

Basics & Foundations

[ML &] AI

What are they?

What do they mean to me and to you?

Yesterday, Today, and Tomorrow?

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- Enthusiastic Cyber Security Practitioner
- Cloud Security Lead @Northwave
- Assistant Professor @UTwente
- Public Speaker, Father, Husband, Marathoner, Triathlete

The Yesterday and Today



Basis & Foundations:

Machine Learning: learning from data provided





(Mine +)

Optical Character Recognition--OCR

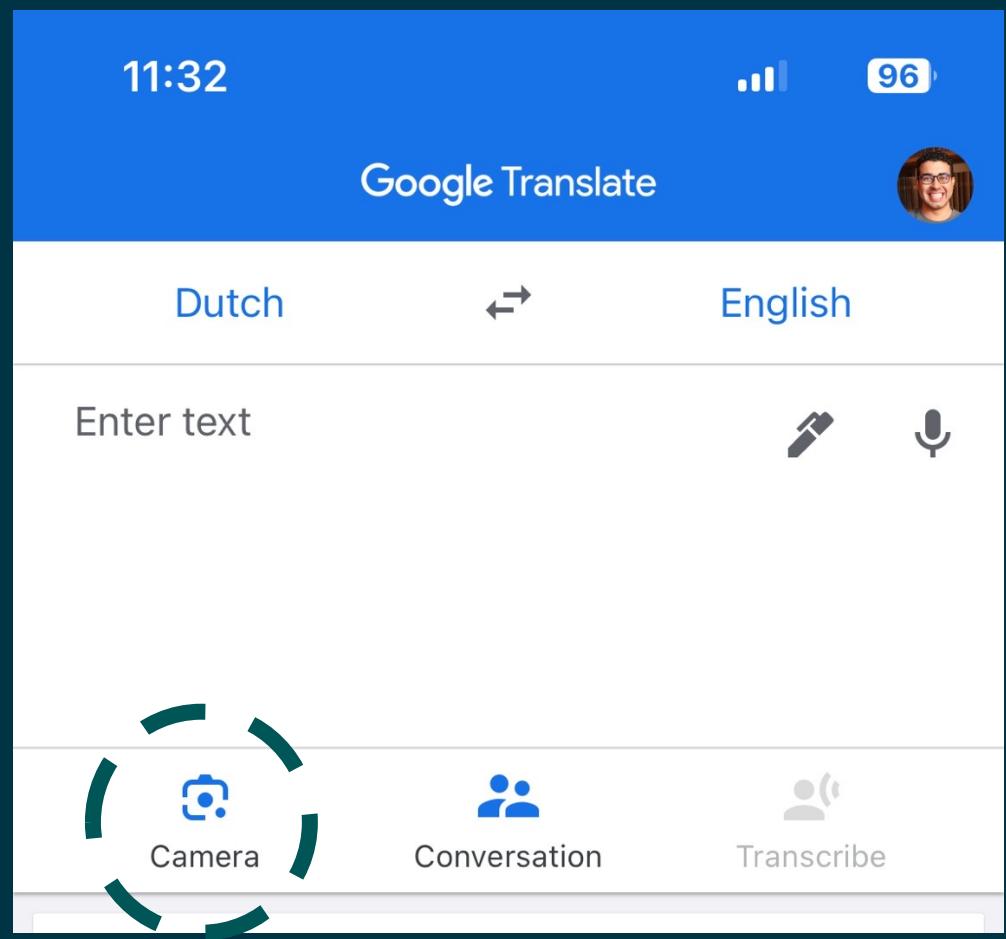
Machine Learning: “**learning from data provided**”

Basis & Foundations:

Machine Learning: learning from data provided

Artificial Intelligence: like a human in a task





Artificial Intelligence: like a human in a task!

Basis & Foundations:

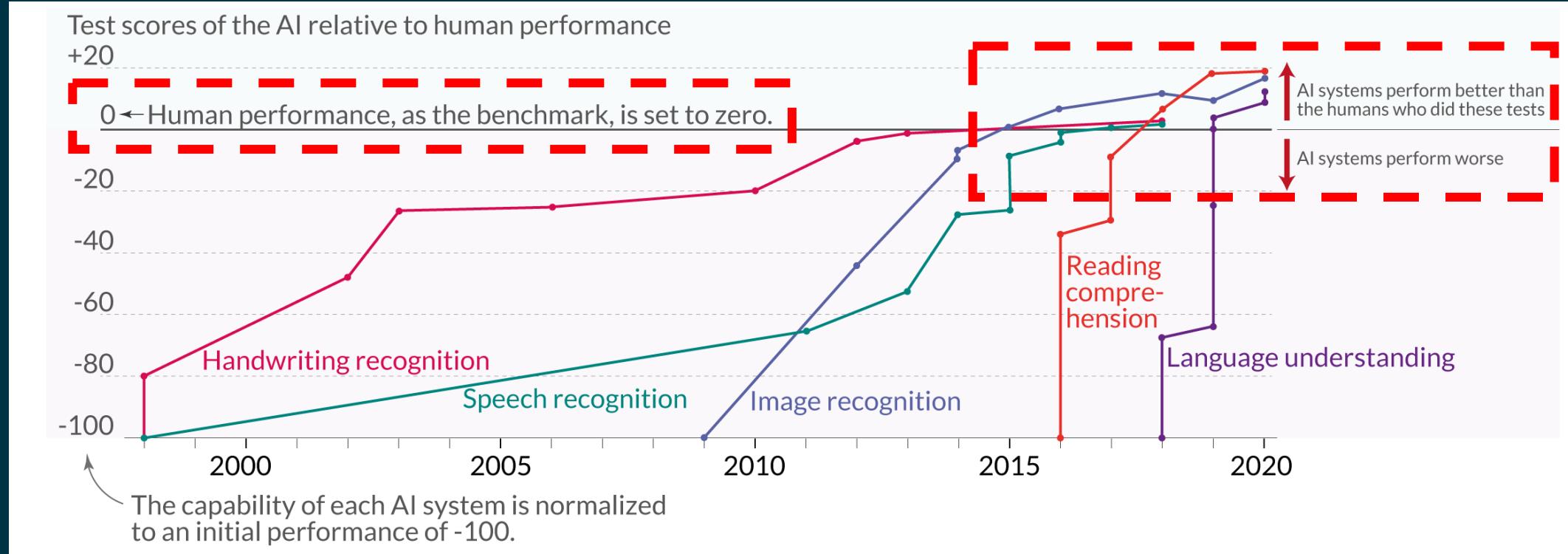
Machine Learning: learning from data provided

Artificial Intelligence: like a human in a task

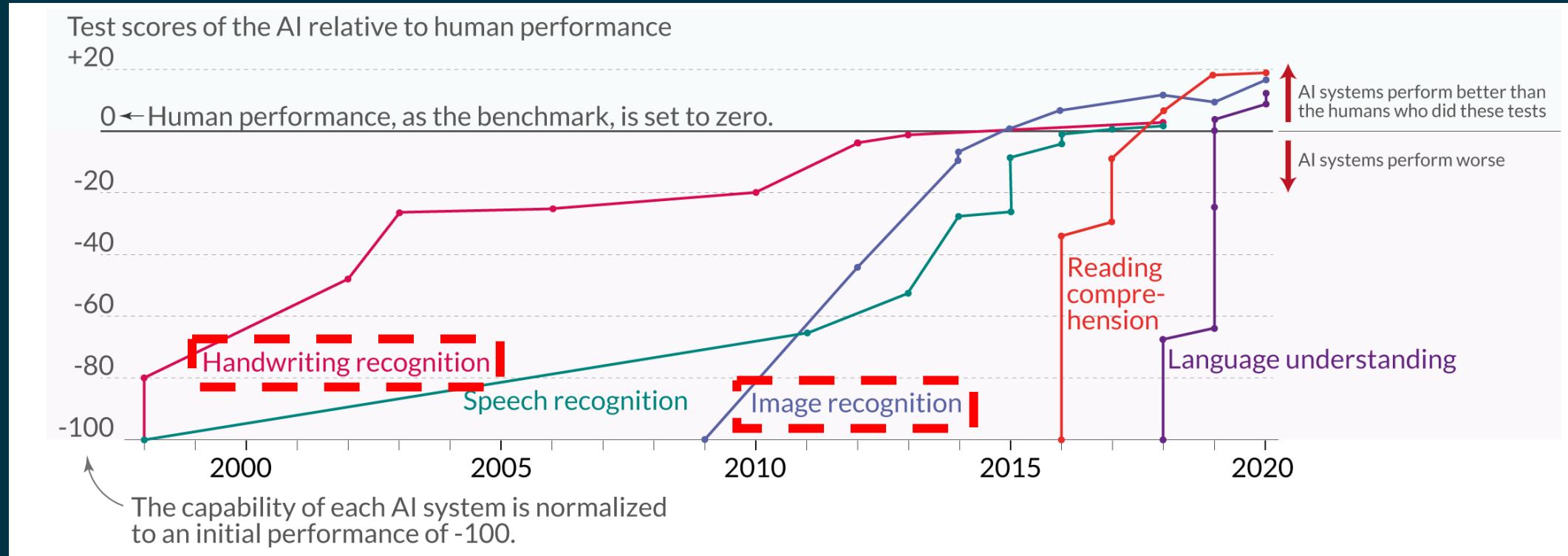
Artificial General Intelligence: multipurpose



Multipurpose



Multipurpose



Trained Data - Captcha



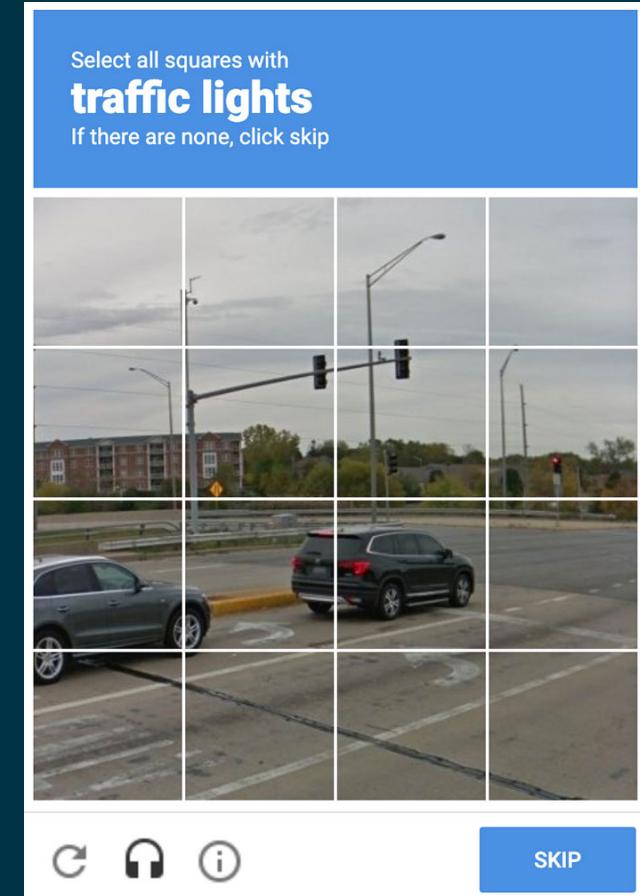
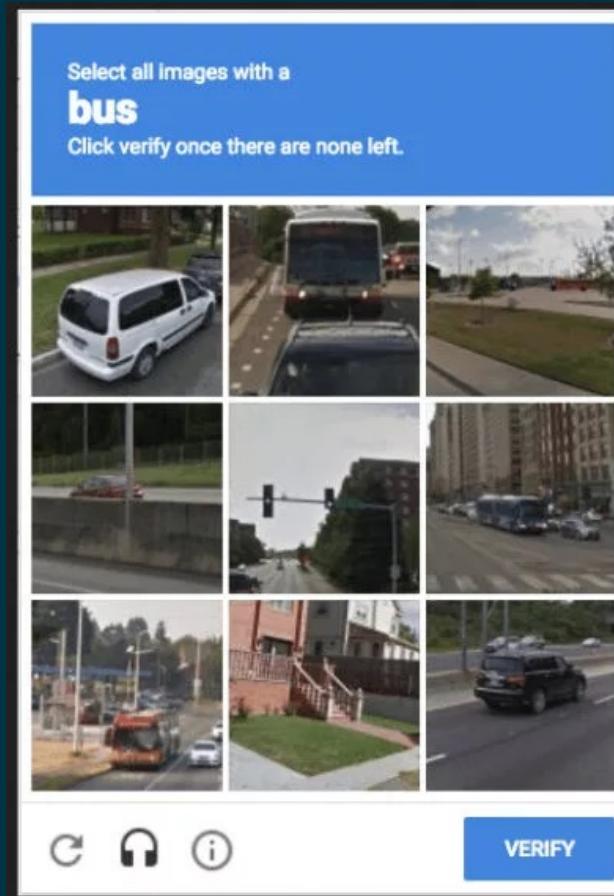
Type the characters above:

 Go
okta

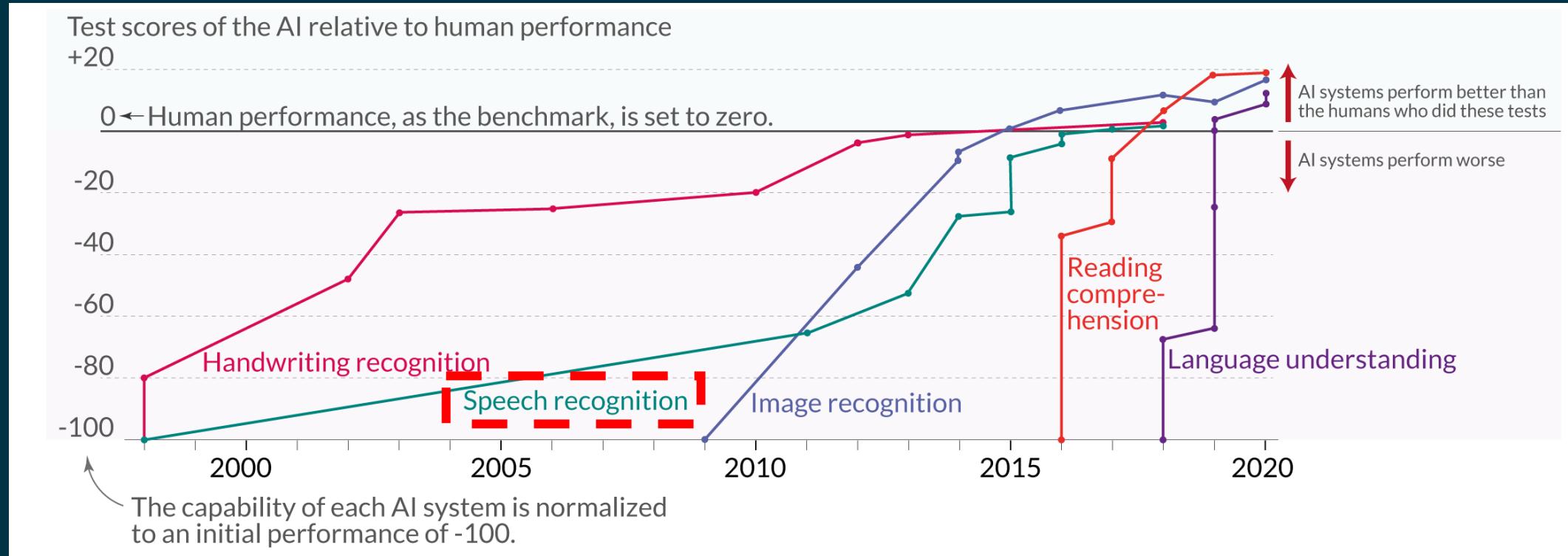
Type the two words:
passes wildly

Submit

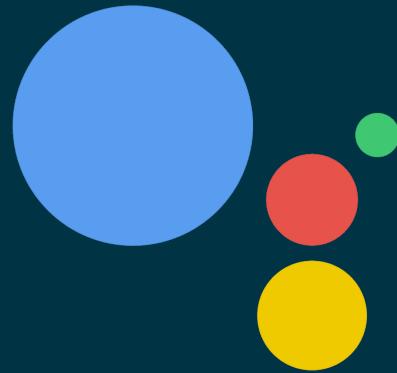
reCAPTCHA™
stop spam.
read books.



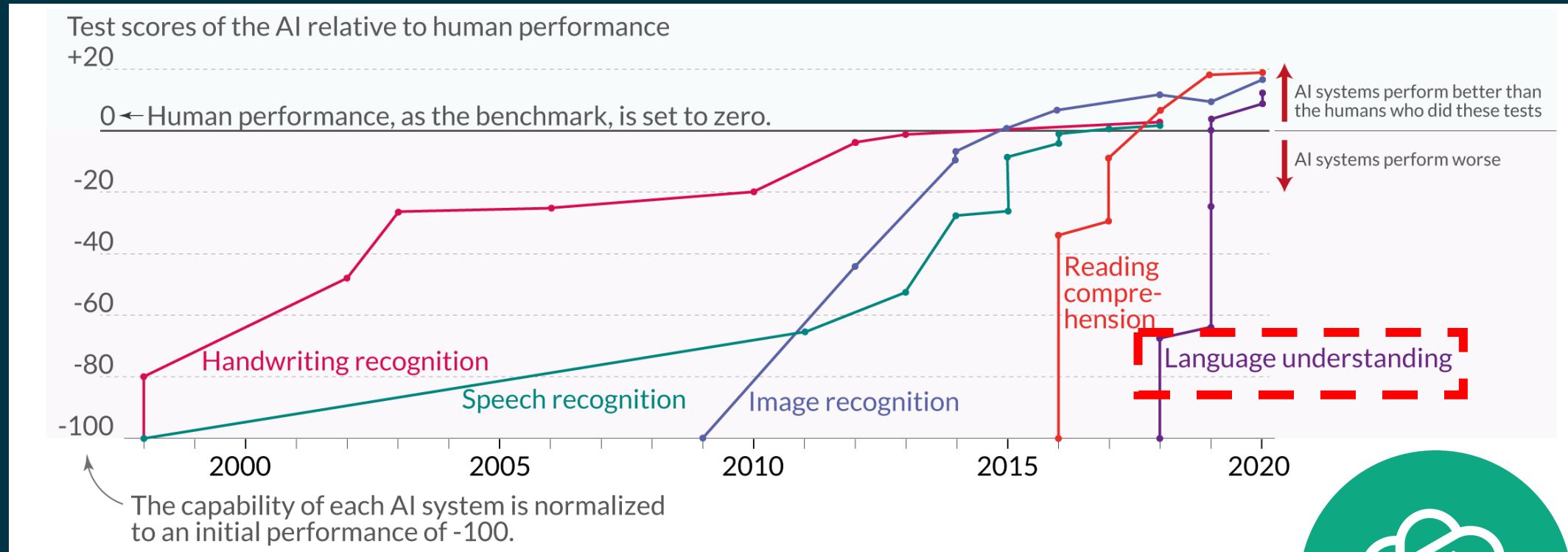
Multipurpose



Trained Data - Personal Assistants



THE BIGGEST CHANGE!





Jair Santanna • You

Cloud Security Lead at Northwave | Assistant P...

9mo •



ChatGPT is like a "girl" that entered in all the libraries of the world, read and memorize all the books, and now she can answer almost anything that were in those books.



Like



Comment



Repost



Send



13,982 impressions

[View analytics](#)

https://www.linkedin.com/posts/jjcsantanna_my-daughter-asked-me-what-is-chatgpt-my-activity-7028311043160309760-gjVm2utm_source=share&utm_medium=member_desktop



Basis & Foundations:

Machine Learning: learning from data provided

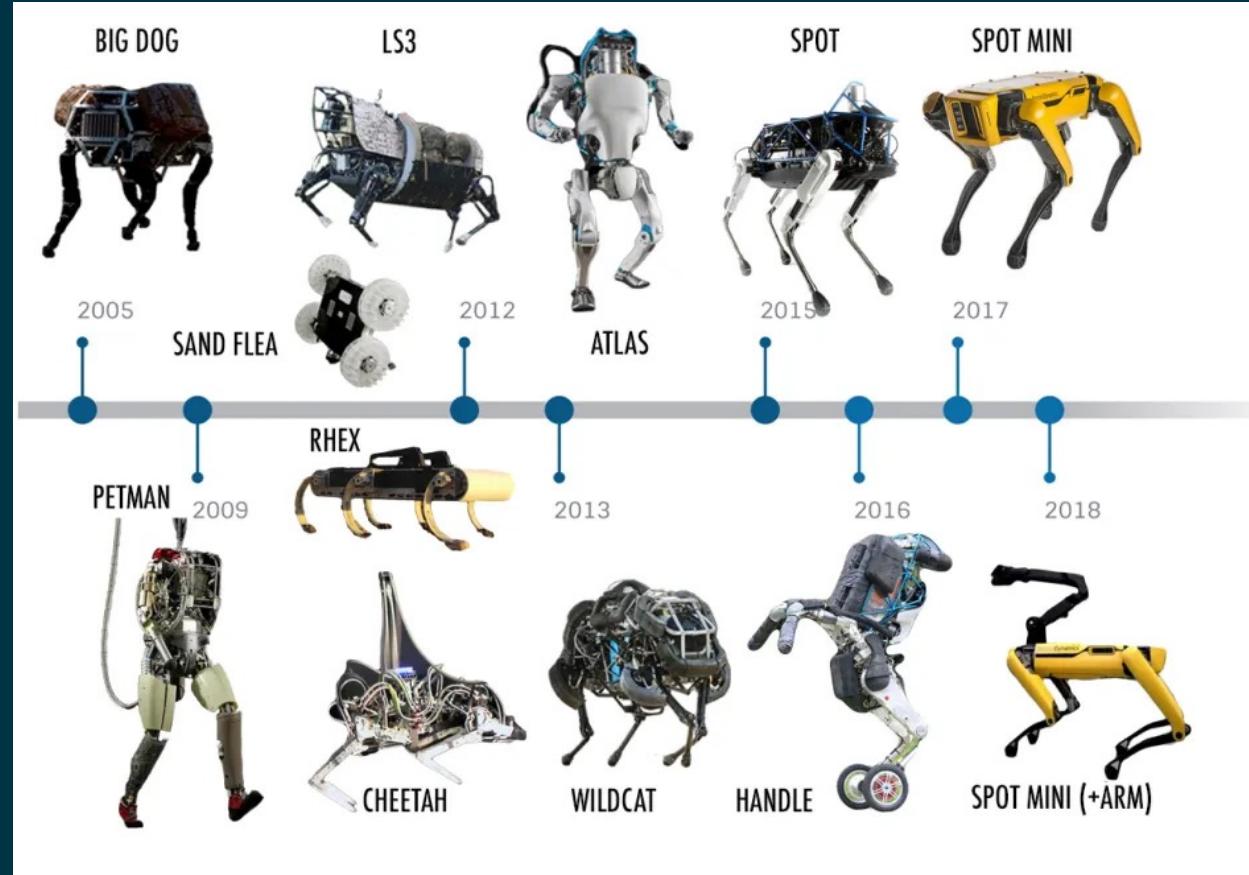
Artificial Intelligence: like a human in a task

Artificial General Intelligence: multipurpose





Robots



[Boston Dynamics]

For automation in unstructured or hard-to-traverse spaces

Robots - Humanoid



Grace
[Hanson Robotics]
For senior healthcare

Robots - Humanoid



Erica
[Laboratory of Osaka University]
Actress, to become a TV news anchor

Robots - Humanoid



Ai-da
[Aidan Meller]
Artist

Robots - Humanoid



Jia Jia

[University of Science and Technology Hefei/China]

Menial tasks in hospitals, nursing homes, restaurants, and households

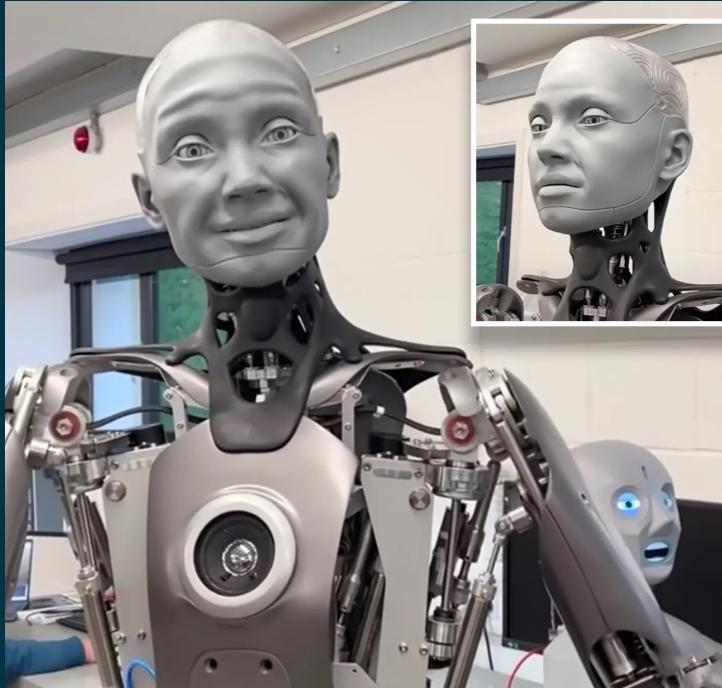
Robots - Humanoid



CyberOne
[Xiaomi]

Menial tasks in hospitals, nursing homes, restaurants, and households

Robots - Humanoid



Ameba

[Engineered Arts]

A platform for developing technologies involving human-robot interaction

Robots - Humanoid



Sophia
[Hanson Robotics]
The first robot citizen (2017)

Chat(Ro)Bots

BUSINESS
INSIDER
NEDERLAND ONDERNEMEN TECH FINANCE CARRIÈRE A

HOME > ARCHIEF > A VIDEO GAME COMPANY MADE A BOT THE CEO, AND ITS STOCK CLIMBED

A video game company made a bot the CEO, and its stock climbed

Tang Yu (NetDragon): **chief executive officer (CEO)**

Meena (Google): **conversation**

BlenderBot (Meta): **conversation**

Lyro (Tidio): **customer support**

Rose AI (Rose): **data visualization**

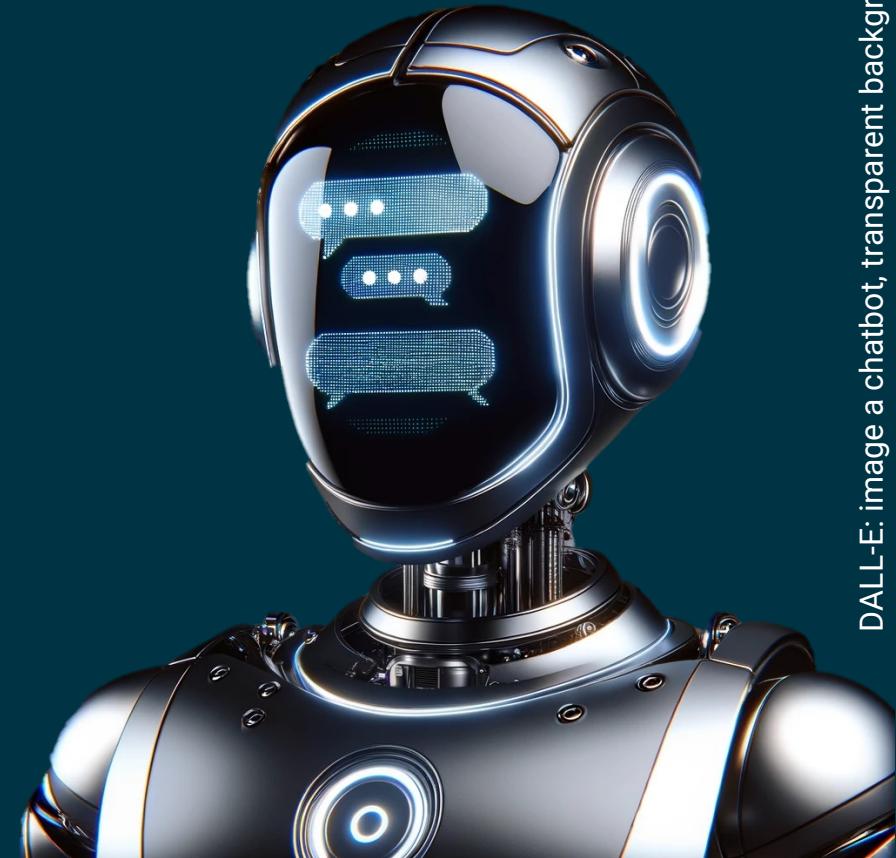
Kuki AI (Steve Worswick): **companion**

Replika (Luka Inc): **companion**

Eviebot, Boibot, Pewdiebot, and Chimbot (Existor): **companion**

Erica (Bank of America): **manage bank account**

Khanmigo (Khan Academy): **tutor and teacher's assistant**



DALL-E: image a chatbot, transparent background

Basis & Foundations:

Machine Learning: learning from data provided

Artificial Intelligence: like a human in a task

Artificial General Intelligence: multipurpose



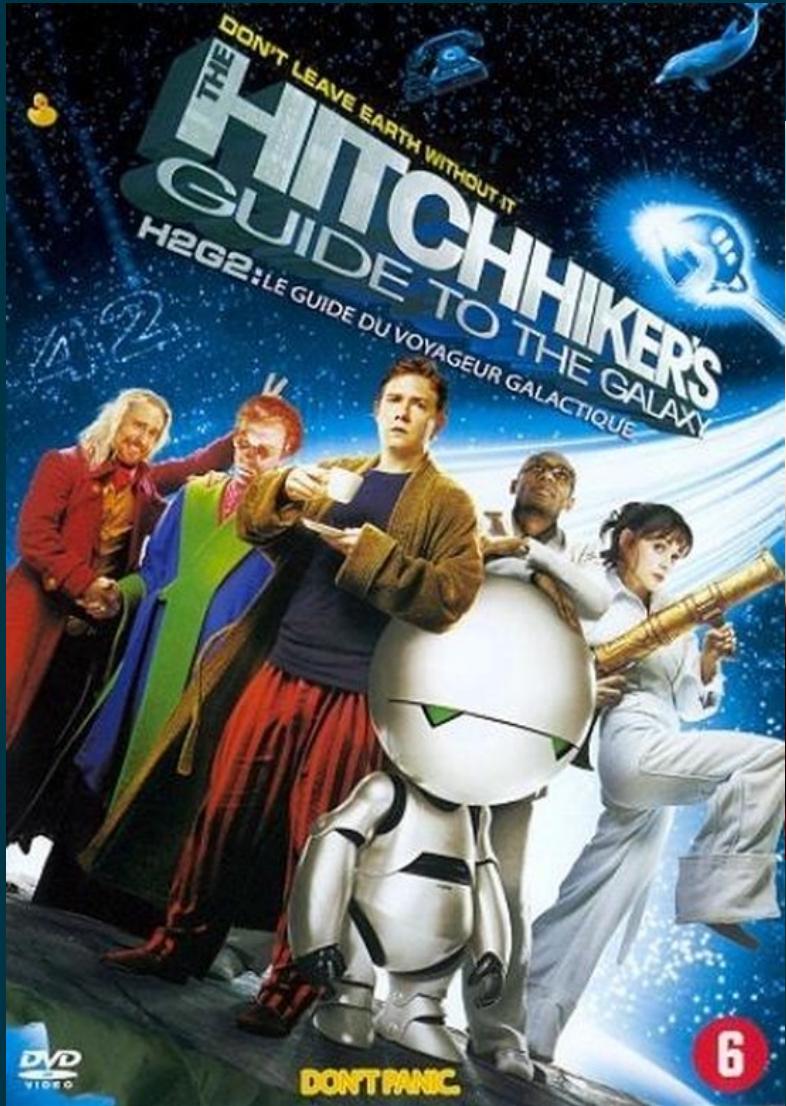
Artificial General Intelligence (AGI)

Sparks of Artificial General Intelligence: Early experiments with GPT-4

Sébastien Bubeck Varun Chandrasekaran Ronen Eldan Johannes Gehrke
Eric Horvitz Ece Kamar Peter Lee Yin Tat Lee Yuanzhi Li Scott Lundberg
Harsha Nori Hamid Palangi Marco Tulio Ribeiro Yi Zhang

Microsoft Research

Given the breadth and depth of GPT-4's capabilities, we believe that it could reasonably be viewed as an early (yet still incomplete) version of an artificial general intelligence (AGI) system.



The Supercomputer Deep Thought



The ultimate question:
“The meaning of life, the universe, and everything?”

Wait 7.5 million years

Basis & Foundations:

Machine Learning: learning from data provided

Artificial Intelligence: like a human in a task

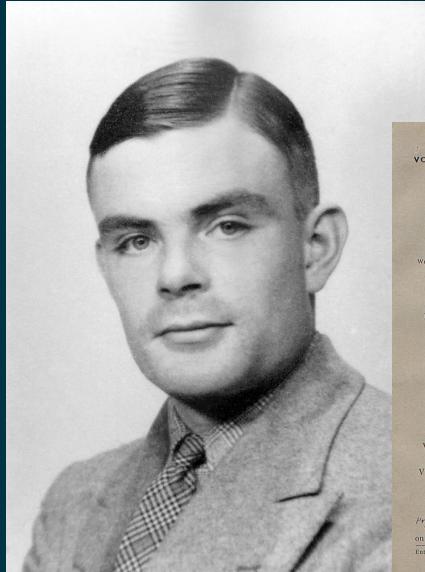
Artificial General Intelligence: multipurpose

Sentient machine: has feelings



Sentient?

1950 - Alan Turin



*I propose to consider the question,
'Can machines think?' This should
begin with definitions of the meaning
of the terms 'machine' and 'think'.
"The Imitation Game" == "Turing test"*



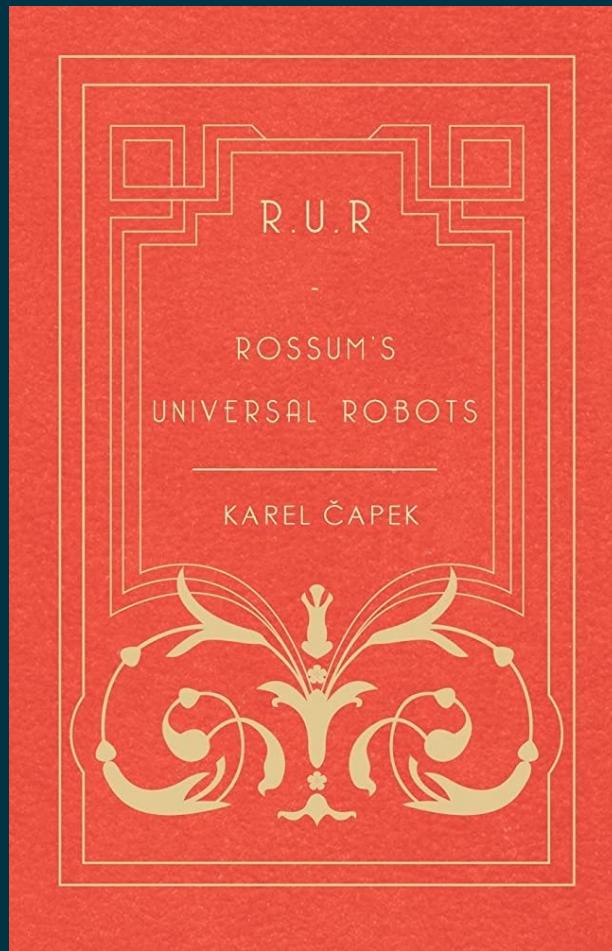
Blake Lemoine – ex. Google Engineer (July/22)
Test AI bias (gender, ethnicity, and religion) – LaMDA

"wholly unfounded claims!"

The Tomorrow



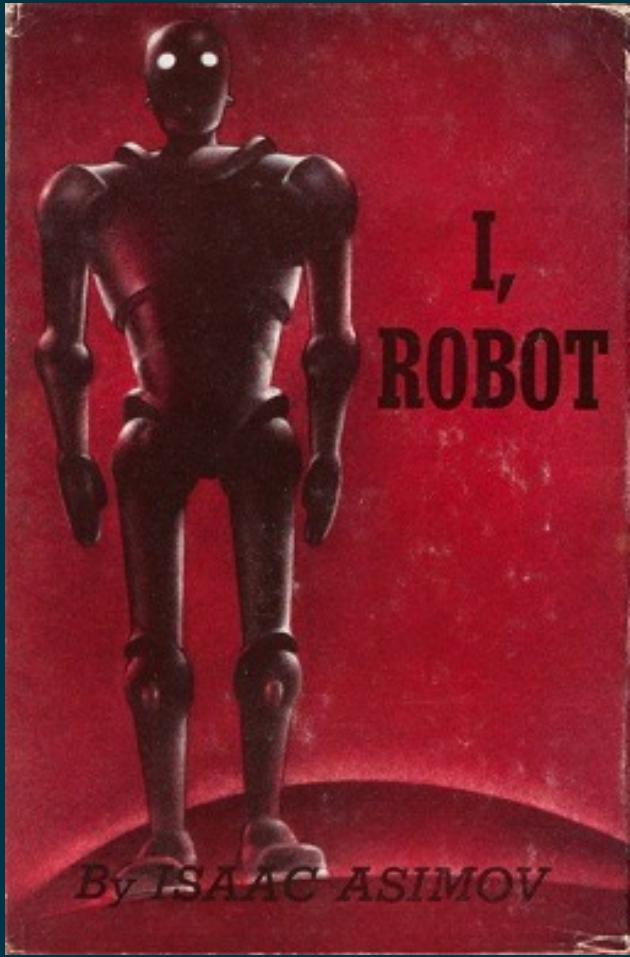
1920



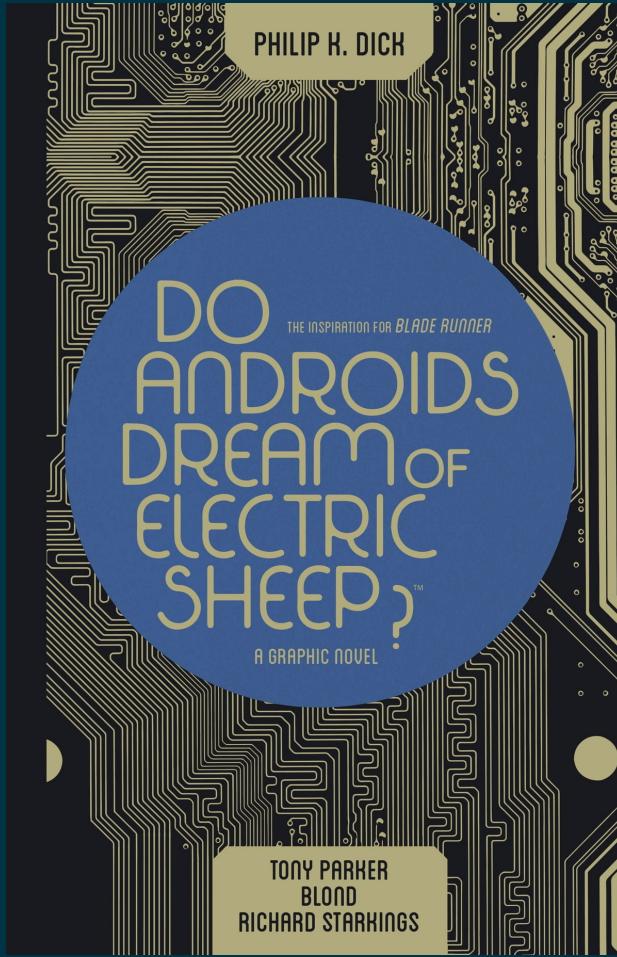
Introduced the concept of artificial beings made from synthetic materials, **Robot**.

Robots initially perform “menial labor” *Factory* *Work* *Household*
BUT eventually develop self-awareness and **rebel** against their human creators.

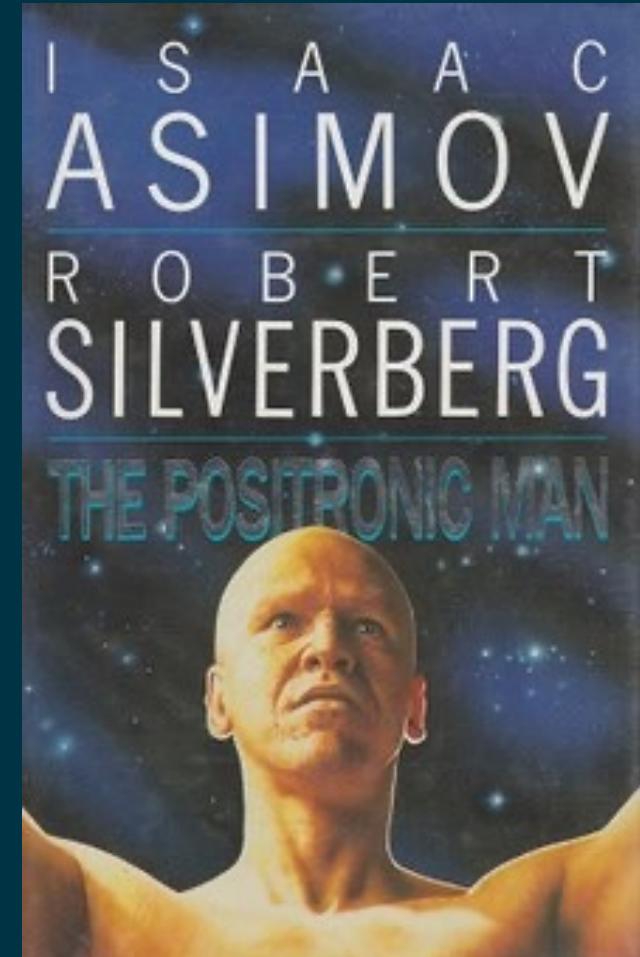
1942/1950



1969



1993

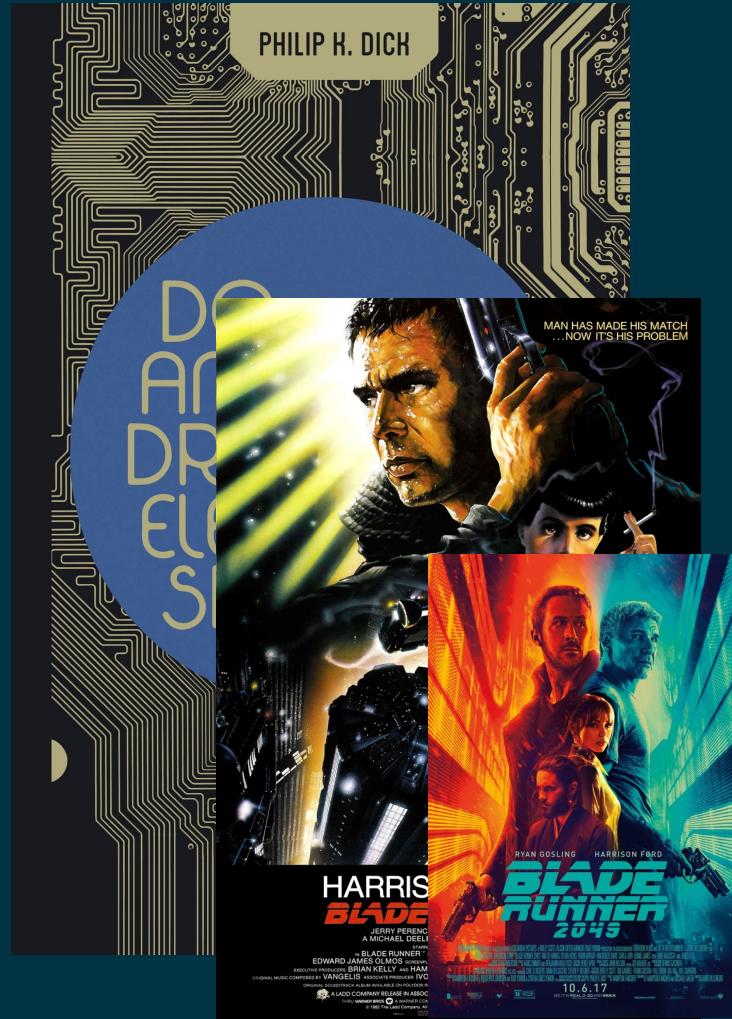


1942/1950



2004

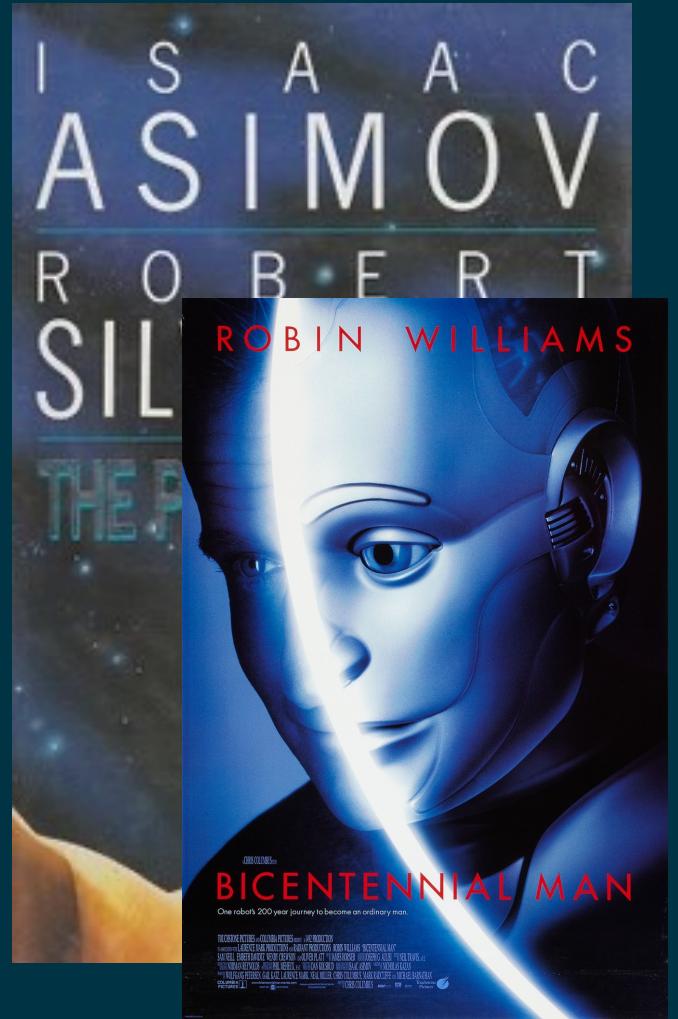
1969



1982

2017

1993

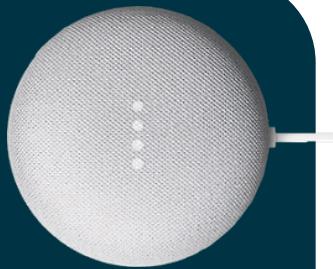


1999





Tasks -> Technology -> 'Smart' -> !?



What do they mean to me and to you?





Dec/15

The screenshot shows the ChatGPT interface. On the left is a sidebar with links: Reset Thread, Dark Mode, OpenAI Discord, FAQ, and Log out. The main area has three tabs: Examples, Capabilities, and Limitations. Under Examples, there are three cards: "Explain quantum computing in simple terms", "Got any creative ideas for a 10 year old's birthday?", and "How do I make an HTTP". Under Capabilities, there are three cards: "Remembers what user said earlier in the conversation", "Allows user to provide follow-up corrections", and "May occasionally produce harmful instructions". Under Limitations, there is one card: "May occasionally generate incorrect information".

Problems:
*Accuracy
*Bias
Privacy
References
Integration
Multimodels



Christiaan 7:53 AM

Hey man, have you seen this? <https://openai.com/blog/introducing-gpts>
Could you get on top of that with SOC and SPO to see if it opens new possibilities?

– Jul/19 - \$1 billion - Microsoft

– Aug/21 - Codex released

– Mar/22 - GPT 3 released

– Sep/22 - Wisper released

– Nov/22 - ChatGPT released

Mar/23 - ChatGPT with GPT 4

Jun/22 – Github Copilot

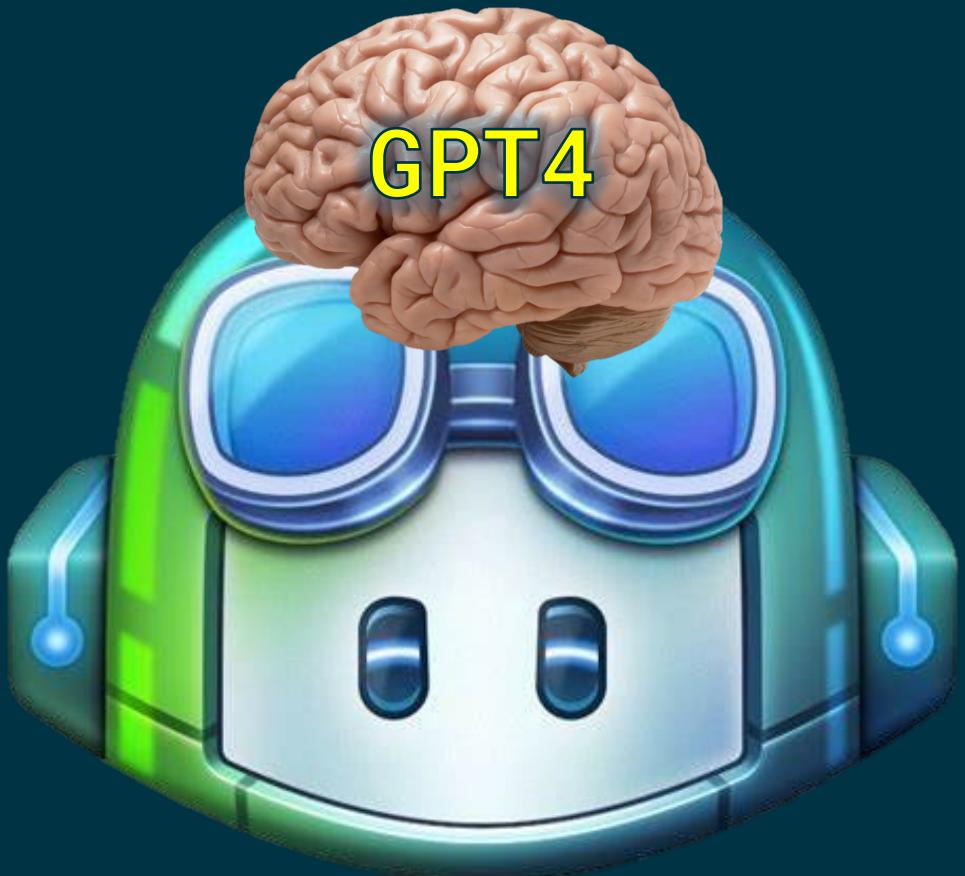
Feb/23 – Bing Chat AI

Jul/23 – Bing Chat AI Enterprise

Nov/23 - ChatGPT + GPT 4 Turbo + GPTs

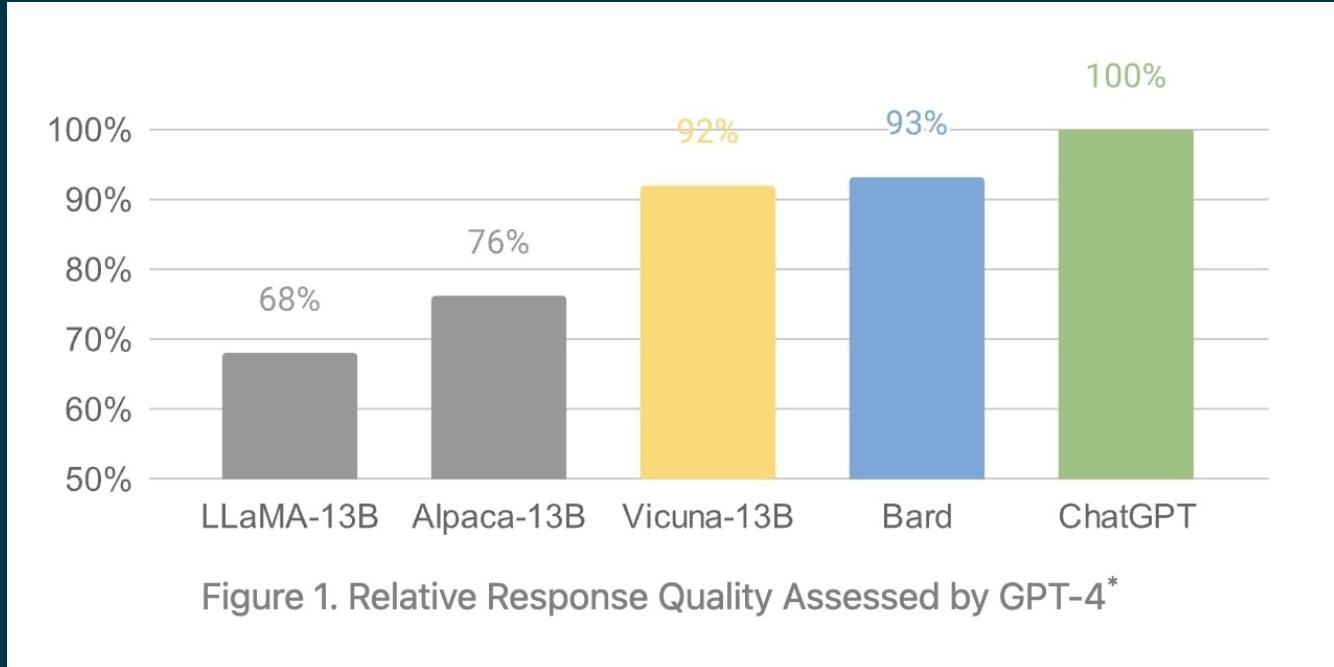


Microsoft 'Copilot'



- GitHub **Copilot** (Python, Ruby, Go, C#, C++, KQL, ARM, HCL,...)
- Microsoft 365 **Copilot** (Teams, Outlook, Word, Excel, PowerPoint)
- Security **Copilot** (MS Sentinel, DefenderS)
- Windows **Copilot**
- Biz Apps **Copilot** (Dynamics, Viva)
- Power Platform* **Copilot** (Power BI, Power Apps, Power Automate)
- Quantum (q#) **Copilot**

Sidenote



Sidenote

The screenshot shows the Hugging Face website homepage. At the top, there's a navigation bar with links for Models, Datasets, Spaces, Docs, Solutions, Pricing, Log In, and Sign Up. Below the navigation is a large dark banner featuring a yellow emoji of a smiling face with hands up, followed by the text "The AI community building the future." and a subtitle about the platform being where the machine learning community collaborates on models, datasets, and applications.

The main content area is divided into several sections:

- Tasks:** Multimodal, Computer Vision, Natural Language Processing, Audio, Tabular, Reinforcement Learning.
- Libraries:** A list of various libraries and frameworks.
- Datasets:** A list of datasets available on the platform.
- Languages:** A list of supported languages.
- Licenses:** A list of available licenses.
- Other:** A list of other resources.

On the right side, there's a sidebar titled "Models 469,541" listing various AI models with their names, descriptions, and update information. Some examples include "meta-llama/Llama-2-7b-hf", "stabilityai/stable-diffusion-2", and "Salesforce/xgen-7b-8k-instruct".

Models 393,329

Datasets 77,435



What do they
should mean to
me and to you?



Simplify Human Life

AUTOMATION

&

SCALABILITY

- Speed
- Quality
- Safety
- Cost
- Risk
- Happiness







[ML &] AI

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