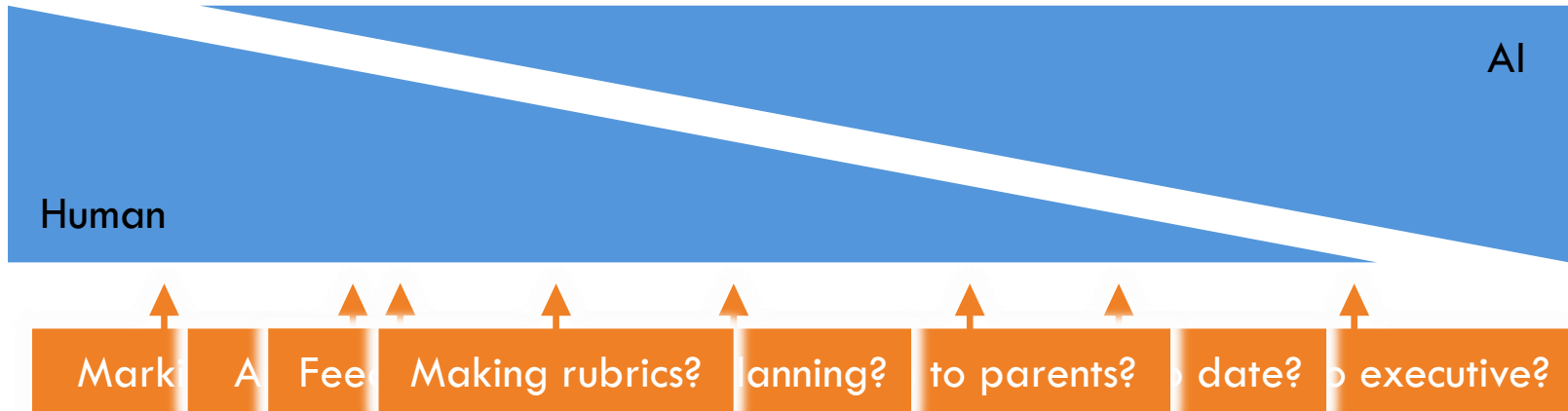
Some big questions

What is authenticity?



Who decides what activities can/should be given to AI?

- “AI reduces or eliminates boring or tedious tasks”
 - But who decides?



What are AI's capabilities?

Dell'Acqua et al. (2023)

AI surprisingly capable

suggests that several factors may explain . In particular, it seems that humans with different levels of skill in the task domain, with different degrees of hands-on practice with generative AI, and with different perceptions of the relationship between humans and AI, may use different sets of practices. We are also investigating this in detail and the impact of these behaviors on performance. We assume some of these practices enable navigating the jagged frontier in a superior way to others.

Tasks AI **can** handle well

Tasks AI **can't** handle well



STEVEN LEVY

BACKCHANNEL SEP 5, 2023 6:00 AM

What OpenAI Really Wants

The young company sent shock waves around the world when it released ChatGPT. But that was just the start. The ultimate goal: Change everything. Yes. *Everything.*

What is the human value-add?

Chan and Tsi (2023)

- Normalising human-AI collaboration
- Critical thinking?
- Culture?
- Creativity?
- Curiosity?
- Connection?

... confronted with the beginning of a rise in artificial intelligence unparalleled at any other time... do we simply teach and assess in accordance with the old pattern? It's like adding another wing to the old factory.

Or do we take stock and decide what kind of education we build?

Thank you

danny.liu@sydney.edu.au

