



Artificial Intelligence (AI): Rise, Challenges and the Need for AI Governance

Akanksha Singh¹, Dr. Manish Kumar Singh²

¹Research Scholar, NIMS School of Law, NIMS University Rajasthan, Jaipur

²HOD & Assistant Professor, NIMS School of Law, NIMS University Rajasthan, Jaipur

(Received: 16 March 2025

Revised: 20 April 2025

Accepted: 01 May 2025)

KEYWORDS

Artificial Intelligence, governance, challenges, transparency, ethical

ABSTRACT:

Artificial Intelligence (AI) refers to the development of computer systems that can perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, understanding natural language, speech recognition, and visual perception. AI is a multidisciplinary field that combines computer science, mathematics, cognitive science, and various engineering disciplines. AI holds immense potential for positive impact, however it also raises ethical, societal, and regulatory concerns, like-bias in algorithms, job displacement due to automation, data privacy, and accountability. Thereby Artificial Intelligence (AI) governance is emerging as a current critical and interdisciplinary field, addressing the ethical, legal, and societal challenges associated with the rapid development and deployment of AI technologies. This paper shall provide an overview of the key issues and considerations within AI governance, focusing on the need for comprehensive frameworks to ensure responsible and accountable AI development and use. Further the paper shall deal with the following key aspects in detail:

- ➔ Ethical AI Development
- ➔ Transparency and Accountability
- ➔ Legal and Regulatory Frameworks
- ➔ Public Awareness and Engagement
- ➔ Global Collaboration
- ➔ Adaptation

Objective: The main focus of this paper is to highlight the issues with AI development and the governance required in order to frame out a regulation.

Research Methodology: This paper will be based on primary sources like public opinion and secondary sources like international conventions, judgments, scholarly articles and newspaper articles.

1. Introduction

Artificial Intelligence governance refers to the regulations and policies that govern the use of AI. There is no doubt to the fact that AI has been acting as a boon in different fields like-education, health, transportation. Especially in the difficult times of the pandemic AI has played an essential role to provide various services.

However, with ongoing development of AI in different field like seems to give rise to the concerns like-accountability, privacy, reliability. Privacy is one of such major concerns wherein AI is capable enough to read, store and use data as per its convenience. In addition, the infringement of Intellectual Property is also one of such major concerns. In order to deal with such concerns, the



nations need to come together and develop a framework that regulates the use AI at global level.

2. Background

Artificial Intelligence - AI can be defined as the ability to perform tasks that are normally required by human intelligence; the ability to choose, learn, plan intelligently, communicate and make decisions. AI attempts to replicate human intelligence by using human problem-solving abilities and reasoning in order to achieve better and more efficient solutions. It can also be seen as an umbrella concept, consisting of a set techniques using machines trying to resemble human cognition. Scholars today generally focus on Machine Learning (ML), which refers to the ability of a system to improve its performance over time.

AI has existed since the 1950s but it has not been possible to use its potential until the rise of the world wide web with the accessibility of large data sets. The recent rise of AI could also be contributed to faster and better computers and much more data available through, e.g. social media and Google. It has then been possible to develop AI to perform tasks such as: problem solving, planning, knowledge acquisition, learning, have improvement over time, speaking, developing vision and action processing. Artificial intelligence is dependent on collecting data because of the knowledge that it can attain from such collection; this entails collecting data from individuals using Facebook, Google and other applications. This is done by using their personal data to direct ads and recommendations based on their preferences and tastes by different companies on these platforms. AI is dependent on “algorithms”, which is a set of rules or step by step instructions to be followed by computers in data processing, calculations and other mathematical operations.

Rise of AI - AI has in recent years gained traction in the media and society as a whole. Large tech companies such as Google, Facebook, Amazon and others are investing heavily in the technology. They have launched products with AI technology, such as; Google’s Alpha goes, Apple’s Siri and Amazon Echo.

Governments have also started to give AI more attention, where many countries have made a national strategy for AI and are investing in this technology. China has been very eager to become a leader in this field. They have invested 147 billion USD in becoming the global leader of AI by the year 2030. The US has spent 1,2 billion USD on research and development in the field of AI, while Europe has spent around 700 million USD in AI-related technologies.¹

The rise of AI can be summed up as:

| | |
|---|--|
| 2000s-Expansion of AI Applications | The 2000s witnessed a resurgence of interest in AI, fuelled by advances in machine learning. As AI applications expanded, concerns about privacy, data protection, and the potential misuse of AI technologies began to emerge. |
| 2010-AI Ethics Guidelines | In the 2010s, there was a growing recognition of the need for ethical guidelines in AI development. |
| 2016-AlphaGo | The success of AlphaGo, a computer program that defeated a world champion in the board game Go, brought heightened awareness to the capabilities of AI. This success, coupled with the increasing integration of AI in various sectors, raised concerns about the need for governance. |
| 2018-GDPR Implementation in the EU | The General Data Protection Regulation (GDPR) was implemented in the European Union in 2018, marking a significant step in AI governance. |
| 2019-Development of AI Principles | Major AI industry players, including Google, Microsoft, and IBM, started releasing their AI principles, emphasizing |

¹ Digital Business Models: By Bernd W. Wirtz.



| | |
|--|---|
| | responsible and ethical AI development. |
| 2020-National and International Regulatory Developments | Countries around the world started developing and implementing national AI strategies. International organizations, such as the Organization for Economic Co-operation and Development (OECD), released AI principles. The European Union proposed the AI Act in 2021, outlining regulatory measures for high-risk AI applications. |

3. India's Initiatives in AI Governance

India has been actively working on formulating policies and regulations related to artificial intelligence (AI). Keep in mind that developments in this field may have occurred since then, so it's advisable to check the latest sources for the most current information. Here are some key initiatives and policies related to AI in India:

➔ **National Strategy for AI (NSAI) 2018**- The National Institution for Transforming India (NITI Aayog) released the National Strategy for AI in 2018. The strategy aims to position India as a global AI hub and outlines key focus areas, including research and development, skilling, data utilization, and international collaborations.²

➔ **Ethics Guidelines for Trustworthy AI (2020)**- NITI Aayog released "Ethics Guidelines for Trustworthy AI" in 2020. These guidelines emphasize the importance of ethical considerations in AI development, including transparency, accountability, fairness, and user-centricity.³

➔ **AI Standardization Framework (2020)**- The Bureau of Indian Standards (BIS) is working on the development of an AI Standardization Framework. The framework aims to establish standards for the implementation and adoption of AI technologies in various sectors.⁴

➔ **National AI Portal**-The Indian government has launched the National AI Portal to serve as a platform for sharing resources, information, and updates related to AI initiatives in India. The portal also provides a space for collaboration and engagement with the AI community.⁵

➔ **AI in Agriculture**- The Ministry of Agriculture and Farmers Welfare has been exploring the use of AI in agriculture. Initiatives focus on leveraging AI for crop monitoring, precision agriculture, and improving agricultural productivity.⁶

➔ **AI in Healthcare**- The National Health Authority (NHA) and other health organizations in India are exploring the application of AI in healthcare. This includes initiatives related to diagnostics, telemedicine, and health data analytics.⁷

➔ **AI in Education**- The Ministry of Education is exploring the integration of AI in the education sector. This includes initiatives to enhance learning experiences, personalize education, and address challenges in the education system.

➔ **AI in Urban Governance**- Some Indian cities are exploring the use of AI in urban governance for applications such as traffic management, waste management, and smart city initiatives.

4. Challenges in enforcing AI-laws

Constituting and enforcing laws related to artificial intelligence (AI) presents various challenges, reflecting the complex nature of the technology and its rapidly evolving pace. Some of such challenges are:

² NITI Aayog, <https://www.niti.gov.in/node/708> (last visited- Feb 02,2024 2.30 PM).

³ Id.

⁴ BIS, https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/standard_review/Standard_review/Isdetails?ID=MjcxOTM%3D (last visited- Feb 02,2024 1.35 PM).

⁵ India AI, <https://indiaai.gov.in/> (last visited- Feb 02,2024 1.50 PM).

⁶ Pib, <https://pib.gov.in/PressReleasePage.aspx?PRID=2002010> (last visited- Feb 10,2024 1.30 PM).

⁷ NITI Aayog, <https://niti.gov.in/sites/default/files/2019-01/NationalStrategy-for-AI-Discussion-Paper.pdf>.



| | Challenges | Measures |
|---|--|---|
| Rapid Technological Advancements | AI technologies evolve quickly, making it challenging for legislation to keep pace with the latest developments. ⁸ Laws may become outdated, and regulatory frameworks may struggle to address novel applications and risks associated with emerging AI capabilities. | Government needs to formulate policies that guide the development and deployment of AI technologies. Creating a national AI strategy that outlines goals, priorities, and initiatives. |
| Interdisciplinary Nature of AI | AI is interdisciplinary involving computer science, ethics, law, and more. | Government needs to focus on invest in research and development to advance AI technologies. Funding AI research initiatives to drive innovation. Supporting academic and industry collaborations in AI. |
| Ethical Bias | AI systems may exhibit biases, discrimination, | Integrating ethical principles into AI governance frameworks. |

| | | |
|------------------------------|--|--|
| | or unintended consequences. | Conducting human rights impact assessments for AI applications. |
| Data Privacy Concerns | AI often relies on large datasets, raising concerns about privacy. | Defining standards for AI safety, security, and performance. Governments oversee the responsible collection, use, and sharing of data for AI applications. |
| Public Awareness | Lack of public awareness about AI and its implications can hinder the development of informed and inclusive regulations. | Governments can engage with the public to raise awareness and gather input on AI policies. Conducting public consultations on AI-related issues. Promoting public understanding of AI technologies and their implications. |

5. Comparative study

European Union's Proposal for the AI Act- The European Union proposed the AI Act in April 2021, which aims to regulate high-risk AI applications. The proposed regulations outline requirements for transparency, accountability, and human oversight. If adopted, it would represent a comprehensive and

⁸ Artificial intelligence and effective governance: A review, critique and research agenda, Gagan, Rithika (Feb. 01,2024. 9.43 am)

<https://www.sciencedirect.com/science/article/pii/S2666188819300048>.



ambitious effort to govern AI use in a wide range of sectors.⁹

Singapore's Model AI Governance Framework- The Singapore government has developed a Model AI Governance Framework to help organizations manage the ethical and responsible use of AI. It provides guidelines on fairness, transparency, accountability, and the use of personal data. Singapore's approach emphasizes a collaborative and industry-driven effort in shaping AI governance practices.

OECD Principles on AI- The Organization for Economic Co-operation and Development (OECD) has developed the OECD Principles on Artificial Intelligence. These principles provide a framework for the responsible development and deployment of AI and cover aspects such as transparency, accountability, and human rights.¹⁰

NHS AI Ethics Guidelines (United Kingdom)- The National Health Service (NHS) in the United Kingdom has developed AI Ethics Guidelines for the health sector. These guidelines provide recommendations on the ethical use of AI in healthcare, focusing on issues like patient privacy, transparency, and accountability.¹¹

Montreal Declaration for Responsible AI (Canada)- The Montreal Declaration for Responsible AI, established by the Montreal Institute for Learning Algorithms (MILA) and other organizations in Canada, outlines ethical principles for the development and deployment of AI technologies. It emphasizes the importance of inclusivity, accountability, and avoiding the use of AI for harmful purposes.¹²

AI Now Institute's AI Principles (United States)- The AI Now Institute has developed a set of principles for

responsible AI development and deployment. These principles address issues such as bias and discrimination, accountability, transparency, and labour rights. The institute conducts research and advocacy to promote the ethical use of AI.

UNESCO's Recommendation on the Ethics of AI

UNESCO has been working on a global standard-setting instrument, the Recommendation on the Ethics of Artificial Intelligence, to provide a framework for the ethical development and deployment of AI technologies. This initiative involves collaboration with member states and experts from various regions.

6. Conclusion

We are throughout that AI governance is a multidimensional and evolving field that seeks to strike a balance between fostering innovation and addressing the ethical, legal, and societal implications of AI technologies. It tends to involve collaboration among governments, researchers, and the public to create a framework that ensures the responsible and beneficial use of AI.

With the rapid development and ongoing use of AI across diverse sectors has outpaced the development of comprehensive and globally harmonized governance frameworks. This as a result has given rise to a range of interconnected challenges, including ethical concerns related to bias and transparency, legal and regulatory uncertainties, privacy and security risks, potential societal impacts, and the need for international collaboration. The absence of robust and adaptive governance mechanisms poses a threat to responsible AI development and deployment, potentially resulting in biased algorithms, violation of privacy, inadequate legal

⁹ Berryhill, J., Heang, K. K., Clogher, R., and McBride, K. (2019). "Hello, World: Artificial intelligence and its use in the public sector," in OECD Working Papers on Public Governance (Paris: OECD Publishing), p. 36

¹⁰ Id.

¹¹ Bradley, C., and Wingfield, R. (2020). National Artificial Intelligence Strategies and Human Rights: A Review. Global Digital Policy Incubator, https://www.gp-digital.org/wp-content/uploads/2020/04/National-Artificial-Intelligence-Strategies-and-Human-Rights-A-Review_April2020.pdf.

¹² Calvo R. A Peters D Vold K Ryan R. M. (2020). "Supporting human autonomy in AI systems: A framework for ethical enquiry," in Ethics of Digital Well-Being: A Multidisciplinary Approach, eds C. Burr and L. Florida (Cham: Springer), 31–54. doi: 10.1007/978-3-030-50585-1_2



safeguards, and a lack of accountability. Addressing these challenges requires urgent attention to establish ethical standards, legal clarity, and collaborative international efforts to ensure that AI technologies are developed and utilized in a manner that aligns with societal values, protects fundamental rights, and promotes beneficial outcomes for all stakeholders.

This in turn has raised an issue for the need of regulatory frameworks which specifically deals with AI as its focal point by various countries and organizations. Such regulations must be formulated with an aim to provide a structured approach to the development and deployment of AI, offering guidelines that promote responsible practices while avoiding stifling technological progress. Also, recognizing the global nature of AI, international collaboration has emerged as a vital aspect of governance efforts. Collaborative initiatives seek to establish common standards, share best practices, and collectively address the transnational challenges posed by AI technologies.

The issues like transparency and explainability are foundational principles in effective AI governance. Users and the public should have insights into how AI systems make decisions, particularly when these decisions have significant impacts on individuals or communities. Stakeholder engagement is another critical element, emphasizing the importance of involving policymakers, industry experts, researchers, and the public in the development of governance frameworks. Diverse perspectives contribute to comprehensive and inclusive policies that account for various interests and concerns.

Adaptability and flexibility are intrinsic to successful AI governance. The dynamic nature of AI requires governance structures that can evolve alongside technological advancements. Continuous monitoring, assessment, and updates to regulations are necessary to address emerging challenges and risks effectively.

As heading towards conclusion, we can say that the journey towards AI governance involves navigating a complex landscape, where ethical considerations, international collaboration, transparency, stakeholder engagement, and adaptability collectively shape the responsible integration of AI into societies worldwide. As discussions and developments progress, the challenge remains to foster innovation while ensuring that AI

technologies align with values, ethics, and the well-being of individuals and communities.