The Research Dialogue

An Online Quarterly Multi-Disciplinary Peer-Reviewed / Refereed Research Journal
ISSN: 2583-438X
Volume-04, Issue-02, July-2025
www.theresearchdialogue.com

"Artificial Intelligence and Innovation: Law and Ethics, An Indian Perspective"

Dr. Deepmala Srivastava

Assistant Professor
TRC Law College, Barabanki, UP
deepmalatrc@gmail.com

Abstract:

The rapid advancement of artificial intelligence (AI) has become a catalyst for innovation across various sectors, including healthcare, finance, and transportation. This evolution underscores the urgent need for robust legal and ethical frameworks to govern the development, deployment, and utilization of AI technologies. This paper investigates the complex interplay between AI, innovation, law, and ethics in the Indian context. It scrutinizes the primary legal and regulatory hurdles accompanying AI adoption, such as data protection, intellectual property rights, and liability issues. Additionally, it delves into the ethical considerations surrounding AI, including concerns about bias, transparency, fairness, and privacy. By analysing India's unique socio-cultural, economic, and legal landscape, this paper offers insights into the intricate ethical and regulatory challenges associated with AI innovation in the country. Moreover, it provides actionable recommendations for policymakers, industry stakeholders, and researchers to navigate the multifaceted domain of AI governance, promoting innovation that is both socially responsible and ethically sustainable.

Keywords- *Artificial Intelligence, human rights, legality, security.*

Introduction

The evolution and progress of human civilization have long been intertwined with its ability to adapt to new challenges and opportunities presented by groundbreaking technologies. From the discovery of fire to the present day, where countries worldwide are grappling with the implications of Artificial Intelligence (AI), the trajectory of human advancement has been marked by innovation. However, the current era of AI exploration stands in stark contrast to the AI winter of the 1970s and 1980s. This period, although not a novel concept within the scientific community, saw significant technological and theoretical developments between the 1950s and 1970s. Coined by John McCarthy in 1956, the term "AI" was explored by other notable figures in computer science such as Alan Turing, Vannevar Bush, and Marvin Minsky. During this time, the focus was on harnessing AI to create advanced machines that could enhance human life. Despite ambitious goals, the lack of tangible technological breakthroughs led to a decline in public and private investment in AI by the late 1980s, often referred to as the "AI winter" era. However, echoing Victor Hugo's sentiment about the power of an idea, the "AI spring" emerged in the 1990s and gained momentum in the post-2000 era. Advances in computing power, data storage capabilities, and the availability of high-quality digital data breathed new life into the concept of AI, sparking renewed interest and investment from both the public and private sectors. While many view AI with optimism, seeing it as a tool to improve and safeguard human lives, others express caution and raise concerns about its potential implications. As with any transformative technology, AI elicits a range of reactions, prompting debate and reflection on its role and impact on human civilization.

What is AI and it's Ethics?

AI, or Artificial Intelligence, is a field of computer science characterized by the development of technology capable of automatically detecting patterns in data and making predictions based on these patterns. Within the academic literature and popular discourse, AI is often described using various terms such as algorithmic profiling, automation, supervised or unsupervised machine learning, and deep neural networks. Broadly speaking, AI encompasses technology that can analyse data to identify correlations, which can then be used for tasks such as classification or prediction. There are two main categories of AI: narrow AI and general or broad AI. Narrow AI refers to applications designed to handle specific tasks, while general AI reflects the versatility of human intelligence to handle a wide range of tasks. In this report, the term AI specifically refers to narrow AI applications. AI has found numerous applications across

various domains, leading to complexity in its definition. Examples of AI applications include predictive analytics, such as recidivism prediction in criminal justice, predictive policing, risk forecasting in business and finance, and automated identification using facial recognition technology. Despite its potential benefits, the deployment of AI in different social domains has yielded mixed outcomes, with implications for areas such as insurance, finance, education, employment, marketing, governance, security, and policing.

At this early stage of AI development, the need for ethical standards has become increasingly prominent, alongside concerns about the adequacy of existing laws in governing AI. This issue has transitioned from theoretical debates to mainstream discourse, with governments and private entities worldwide formulating policies on AI ethics. Central to this discussion is the question of which ethical standards AI should adhere to, considering its transnational nature and the dominance of large geopolitical players in shaping regulations.

In the context of AI, ethics pertains to the reflection of moral principles within computer and engineering sciences engaged in AI research and development. It encompasses both fundamental ethics, concerned with abstract moral principles,and applied ethics, which includes AI ethics as a subcategory. Key areas of focus in AI ethics include research goals, funding, security of AI systems, responsibility in development and usage, and the alignment of technology with the common good. AI ethics also intersects with metaethics, examining the effectiveness of normative demands and their impact on organizational practices.

Ethical discourses in AI can range from proximity, with a direct impact on organizational decisions, to a more distant approach, which may have limited practical effect. Balancing normativity in AI ethics is crucial, as overly strong normative claims may provoke resistance, while weak normativity may fail to address underlying issues effectively. Effective AI ethics should exhibit two key traits: weak normativity, avoiding rigid prescriptions of right and wrong, and proximity to the field of AI research and development. This entails an interdisciplinary approach that actively engages with computer sciences and industry organizations, ensuring the relevance and practical applicability of ethical principles within AI development.

AI in India

India's approach to artificial intelligence (AI) is shaped by several national initiatives aimed at fostering digital empowerment and technological innovation. The Digital India

initiative seeks to propel India towards becoming a digitally empowered knowledge economy. Similarly, the Make in India campaign prioritizes the development and deployment of AI technologies originating from India. Additionally, the Smart Cities Mission underscores the integration of AI into urban development strategies. The government has made substantial investments in research, development, and training in emerging technologies, particularly in AI, reflecting its recognition of AI's potential as a socio-economic problem solver on a large scale.

In 2017, the Ministry of Commerce and Industry constituted an AI Task Force, which identified key sectors for AI deployment, including national security, financial technology, manufacturing, and agriculture. Moreover, the National Strategy for Artificial Intelligence, published in 2018 by Niti Aayog, positions AI as a driver of economic growth and social development, envisioning India as a hub for AI innovation. However, while these initiatives acknowledge ethical considerations, they largely overlook fundamental rights, fairness, inclusion, and the limitations of data-driven decision-making. Furthermore, the dominance of the private sector in these discussions marginalizes civil society and academia.

Private actors across various sectors, including manufacturing, healthcare, and finance, are increasingly utilizing AI technologies. However, the absence of comprehensive data protection legislation in India raises significant concerns regarding the processing and sharing of sensitive personal data. The current Personal Data Protection bill inadequately addresses the implications of inferred data, particularly pertinent in the context of machine learning applications. India's biometric identity project, Aadhaar, could potentially serve as a focal point for AI applications in the future, although proposals for facial recognition use remain nascent.

Despite the growing importance of ethical considerations, the Indian government has yet to establish a formal ethical framework or principles for AI. However, public attention to data protection laws is expected to spur the development of ethical guidelines. AI discussions in India are increasingly intertwined with data protection legislation, reflecting a broader global trend towards addressing ethical concerns in AI deployment.

IMPLIMANTATION OF AI TOOLS IN INDIA

The implementation of AI tools in India has been steadily increasing across various sectors, including healthcare, finance, agriculture, education, and more. Here are some notable examples and initiatives:

Healthcare Finance: AI is being used for disease diagnosis, personalized treatment plans, drug discovery, and remote patient monitoring. For instance, AI-powered platforms like SigTuple and Qure.ai are assisting healthcare professionals in interpreting medical images efficiently and accurately.AI is revolutionizing the finance sector by enabling fraud detection, algorithmic trading, risk management, and customer service automation. Companies like Paytm and Policy bazaar are integrating AI algorithms into their platforms for fraud prevention and personalized financial recommendations.

Agriculture & Education: AI is being utilized to improve crop yield, optimize resource usage, predict weather patterns, and offer precision agriculture solutions. Startups like CropIn and SatSure are leveraging AI to provide farmers with actionable insights for better decision-making.AI is transforming the education sector through adaptive learning platforms, personalized tutoring, and student performance analysis. Companies like BYJU'S and Vedantu are using AI algorithms to customize learning experiences for students and provide them with targeted educational content.

Smart Cities & E-Governance: AI is being deployed in urban planning, traffic management, waste management, and public safety initiatives. For example, the Smart Cities Mission launched by the Indian government aims to leverage AI and IoT technologies to enhance the efficiency of urban infrastructure and services.AI is being integrated into government services for streamlining processes, improving citizen services, and enhancing administrative efficiency. Initiatives like the National e-Governance Plan (NeGP) and the Digital India campaign are driving the adoption of AI tools in various government departments.

Language Processing: With India's linguistic diversity, natural language processing (NLP) technologies are gaining traction for regional language processing, sentiment analysis, and chatbot development. Companies like Haptik and Vernacular.ai are developing AI-powered chatbots and voice assistants tailored for Indian languages.

Startups and Incubators: India has seen a surge in AI startups and incubators fostering innovation in AI technology. Incubators like IIT Madras Incubation Cell and Startup India are providing support to AI startups, helping them develop and scale their solutions.

Skill Development: Initiatives like the National Programme on Artificial Intelligence (NPAI) and Skill India Mission are focused on building a skilled workforce in AI technologies through training programs, workshops, and curriculum development.

Overall, India is actively embracing AI technologies across various sectors, driven by both government initiatives and private sector innovation. With its vast talent pool and growing technological infrastructure, India is poised to play a significant role in the global AI landscape.

Pros and Cons of AI in India

Artificial Intelligence (AI) has sparked a global debate, with proponents touting its potential benefits and detractors raising concerns about its drawbacks. On the negative side, one of the primary worries is the potential displacement of human jobs by AI-driven automation, which could lead to widespread unemployment and economic disruption. Moreover, there are fears about AI being exploited by governments or corporations for malicious purposes, such as targeted propaganda or intrusive surveillance. Ethical concerns also loom large, particularly regarding issues of consciousness, free will, and responsibility as AI technology advances.

Despite these apprehensions, AI offers numerous advantages across various sectors. In healthcare, AI's ability to analyse vast amounts of medical data holds promise for personalized treatment plans and disease diagnosis. Similarly, in finance, AI algorithms can enhance decision-making processes and detect fraud, contributing to financial stability. Moreover, AI is revolutionizing manufacturing by optimizing production processes and predictive maintenance schedules, thereby improving efficiency, and reducing costs. In retail, AI-driven analytics enable personalized marketing strategies and supply chain optimization. Additionally, AI holds potential in transportation to optimize traffic flows, develop autonomous vehicles, and improve safety.

India has emerged as a significant player in the global AI landscape, with a thriving startup ecosystem and government support initiatives. The country hosts over 1,200 AI startups, focusing on diverse applications such as healthcare, finance, and transportation. The Indian government has launched the National AI Strategy, aiming to position India as an AI research and development leader by 2030. This strategy encompasses talent development, research promotion, and ethical framework establishment. The growing AI ecosystem is poised to contribute significantly to India's economy, with projections estimating a potential $957 billion addition by 2035.

However, alongside the opportunities AI presents, concerns about its impact on human rights have surfaced. Privacy violations are a major worry, as AI's data collection and analysis capabilities raise issues of government surveillance and personal freedoms. Instances such as facial recognition technology misuse in tracking individuals without

consent underscore these concerns. Moreover, China's social credit system, employing AI for citizen monitoring, has drawn criticism for privacy infringements and freedom restrictions. Balancing the benefits of AI with human rights protection remains a critical challenge for policymakers and stakeholders globally.

AI Ethics in India

India's inaugural national policy on Artificial Intelligence (AI) in 2018 prioritized the development of expert research institutions and established a task force to spearhead its objectives. The policy recommended the formation of a task force comprising representatives from the Ministry of Corporate Affairs and the Department of Industrial Policy and Promotion, to examine and propose amendments to intellectual property laws pertaining to AI. Additionally, it proposed the establishment of a standing committee or task force to assess and report on the potential changes in employment resulting from AI adoption. In response to these recommendations, the Ministry of Commerce and Industry formed a task force led by a Computer Science Professor from the Indian Institute of Technology Madras. The mandate of this task force is to integrate AI into India's economic, political, and legal frameworks, with the overarching goal of positioning India as a leader in AI-driven economies. Furthermore, sectoral regulators are actively engaging with AI-related business practices and their impact on specific sectors.

The examination of India's AI policies underscores a predominant focus on economic benefits derived from AI adoption, with comparatively less emphasis on establishing a robust legal and regulatory framework. Both India and other countries appear to rely on existing administrative, regulatory, and judicial structures to address future AI challenges. However, critics argue that without the establishment of an expert, independent regulator with a proactive approach, comprehensively understanding the socio-economic impacts of AI on employment, privacy, and various legal domains (such as intellectual property, competition, tort, family laws), as well as political institutions, may prove challenging. This lack of regulatory oversight could potentially exacerbate issues related to inequality and law enforcement in rapidly developing economies. Therefore, there is a pressing need to augment existing regulatory mechanisms with specialized oversight to effectively navigate the complexities posed by AI advancements.

AI in the Indian Law and legal profession

The Indian legal profession has historically evolved through various technological advancements, from typewriters to computers, and now it stands on the brink of embracing Artificial Intelligence (AI) as the next transformative tool. Despite being one

of the largest legal services markets globally, India's legal sector has been slow to digitize its operations. However, there is growing recognition of AI's potential to revolutionize legal work and enhance access to justice.

The AI Task Force Report initiated by the Ministry of Commerce and Industry, led by N. Chandrasekaran, aims to harness AI's benefits for India's economic and legal landscape. Despite some resistance due to the labour-intensive nature of the legal profession, tech-savvy lawyers and firms are increasingly leveraging AI to streamline their processes. For instance, Cyril Armarchand and Mangaldas have adopted AI-powered software like "Kira" for legal document analysis, demonstrating AI's practical applications in legal research and case analysis.

Current AI applications in law span various domains, including due diligence, prognostication technology, legal research, documentation, intellectual property analysis, and electronic billing. These AI tools enhance efficiency, speed, and accuracy in legal operations, making them indispensable for modern law firms. Furthermore, AI's integration into legal workflows is poised to reshape the future of law firms, characterized by innovative client service strategies, a focus on profitability, technology-driven growth, and an emphasis on brand value.

In the coming years, advanced law firms will prioritize client-centric innovations, such as performance-based pricing models, to deliver cost-effective legal solutions. They will also shift their focus from revenue growth to profitability and leverage AI-based technologies to improve efficiency and enhance brand value. Embracing AI will be essential for law firms to stay competitive, adapt to evolving client needs, and thrive in an increasingly tech-driven legal landscape.

Conclusion

Artificial Intelligence (AI) and innovation hold immense potential to revolutionize the legal landscape in India, as evidenced by the historical evolution of the legal profession and the increasing recognition of AI's benefits. Despite initial resistance, there is a growing acknowledgment of AI's capacity to enhance access to justice, streamline legal operations, and elevate client service standards. The government's commitment, as highlighted in the AI Task Force Report by the Ministry of Commerce and Industry, further emphasizes the significance of harnessing AI for India's economic and legal sectors. While traditionalists may harbour reservations, forward-thinking lawyers and firms are embracing AI to gain a competitive advantage. Current AI applications span various legal domains, including due diligence, legal research, and intellectual property

analysis, offering increased efficiency and accuracy. Moving forward, advanced law firms will prioritize client-centric innovations and profitability, leveraging AI-driven technologies to deliver cost-effective solutions and enhance brand value. However, as AI adoption progresses, addressing ethical and regulatory concerns is paramount to ensure responsible and equitable AI utilization in the legal domain. Through ethical and innovative AI integration, India can leverage AI's transformative potential to advance law, ethics, and justice in society.

References

- Nils J. Nilsson, The Quest for Artificial Intelligence: A History of Ideas and Achievements, Cambridge University Press, UK, 2010.
- Thompson, A. (2020). Clearview AI's facial recognition tech has been used by the Justice Department, ICE, Macy's, Walmart, and the NBA. Here's what you need to know about the tech that could upend our sense of privacy. Business Insider. https://www.businessinsider.com/clearview-ai-jeff-sessions-ice-contract-databaseprivacy-2020-2
- John McCarthy, Father of AI, a cognitive scientist coined the term AI in the 1956 Dartmouth Conference, the first artificial intelligence conference.
- Dadhich, A. (2018). A Critical View of Laws and Regulations of Artificial Intelligence in India and China. Kathmandu Sch. L. Rev., 6, 1.
- AI can be great supporting technology to solve challenges in education, health, environment, economic growth, Social/elder care etc; 'Artificial intelligence: the next digital frontier?', The Mckinsey Global Institute (MGI) (June 2017) available at www.mckinsey.com/mgi/overview/2017-in-review/whats-next-in-digitaland-ai/artificial-intelligence-the-next-digital-frontier accessed 1 October 2018.
- Elon Musk, 'With artificial intelligence, we are summoning the demon', MIT Aeronautics and Astronautics Department's 2014 Centennial Symposium, 24 October 2014 available at https://techcrunch.com/2014/10/26/ elon-musk-compares-building-artificial-intelligence-to-summoning-the-demon/ accessed on 1 October 2018; Stephen Hawking, 'AI could be 'worst event in the history of our civilization', Web Summit technology conference, Lisbon, Portugal, 17 November 2017 available at https://www.cnbc.com/2017/11/06/stephenhawking-ai-could-be-worst-event-in-civilization.html accessed on 1 October 2018.
- Thompson, A. (2020). Clearview AI's facial recognition tech has been used by the Justice Department, ICE, Macy's, Walmart, and the NBA. Here's what you need to know about the tech that could upend our sense of privacy. Business Insider.

https://www.businessinsider.com/clearview-ai-jeff-sessions-ice-contract-databaseprivacy-2020-2

- Discussion Paper National Strategy for Artificial Intelligence, Niti Aayog, June 2018 http://niti.gov.in/ writereaddata/files/document_publication/NationalStrategy-for-AI-Discussion-Paper.pdf accessed on 1 October 2018.
- The Director-General of Civil Aviation released its regulation policy for commercial use of AIsupported drones in Aug 2018. Ministry of Civil Aviation, 'Government announces Regulations for Drones', PIB Delhi, 27 August 2018 available at https://pib.nic.in/PressReleaseIframePage. aspx?PRID=1544087 accessed on 5 October 2018. The Indian Antitrust Regulator decides to assess AI algorithms used by domestic airlines for ticket pricing; PTI, 'CCI lens on algorithms used for air ticket prices', 11 May 2018 available athttp://timesofindia.indiatimes.com/articleshow/64122441.cms?utm_source= contentofinterest&utm_medium=text&utm_ campaign=cppst accessed on 5 October 2018.
- Russell, S. (2020). Human Compatible: Artificial Intelligence and the Problem of Control.
- Naik, D. (2023) Exploring the Pros and Cons of Artificial Intelligence (AI): Implications for Human Rights and Artificial Intelligence Development in India. https://ijrcs.org/wp-content/uploads/IJRCS202303021
- Russell, S. J., & Norvig, P. (2010). Artificial Intelligence: A Modern Approach. Pearson.
- Task force set up to study AI application in military | Technology News - The Indian Express
- Role of artificial intelligence in law - iPleaders
- The Director-General of Civil Aviation released its regulation policy for commercial use of AIsupported drones in Aug 2018. Ministry of Civil Aviation, 'Government announces Regulations for Drones', PIB Delhi, 27 August 2018 available at https://pib.nic.in/PressReleaseIframePage. aspx?PRID=1544087 accessed on 5 October 2018. The Indian Antitrust Regulator decides to assess AI algorithms used by domestic airlines for ticket pricing; PTI, 'CCI lens on algorithms used for air ticket prices', 11 May 2018 available athttp://timesofindia.indiatimes. com/articleshow/64122441.cms?utm_source=contentofinterest&utm_medium= text&utm_ campaign=cppst accessed on 5 October 2018.

Cite this Article:

Dr. Deepmala Srivastava, "Artificial Intelligence and Innovation: Law and Ethics, An Indian Perspective" *The Research Dialogue,* An Online Quarterly Multi-Disciplinary Peer-Reviewed & Refereed National Research Journal, *ISSN: 2583-438X (Online), Volume 4, Issue 2, pp.144-154, July 2025. Journal URL: https://theresearchdialogue.com/*

THE RESEARCH DIALOGUE

An Online Quarterly Multi-Disciplinary
Peer-Reviewed & Refereed National Research Journal
ISSN: 2583-438X
Volume-04, Issue-02, July-2025
www.theresearchdialogue.com
Certificate Number July-2025/14
Impact Factor (RPRI-4.73)

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"Artificial Intelligence and Innovation: Law and Ethics, An Indian Perspective"

Published in 'The Research Dialogue' Peer-Reviewed / Refereed Research Journal and
E-ISSN: 2583-438X, Volume-04, Issue-02, Month July, Year-2025.

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