



Artificial General Intelligence

For Prelims: [Artificial Intelligence \(AI\)](#), Weak AI, Types of AI

For Mains: Indigenisation of Technology & Developing New Technology, Advantages and disadvantages of AI, Applications of AI in Different Sectors, Generative AI.

Source: IE

Why in News?

During a recent interview, the CEO of **OpenAI** stated his dedication to investing in the advancement of **Artificial General Intelligence (AGI)**.

- AGI is highly advanced, has more scope, and is more capable than [Artificial Intelligence \(AI\)](#), more commonly used in present times.

What is Artificial General Intelligence (AGI)?

▪ About:

- It is highly advanced and more capable than **Artificial Intelligence (AI)** used commonly.
- AGI envisions a broader, more generalised form of intelligence, not confined to any particular task.
- It aims to create machines that possess human-like intelligence across a wide range of tasks.
 - This includes reasoning, common sense, abstract thinking, background knowledge, transfer learning, ability to differentiate between cause and effect, etc.
- AGI aims **to emulate human cognitive abilities** such that it allows it to do unfamiliar tasks, learn from new experiences, and apply its knowledge in new ways.

▪ Characteristics:

- **Generalisation:** AGI can generalise knowledge and skills across tasks and domains, applying learning from one context to solve new problems.
- **Complex Reasoning:** AGI can engage in intricate reasoning and problem-solving.
- **Learning:** AGI exhibits robust learning capabilities, allowing it to acquire knowledge and skills from data, experience, or instruction.
- **Self-Awareness and Consciousness:** AGI would be aware of its own existence and able to set goals.
- **Human-Level Abilities:** AGI's capabilities would match or surpass human intelligence.
- **Creativity:** AGI demonstrates creativity by generating novel solutions, ideas, or artefacts that are not explicitly programmed or predefined.

▪ Applications of AGI:

- **Healthcare:** AGI has numerous positive implications in various fields, including healthcare.
 - **Personalised medicine**, which tailors medical treatment to individual characteristics, can be greatly enhanced by AGI's ability to analyse diverse datasets and identify personalised treatment options.

- **Finance and Business:**
 - AGI has the potential to automate different tasks and improve decision-making, providing real-time analysis and accurate market predictions.
- **Education Sector:**
 - AGI has the potential to revolutionise **adaptive learning** platforms that cater to the individual requirements of students, potentially making **personalised education** accessible to people all over the world.
- **Space Exploration:**
 - It can boost the space industry by operating autonomous systems for space exploration and research.
 - AGI could also analyse data from space missions to develop insights and contribute to discoveries.
- **Military and Defense:** A typical use of AGI would be enhanced surveillance, military involvement, real-time strategies on the battlefield, and combat systems.

What is Artificial Intelligence (AI)?

- AI refers to a broad field of computer science where machines are designed to perform tasks that typically require human intelligence in particular task.
- These tasks can include language translation, image recognition, decision-making, etc.
- It is also called as '**Narrow or Weak AI**' as they excel at specific tasks but lack broader cognitive abilities. These **AI tools are task-specific** and optimised for predefined goals.
- **Examples:**
 - **Chatbots:** AI-powered chatbots can handle customer inquiries.
 - **Recommendation Systems:** AI algorithms suggest personalised content (e.g., Netflix recommendations).
 - **Image Recognition:** AI identifies objects in images.
- **Some Major AI Tools:** [ChatGPT Chatbot](#), [Google's Bard](#), [Chatbot](#).

What are Some Concerns Related to AGI?

- **Environmental Concern:** The significant computational power needed for developing AGI systems raises concerns about **its environmental impact, including energy consumption and e-waste generation**.
- **Job Losses and Unemployment:** AGI has the potential to result in a substantial decrease in job opportunities and **create extensive social and economic inequality**, with a concentration of power among those who oversee the AGI.
- **Human Oversight and Accountability:** The immense cognitive abilities of AGI could potentially enable it to control information environments and influence results, especially in important areas like elections.
- **Loss of Basic Human Skills and Creativity:** Due to less involvement of humans even for small work.
 - Reducing human involvement may **reduce creativity** at work and AGI's work may be a more innovative carbon copy of human works.
- **Existential Risk:** AGI could surpass human intelligence and potentially pose existential risks. Its capabilities may surpass those of human beings, making its behaviour challenging to comprehend and anticipate.
 - This could result in a scenario where it becomes excessively autonomous, to the extent that humans lose their ability to control it.
- **Ethical Dilemmas:** The advancement of AGI raises ethical challenges, such as concerns about responsibility, confidentiality, and the risk of biased decision-making.
 - It is crucial to guarantee that AGI systems comply with ethical norms in order to avoid unintended outcomes and inequalities.

What are India's Initiatives Related to Artificial Intelligence?

- [INDIAai.](#)
- [Global Partnership on Artificial Intelligence \(GPAI\).](#)
- [US India Artificial Intelligence Initiative.](#)
- [Responsible Artificial Intelligence \(AI\) for Youth.](#)
- [Artificial Intelligence Research, Analytics and Knowledge Assimilation Platform.](#)
- [Artificial Intelligence Mission.](#)

Way Forward

- **Robust Ethical Frameworks:** It is essential to create and enforce thorough ethical guidelines and regulations to steer the responsible advancement and utilisation of AGI.
 - Collaborative efforts among governments, industry stakeholders, and researchers are essential to create guidelines emphasising safety, transparency, and accountability.
- **Transparency and Accountability:** Prioritising transparency and explainability in AGI systems is essential for ensuring understandable and verifiable decision-making processes, which in turn helps build trust and minimises the risk of unintended consequences.
- **Ongoing Monitoring and Oversight:** Establishing mechanisms for continuous monitoring and oversight is vital to identify and address potential risks associated with AGI. Regular assessments of AI systems can help prevent misuse and ensure alignment with societal values.

Drishti Mains Question:

Artificial intelligence (AI) is proving to be a Double-Edged Sword bringing both benefits and drawbacks. Discuss how we can ensure AI development is ethical and responsible.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims:

Q1. With the present state of development, Artificial Intelligence can effectively do which of the following? (2020)

1. Bring down electricity consumption in industrial units
2. Create meaningful short stories and songs
3. Disease diagnosis
4. Text-to-Speech Conversion
5. Wireless transmission of electrical energy

Select the correct answer using the code given below:

- (a) 1, 2, 3 and 5 only
 (b) 1, 3 and 4 only
 (c) 2, 4 and 5 only
 (d) 1, 2, 3, 4 and 5

Ans: (b)

Mains:

Q. What are the main socio-economic implications arising out of the development of IT industries in major cities of India? **(2022)**

Q. "The emergence of the Fourth Industrial Revolution (Digital Revolution) has initiated e-Governance as an integral part of government". Discuss. **(2020)**

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