

Has GPT-4 really passed the startling threshold of human-level artificial intelligence? Well, it depends

March 31 2023, by George Siemens



Credit: AI-generated image ([disclaimer](#))

Recent public interest in tools like ChatGPT has raised an old question in the artificial intelligence community: is artificial general intelligence (in this case, AI that performs at human level) achievable?

An online preprint this week has added to the hype, suggesting the latest advanced large language model, GPT-4, is at the early stages of [artificial general intelligence](#) (AGI) as it's exhibiting "[sparks of intelligence](#)."

OpenAI, the company behind ChatGPT, has unabashedly declared [its pursuit](#) of AGI. Meanwhile, a large number of researchers and public intellectuals have called for an [immediate halt](#) to the development of these models, citing "profound risks to society and humanity". These calls to pause AI research are theatrical and unlikely to succeed—the allure of advanced intelligence is too provocative for humans to ignore, and too rewarding for companies to pause.

But are the worries and hopes about AGI warranted? How close is GPT-4, and AI more broadly, to general human intelligence?

If human cognitive capacity is a landscape, AI has indeed increasingly taken over large swaths of this territory. It can now perform many separate [cognitive tasks](#) better [than humans](#) in domains of vision, image recognition, reasoning, reading comprehension and game playing. These AI skills could potentially result in a [dramatic reordering](#) of the global labor market in less than ten years.

But there are at least two ways of viewing the AGI issue.

The uniqueness of humanity

First is that over time, AI will develop skills and capabilities for learning that match those of humans, and reach AGI level. The expectation is the uniquely human ability for ongoing development, learning and transferring learning from one domain to another will eventually be duplicated by AI. This is in contrast to current AI, where being trained in one area, such as detecting cancer in medical images, does not transfer to other domains.

So the concern felt by many is at some point AI will exceed [human intelligence](#), and then rapidly overshadow us, leaving us to appear to future AIs as ants appear to us now.

The plausibility of AGI is contested by several philosophers and researchers, citing that current models are largely [ignorant of outputs](#) (that is, they don't understand what they're producing). They also have no prospect of [achieving consciousness](#) since they are primarily predictive—[automating what should come next](#) in text or other outputs.

Instead of being intelligent, these models simply recombine and duplicate data on which they have been trained. Consciousness, the essence of life, is missing. Even if [AI foundation models](#) continue to advance and complete more sophisticated tasks, there is no guarantee that consciousness or AGI will emerge. And if it did emerge, how would we recognize it?

Input

What can I make with these ingredients?



Output

There are many options for what you can make with these ingredients! Some possibilities include:

- Pancakes or waffles
- Crepes
- French toast
- Omelette or frittata
- Quiche
- Custard or pudding
- Cake or cupcakes
- Muffins or bread- Cookies or biscuits

These are just a few examples, but the possibilities are endless!

GPT-4 is also ‘multimodal’ – it can take visual input and answer questions based on that. Credit: [OpenAI](#)

Persistently present AI

The usefulness of ChatGPT and GPT-4's ability [to master some tasks](#) as well as or better than a human (such as bar exams and academic Olympiads) gives the impression AGI is near. This perspective is confirmed by the rapid performance improvement with [each new model](#).

There is no doubt now AI can outperform humans in many *individual* cognitive tasks. There is also growing evidence the best [model](#) for interacting with AI may well be one of human/machine pairing—where our own intelligence is [augmented](#), not replaced by AI.

Signs of such pairing are already emerging with announcements of [work copilots](#) and [AI pair programmers](#) for writing code. It seems almost inevitable that our future of work, life, and learning will have AI [pervasively and persistently present](#).

By that metric, the capacity of AI to be seen as intelligent is plausible, but this remains contested space and many have come out against it. Renowned linguist [Noam Chomsky has stated](#) that the day of AGI "may come, but its dawn is not yet breaking".

Smarter together?

The second angle is to consider the idea of intelligence as it is practiced by humans in their daily lives. According to one school of thought, we

are intelligent [primarily in networks and systems](#) rather than as lone individuals. We hold knowledge in networks.

Until now, those networks have mainly been human. We might take insight from someone (such as the author of a book), but we don't treat them as an active "agent" in our cognition.

But ChatGPT, Copilot, Bard and other AI-assisted tools can become part of our cognitive network—we engage with them, ask them questions, they restructure documents and resources for us. In this sense, AI doesn't need to be sentient or possess general [intelligence](#). It simply needs the capacity to be embedded in and part of our knowledge network to replace and augment many of our current jobs and tasks.

The existential focus on AGI overlooks the many opportunities [current models](#) and tools provide for us. Sentient, conscious or not—all these attributes are irrelevant to the many people who are already making use of AI to co-create art, structure writings and essays, develop videos, and navigate life.

The most relevant or most pressing concern for humans is not whether AI is intelligent when by itself and disconnected from people. It can be argued that as of today, we are more intelligent, more capable, and more creative with AI as it advances our cognitive capacities. Right now, it appears the future of humanity could be AI-teaming—a journey that is already well underway.

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