What is artificial general intelligence & why are people worried about it?

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IN A recent interview, OpenAI CEO Sam Altman expressed his commitment to invest billions of dollars towards the development of artificial general intelligence (AGI). Despite Altman's repeated endorsement of AGI, many in the global tech community are apprehensive about it.

What is artificial general intelligence?

AGI refers to a machine or software that can emulate human cognitive abilities, such that it can perform any task that a human can do. This includes reasoning, common sense, abstract thinking, background knowledge, differentiating between cause and effect, etc.

Humans learn through their experiences — by talking to people or observing things; by reading books, watching television, and reading articles — which then shape our decision-making (often subconsciously) to solve any given problem, or come up with a new one. AGI seeks to replicate this. Think of a super intelligent robot friend who can understand everything that you say, learn new things just the way you do, and even think of problems to find solutions.

How is AGI different from the AI we use?

The main difference between AGI and the more common form of AI, also known as "narrow AI" lies in their scope and capabilities. Narrow AI performs specific tasks such as image recognition, translation, or playing games like chess — at which it can outdo humans — but it remains limited to its set parameters. AGI on the other hand, envisions a broader, more generalised form of intelligence that is not confined to any particular task. This makes it more human-like.

This is also why AGI is currently the summit of AI development, which has always been about broadening capabilities. ChatGPT, launched in November 2022, piqued global interest due to its ability to come up with human-like text responses. Since then, as billions of dollars have been pumped in to fuel research in the field. AI models have become progressively better. The creation of AGI is like the final frontier in this development.

How old is AGI as an idea?

The idea of AGI first emerged in 1950 in a paper by Alan Turing, the father of theoretical computer science and AI. In *Computing Machinery and Intelligence*, he introduced the so-called Turing test — if a machine can engage in a conversation with a human without being detected as a machine, according to the Turing test, it has demonstrated human intelligence.

When Turing wrote this paper, it was a distant dream — even computers were in their infancy. Yet he worked to wide-ranging discussions about the possibility of such machines, their potential benefits, and risks.

How can AGI help us?

In theory, AGI has innumerable benefits. For instance, in healthcare, it can redefine diagnostics, treatment planning, and personalised medicine by integrating and analysing vast data-sets, far beyond the capabilities of humans. In finance and business, AGI could "automate various processes and enhance overall decision-making, offering real-time analytics and market predictions with accuracy. AGI could also transform adaptive learning systems that work towards the unique needs of students, democratising access to personalised education worldwide.

In an interview given to *The Wall Street Journal*, Altman said AGI would lead to a "lot of productivity and economic value" and would have unprecedented "problem-solving capabilities and creative expression".

So why is there scepticism about AGI?

Despite its promise, AGI continues to fuel widespread apprehensions.

■ The amount of computational power required to develop AGI systems raises concerns about its environmental impacts, in terms of energy consumption and generation of e-waste.

■ AGI could lead to massive job losses and widespread socio-economic disparity. Power would be concentrated in the hands of those who control AGI.

■ It could introduce new security vulnerabilities and outrun governments' abilities to come up with suitable regulations.

■ If humans were to become dependent on AGI, it might in their own interest limit the use of basic human skills and capabilities.

■ AGI can outdo human beings, making its actions difficult to understand and predict. This could conceivably lead to a dire horror: AGI taking actions against human well-being.

AI pioneers Joshua Bengio, Geoffrey Hinton, and Yann LeCun have often warned about the catastrophic outcomes of creating AGI, with Hinton even comparing AGI's dangers to that posed by nuclear weapons.

Today, most experts advocate stringent regulations to ensure that the development of AGI is in line with human values and safety standards.

1. Define Artificial General Intelligence (AGI) and differentiate it from Narrow AI
2. Discuss the potential benefits and challenges associated with achieving AGI
3. How can India leverage the potential of AGI for its socio-economic development?
4. Critically evaluate the impact of AGI on the future of work. Discuss policy frameworks that can be implemented to mitigate potential job losses

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Q. what is AGI?

↳ Artificial general Intelligence refers to machine or software that can perform human cognitive abilities, such as any task that human can do, reasoning, common sense, abstract thinking, etc.

↳ Qualities AGI have → learn by reading books
watch TV
observe things
by talking people
decision making

• Difference Between AGI and AI :

↳ AI performs → image recognition
(limited)   → Translation
              → Play games

↳ AGI → Fully Human like.
              → Human Intelligence.
↳ Idea of AGI 1st emerged in 1950 by Turning Test. (machine can talk with human without being detected as machine)

• Benefits of AGI :
① → Healthcare sector (diagnose, treatment)
② ↳ Finance and business (improve decision making)
③ ↳ Adaptive learning System Transform to personalised Education.
④ ↳ lot of Productivity
⑤ ↳ Problem solving Capabilities.

• Concerns:
↳ Environment Impact (energy consumption & e-waste)
↳ social Impact (Job losses, socio-economic disparity, loss of basic human stills,)
↳ New security vulnerabilities.
↳ "sci-fi horror" → AGI taking actions against human well being.