

# AI Governance in the future: Harnessing AI to strengthen its Accountability and Transparency within the Indian contextual Framework

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#### Abstract

We are seeing shifts and effects on several divisions in the looming uncertainty world of artificial intelligence. The ubiquitous aspect of AI systems is based on algorithms that use collectively generated information from the public across a variety of industries or social media networks, which includes digital apps, banking, gaming, information, and shopping, etc. One of the many uses for the fundamental data gathered from the public is to create a threat, either individually or collectively, as a deterrent to the country by any other nation or state. A wide range of industries, including government, statecraft, technology, the cyberspace, defense, and security, have been impacted by artificial intelligence. The introduction of AI into numerous industries makes it crucial to further research the benefits and drawbacks of this emerging discipline. This paper scrutinize the detailed analysis of AI governance in the future is, which focuses on using AI to improve accountability and transparency within the Indian context. The study focuses on strategic studies, cyber security and defense, and statecraft. Leveraging AI in India's strategic and security concerns, the development and standards of AI governance in India, identifying various ethical and legal factors in policy making for AI's rapid expansion in multiple sectors, innovation, up-grading, challenges and threats faced by advanced AI emerging status, and India's readiness for the field are the main topics of this field of study. This study aims to mitigate the consequences, problems and scope of Gen AI as we enter a new era of technology and India focuses on developing its workforce. India must

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position itself on the global stage and be prepared to meet the risks posed by its neighboring nations. The primary and secondary methods are used in the research.

*Keywords:* Artificial Intelligence, Commercial Technologies, Statecraft, Robotics Drone, New Dimension Warfare

#### Introduction

In the emerging artificial intelligence (AI) technology in India, AI is transforming a number of industries, propelling technical development and economic expansion while permeating every aspect of daily life. AI-powered solutions are improving accessibility, accuracy, and efficiency across a range of industries, including healthcare, education, agriculture, and finance. By bringing cutting-edge technology that move the emphasis toward command-centric operations and alter geopolitical dynamics, the quick integration of AI is likewise changing combat. AI in defense and combat improves autonomous equipment, military weaponry, and surveillance systems, providing strategic benefits but also raising moral and security issues for coming generations. In order to ensure efficiency, AI systems gather enormous volumes of data, examine trends, and carry out activities in response to preprogrammed instructions. However, this raises questions around privacy, prejudice, and responsibility. Society must place a high priority on moral growth, open rules, and ongoing human supervision in order to appropriately utilize AI's potential. In India, AI has become an influential force in a number of industries, can also bring both considerable benefits and difficulties. Predictive analytics and AI-powered diagnostic technologies have transformed patient care in industries like healthcare by facilitating early illness identification and individualized treatment regimens. Through weather forecasting, soil analysis, and automated equipment, AI-driven solutions in agriculture maximize crop management, increasing output and decreasing resource waste. Personalized learning platforms have emerged in the education sector, increasing access to high-quality education, particularly in rural regions. Similar to this, AI has transformed the financial industry by improving fraud detection, automating trade, and improving customer care via chatbots and virtual assistants. AI-driven automation in manufacturing has raised productivity, decreased human error, and enhanced production efficiency. But there are serious drawbacks to these developments. Concerns about unemployment are heightened by the growing automation of occupations, especially for lowskilled workers, who must reskill in order to stay competitive. Even while AI improves

diagnosis in the medical field, data privacy and ethical issues with patient information continue to be major obstacles. The lack of digital infrastructure in rural regions makes it difficult for the agriculture sector to use AI widely. Furthermore, with autonomous weaponry, surveillance systems, and cyber capabilities, AI is revolutionizing modern combat and posing ethical and misuse-related problems. AI brings issues in the form of digital reliance, disinformation, and cyber security risks, but it also offers potential for creativity for the next generation. In order to ensure that technology advances humanity rather than supplants it, Indian enterprises and governments must find a balance between innovation and moral governance as AI continues to change the future. To guarantee an inclusive and sustainable digital future, this entails fostering responsible AI development, enforcing strict data protection regulations, and promoting AI literacy. As AI develops further, it is imperative that humans create strong frameworks that guarantee human control and keep computers from taking over decision-making.

## Artificial Intelligence Startups in Multiple Fields in India

AI startups in India are rapidly emerging as key players in the global tech landscape, driving innovation across a range of industries. These startups are harnessing artificial intelligence, machine learning, and deep learning to develop solutions that address critical challenges in sectors like healthcare, agriculture, customer service, and geospatial data. With a growing ecosystem of tech talent and access to vast data resources, Indian AI startups are creating transformative products—from AI-powered diagnostics in healthcare to smart farming tools and automated customer service bots. Their ability to innovate is positioning India as a significant hub for AI development and deployment.

Name of Startups	Product	Technology	Website
Qure.ai	qXR (Covid-19), qER, qQuant for healthcare	deep learning	http://www.qure.ai
CamfyVision Innovations	FaceAI – PRO, BhavnaAI, ArjunaVision, Tejas, IryaVision	AI, ML, Computer Vision, Image detection	https://www.camfyvision.com/
Haptik	Haptik lead generation bot, Haptik concierge bot, Haptik customer service bot	Conversational AI	https://haptik.ai/

**Table 1:1 AI Startups in India in Various Industries** 

CogniCor Technologies Pvt ltd	AI platform CIRA, AI enabled digital assistant	AI-augmented digital assistants	https://www.cognicor.com/	
Garuda – Aerospace Pvt. Ltd	market leaders in the drone industry	Drones, High tech	https://www.garudaaerospace.com/	
Attentive AI Solutions Pvt. Ltd.	Provide geospatial big data for Digital Maps	AI, Deep learning, remote sensing	https://www.attentive.ai	
Tripeur	Recommendation Engine, Booking Engine, Behavioral Engine to support travel budgets.	AI/ML with Behavior Science, NPL	https://tripeur.com/	
Doxper	AI-powered Pen	Cloud Computing & ML	https://doxper.com/home/	
Jovian.ml	Code, libraries, datasets	Data Sciences	https://www.jovian.ml	
CropIn	Smart Sales, Smart Ware, Smart Risk, Smart Farm	decision-making tools for agricultural sector	https://www.cropin.com/	

# Table 1:2 AI Initiatives by Different Departments of Central Government of India

Department of Central Government	Name of the Initiative	Key Objective of Initiative	Field/Technology
Ministry of Electronics and Information Technology	Responsible AI for Youth	The goal is to build a future-ready youth that grasps fundamental AI concepts by engaging with students at the school level	Educational, Learning training
Ministry of Finance	New unit formed by RBI to track AI and Block chain	The RBI created an initiative focused on comprehending emerging technologies like crypto currency and block chain, and formulating regulations to address them	Block chain, Fintech
	Project Insight	A system that monitors taxes by applying AI to analyze banking transaction patterns and prevent tax evasion	Data Mining, Machine Learning, Taxation
Ministry of Commerce and Industry	AI Task Force	To establish a structure that addresses legal and policy challenges arising from AI technologies in different fields	National Strategy, Policy Paper
	MoU for India- UAE Artificial Intelligence Bridge	A collaborative group formed to leverage the advantages of AI, block chain, and analytics for business and economic gains	Bilateral collaboration

Ministry of Science and Technology	Interdisciplinary Cyber Physical Systems (ICPS)	The initiative aims to tackle issues across various sectors such as education, agriculture, health, environment, and industry using AI and data analysis	Industry 4.0, AI Research
	Survey of India	To create high-quality mapping and survey data throughout India	Geospatial Mapping, Remote Sensing
	Cognitive Science Research Initiative (CSRI)	The focus is on designing software and AI tools to facilitate early diagnosis and improved rehabilitation for mental health conditions	AI Research, Mental Health, Cognitive Science
	Data Science Research Initiative	To investigate data characteristics that underpin new technologies, including AI, to identify practical solutions	AI Research, Data Science
	AffordableandAccessible-HealthcareBigDataandGenomics-	To create AI solutions that assist in early diagnosis, medicine development, and personalized treatments for conditions like cancer, tuberculosis, and rare illnesses	Healthcare, Medical Diagnosis
	India-Sweden Collaborative Industrial Research and Development Program	An R&D collaboration with Sweden aimed at combining resources from both countries to innovate technology	AI Research, Internet of Things
MinistryofElectronicsandInformationrechnology	Microsoft and NITI Aayog partner to use AI across industries	The initiative seeks to produce AI solutions applicable in sectors such as agriculture, healthcare, and the environment	AI Education, AI for social good, NLP
	Open Government Data Platform	A publicly accessible platform that shares government data to enhance transparency in governmental processes	Governance, Open Data
	National Centre for AI	A program aimed at promoting AI usage within government services and examining the various challenges that this entails	AI Governance, Research
	Digidhan Mitra Chatbot	An AI-powered chatbot that delivers tailored information to users by analyzing their data through conversations in text and voice	Banking
	CoE in AI by National Informatics Centre	The aim is to enhance how egovernment services reach citizens by creating innovative solutions using AI	Governance, Policy Document
	Technology Incubation and Development of Entrepreneurs (TIDE 2.0)	This initiative seeks to encourage business creation in new technologies such as AI, Robotics, blockchain, etc., by providing financial aid and technical assistance	Entrepreneurship Incubator

The Indian government has recognized the potential of artificial intelligence (AI) in driving economic growth and national development, leading to various AI initiatives across different departments. Key government initiatives, such as the National Strategy for AI (2018), emphasize the adoption of AI to enhance sectors like healthcare, education, agriculture, and governance. Ministries like the Ministry of Electronics and Information Technology (MEITY) are fostering AI research and development through partnerships with academic institutions and startups. Additionally, AI is being used to improve public services, such as in smart cities, traffic management, and healthcare diagnostics. The government's efforts aim to position India as a global leader in AI while ensuring that its benefits are accessible across society.

#### Artificial Intelligence in New Dimension of War

In the fast moving world towards the unforeseen future, we human experiencing the technologies playing major role in the changing era, the shift is seen in both military and commercial field, from making day-to-day lifestyle easier to the enhancing of military weapons, leading to change the battle of future warfare. Artificial intelligence plays a crucial role in multiple sectors undertaking daily tasks and mission especially in military such as robotics command and unmanned aerial vehicles (UAVs) used for better targeting the enemy without coming under the target.

#### AI mechanism

AI is used for perception tasks like speech, photographs, videos, and landscape analyzing, it may glean valuable information from unprocessed data and provide leaders a better understanding of their surroundings. In order to choose the best courses of action to accomplish mission results and reduce risks to both deployed personnel and civilians, commanders can use AI to develop and assist in exploring new choices.



Fig 1:1 AI UAV Working Mechanism

AI UAV application are easy to monitor, actively sensing the target, the AI advance technology allows to evaluate security concerns, monitoring future challenges.

AI UAV works through channel estimation is the process of determining the characteristics of the wireless communication channel between a UAV and a ground station (or another UAV) by using AI algorithms to analyze received signals. UAV AI application drones and vehicles follow routing protocols classification which helps to communicate in a most effective manner. AI application in such technologies helps for its advancement and better results in a limited timeline. But as it comes also comes with the disadvantages and challenges; as to gain such technologies a nation requires a quality of research, development, information and awareness for the subject among the new generations. The realization of the new technologies uses must be the way of just learning for the betterment of the future task, considering the protocols.

### AI Application weapons in Indian Defence Sector

India preparedness towards advance technologies as it has sharing border with countries through which India gets threaten by the increasing activities of non-state actors which has no boundaries of war ethics. India needs to prepare itself for better defence and has to stand for peace to influence other growing countries; India as middle power as well as raising power and has the third largest defence sector and first largest population hold the stealth future with all new mechanism such and project on Quantum computer, artificial information technologies, unmanned aerial vehicles, advance underwater submarines include the Arihant-class nuclearpowered ballistic missile submarines (SSBNs).



Vibhram-E is a multirole battery powered helicopter drone with medium range and endurance. AI-powered real-time monitoring tools have also been used produce cognitive to ability for counterterrorism efforts.

Fig 1:2 Vibhram-E Drone

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In order to teach its initial round of recruits, the armed forces has also started utilizing advanced military simulator technology, a practice that is probably going to become commonplace in military training soon. According to a senior defense ministry source who spoke to DW, "AI can be a game-changer in logistics, information operations, intelligence collection and analysis." "Though India's adoption of military AI technology is relatively recent, we have made substantial progress in launching AI-enabled military devices". Likewise there are many business sector operating in the AI aerial robotic solution and artificial intelligence advance mechanism to bring advance technologies for better preparedness in forthcoming world.

#### Fig 1:3 AI Unveil "Karan Kavach" Displayed In Defense Expo 2022



CHOUKASS: A 400meter-range optical sensor takes pictures, which are sent in real time to a portal that monitoring centers may access via a tiny NB-IOT satellite module. The system

weighed 3 kg and is made to be hidden. A 50W flexible solar panel could potentially use to prolong the system's five-day operating time on a Li-ion battery. The AI-enabled system could recognize targets and sound an alarm on its own. Multiple AI command systems has been introduced by the Indian government.

#### Conclusion

As a middle power, India has a lot of potential to expand in many areas. India, as the global force, need a multifaceted approach to drive progress in economic, scientific, and military areas. Economically, it should enhance its manufacturing sector through initiatives such as Make in India and make it easier to do business. Infrastructure development, digital change, and financial inclusion will propel economic growth. Technology, including R&D, artificial intelligence, and quantum computing, is critical for minimizing reliance on foreign goods and boosting domestic innovation. A strong knowledge economy can be built by strengthening educational institutions, implementing skill development programs, and collaborating with

global technology leaders. Militarily, India should invest in local military production while also improving cyber security, space defense, and AI-powered battle capabilities. Strengthening strategic alliances through QUAD, BRICS, and Indo-Pacific ties will benefit India's global standing. However, it still has a long way to go in terms of being ready for the new dimension in the war arena; it must work on developing its naval capabilities, particularly its high-stealth submarines and deep water, while ensuring interoperability with other sectors to improve growth. India's air force and army are working to improve their systems so they can keep up internationally. In order to become a high-performance nation with enough computing capacity for improved battlefield readiness, security, and integrity, India must preserve its legacy and ethnicity while advancing technologically.

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