

Generative AI

exploring the past, embracing
the present, and envisioning
the future

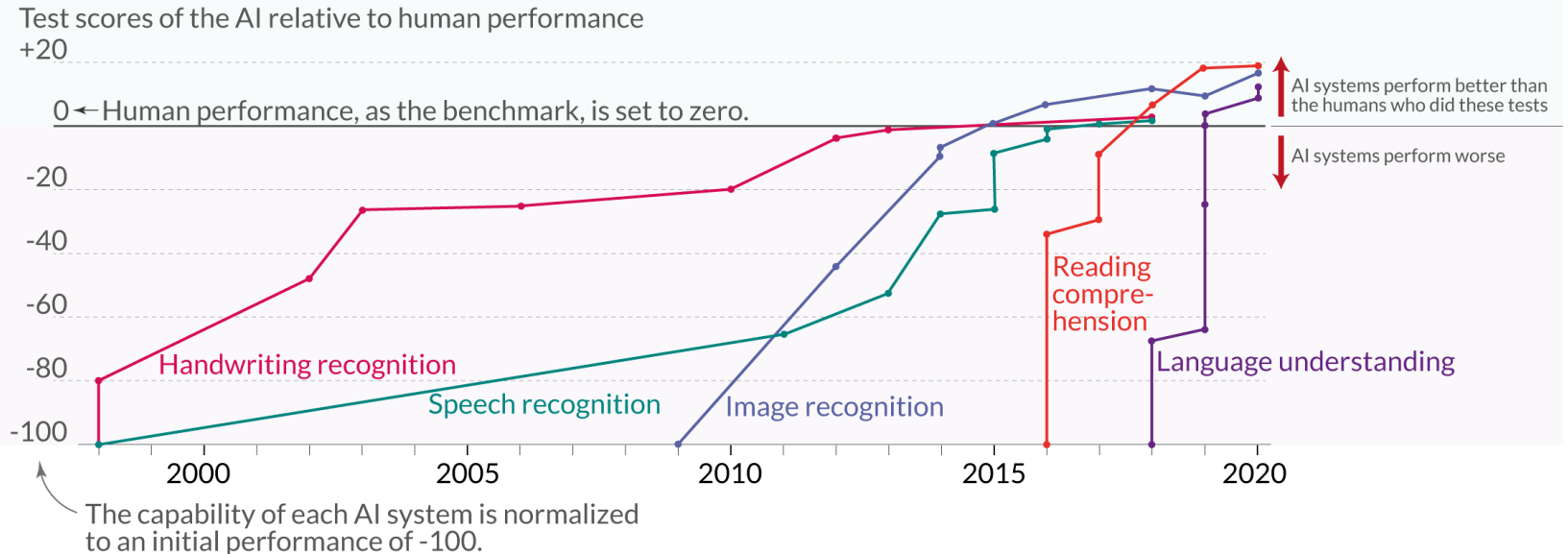
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What's changed? And why now?

Language and image recognition capabilities of AI systems have improved rapidly

Our World in Data



Attention is all you need

The "Attention is All You Need" paper by Vaswani et al. (2017) introduced the Transformer model, a novel neural network architecture that relied entirely on attention mechanisms to process and generate sequences.

Key breakthroughs:

- The paper introduced the Transformer model, which processes language by focusing on important words throughout a sentence all at once.
- It eliminated the need for step-by-step reading, allowing the model to understand and generate text faster and more accurately.
- It significantly improved the efficiency and quality of AI language models, leading to advancements in various applications like text and speech processing.
- The ideas from this paper have become foundational in modern AI, setting a new standard for how machines understand and work with human language.

November 2022–ChatGPT Launch

- OpenAI released ChatGPT to the public in November 2022
- It was fast, knowledgeable, useful, and was most people's first experience with a Generative AI tool
- Its depth of general knowledge was impressive, but its responses were generalised and lacked the ability to personalise interactions
- It represented a sea change in people's understanding of the capabilities of AI



The current state of GPT AI models

There are now many GPT AI models available, including; [ChatGPT](#) (OpenAI), [Claude](#) (Anthropic), [Gemini](#) (Google), and several open-source models. The pace of improvement of these models has been rapid, with particular focus on:

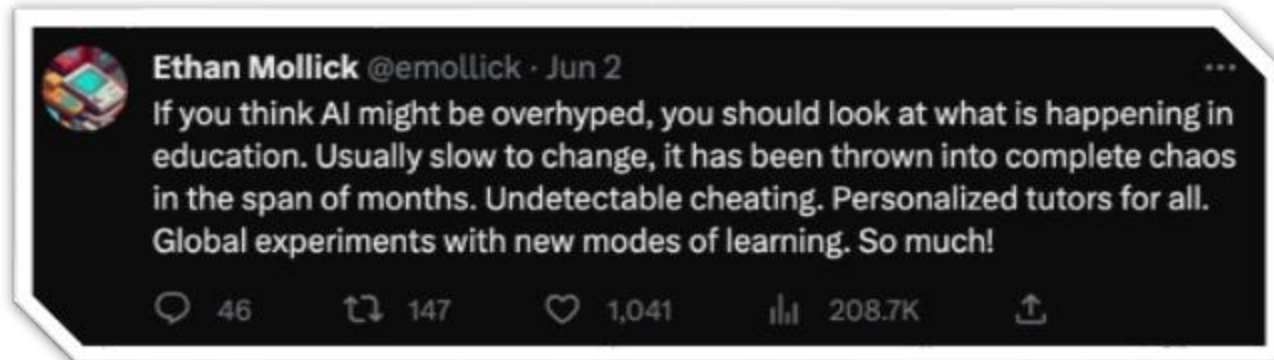
- Improved ability to grasp and respond to complex queries, providing more accurate and context-aware responses
- Multi-modal input: Integration of text, image, and voice inputs to offer greater utility and more interactive user experience
- Models are now much more customisable—including ability to work with documents, large context windows, and custom instances (GPTs) that allow users to use GPT models for their own specific needs

What does the (near) future hold?

Very difficult to produce long-term predictions. By their nature, disruptive technologies are unpredictable. However, there have been clues about the direction of travel:

- When OpenAI revealed their most recent model (GPT4o) it chose to do so [entirely with voice](#)—the capabilities of the model were demonstrated through a spoken conversation
- Apple announced their own [AI features](#) this week, and the focus was on these tools existing at OS level. Can 'see' everything you are using your phone for to build a contextual understanding of who you are, what you do, and what type of assistance you would most value
- Microsoft announced a Windows feature last week where [AI will take screenshots every five seconds](#), and so will act as an AI memory tool—it will know everything you've done, seen, and read, and will make all this information searchable

One last thing...



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