

# **Navigating the Future: India's Strategic Approach to Artificial Intelligence Regulations**

**RESEARCH PAPER**

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**National Centre for Good Governance (NCGG),  
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Government of India**



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2022-25

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## DECLARATION

This is to certify that research paper entitled “**Navigating the Future: India’s Strategic Approach to Artificial Intelligence Regulation**” submitted to National Centre for Good Governance (*NCGG*), Ministry of Personnel, Public Grievances & Pensions, Government of India is result of my own original research . The research work was carried under the guidance of **Shri V Srinivas, IAS**, Additional Secretary, Department of Administrative Reforms & Public Grievances (DARPG), Government of India and **Dr. Gazala Hasan** Assistant Professor, NCGG and Dr. Neha Aneja , Assistant Professor at Campus Law Centre, Faculty of Law, University of Delhi. I declare that this is my original work. No part of this work has been submitted for award of any degree or equivalent.

Date: 21<sup>st</sup> December ,2023

Place: New Delhi

(Kshitija Kashik)

## CERTIFICATE

This to certify that the research paper entitled “**Navigating the Future: India’s Strategic Approach to Artificial Intelligence Regulation**” is a record of bonafide work carried out by Ms. **Kshitija Kashik** a student of LLB, University of Delhi submitted for internship at National Centre for Good Governance (*NCGG*), Ministry of Personnel, Public Grievances & Pensions, Government of India.

The thesis has been carried out under the supervision of **Shri V Srinivas, IAS**, Additional Secretary, Department of Administrative Reforms & Public Grievances (DARPG), Government of India and **Dr. Gazala Hasan** Assistant Professor, NCGG and **Dr. Neha Aneja** (mentor), Assistant Professor at Campus Law Centre, Faculty of Law, University of Delhi.

Date - 21 /12/ 2023

Place – New Delhi

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Date: 21<sup>st</sup> Dec , 2023  
Place: New Delhi

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## ABSTRACT

This research paper delves into international and national landscape of Artificial Intelligence (AI) regulations by meticulously studying documents from various countries worldwide. Through an extensive review, various key regulatory frameworks and best practices were identified that have proven effective in different contexts. Drawing from this wealth of international knowledge, this study seeks to propose a tailored framework for AI regulations in India.

The research work started with finding out of various risks associated with artificial intelligence. A comprehensive review of various documents was done by referring to various documents present worldwide. They are consultation paper by TRAI, China AI development report, national strategy for AI by NITI Aayog, report by Select Committee on Artificial Intelligence Of The National Science And Technology Council, US. It was found that each country needed different approach as per their requirements. Risks identified were low quality data, data biases, data security, data privacy, inaccurate or biased algorithm, and unethical use of AI, job losses due to AI automation, socioeconomic inequality, weakening of ethics and goodwill, financial crises brought about by AI algorithms, loss of critical thinking and decision-making skills, serious biases against women etc.

Subsequently, the study embarked on the exploration of effective regulatory frameworks for AI. Various documents were reviewed meticulously and many ways to regulate Artificial Intelligence were identified. In this paper these strategies have been classified into three: International strategies, National strategies, and contemporary happenings. By reviewing these strategies, a unique framework for India has been framed by adopting best out of them for Indian context. This adaptation aims to foster responsible AI development while addressing the specific challenges and opportunities inherent in the Indian setup.

The findings of this research contribute to the ongoing discourse on AI governance, providing insights into the nuances of global regulatory models. The proposed framework for India considers both the ethical considerations and technological advancements, ensuring a balance that promotes innovation while safeguarding against potential risks. This research serves as a valuable resource for policymakers, industry stakeholders, and researchers alike, offering a roadmap for the effective regulation of AI in the Indian context.

**Keywords :** Artificial Intelligence, data biases, data security, data privacy biased algorithm

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## List of Acronyms

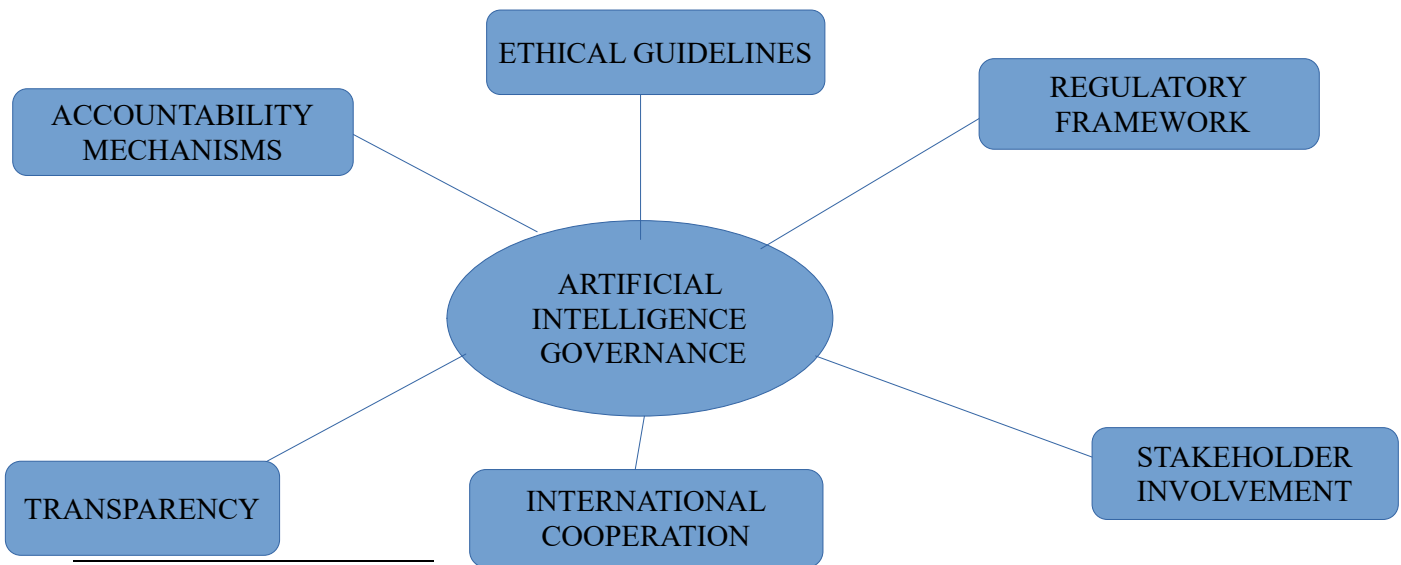
AI	Artificial Intelligence
TRAI	Telecom Regulatory Authority of India
CP	Consultation Paper
EU	European Union
US	United States
NITI	National Institution for Transforming India
NATO	North Atlantic Treaty Organisation
OECD	Organisation for Economic Co-operation and Development <sup>7</sup>
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
ETDA	Electronic Transaction Development Agency
XAI	Explainable Artificial Intelligence
NASSCOM	National Association of Software and Service Companies
RAI	Responsible Artificial Intelligence
GPAI	Global Partnership on Artificial Intelligence

# I. INTRODUCTION

***“We need to be super careful with AI. It’s capable of vastly more than almost anyone knows, and the rate of improvement is exponential”<sup>1</sup>***  
- ELON MUSK

It is a widely recognised idea that technological advancements often outpace the development of regulations and policies to govern them. This creates a need to bring a regulatory framework which can regulate technological advancements. Artificial Intelligence is a significant aspect of technological advancements. Artificial Intelligence (AI) is the creation of computer systems that are intended to carry out tasks that normally require human intelligence. These tasks span learning, problem-solving, reasoning, understanding natural language, recognizing speech, and interpreting visual information. AI systems aim to simulate human cognitive functions, allowing machines to analyze data, adapt to new information, and make decisions or predictions. Artificial intelligence is taking a prominent seat in almost every sphere of the world vis business and industry, healthcare , finance, transportation, education, entertainment, security, agriculture, environmental monitoring, smart cities, customer services , research and development and many more.

AI systems are becoming increasingly autonomous, capable of making crucial decisions, and influencing human lives in ways that were once considered the realm of science fiction. The rise of AI necessitates a re-evaluation of how we approach governance, examining the critical need to establish a comprehensive framework that ensures the ethical and responsible development and deployment of AI technologies. With the potential to impact diverse sectors, AI governance stands at the forefront of contemporary discussions on technology, ethics, and policy. AI is not just a technological marvel; It is a societal disruptor. It is within this context that the importance of AI governance becomes evident. Artificial Intelligence (AI) governance includes rules, regulations, framework and ethical principles that guide the development, and use of AI technologies in a responsible and ethical manner. It involves a set of policies and mechanisms aimed at ensuring that AI systems operate within ethical boundaries, comply with relevant laws and regulations, and do not pose risks to individuals, society, or the environment. AI governance includes a diverse set of considerations, including:



<sup>1</sup> <https://cdn.graciousquotes.com/wp-content/uploads/2023/05/We-need-to-be-super-careful-with-AI.-Its-capable-of-vastly-more-than-almost-anyone-knows-and-the-rate-of-improvement-is-exponential.jpg>



Ethical Guidelines includes ethical principles that AI systems should adhere to, such as fairness, transparency, accountability, and privacy. Regulatory Frameworks like developing and implementing legal and regulatory measures to govern AI, covering areas like data protection, safety, and liability. Accountability Mechanisms for holding developers, operators, and users of AI systems accountable for their actions and decisions. Transparency ensures that AI systems are transparent, understandable, and capable of explaining their decisions and actions. International Cooperation promotes collaboration and harmonization of AI governance at the global level to address cross-border challenges.

Artificial Intelligence governance is evolving and a complex field , it demands attention and proactive measures with futuristic approach to ensure the responsible use of Artificial Intelligence Technologies. A synergic intelligence is required. It refers to the idea of combining human intelligence with artificial intelligence in a collaborative and complementary manner . This approach combines the strengths of both human and machine intelligence to achieve more effective and impactful outcomes.

## **II. RESEARCH METHODOLOGY**

The study is multi-disciplinary, Comparative, exploratory and analytical in approach and methodology. Hence, the study employs a doctrinal method . Certain components of empirical study has been adopted in completing this research. Doctrinal mode of research is used in basing the research on evaluation and analysis of books, research papers, articles, websites, legislations , reports and journals. By way of this doctrinal research, is has been analysed how different countries and organisations are taking steps to regulate Artificial Intelligence . The study includes detailed review of various legislations , strategies present around the world . In empirical modes, the study uses questionnaire, discussion, interview and observation methods to analyse risks associated with AI , and how to regulate AI.

## **III. LITERATURE REVIEW**

Artificial intelligence has emerged as an engine which is driving the Fourth Industrial Revolution. Era of traditional machine learning is getting transformed into modern era of machine learning. This transformation is creating great opportunities but also creating a potential danger. Here comes the role of government, corporations and other stakeholders to regulate it. Each country needs a different approach for AI regulation as per their requirements. For example, India with youthful populations needs to bring a framework by keeping youth people in mind. Various countries like Canada, the United Kingdom, the United States, India, France, Singapore have prepared national plans for AI regulation according to their setup.

TRAI<sup>2</sup> issued Consultation Paper (CP) on "Leveraging Artificial Intelligence and Big Data in telecommunication sector" in August 2022. This paper discussed some of the risk associated with AI. These include erroneous or biased algorithms, low-quality data, data biases, data

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<sup>2</sup> [https://www.trai.gov.in/sites/default/files/CPS\\_22092023.pdf](https://www.trai.gov.in/sites/default/files/CPS_22092023.pdf) (Last visited :12/12/2023)

security, data privacy, and unethical AI use. These dangers exist throughout an AI solution's lifecycle, from conception to application.

China AI development report<sup>3</sup> provides a survey of AI strategies and policies released by different countries. The European Union and European countries represented by Germany, United Kingdom France stress the ethical and moral risks of AI development and in policymaking focus on how to respond to the potential security, privacy, integrity and other ethical threats posed by AI to humankind. In case of Chinese setup AI poses serious challenges to employment, privacy, security and social equality.

A Report by the Select Committee on Artificial Intelligence of The National Science And Technology Council<sup>4</sup>, US unveiled that AI technologies hold significant opportunity, but they also pose risks that can negatively impact individuals, groups, organizations, communities, society, the environment, and the planet. Similar to other technology-related hazards, artificial intelligence (AI) risks can manifest in several ways and can be classified as either long-term or short-term, highly probable or unlikely, systemic or localized, and high-impact or low-impact. Inequitable or undesired consequences for individuals and groups can be amplified, perpetuated, or worsened by AI systems in the absence of appropriate controls.

National Strategy<sup>5</sup> for Artificial Intelligence by NITI Aayog talked about how AI can impact privacy. The creation, gathering, and processing of massive volumes of data about the behavior of individuals, entities, and communities is necessary for the development of AI models, solutions, and applications. Data collection without proper consent, privacy of personal data, inherent selection biases and resultant risk of profiling and discrimination, and non-transparent nature of AI solutions are some of the issues which require deliberation and proper recourse. This document has beautifully given example of how companies misuse AI. And has shown two distinct aspects. Firstly, there are concerns that companies are harvesting significant amounts of consumer data and using it inappropriately to gain insights about consumers. Secondly, there are worries that businesses are gaining an unfair competitive advantage by accumulating big data collections.

Mike Thomas, Senior Features Writer at “Built In<sup>6</sup>” talks about 12 Risks and Dangers of Artificial Intelligence (AI) in his article:

- “Lack Of Ai Transparency and Explainability
- Job Losses Due to Ai Automation
- Social Manipulation Through Ai Algorithms
- Social Surveillance with Ai Technology
- Lack Of Data Privacy Using Ai Tools
- Biases Due to Ai
- Socioeconomic Inequality as A Result of Ai
- Weakening Ethics and Goodwill Because Of Ai
- Autonomous Weapons Powered by Ai
- Financial Crises Brought About by Ai Algorithms

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<sup>3</sup> [https://indianstrategicknowledgeonline.com/web/China\\_AI\\_development\\_report\\_2018.pdf](https://indianstrategicknowledgeonline.com/web/China_AI_development_report_2018.pdf)  
(Last visited :09/12/2023)

<sup>4</sup> <https://www.whitehouse.gov/ostp/ostps-teams/nstc/select-committee-on-artificial-intelligence/>  
(Last visited :11/12/2023)

<sup>5</sup> <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>  
(Last visited :25/11/2023)

<sup>6</sup> <https://builtin.com/artificial-intelligence/risks-of-artificial-intelligence> (Last visited :15/11/2023)

- Loss Of Human intelligence
- Uncontrollable Self-Aware AI”

In his article titled "The dangers of Artificial Intelligence,"<sup>7</sup> Velibor Božić discusses the potential hazards of excessive reliance on AI in society. As AI becomes more advanced and widespread, there is a concern that humans may become overly dependent on it, risking the loss of critical thinking and decision-making skills. For instance, relying heavily on AI for decision-making could erode our ability to think independently. Similarly, depending too much on AI for tasks like driving or navigation might compromise our capability to navigate safely without AI assistance.

Gina Neff, Professor of Technology and Society, University of Oxford in article “AI must not make women’s working lives worse”<sup>8</sup> writes on the effects of AI on the working lives of women. Because AI systems are built using data that looks toward the past, but society as a whole must look forward, they might exhibit major biases against women. These days, artificial intelligence (AI) powers a lot of job search engines, online job postings and suggestions, and it's being utilized by big businesses to automate certain aspects of the recruiting process. Use of historical data on women’s workforce participation can skew the work counts in these new systems. For instance, AI hiring algorithms that rely on previous hires' success in the computer industry, where women are underrepresented, may reinforce prejudice in the future and exacerbate gender disparity in the field. Studies reveal that today's working women have fewer senior positions, are less likely to possess STEM (science, technology, engineering, and math) abilities, work in more hazardous occupations, and receive lower pay overall for doing the same tasks as their male colleagues. Powerful new AI systems present a potential to assist close rather than widen gender inequities. Effective communication, physical and digital job productivity, amount of time spent at work, and retention potential are all measured by new AI workplace performance monitoring systems. Some detrimental gender stereotypes may be included into these new management tools, which are based on data from today's unequal workplaces. Systems that evaluate employees' interactions with clients, for instance, may give men greater marks if the standards are based on qualities that males are often trained to embrace, such as assertiveness or confidence.

## IV. Regulatory Landscape of Artificial Intelligence

### A. International Strategies

- (a) The European Union<sup>9</sup> recognizes the transformative potential of AI and the need to balance innovation with ethical considerations, consumer protection, and fundamental rights. The goal is to create a legal framework that fosters AI development while ensuring a human-centric and trustworthy approach. The EU's approach is guided by several fundamental principles, including transparency, accountability, fairness, data protection, and the respect for fundamental rights. These principles aim to address concerns related to bias, discrimination, and the potential societal impacts of AI technologies. The European Commission has released "Proposal for a Regulation on a European approach for Artificial Intelligence,". This proposal outlines a comprehensive framework for the regulation of AI across various sectors. The

<sup>7</sup> [https://www.researchgate.net/publication/370659879\\_THE\\_DANGERS\\_OF\\_ARTIFICIAL\\_INTELLIGENCE](https://www.researchgate.net/publication/370659879_THE_DANGERS_OF_ARTIFICIAL_INTELLIGENCE) (Last visited :03/12/2023)

<sup>8</sup> <https://oecd.ai/en/wonk/ai-womens-working-lives> (Last visited :03/12/2023)

<sup>9</sup> [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwisw8-claGDAXye\\_UHHf96AL4QFnoECBkQAQ&url=https%3A%2F%2Fec.europa.eu%2Finfo%2Fflaw%2Fbetter-regulation%2Fhave-your-say%2Finitiatives%2F12527-Artificial-intelligence-ethical-and-legal-requirements&usq=AOvVaw395hCtnfjo4\\_q5b6rwNXSr&opi=89978449](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwisw8-claGDAXye_UHHf96AL4QFnoECBkQAQ&url=https%3A%2F%2Fec.europa.eu%2Finfo%2Fflaw%2Fbetter-regulation%2Fhave-your-say%2Finitiatives%2F12527-Artificial-intelligence-ethical-and-legal-requirements&usq=AOvVaw395hCtnfjo4_q5b6rwNXSr&opi=89978449) (last visited on – 1 5, dec ,2023)

proposed regulation covers a wide range of AI applications, including both high-risk and low-risk AI systems. Higher standards are applied to high-risk applications, such as law enforcement, healthcare, and vital infrastructure, to guarantee both safety and adherence to moral principles.

(b) China's strategic approach<sup>10</sup> to AI regulations reflects a nuanced understanding of the delicate balance between fostering innovation and addressing societal concerns. The nation recognizes that effective regulation is not a hindrance to progress but a catalyst for sustainable and responsible AI development. China's comprehensive approach to artificial intelligence talks about following things:

- National AI Standards: Established national standards to ensure uniformity, interoperability, and quality across various AI applications.
- Data Privacy and Security Regulations: Implemented stringent regulations to safeguard personal and sensitive data, especially in critical sectors like healthcare and finance.
- Ethical AI Development Guidelines: Introduced guidelines and regulations addressing ethical considerations, including algorithmic bias, accountability, and transparency in AI development.
- Sector-Specific Regulations: Implemented industry-specific regulations, recognizing the unique challenges and implications of AI in sectors such as education, healthcare, and finance.
- Cybersecurity Regulations: Strengthened cybersecurity regulations to mitigate potential vulnerabilities associated with AI systems, ensuring the security and resilience of AI applications.
- International Collaboration: Actively engaged in international collaboration to establish common standards and regulations for AI, contributing to the development of a cohesive global regulatory framework.
- Government Oversight and Coordination: Implemented a coordinated effort among multiple government agencies to oversee AI development, ensuring regulations are adaptive and aligned with technological advancements.
- Testing and Certification Processes: Explored the establishment of testing and certification processes for AI technologies, focusing on evaluating performance, reliability, and safety before widespread implementation.

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<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwio59K3laGDAXaYfUHHW-6BicQFnoECBAQAQ&url=https%3A%2F%2Flink.springer.com%2Farticle%2F10.1007%2Fs00146-020-00992-2&usg=AOvVaw2l7Bmk-oBCIsyHm6LR67gi&opi=89978449> (last visited on –2 1 , dec ,2023)

- Public Consultation Initiatives: Embraced public consultation as a means to gather input and perspectives on proposed AI regulations, fostering transparency and public participation in the decision-making process.
- Promotion of Responsible AI: Actively promoted the concept of responsible AI deployment, emphasizing the need for AI applications to align with ethical standards and societal expectations.

These unique initiatives collectively showcase China's commitment to fostering a regulatory environment that not only supports AI innovation but also addresses ethical, privacy, and security concerns, ensuring responsible and sustainable development in the field of artificial intelligence.

(c) Ukrainian<sup>11</sup> Strategy of Artificial Intelligence Development seeks to build the technologically advanced age's foundations in order to guarantee the state's sustained economic growth and to raise living standards and welfare. It aims:

- to comply with data protection laws and enhance the quantity and quality of data required for the development of AI technologies
- to use the available processing power to build a dependable communication system.
- to boost the quantity of skilled laborers at the country's AI market
- to reduce unfavorable AI system behavior (the creation and application of AI systems that are capable of purposefully harming humans should be restricted)
- to maintain systems under human control (as much as is feasible given the necessary autonomy of AI systems)
- to comply with law (the use of AI systems should not violate laws);
- to raise awareness of possible sectors for AI application
- to establish a thorough framework for controlling social interactions resulting from the advancement and use of AI technologies
- to encourage participation of Ukrainian experts in worldwide AI conferences and programs, as well as to promote professional exchange and international cooperation.
- to grant licences for high-risk AI technology associated with strategically significant national economy sectors
- to regularly assess high-risk AI systems ,throughout their lifecycle in order to ascertain their influence on society and make necessary modifications.

(d) NATO's Artificial Intelligence Strategy<sup>12</sup> aims :

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[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwip5vVlaGDAXWBYgKHfXACrgQFnoECB0QAQ&url=https%3A%2F%2Fwww.researchgate.net%2Fpublication%2F362902569\\_Regarding\\_the\\_Draft\\_Strategy\\_Development\\_of\\_Artificial\\_Intelligence\\_in\\_Ukraine\\_2022\\_-\\_2030&usg=AOvVaw0spJBxj6WnRMoRQZIXqaVq&opi=89978449](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwip5vVlaGDAXWBYgKHfXACrgQFnoECB0QAQ&url=https%3A%2F%2Fwww.researchgate.net%2Fpublication%2F362902569_Regarding_the_Draft_Strategy_Development_of_Artificial_Intelligence_in_Ukraine_2022_-_2030&usg=AOvVaw0spJBxj6WnRMoRQZIXqaVq&opi=89978449) (last visited on – 12 , dec ,2023)

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[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwj7pdvqlaGDAXWFft4KHX\\_hBmAQFnoECBsQAQ&url=https%3A%2F%2Fwww.nato.int%2Fcps%2Fen%2Fnatohq](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwj7pdvqlaGDAXWFft4KHX_hBmAQFnoECBsQAQ&url=https%3A%2F%2Fwww.nato.int%2Fcps%2Fen%2Fnatohq)

- to provide a framework that would enable NATO and its allies to set a good example, promote the appropriate development and application of AI for Allied defense and security, and
  - to safeguard and oversee artificial intelligence (AI) technology and its ability for innovation, taking into account security policy issues such the implementation of “Principles of Responsible Use”.
  - to recognize and protect against the risks posed by malicious use of AI
  - to provide AI applications that are transparent and suitably comprehensible, particularly by using review techniques, sources, and methods
  - to take proactive steps to minimize any unintended bias in the development and use of AI applications and in data sets
  - to develop and use AI applications according to their intended functions. These apps should be capable of detecting and averting unexpected effects, as well as allowing for proper human-machine interaction.
- (e) The OECD AI Principles<sup>13</sup> adopted in May 2019, provide a framework for the responsible deployment and development of AI, addressing societal, ethical, and governance considerations. OECD principles consist of following:
- Inclusive growth, sustainable development and well-being - AI players should safeguard the environment and lessen economic, social, gender, and other forms of inequality in order to promote inclusive growth, sustainable development, and general well-being.
  - Human-centred values and fairness -AI actors should uphold the rule of law, democratic principles, and human rights, including freedom, autonomy, and dignity as well as privacy and data protection, equality and nondiscrimination, diversity, justice, and social justice, as well as internationally recognized labor rights.
  - Transparency and explainability - AI actors ought to pledge to disclose AI systems in a responsible and transparent manner.
  - Robustness, security and safety -AI systems ought to be reliable, safe, and secure for the duration of their existence. In order to analyze the results of the AI system and its responses to inquiries that are acceptable for the context and in line with state-of-the-art, AI actors must uphold traceability, especially with respect to decisions, methods, and datasets used throughout the life of the AI system. AI systems shouldn't be dangerous. AI actors can utilize a risk management strategy to recognize and guard against anticipated abuse and risks related to using AI technology.
  - Accountability - AI actors should be responsible for ensuring that AI systems operate correctly and that the aforementioned principles are followed, taking into account their respective responsibilities, the situation, and the state of the art.

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- Technological independence - The government should promote the nation's AI independence, especially by using AI-based national technology and solutions to a greater extent.
- (f) UNITED KINGDOM’S<sup>14</sup> National Security and Investment Act 2021 It gives the government the power to step in and block acquisitions that would jeopardize the UK's national security, including companies that develop AI. The Online Safety Bill aims to regulate proactive technologies, which includes AI. The bill places a duty of care on a number of platforms to protect all users from illegal content and Keep children safe online. To comply with the duties, the companies must conduct risk assessments identifying risks and explain how the risks are mitigated, which can be through human moderators or AI tools.
- (g) During the UNESCO<sup>15</sup> General Conference on November 21, 2021, global ethical standards for artificial intelligence were embraced by 193 nations. These standards outline key areas for regulating AI behavior, encompassing data protection, social assessment and mass surveillance, control, and environmental protection. UNESCO anticipates that these standards will enhance the responsible utilization of the advantages presented by machine algorithms while mitigating risks related to transparency and privacy.
- (h) Thailand’s Electronic Transactions Development Agency (ETDA)<sup>16</sup> has recently proposed draft law. The main goal of the Draft Act is to create a certification system for AI standards, giving consumers a trustworthy means of evaluating the caliber and security of AI goods and services that are on the market. Under this system, businesses may submit applications to the ETDA to ascertain whether their AI products or services meet the standards set by ETDA. They might be awarded a certification mark if found qualified. It is noteworthy that AI suppliers are not required to earn this certification mark. Instead, it is meant to be an optional step to increase prospective clients' trust. Promoting and regulating the dependability and safety of AI-related goods and services is one of the Draft Act's other goals. Under the Draft Act, the ETDA has the authority to designate a list of “AI systems that may be allowed under strict monitoring” if deemed necessary. Moreover, the ETDA can also think about creating a list of risk audit and risk management responsibilities for these AI systems.

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## B. National Strategies

India has been proactive in recognizing the importance of regulating artificial intelligence (AI) and has taken steps to address the associated challenges and opportunities. The country has been working on formulating a National Artificial Intelligence Strategy to provide a comprehensive framework for the development, deployment, and regulation of AI technologies. Here are some key initiatives and measures taken by India in the realm of AI regulation:

(a) National Strategy for Artificial Intelligence<sup>17</sup> by NITI Aayog - In addition to encouraging the adoption of international standards, the study recommends the establishment of sector-specific regulatory frameworks and data protection frameworks. Its primary concerns are security, privacy, and ethics. Its main objective is to make “Responsible AI”. This document coined “AI for All” mantra, to be the governing benchmark for future AI design, development and deployment in India. Following measures have been suggested by the paper:

i. Dealing with privacy issues

- Create a framework for data protection that is supported by the law. This will contribute to the nation's robust privacy protection regime.
- Create sectoral regulatory frameworks: since technology is diverse and evolving quickly, sectoral regulatory frameworks may provide additional protection for user security and privacy in addition to central privacy laws. for eg . Japan and Germany
- Benchmark national data protection and privacy laws with international standards: India will need to amend its privacy protection laws on a regular basis to take new hazards and their effects into account.
- Encourage AI developers to adhere to international standards: International leaders and practitioners have gathered to create guidelines for secure and private AI. These principles must be incorporated into the AI design process itself by Indian developers and businesses.
- Encourage self-regulation: AI developers and businesses implementing AI solutions can use Data Privacy Impact Assessment Tools to mitigate privacy issues.
- Invest and collaborate in privacy preserving AI research: Researchers are looking into new mathematical models for protecting privacy. India ought to cooperate in research fields such as Differential Privacy, Privacy by Design, Safety-Critical AI, and Multi-Party Computations, which allow for privacy preservation even in the face of extensive data exchange.
- Spread awareness: Individuals frequently consent to the sharing of their data without realizing it, and they would not have done so in the first place if they had realized for

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what reason their data was being used. There is an immediate need to educate people on the value of privacy, ethics, and consent when using technology.

- ii. tackling the biases : Identifying the ingrained biases, evaluating their effects, and then coming up with strategies to lessen the bias would be one method to go about this.
- iii. Dealing with transparency :Explainable Artificial Intelligence (XAI) can accomplish this. The goal of the Explainable AI (XAI) initiative is to develop a collection of machine learning methods that
  - Create more Explainable models while preserving a high level of learning effectiveness.; and
  - Enable human users to understand, appropriately trust, and effectively manage the emerging generation of artificially intelligent partners.
- iv. Creating accountability:
  - Negligence test for damages caused by AI software. Stakeholders must exercise self-regulation in this regard by evaluating the potential harm associated with each step of an AI model's development.
  - As an extension of the negligence test- As long as the necessary actions have been done to design, test, monitor, and enhance the AI product, safe harbors must be created to insulate or limit liability.
  - Framework for apportionment of damages need to be developed so that the involved parties bear proportionate liability, rather than joint and several liability, for harm caused by products in which the AI is embedded, especially where the use of AI was unexpected, prohibited, or inconsistent with permitted use cases.
  - Actual harm requirements policy may be followed, so that a lawsuit cannot proceed based only on a speculative damage or a fear of future damages.

(b) The National Association of Software and Service Companies (NASSCOM)<sup>18</sup> released Guidelines for the Responsible Implementation of Generative AI with the intention of ensuring its responsible adoption. The research, development, and application of generative artificial intelligence are the main foci of the guidelines. These guidelines' primary goal is to support and promote diverse stakeholders' responsible advancement and implementation of generative AI technologies.

(c) Principles of Responsible AI (RAI)<sup>19</sup>

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In a two-part methodology paper, NITI Aayog outlined guidelines for the ethical development, design, and application of artificial intelligence (AI) in India and provided enforcement methods for the practical application of these guidelines. These principles are:

- i. “safety and reliability,
- ii. inclusivity and non-discrimination
- iii. equality,
- iv. privacy and security,
- v. transparency
- vi. accountability and protection
- vii. and reinforcement of positive human value”.

The rationale behind these RAI principles is the increasing demand for the creation of governance and regulatory frameworks to minimize any hazards associated with AI while optimizing its advantages for the greatest number of people.

### C. Contemporary Development

- a) “Us President Joe Biden Signs Executive Order”<sup>20</sup> to Regulate Artificial Intelligence
  - The Biden administration aims to lower hazards associated with artificial intelligence (AI) and safeguard workers and consumers from them.
  - Eight goals are outlined in the order for the development of AI– “safety, security, privacy, fairness, consumer protection, worker support, innovation, and responsible government use”.
  - Standards for testing AI models before their public release will be developed by the National Institute of Standards and Safety (NIST).
  - Potential infrastructure hazards and cybersecurity risks will be addressed by the Department of Energy and Department of Homeland Security.
  - Developers of large AI models are required to share the outcomes of safety testing.
- (b) The “Risk-Based Approach of the European Union’s Proposed Artificial Intelligence Regulation”<sup>21</sup>.
  - Four tiers of risk are distinguished in a "pyramid of criticality" by the proposed EU rule..
  - At the bottom tier is the vast majority of all existing AI systems.They will be classified as low risk, thus falling outside the scope of the regulation.
  - The next rung of the pyramid, "limited risk," will house a great deal of systems where the only obligations will be to supply certain information to users.

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<sup>20</sup> <https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/> (last visited on – 8 Nov ,2023)

<sup>21</sup> <https://www.cambridge.org/core/journals/european-journal-of-risk-regulation/article/riskbased-approach-of-the-european-unions-proposed-artificial-intelligence-regulation-some-comments-from-a-tort-law-perspective/A996034CC512B6B8A77B73FE39E77DAE> (last visited on – 8 Nov ,2023)

- Fewer systems will end up in the following tier, "high risk", where various restrictions are in place.
  - And the prohibited AI systems with "unacceptable risks" are at the top of the pyramid.
  - The categorization must be as clear as feasible as soon as possible, even though the law has not yet been passed. This will allow firms to anticipate whether their systems will be extensively regulated or not at all, and adjust their plans for the upcoming years.
- (c) G7 introduces a code of conduct<sup>22</sup> for organisations aiming for a safe and trustworthy AI:
- This is “11-point code” , which aims to promote safe, secure, and trustworthy AI worldwide and will offer businesses creating cutting-edge AI systems with optional guidelines for actions, such as generative AI systems and the most sophisticated foundation models
  - It is intended to assist in maximizing the advantages and addressing the risks and difficulties presented by these technologies.
  - ◦ By offering best practices, organizations can contribute to the creation of efficient monitoring mechanisms, which is the purpose of the code.
  - The 11-point code includes:
    - 1) Recognize, assess, and reduce risks at every stage of the AI lifecycle by taking the necessary precautions before, during, and after the creation of advanced AI systems and their introduction into the market.
    - 2) Determine and address vulnerabilities, problems, and usage patterns following deployment, including placement on the market.
    - 3) To assist and maintain proper transparency, and publicly disclose the capabilities, limitations, and domains of appropriate and inappropriate usage of advanced AI systems.
    - 4) Strive for responsible information exchange and incident reporting among organizations creating cutting-edge AI systems, as well as with business, government, civil society, and academic institutions.
    - 5) Create, implement and disclose AI governance and risk management policies based on a risk-based approach. These should include privacy rules and mitigating measures, especially for companies creating advanced AI systems.
    - 6) Make a significant investment in and put in place strong security controls, such as those related to insider threats, physical security, and cybersecurity across the AI lifecycle.
    - 7) Create and implement trustworthy methods for content provenance and authentication, such as watermarking or other methods, so that users can recognize content produced by artificial intelligence.

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<sup>22</sup> <https://indiaai.gov.in/article/g7-introduces-a-code-of-conduct-for-organisations-aiming-for-a-safe-and-trustworthy-ai> (last visited on – 8 Nov ,2023)

- 8) Prioritise research to reduce societal, safety and security risks and prioritise investment in effective mitigation measures.
  - 9) Give top priority to the creation of cutting-edge AI systems to tackle the world's biggest problems, notably but not limited to the climate catastrophe, global health issues, and educational issues.
  - 10) Advance the development and adoption of international technical standards.
  - 11) Implement appropriate data input controls and audits.
- (d) GPAI Summit: The New Delhi Declaration<sup>23</sup> on artificial intelligence was adopted by all member nations. Its methodology is flexible and inclusive.
- It emphasises on increasing collaboration, inclusion and developing a governance framework on artificial intelligence.
  - The declaration promises to position GPAI at the front of shaping AI in terms of innovation and collaboration by increasing applications of AI in healthcare, agriculture and other areas of concern
  - Additionally, GPAI will spearhead discussions on safe and reliable AI and be at the forefront of forming AI governance.
- (e) China's Deep Synthesis<sup>24</sup> Provisions
- The provisions define deep synthesis as “Technology that creates text, pictures, audio, video, or virtual scenes using generative and/or synthetic algorithms, such deep learning and virtual reality.”
  - The provisions are centred on four key verticals:
    - 1) Data security & personal information protection: Respect the data security laws that are in place. Required to set up management systems for user, registration, algorithm review, and child safety, among other things..
    - 2) Transparency : Must set rules, standards, and procedures to identify inaccurate or harmful information. Form and publish platform conventions and management guidelines. Must implement a real-Identity information authentication system.

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- 3) Content management & labelling: Needed to refute false information, maintain records, and notify these instances to the appropriate authorities.
- 4) Technical security : Must periodically review algorithms and conduct security assessment when providing models, templates, and other tools.

(f) AI and IoT: Post-AI Summit<sup>25</sup> reflections on safe integration and data integrity

- This summit brought together 150 global leaders from various sectors to discuss the future of Artificial Intelligence (AI)
- This summit emphasised on collaborative action for AI safety and the need for a shared understanding of AI risks and opportunities
- Strong focus was made on the necessity of state-led testing of AI models, and the importance of setting international safety standards was highlighted
- Summit participants also recognised the need to address current and future AI risks, emphasising standardisation and interoperability to mitigate these risks effectively.
- The main objective is to make sure AI enhances IoT functionality rather than acting as a barrier.

(g) Deepfake regulation to target both creators and social media platforms<sup>26</sup>

- government intends to regulate deepfake content and ask social media platforms to scan and block deepfakes
- Watermarks or labels included in any digitally altered or manufactured content are one method that is being considered generally to alert users about synthetic content and the risks connected with it. These also reinforce the tools to enable people to report the same stuff swiftly.

## V. Conclusion

Building regulatory framework for artificial intelligence in India is need of the hour , considering its unique demographics, economic structure, and societal needs. To promote ethical AI development, a comprehensive strategy that takes into account the nation's large population, varied economic sectors, and technological environment is essential. The regulatory framework should be agile and responsive, addressing the specific challenges and opportunities posed by AI across various domains such as healthcare, agriculture, and education. This tailored approach will not only ensure the ethical use of AI but also stimulate innovation, creating a harmonious integration of technology into India's socio-economic fabric.

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<sup>25</sup> <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjUj-vG16CDAXX5hIYBHXaBC68QFnoECA8QAQ&url=https%3A%2F%2Fiotbusinessnews.com%2F2023%2F12%2F19%2F09444-ai-and-iot-post-ai-summit-reflections-on-safe-integration-and-data-integrity%2F&usg=AOvVaw1dSo2zpCXxoJD2zNHdKDHU&opi=89978449> (last visited on – 10 Nov ,2023)

<sup>26</sup> <https://www.livemint.com/technology/deepfake-regulation-to-target-both-creators-and-social-media-platforms-11700755795363.html> (last visited on – 9Nov ,2023)

## VI. Recommendations

This comprehensive paper on “Navigating the Future: India’s Strategic Approach to Artificial Intelligence Regulations” delves into the evolving landscape of AI governance, addressing key challenges and proposing strategic approaches to navigate the ethical, legal, and societal implications of AI. It provides valuable insights for policymakers, researchers, and industry professionals seeking a deeper understanding of responsible AI development and deployment. Following measures can be taken into consideration while making regulatory framework for Artificial Intelligence in India:

- **Balanced Approach:** Advocate for a balanced approach to AI regulations, striking a nuanced balance between fostering innovation and addressing societal concerns, as demonstrated by the European Union and China.
- **Human-Centric Framework:** Emphasize the importance of adopting a human-centric framework in AI regulations, prioritizing ethical considerations, consumer protection, and fundamental rights.
- **Transparency and Accountability:** Recommend the incorporation of principles such as transparency, accountability, and fairness in AI regulations to build trust and address concerns related to bias, discrimination, and societal impacts.
- **Data Protection Standards:** Highlight the need for robust data protection standards within AI regulations, ensuring the safeguarding of personal and sensitive data, especially in critical sectors like healthcare and finance.
- **Risk-Based Regulation:** Encourage the implementation of a risk-based regulatory approach, distinguishing between high-risk and low-risk AI applications, with more stringent requirements for critical sectors like healthcare, law enforcement, and finance.
- **International Standards Collaboration:** Advocate for collaboration on international AI standards to ensure uniformity, interoperability, and quality across various AI applications, similar to China's national AI standards.
- **Sector-Specific Regulations:** Recognize the importance of sector-specific regulations, tailoring AI governance to the unique challenges and implications of AI in sectors like education, healthcare, and finance, as demonstrated by China's approach.
- **Continuous Review and Adaptation:** Suggest the establishment of mechanisms for continuous review and adaptation of AI regulations to keep pace with technological advancements and evolving ethical considerations.
- **Public Awareness and Education:** Encourage initiatives for public awareness and education on AI regulations, fostering an informed citizenry that understands the benefits, risks, and ethical considerations associated with AI technologies.
- **Government-Industry Collaboration:** Stress the importance of collaboration between governments and industries in shaping and implementing AI regulations, fostering a cooperative and effective regulatory environment.

- **Government Oversight and Coordination Models:** Recommend the adoption of coordinated efforts among multiple government agencies to oversee AI development, ensuring regulations are adaptive, well-coordinated, and aligned with technological advancements.
- **Robust Testing and Certification:** Promote the establishment of comprehensive testing and certification processes for AI technologies, focusing on evaluating performance, reliability, and safety to ensure responsible deployment.
- **Public Consultation for Transparency:** Embrace public consultation initiatives as a crucial aspect of the regulatory process, enabling diverse perspectives and fostering transparency in decision-making around AI regulations.
- **Communication Infrastructure:** Advocate for the creation of a reliable communication infrastructure, utilizing available computing capacity to support the growth and efficiency of AI applications.
- **Workforce Development:** Support initiatives to increase the number of qualified workers in the national AI market, addressing the growing demand for skilled professionals in the field.
- **Mitigation of Adverse AI Behavior:** Stress the importance of measures to mitigate adverse AI system behavior, limiting the development and use of AI systems capable of causing deliberate harm to humans.
- **Human Oversight:** Emphasize the need to sustain human-controlled systems, balancing the required autonomy of AI systems with human oversight to ensure accountability and ethical use.
- **Security and Innovation:** Emphasize the need to protect and monitor AI technologies, fostering innovation while addressing security policy considerations outlined by NATO, including the operationalization of principles of responsible use.
- **Certification System for AI Standards:**\* Promote the adoption of certification systems for AI standards, similar to Thailand's proposed draft law, providing consumers with a trustworthy means of evaluating the caliber and security of AI goods and services.
- **Standards Development:** Support the creation of standards, such as those proposed by the U.S. National Institute of Standards and Safety (NIST), to test AI models before public release, ensuring a standardized approach to safety assessments.
- These recommendations aim to guide the development of AI regulations that are comprehensive, risk-based, transparent, and responsive to the evolving landscape of artificial intelligence.
- **Comprehensive Deepfake Regulation:** Recommend the development of comprehensive regulations addressing deepfake content, targeting both creators and the platforms where the content is shared.
- **Scanning and Blocking Measures:** Encourage the implementation of scanning and blocking measures on social media platforms to detect and prevent the dissemination of deepfake content, aligning with the intent to regulate expressed in the statement.

- **Watermarks or Labels:** Support the consideration of watermarks or labels embedded in digitally altered content as a tool to alert users about synthetic content. This can enhance user awareness and help in distinguishing between authentic and manipulated content.
- **Educational Initiatives:** Recommend the implementation of educational initiatives to raise awareness among users about the existence and potential risks of deepfake content. Educated users are better equipped to identify and report deceptive content.
- **Collaboration with Tech Companies:** Encourage collaboration between regulatory bodies and technology companies to develop and implement advanced technologies for detecting and blocking deepfake content effectively.
- **Periodic Reviews:** Propose periodic reviews of deepfake regulations to ensure their relevance and effectiveness in addressing emerging challenges and advancements in technology.