

The Big Picture- Regulating Artificial Intelligence

Context:

- Many people have voiced their concerns about regulating the usage of Artificial Intelligence (AI), the most recent ones being Google CEO Sundar Pichai.
- One of the most powerful men in IT, Sundar Pichai, has backed the need for regulating AI. While Pichai isn't the first big tech executive to say so publicly, his voice matters, given that Google is arguably the world's largest AI Company.
- Tesla and SpaceX chief Elon Musk has been vocal about the need for regulating AI several times in the past. Microsoft president Brad Smith is another prominent person from the tech world who has called for regulation of AI.

Larger Background:

- Sundar Pichai, in an editorial, advocated for AI to be regulated keeping in mind both the harm and societal benefits that the technology could bring in. He also said that governments must be willing to align on regulations around AI for "making global standards work".
- While India has been vocal about the use of AI in various sectors, it is far from regulating it.
- A 2018 NITI Aayog paper proposed five areas where AI can be useful. This paper noted the lack of regulation around AI as a major weakness for India.

What is AI?

- Artificial Intelligence or AI is an autonomous decision-making system. It is a constellation of technologies that enable machines to act with higher levels of intelligence and emulate the human capabilities of sense, comprehend and act.
- AI can be described as, "a system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation."
- AI has become an integral part of Information Technology (IT) and this branch mainly focuses on the production of intelligent machines that derive valuable output from the available data and react in accordance with it.
- Quality of data is one of the crucial elements for the success of AI.
- The science of AI is based on various disciplines, which makes it a multidisciplinary field. This is essentially one reason why AI has a plethora of applications.

Advantages of AI:

- Decision-making skills are enhanced with the usage of AI. This could also aid in improving governance.
- The AI systems are much more organized at maintaining records.
- This technology can work with equal efficacy under hostile situations and they reduce human-intensive labour.
- Detection and monitoring of fraudulent activities become easier with the usage of AI.
- AI also plays a key role in communication systems.
- AI is being increasingly utilized as a part of nuclear control and space probe manufacturing systems.
- AI technology can also be utilized to work in situations that can prove to be dangerous for humans, thereby saving human lives. It can also be deployed for the prediction of natural disasters.

Challenges to the adoption of AI:

- **Data Protection:** one of the most important challenges to adopting AI is the question of data security. The data stored or assimilated in the AI systems can fall into the wrong hands and the repercussions could be catastrophic.
- **Understanding:** The AI systems are built on the basis of algorithms, which can be far too technical for the common man to understand. This makes it difficult for the public to understand its functioning too.
- Lack of enabling data ecosystems

- The low intensity of AI research
 - Core research in fundamental technologies
 - Transforming core research into market applications
- Inadequate availability of AI expertise, manpower and skilling opportunities
- High resource cost and low awareness for adopting AI in business processes
- Uncertain privacy, security, and ethical regulations
- Data democratization
- Unattractive Intellectual Property regime to incentivize research and adoption of AI
- It can result in the replacement of manpower.

Types of Artificial Intelligence:

- AI can be classified into two types on the basis of their ability to replicate the human brain:
 - **Based on Functionality:** This classification categorizes AI systems on the basis of their likeness to the human mind and their ability to think and feel like humans.
 - **Based on Capabilities:** This classification is more prominently seen in the tech industries, wherein classification is based on the capabilities of AI vis-à-vis human intelligence.

What should India do to tap into the power of AI?

- India has the necessary building blocks to develop a thriving AI research and development ecosystem, viz. availability of highly educated talent pool, world-class educational institutes and an illustrious list of top-notch IT companies dominating the global IT landscape.
- Despite these advantages, India sees itself lagging considerably in producing world-class research and innovation in most technology fields, more so in AI.
- China especially has been making tremendous strides in the field of AI and aims to become an AI leader by 2030.
- India should consider reports such as NITI Aayog's paper on AI, which also enlist the most essential areas of AI Application. These include:
 - Healthcare
 - Agriculture
 - Education
 - Smart cities and Infrastructure
 - Smart mobility and transportation
- To be able to adopt AI on a larger scale, India has to factor in its current strengths or a lack thereof and work upon that with support from the government. The government and the private industries would have to provide financial support to facilitate the development of AI, as can be seen in the case of the USA and China.
- However, it must be kept in mind that the exponential growth of AI is due to the conjoint contribution of data computing and algorithms. Thus it is quintessential to invest in computing technologies too.
- The first set of recommendations from the NITI Aayog report focuses on turbocharging both core and applied research. In addition, two frameworks for solving some of AI's biggest research challenges through a collaborative, market-oriented approach have been proposed.
- India should follow a two-step process for ensuring the efficient working of AI systems:
 - Country specific data should be collected after figuring out the application of interest.
 - After modifying the data and computing it, the AI systems should be set up to work in the country.
- The problem with India is primarily in its data collection phase and in the skilling of individuals. Moreover, India has never valued the role of "Raw Data" in AI.

Need for AI regulation:

- Apple and most of the Chinese brands of mobile phones have facial recognition technology imbibed in their software. This could lead to the possibility of "**mass surveillance**", which also violates the privacy concerns of an individual.
- The assimilated data in the AI systems could be passed onto the wrong hands which can prove to be a threat to national security.
- The increasing reliance on the use of machines, machine learning and the use of smart algorithms to power artificially intelligent systems, makes it prudent to regulate AI.

- The regulations should be focussed on the intended usage of the technology rather than restricting the usage of the technology itself.

Is the Indian Government ready to regulate AI and its ethics?

- The Government of India is looking to regulate artificial intelligence (AI), with a clear set of guidelines for how the AI technology would be developed and implemented.
- The debate on data privacy and data security has pushed the Indian Government to regulate the usage of data by AI systems and other social media platforms.
- The Indian Government wants to put in place certain policies on how the algorithms are written and how data collected during the entire process is used, safeguarded and perhaps even further tracked.
- India would be following the lead of countries such as Canada, China, and the UK among other countries, to formulate and eventually implement policies and regulations that control the use of AI, including its ethical dimensions.

Conclusion:

- India should promote a “Responsible AI Ecosystem” which is ethical, secure and unbiased.
- Both government and private industries should be invested in the development of AI technologies.
- The Indian government should also focus on skill development of graduates in the field of AI.