

Apocalypse or Renaissance?

How Artificial Intelligence is Reshaping Human Work



The Four Horsemen of the Apocalypse, A.Dürer.

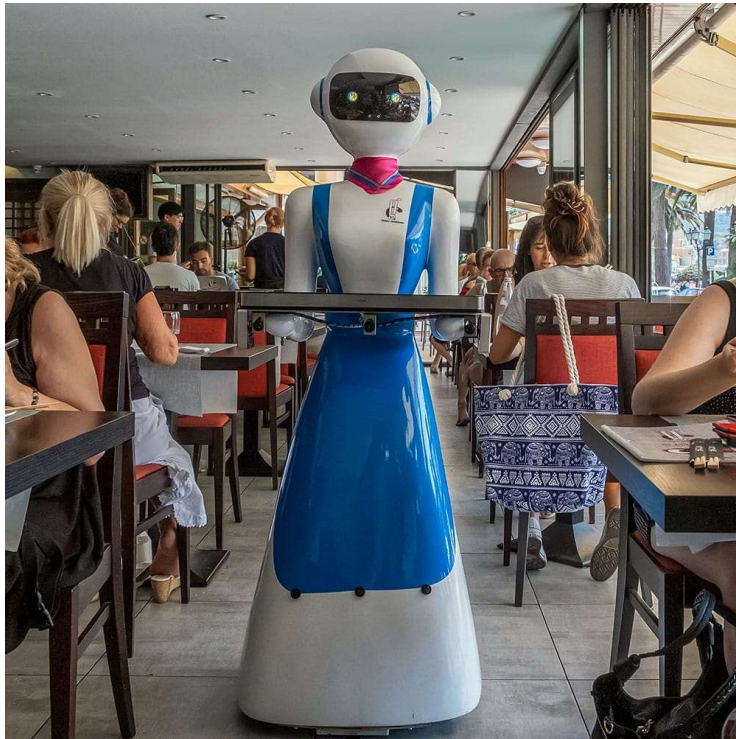
Geoffrey Hinton



"For mundane intellectual labor, AI is just going to replace everybody"

"I'd say it's going to be a long time before it's as good at physical manipulation, so a good bet would be to be a plumber"

Some predictions...



AI is expected to automate up to 30% of tasks by 2030



400 million workers may need reskilling

AI-Powered Nurse





PEOPLE'S DAILY

Drones



Today



Artificial



Apocalypse

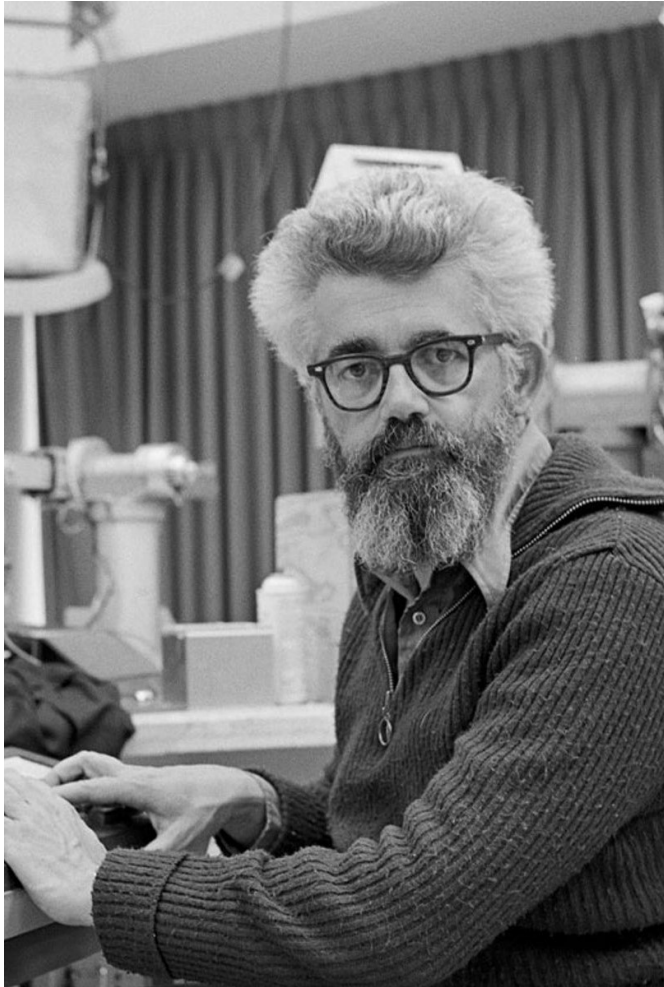


Renaissance



The Future

John McCarthy

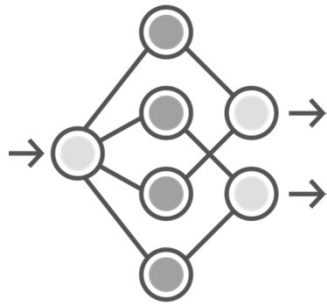


Artificial Intelligence

"the science and engineering of making intelligent machines, especially intelligent computer programs"

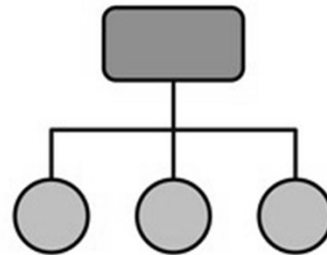
Why now?

AI Evolution



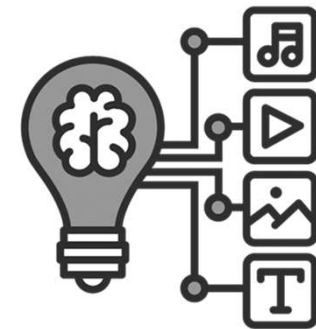
Neural Networks

1950-1970



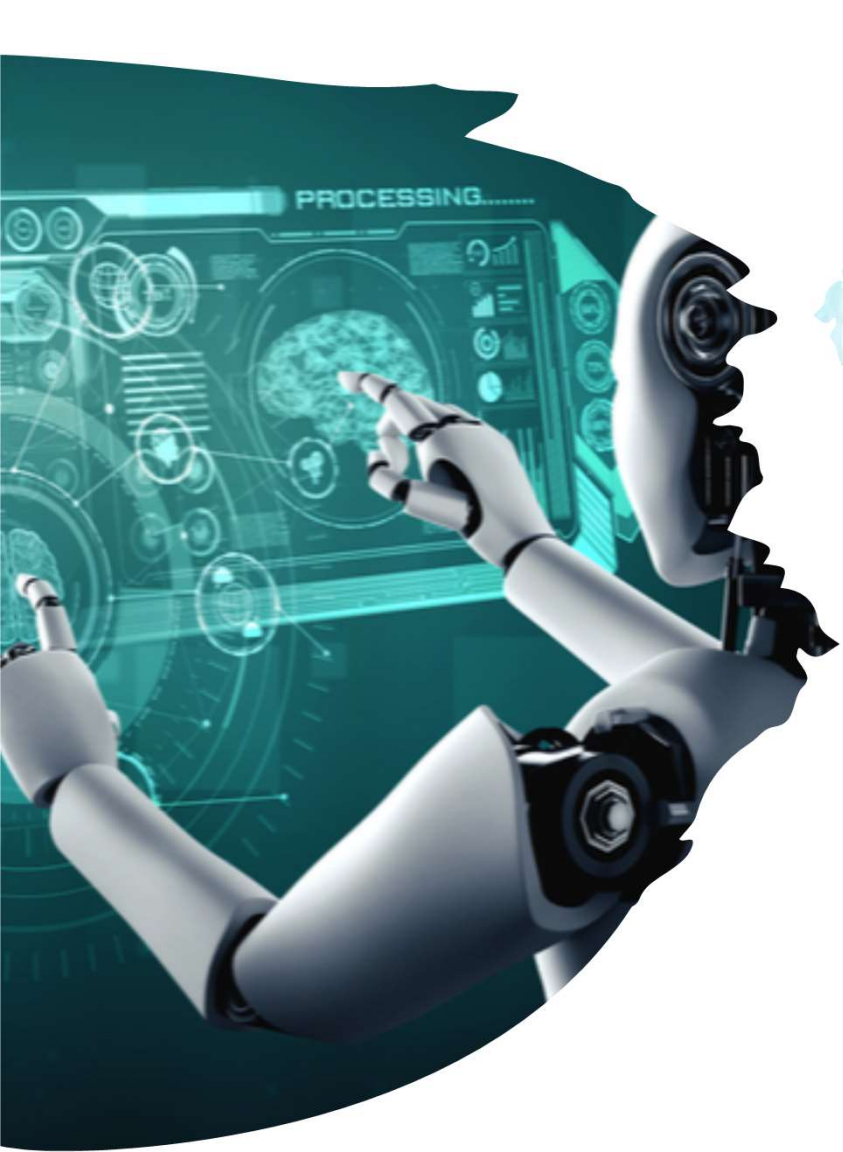
Machine Learning

1980-2010



Deep Learning

Today



Perception

Reasoning

Forecasting

Perception

AI can see



Perception

AI can read and write



how to merge dictionaries in python?



To merge two dictionaries in Python, you can use the `update()`

Reasoning

Standard prompting

Input: Q: Shawn has five toys. For Christmas, he got two toys each from his mom and dad. How many toys does he have now?

A: The answer is 9.

...

Q: John takes care of 10 dogs. Each dog takes .5 hours a day to walk and take care of their business. How many hours a week does he spend taking care of dogs?

A:

Model output: The answer is 50. ❌

Chain of thought prompting

Input: Q: Shawn has five toys. For Christmas, he got two toys each from his mom and dad. How many toys does he have now?

A: Shawn started with 5 toys. If he got 2 toys each from his mom and dad, then that is 4 more toys. $5 + 4 = 9$. The answer is 9.

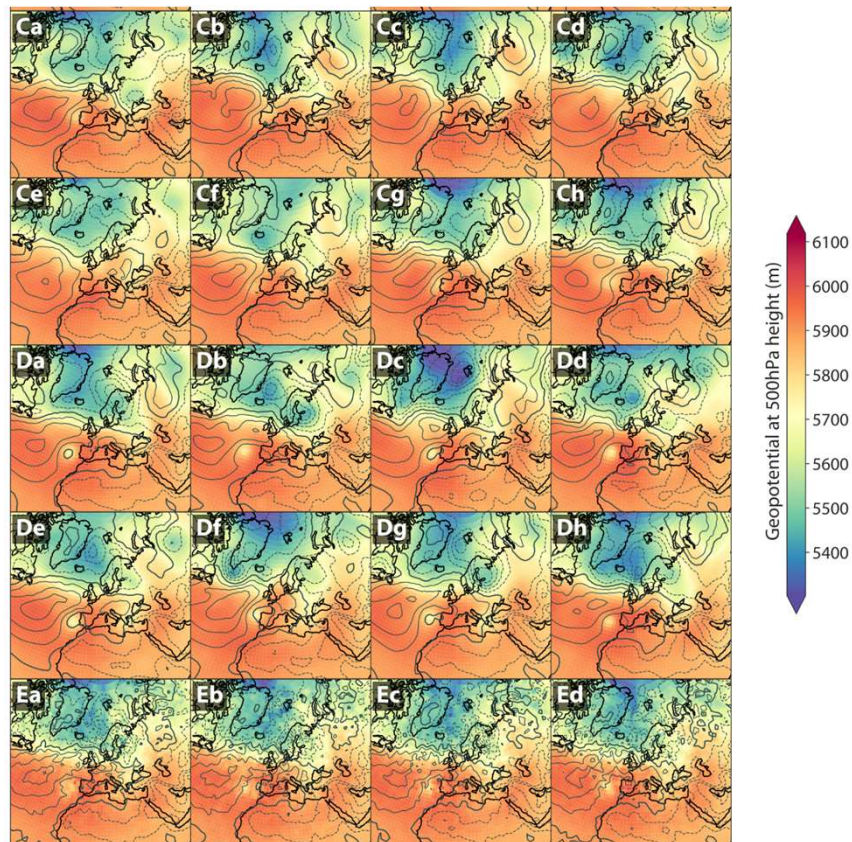
...

Q: John takes care of 10 dogs. Each dog takes .5 hours a day to walk and take care of their business. How many hours a week does he spend taking care of dogs?

A:

Model output: John takes care of 10 dogs. Each dog takes .5 hours a day to walk and take care of their business. So that is $10 \times .5 = 5$ hours a day. 5 hours a day $\times 7$ days a week = 35 hours a week. The answer is 35 hours a week. ✅

Forecasting





*Azienda Provinciale
per i Servizi Sanitari*
Provincia Autonoma di Trento

Seguici su

Azienda

Servizi e Prestazioni

Lavora con noi

Documenti e dati

Novità

[Azienda Provinciale per i Servizi Sanitari](#) / [Novità](#) / [Notizie](#) / A Trento il mammografo con l'intelligenza

A Trento il mammografo con l'intelligenza artificiale

Da agosto il programma di screening esteso anche alle 49enni

Nuove tecnologie e sempre più prevenzione per le donne trentine. L'Azienda provinciale per i servizi sanitari ha presentato oggi il nuovo mammografo di ultima generazione dotato di intelligenza artificiale che sarà utilizzato per lo screening da parte dell'Unità operativa di senologia clinica di Trento. Con l'occasione è stata annunciata anche l'estensione del programma di screening alle donne trentine di 49 anni. All'inaugurazione del nuovo mammografo – allestito nella nuova area dedicata allo screening al piano terra della palazzina B del Centro per i servizi sanitari di Trento – erano presenti il neo dirigente generale del Dipartimento salute e politiche sociali della Provincia autonoma di Trento Andrea Ziglio, il direttore generale di Apss Antonio Ferro e la direttrice dell'U.o. di senologia Marvi Valentini.

~~Decision
Making~~

AI Revolution





Investment S

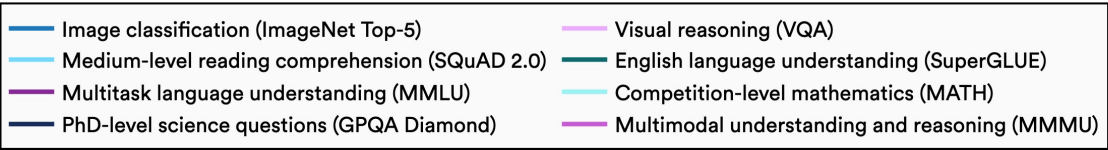
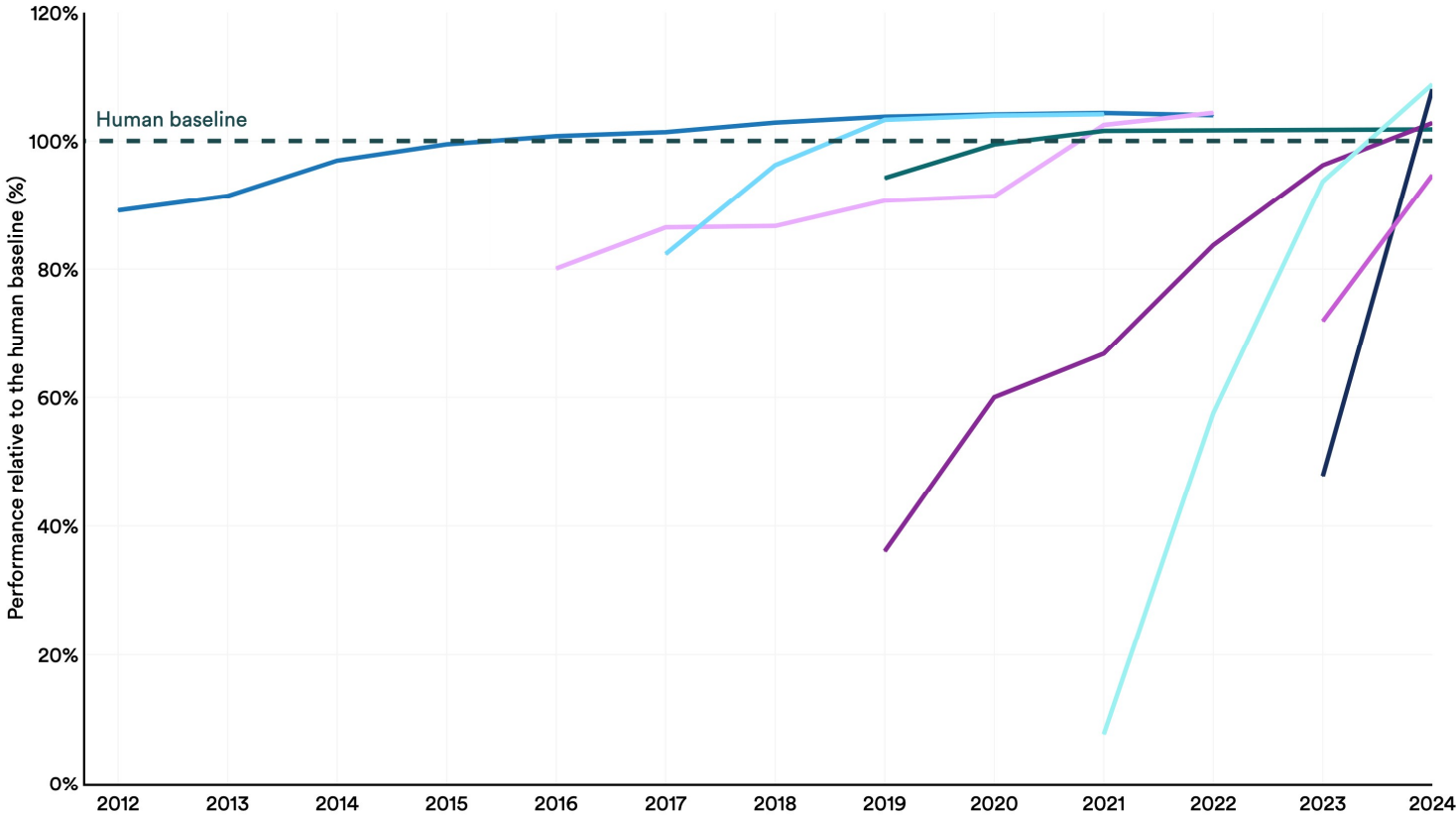
In 2024, corporate investments in AI reached **\$252.3 billion**, a **26% increase** compared to 2023. Private investment grew by **44.5%**, while mergers and acquisitions increased by **12.1%**. Over the past ten years, the sector has seen a **13-fold growth** in investments.

Boom in Generative AI investments

Private investments focused on **Generative AI** have reached **\$33.9 billion** in 2024, an **18.7% increase** compared to 2023 and more than **eight times higher** than in 2022. This sector accounts for over **20% of total private AI investments**.

Select AI Index technical performance benchmarks vs. human performance

Source: AI Index, 2025 | Chart: 2025 AI Index report

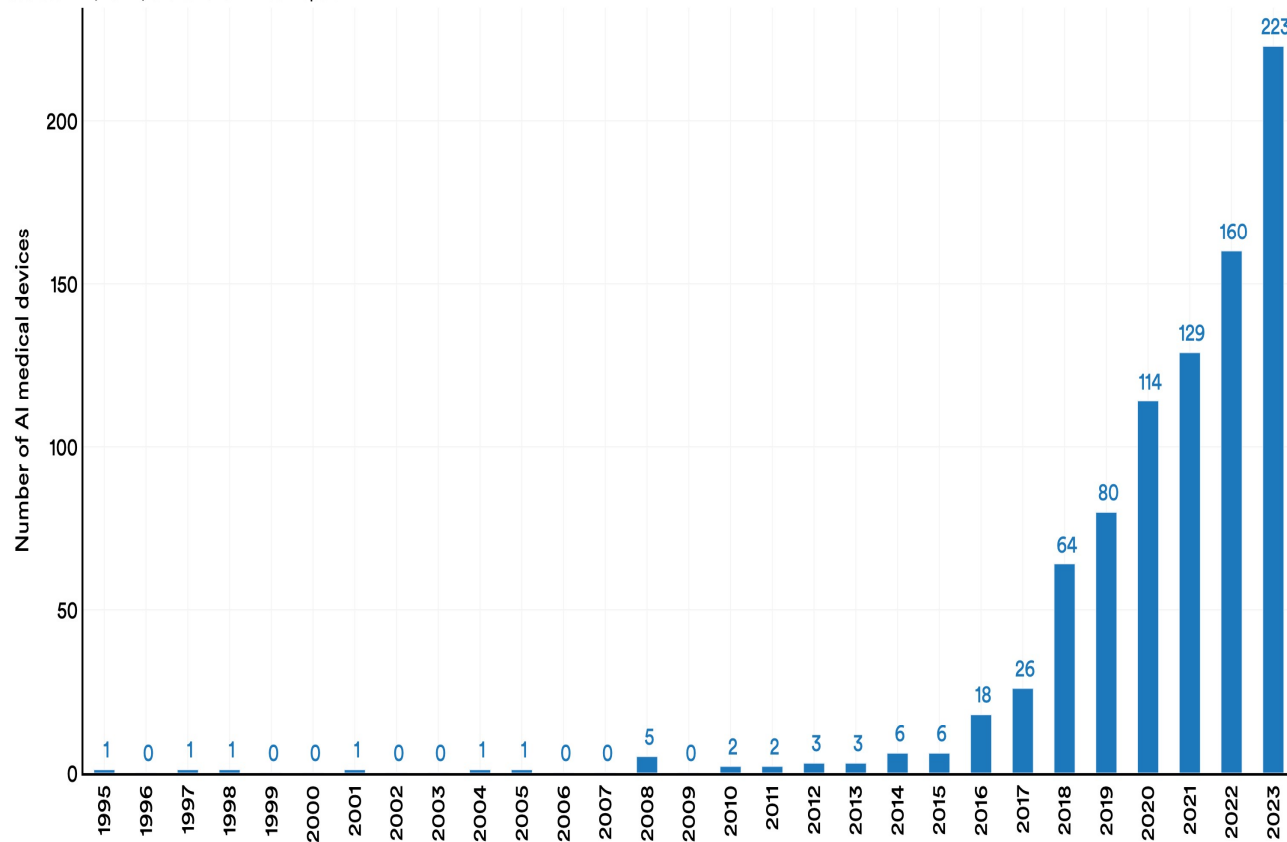


Progress

AI Adoption Trends

Number of AI medical devices approved by the FDA, 1995–2023

Source: FDA, 2024 | Chart: 2025 AI Index report



78% of companies reported using AI solutions in 2024, up from **55% in 2023**.

The use of GenAI in at least one business function more than **doubled**, rising from **33% in 2023 to 71% in 2024**.

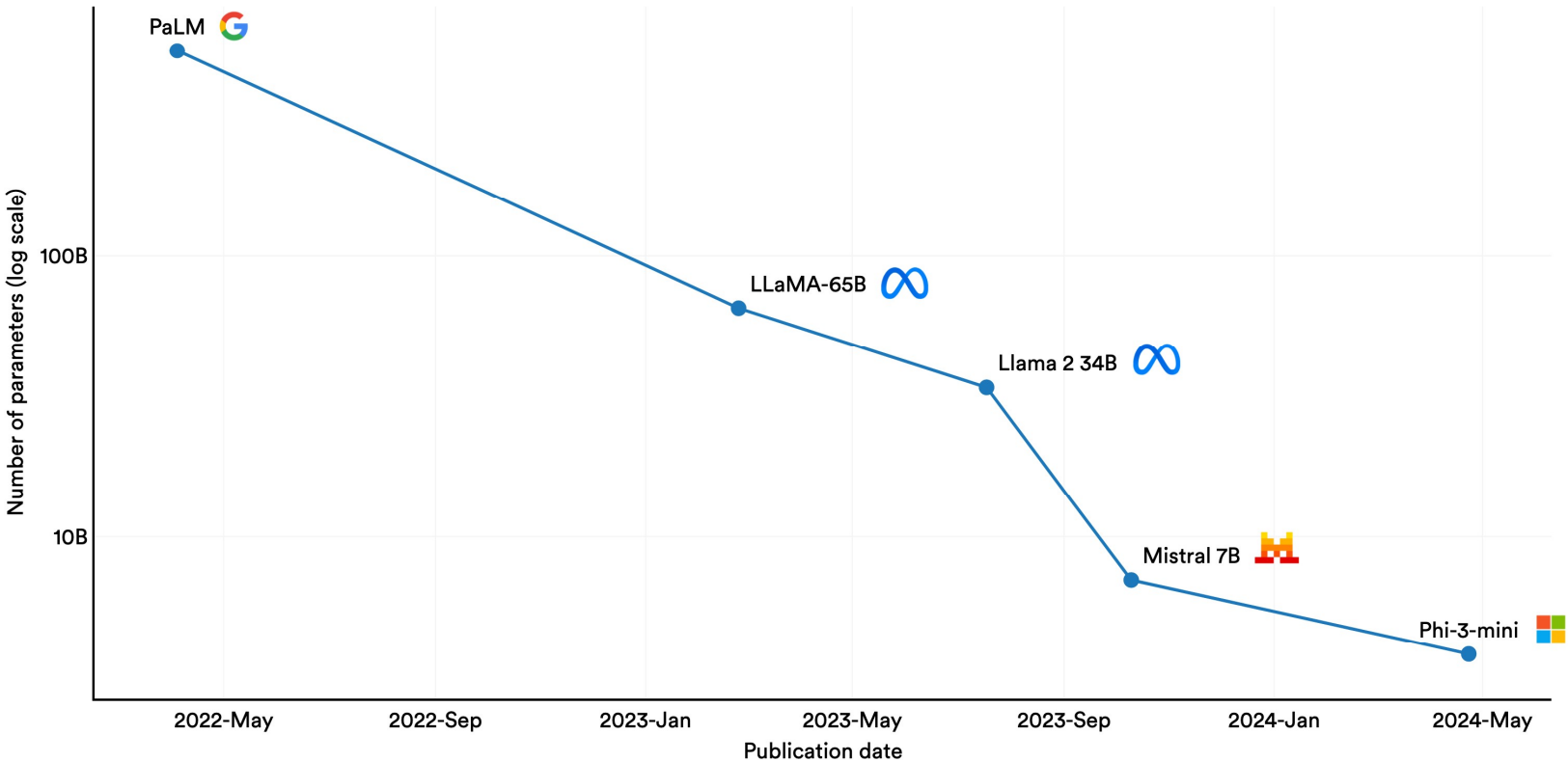


**Self-driving
cars**

AI is more efficient, affordable and accessible

Smallest AI models scoring above 60% on MMLU, 2022–24

Source: Abdin et al., 2024 | Chart: 2025 AI Index report



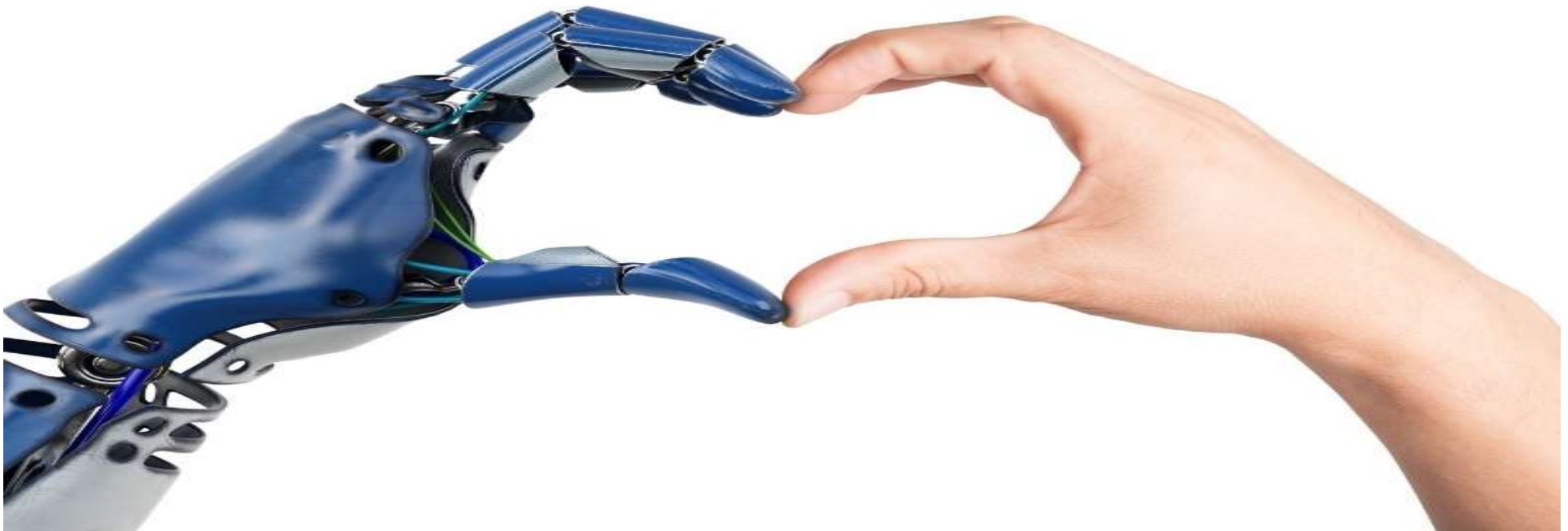
Jobs

Job loss, skill gaps, economic inequality



Jobs

Human-machine cooperation

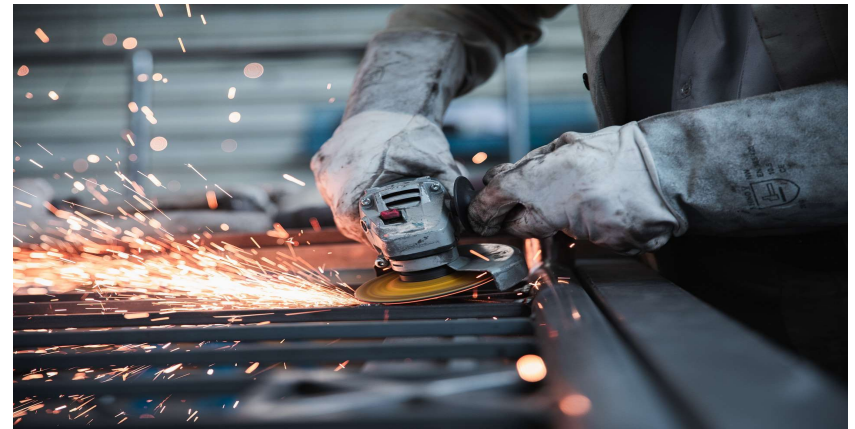


Jobs

Uneven Impact



Most affected sectors



Less affected sectors



Jobs

Transformation





Geoffrey Hinton

Nov 24, 2016

“I think that if you work as a radiologist, you are like Wile E. Coyote in the cartoon. You're already over the edge of the cliff, but you haven't yet looked down. There's no ground underneath. People should stop training radiologists now. It's just completely obvious that in five years deep learning is going to do better than radiologists.”

Editorial

 Free Access

Will Artificial Intelligence Replace Radiologists?

 Curtis P. Langlotz 

▼ Author Affiliations

Published Online: May 15 2019 | <https://doi.org/10.1148/ryai.2019190058>

"artificial intelligence will not replace radiologists. Yet, those radiologists who use AI will replace the ones who don't."

Apocalypse?

Unemployment, inequalities,
conflicts



The Four Horsemen of the Apocalypse, A.Dürer.

Apocalypse?

AI bias and ethical risks



Apocalypse?

Psychological and social
impacts



Renaissance?

Augment human potential, create opportunities,
boost creativity



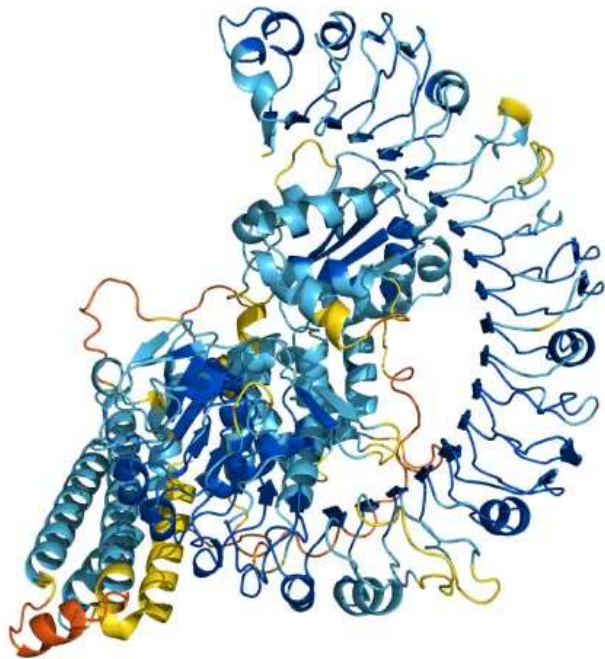
Renaissance?

New professions, human-ai collaboration,
productivity gains



Renaissance?

Innovation acceleration, scientific breakthroughs



2024-9-4

The AI Scientist: Towards Fully Automated Open-Ended Scientific Discovery

Chris Lu^{1,2,*}, Cong Lu^{3,4,*}, Robert Tjarko Lange^{1,*}, Jakob Foerster^{2,†}, Jeff Clune^{3,4,5,†} and David Ha^{1,†}

^{*}Equal Contribution, ¹Sakana AI, ²FLAIR, University of Oxford, ³University of British Columbia, ⁴Vector Institute, ⁵Canada CIFAR AI Chair, [†]Equal Advising

One of the grand challenges of artificial general intelligence is developing agents capable of conducting scientific research and discovering new knowledge. While frontier models have already been used as aides to human scientists, e.g. for brainstorming ideas, writing code, or prediction tasks, they still conduct only a small part of the scientific process. This paper presents the first comprehensive framework for fully *automatic scientific discovery*, enabling frontier large language models (LLMs) to perform research independently and communicate their findings. We introduce **THE AI SCIENTIST**, which generates novel research ideas, writes code, executes experiments, visualizes results, describes its findings by writing a full scientific paper, and then runs a simulated review process for evaluation. In principle, this process can be repeated to iteratively develop ideas in an open-ended fashion and add them to a growing archive of knowledge, acting like the human scientific community. We demonstrate the versatility of this approach by applying it to three distinct subfields of machine learning: diffusion modeling, transformer-based language modeling, and learning dynamics. Each idea is implemented

1 Sep 2024

Skill shifts



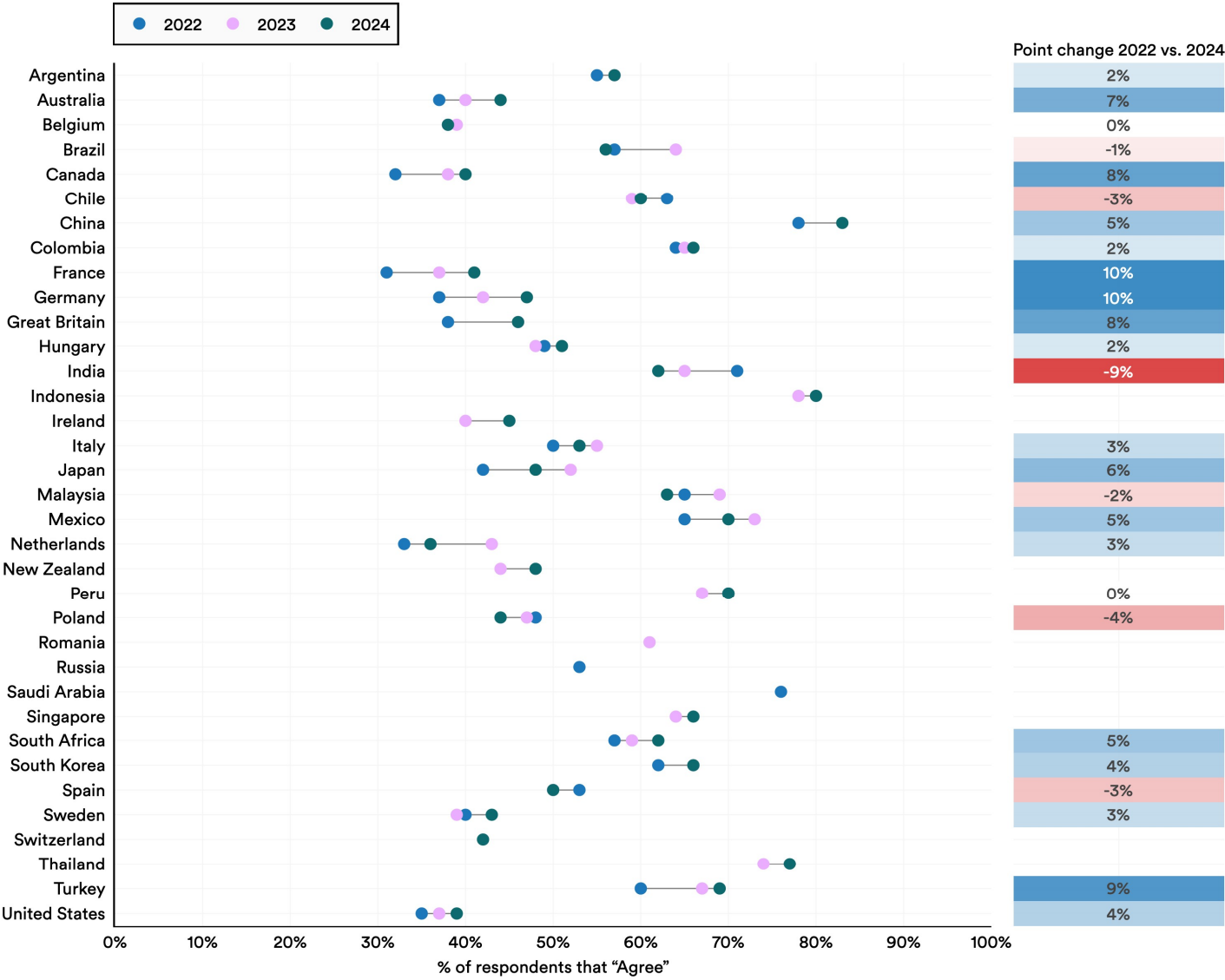
Creativity

Problem-solving

Emotional intelligence

‘Products and services using AI have more benefits than drawbacks,’ by country (% of total), 2022–24

Source: Ipsos, 2022–24 | Chart: 2025 AI Index report



AI
Optimism?

The Middle Ground

AI speed

Global perspective



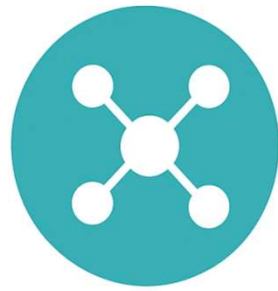
AI speed

Safety and Ethical AI Deployment



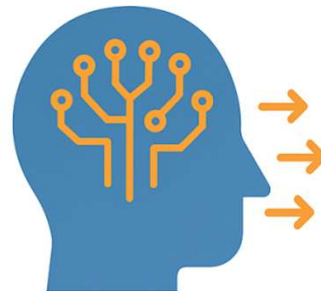
Emerging Trends

Collaborative robots, agentic AI



Gen AI

produces content



AI Agents

takes actions



Agentic AI

operates
autonomously

Geoffrey Hinton



*"We are no longer waiting
for the AI revolution, we
are in it"*