



ARTIFICIAL INTELLIGENCE STILL DOES NOT EXIST.

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Artificial intelligence, despite its widespread use in the news, does not truly exist. This is because the term encompasses three different phenomena: a myth, a scientific research domain, and a set of technologies. This creates confusion among even the experts in the field, as each of these phenomena has its own interpretation.

AI refers to a myth. The mythological reading of AI is perpetuated by pop culture references to super-intelligent robots, which are both harmful and friendly. Our cultural heritage is full of references to super-intelligent machines, from HAL in *2001: A Space Odyssey* (1968) to *Terminator* (1984), *The Matrix* (1999), *Her* (2013), and *Ex-Machina* (2014). Science fiction authors such as Isaac Asimov and William Gibson have also contributed to this vast field. This cultural heritage is so deeply ingrained in our collective imagination that we cannot afford to ignore it. These examples of super-intelligent robots, often depicted as harmful, sometimes friendly, and rarely indifferent, are the source of our current fantasies.

AI also refers to a scientific research domain in which researchers aim to replicate intelligent problem-solving processes in computer programs. Progress in this area has been ongoing since the 1950s, with advancements made in areas such as logic, algorithms, information processing, numerical optimization, robotics, and cognitive sciences. However, despite these strides, human-like intelligence remains difficult to conceptualise and model. The design and implementation of a "general" artificial intelligence capable of human-level performance remains elusive. While current AI programs may be fast and efficient, they are not capable of general intelligence. Programs are still quite stupid, actually.

Last but not least, AI encompasses a range of technological applications developed by engineers who use scientific methods to design decision support tools, exploration, and automation tools. These technologies have become increasingly visible to the public in recent years, with examples such as conversational agents (such as ChatGPT), generative systems (like MidJourney), and gaming applications (including chess and go players like Stockfish, DeepBlue, and AlphaGo, and video game player Agent57). Additionally, information retrieval systems like Google Search and IBM Watson have demonstrated significant advancements in AI. The development of machine learning algorithms, particularly neural networks, has allowed these applications to identify patterns and trends within vast databases. The progress made in AI since 2010 has been remarkable. Leveraging the advancements in machine learning algorithms, particularly neural networks, coupled

with powerful computing infrastructures, these programs have the ability to identify statistical patterns in vast databases.

These software applications can be referred to as specialised AI, in contrast to a (theoretical) general AI. The current confusion for the public stems from two factors: the tendency to romantically project unrealistic expectations onto scientific and technical advancements and the conflation of general AI and specialised AI. The implicit assumption is that because present-day programs exhibit high performance in specific tasks, such as generating text or images, or optimising calculations, we can anticipate the emergence of programs capable of excelling at all tasks in the near future. This assertion is flawed and betrays a fundamental misunderstanding. Although numerous specialised AIs can be developed, it is unlikely that a powerful AI can be created anytime soon.

WE HAVE BEEN LIVING IN AN ARTIFICIAL INTELLIGENCE BUBBLE SINCE 2016, DRIVEN BY SPECIALISED AI. THE BIGTECHS ARE THE MAIN ACTORS AND BENEFICIARIES.

The difference between general AI and specialised AI is a difference in nature, reminiscent of Pascal's distinction between the *esprit de geometrie* and the *esprit de finesse*. That's why we avoid using the usual terms "strong AI" and "weak AI". Even the most advanced specialised AI programs are limited in their capabilities and cannot reflect, conceptualise, or transfer learning across domains. In addition, there is no scientific theory that provides a clear direction for the development of general AI. Therefore, the common belief that we will soon be able to design a program that can perform all tasks at a human-level is a total misunderstanding of the current state of AI research.

Thus, the term AI (even qualified as specialised) is poorly chosen to describe current technologies. It feeds the narratives of big tech companies and their supporters, who are the only ones to benefit from the hype. It is better to use the more precise term "machine learning" and reserve the term "AI" for myth and research.

And since current scientific knowledge does not allow us to think or design intelligent machines in a human-like way, artificial intelligence does not exist (yet?).

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