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From the Editor's Desk

At the outset, I take this opportunity to express my sincere gratitude to all the Editorial Board Members, Editors, Peer Review Members, contributors, and readers for making ***Cyber Times International Journal of Technology & Management*** an outstanding success. Their unwavering support, dedication, and commitment to academic excellence have significantly contributed to the growth and reputation of the journal.

We are pleased to present **Volume 19 – Issue 01** of ***Cyber Times International Journal of Technology & Management***. This issue features a collection of high-quality research papers and scholarly articles that reflect contemporary developments, innovative ideas, and critical insights across emerging areas of Technology, Management, Law, Education, and other multidisciplinary domains. The diversity of topics covered in this issue highlights the increasing importance of interdisciplinary research in addressing global challenges and opportunities.

The overwhelming response received from researchers, authors, academicians, law-enforcement agencies, and industry professionals for submitting their research papers and articles is deeply appreciated and duly acknowledged across the globe. Their valuable contributions have enriched the journal's content and strengthened its role as a platform for disseminating knowledge, fostering innovation, and encouraging scholarly dialogue among academia, industry, and society.

On behalf of the Editorial Team, I extend my heartfelt thanks to all authors for their valuable research contributions and to our reviewers for their constructive evaluations that help maintain the highest standards of publication quality. We hope that the research published in this issue will inspire further inquiry, collaboration, and advancement in various fields of study, while continuing to serve as a meaningful resource for our readers worldwide.

We look forward to receive your valuable and future contributions to make this journal a joint endeavor.

With Warm Regards,



Dr. ANUP GIRDHAR

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"ARTIFICIAL INTELLIGENCE AND LEGAL PERSONHOOD: A STUDY OF SOCIO-LEGAL IMPLICATIONS IN INDIA"

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ABSTRACT

The accelerating development of Artificial Intelligence (AI) and Machine Learning (ML) has significantly reshaped various sectors, raising complex legal, ethical, and social questions particularly concerning the status, responsibility, and potential rights of intelligent autonomous systems. This research paper explores the concept of granting legal personhood to AI within the Indian legal framework. It delves into the historical evolution, definition, and major branches of AI while critically examining its increasing integration into sectors like governance, healthcare, and employment. While countries around the world are starting to discuss and act on the idea of giving legal status to AI such as Saudi Arabia giving citizenship to the robot Sophia in 2017. India still does not have clear laws to define the identity or responsibility of AI systems. This study evaluates the current Indian statutory provisions, constitutional mandates, and policy instruments in addressing the legal implications of AI, and undertakes a comparative analysis with global legal approaches. This research paper explores the social and legal aspects of AI governance in India, aims to recommend forward-looking legislative and regulatory strategies to ensure responsible innovation and legal clarity in the governance of AI technologies in India.

KEYWORDS: *Artificial Intelligence, Intelligent autonomous systems, Socio-Legal Implications*

INTRODUCTION

The world is transforming as a result of accelerating technological advancement. Artificial Intelligence (AI) and Machine Learning (ML), in particular, have advanced considerably in the evolution of technologies. However, this advancement has also brought up several new issues about AI management, ownership, responsibility, and representation. And these problems have led us to the critical decision of whether to grant AI systems legal validity.[1]

Artificial intelligence is a significant technical advancement on a global level.

The concept of artificial intelligence is not new to India; hence, it has also found its way into the Indian market. AI refers to the ability of machines to carry out brain functions like thinking, perception, learning, and decision-making. Over time, artificial intelligence has developed significantly. Intelligent systems can now be used to take over a variety of jobs, enable communication, and enhance productivity thanks to remarkable advancements in data collecting, processing, and computation power. AI has the ability to enter a wide range of societal activities, including government, education, employment, and the health and human services sectors. AI's

utility in a growing variety of disciplines has increased dramatically along with its capabilities. [2]

John McCarthy the father of Artificial Intelligence described AI as, “The science and engineering of making intelligent machines, especially intelligent computer programs.”

Science's field of artificial intelligence (AI) is concerned with giving machines (robots) the ability to solve complicated issues in a more human-like manner. Usually, this entails taking aspects of human intelligence and applying them as computer-friendly algorithms. Depending on the defined needs, a more or less flexible or effective technique can be used, which affects how artificial the intelligent behaviour seems. [3] Every human being is given certain fundamental rights, known as human rights, which are enshrined in numerous national and international laws. There are two kinds of rights natural and legal rights. Natural rights are recognized by human beings, whereas Legal or judicial rights are rights granted by law. AI is fast reaching a stage where many of the tasks performed by humans can be done by robots due to advances in artificial intelligence (AI).

Presently, due to the advancement of artificial intelligence, several human-related tasks can be performed by artificial-based technology like expert systems, robots, machine learning, Neural Network, etc. In the year 2017, Saudi Arabia was the first country which grants citizenship to a humanoid robot. Thus the question arises whether a robot can be granted citizenship of a country. Although the action has drawn criticism for a number of social and ethical grounds, it undoubtedly highlights an important issue in the modern period where artificial intelligence is developing at an increased rate.

As far as India is concerned, the penetration level of artificial intelligence remains low, but is steadily expected to increase over a period of time. Presently, in India, there are lots of sectors where AI techniques are used. But granting legal personhood to such AI-

based technology creates many ethical questions. India has not yet recognized personhood rights of entities comprising artificial intelligence, and no relevant laws exist there either.

So, the question arises in India whether it is possible to give legal rights to AI technology like robots? In India, as per the Constitution of India and the Citizenship Act, 1955, only “persons” are capable of having citizenship. But considering the existing and expected development of artificial intelligence and robotics and worldwide development in the field of AI, experts have considered the necessity of granting personhood status to robots in order to address issues relating to their rights and liabilities. The lack of personhood causes difficulty in determining liability in case of damage. But still, in India, this question is unanswered due to insufficient rules in this area. Under the legal system, judicial legal status has been provided to corporations, religious entities, governmental and intergovernmental entities, etc. As per some scholars, such status can also be provided for robotics and for emerging AI systems.

This research endeavors to examine the socio-legal implications of granting legal personhood to Artificial Intelligence (AI) within the Indian legal framework. It explores the meaning, definition, historical evolution, and major branches of AI, providing a comprehensive foundation for legal analysis. The study also analyzes the existing laws in India that relate to AI, assessing their adequacy in addressing the challenges posed by intelligent systems. A central focus is placed on the concept of legal personhood for AI, with a balanced evaluation of the arguments both in favour of and against such recognition. Furthermore, the research investigates the broader impact of recognizing AI as a legal person on societal norms, individual rights, and the structural integrity of the legal system. By integrating these dimensions, the study aims to contribute meaningfully to the

ongoing debate surrounding AI and legal reform in India.

Meaning and Definition of Artificial Intelligence (AI)

Artificial Intelligence (AI) means creating computer systems that can perform things which normally done by humans, like thinking, learning, understanding language, and making decisions. Presently AI is used in many sectors like healthcare, education, shopping, and transport, making our lives easier and more connected.

Artificial Intelligence (AI) is a branch of computer science focused on developing machines that can think and act like humans. This means they can learn from experience, understand language, recognize patterns, solve problems, and even make decisions independently. We see AI everywhere today, such as in self-driving cars, voice assistants (like Alexa or Siri), and recommendation systems on platforms like YouTube or Netflix. As technology continues to improve, AI becomes an increasingly significant part of our daily lives. [4]

Advancements in artificial intelligence (AI) techniques have not only significantly improved efficiency across various domains but have also created entirely new business opportunities, particularly for large enterprises. A notable example is Uber, which capitalized on AI-driven systems to connect riders with taxis on demand—an innovation that would have seemed unlikely prior to the current wave of AI development. As a result, Uber has grown into a Fortune 500 company. AI now plays a central role in the strategies and operations of many of today's most prominent and successful corporations, including Alphabet, Apple, Microsoft, and Meta. These companies employ AI technologies to optimize their processes and maintain a

competitive advantage. Within Alphabet, for example, AI is integral to Google's search engine, and its self-driving vehicle company, Waymo, originated as an internal division. Furthermore, Alphabet's Google Brain research lab developed the transformer architecture, a foundational breakthrough in natural language processing (NLP) that underlies recent innovations such as Open AI's, Chat GPT. [5]

History and Development of AI

In recent years, the field of Artificial Intelligence (AI) has experienced rapid growth and significant transformation. However, the idea behind AI is not new. The concept of creating machines that can think, learn, and act like humans has existed for many decades, even before the invention of modern computers. It began as a vision among scientists, mathematicians, and philosophers who imagined building intelligent machines capable of mimicking human reasoning and behavior. Over time, this vision developed into a formal field of study, leading to the creation of smart systems that now influence many aspects of our daily lives.

Artificial Intelligence (AI) has made remarkable advancements and is now applied across a wide range of sectors. These intelligent systems are capable of performing tasks that resemble human cognitive functions. They can learn from data, understand information, and make informed decisions. A clear understanding of the various components of AI is essential to appreciate how it addresses real-world challenges. One of the most prominent techniques is machine learning, a subfield of AI that enables systems to improve their performance over time by learning from past data and experiences, without the need for explicit programming for each task.

Main Branches of AI

Artificial Intelligence (AI) is a broad and dynamic field that encompasses several key

branches, each focusing on different aspects of making machines intelligent.

The seven main branches of AI include: [6]

1. Computer vision is currently one of the most popular branches of artificial intelligence, aimed at enabling computers to see and understand digital images and videos. By applying machine learning models to visual data, systems can identify objects, faces, people, and animals, learning to distinguish between different images through contextual understanding. Computer vision has diverse applications across multiple industries, enhancing machine capabilities in interpreting and acting on visual data. Key use cases include object tracking, which involves monitoring the movement of identified objects; image classification, where images are categorized based on learned features; and facial recognition, commonly used in smart phones for secure access by mapping and matching facial characteristics. These applications demonstrate the practical impact of computer vision in areas such as surveillance, healthcare, automotive technology, and consumer electronics.

2. Fuzzy logic is a branch of artificial intelligence designed to handle uncertainty and approximate reasoning, much like human decision-making. Unlike traditional binary logic that operates strictly with true or false values, fuzzy logic allows for varying degrees of truth. It evaluates how much a statement is true, rather than treating it as simply true or false, making it especially useful for dealing with vague or imprecise information. This approach is often applied in situations where decisions must be made based on partial or uncertain data. The architecture of a fuzzy logic system typically includes four components: a rule base containing if-then rules; a fuzzification module that converts input data into fuzzy values; an inference engine that applies logical reasoning to determine

the relevance of rules; and a defuzzification process that translates fuzzy outputs into precise, actionable values.

Fuzzy logic has practical applications in various industries. For example, automotive companies like Nissan use it in their braking systems to respond to dynamic driving conditions, taking into account factors such as vehicle speed, acceleration, and wheel motion to enhance safety.

3. Expert System: An expert system is a computer program designed to focus on one specific task, much like a human expert in that area. These systems are built to tackle complex problems by making decisions in a way that resembles human thinking. Expert systems first came into use in the 1970s and played a major role in the early success of artificial intelligence. One well-known example is CaDeT, a system that supports doctors by helping detect cancer at early stages.

4. Robotic: Robotics refers to the field of creating machines called robots that can perform a series of tasks on their own. These robots can either be controlled by people using external devices or have built-in systems that allow them to function independently. Robots are especially useful for doing boring, repetitive, or difficult tasks that humans would rather avoid. When powered by artificial intelligence, robots become even smarter and more helpful for example, assisting space agencies like NASA in exploring outer space. One of the most advanced types of robots today is the humanoid robot, designed to look and act like a human. A well-known example is Sophia, created by Hanson Robotics. With the help of AI and neural networks, Sophia can recognize faces, understand human emotions and gestures, and even hold conversations.

We also see robotics being used in everyday life across many areas like manufacturing,

healthcare, and retail, making our work faster and more efficient.

5. Machine learning is a key area of artificial intelligence that allows machines to learn and improve automatically from data and past experiences, without being explicitly programmed. Instead of following fixed instructions, machine learning enables systems to analyze patterns, make decisions, and get better over time. The learning process begins by collecting historical data such as examples, instructions, or real-world experiences and using this information to build models that guide future decisions. The accuracy of a machine's output largely depends on the quality and quantity of data it receives; the more data it processes, the more accurate and effective its predictions become. The machine performs actions and learns from the feedback it receives, rewarding correct decisions and adjusting after mistakes. Through this continuous process, machines learn to choose actions that yield the best outcomes over time.

6. Neural networks, or artificial neural networks (ANNs), are a key part of deep learning, modelled after the way the human brain works. They consist of layers of connected nodes, input, hidden, and output layers where each node (or artificial neuron) processes and passes information forward. Each node has a weight and a threshold; if the input exceeds the threshold, the node activates and sends data to the next layer. Neural networks learn and improve through training on large datasets, enabling them to recognize patterns and make accurate predictions.

7. Natural Language Processing (NLP) is a branch of AI that enables computers to understand and interpret human language both spoken and written much like people do. By combining machine learning, linguistics, and deep learning, NLP helps systems grasp meaning, intent, and emotion from language data. In speech recognition, for example, NLP

converts voice into text, even when people speak with different tones, accents, or emphasis making it a complex task. To do this effectively, computers must be trained to understand language from the ground up.

Common uses of NLP include virtual chatbots, which learn to give better responses over time; spam detection, which filters harmful or irrelevant messages by analyzing language patterns; and sentiment analysis, which interprets public opinions and emotions from platforms like social media.

Laws Relating To AI in India [7]

Artificial Intelligence (AI) technologies have introduced transformative changes across various sectors and are now emerging as a key global force. To ensure the development and deployment of AI aligns with national interests, particularly in terms of privacy policies, data protection, and cyber security, it is imperative to establish robust legal frameworks, regulations, and ethical guidelines. Although India has not yet enacted legislation specifically dedicated to AI, existing legal instruments such as the Information Technology Act, 2000, and the Digital Personal Data Protection Act, 2023 currently provide essential regulatory oversight in this domain. However, the rapid evolution and application of AI necessitate the formulation of comprehensive and specialized laws to govern its use effectively.

At present, the following legal frameworks operate concerning AI in India:

I. Information Technology Act, 2000 (IT Act)

The Information Technology Act, 2000, is India's primary law governing digital activities, including online transactions, cyber security, and electronic governance. This Act does not directly deal with AI, but some of its provisions apply to AI. These provisions are as follows:

i. **Section 43A:** This section says that if someone mishandles sensitive personal data and causes harm, they must pay compensation. So, if AI systems collect or process personal data, they must handle it carefully and responsibly.

ii. **Section 66D:** this deal with cheating or impersonation using digital means. It's especially important in cases where AI is used to create deepfakes or fake messages to trick people.

iii. **Section 67:** This section prohibits sharing obscene or offensive material online. AI tools that can generate or spread harmful content could fall under this rule.

Justice K.S. Puttaswamy v. Union of India (2017) 10 SCC 1

The Supreme Court of India recognised the right to privacy as a fundamental right under the Indian Constitution. Although not directly related to AI, this judgment sets a precedent for protecting personal data, which is crucial for AI systems that often process sensitive information.

II. Digital Personal Data Protection Act, 2023 – In Simple Terms

In India, on August 11, 2023, the Digital Personal Data Protection Act, 2023, became a comprehensive law for protecting people's personal data. It establishes clear rules about how personal information can be collected, stored, used, and shared, which is especially important in today's world where AI systems handle large amounts of data. Here are the key highlights of the Act, explained simply:

a. **Data Protection Principles:** Before collecting or using anyone's personal data, platforms including AI-based ones must clearly ask for and get the user's permission. Users should also have the right to know how their data is being used and the ability to take back their consent at any time.

b. **Data Localisation:** For certain types of sensitive personal data, the law says it must be stored within the country. This affects how AI systems work, especially those that send or process data across borders.

c. **Mandatory Reporting of Data Breaches:** If there's a data leak or breach, companies using AI must inform the authorities quickly. This helps maintain responsibility and gives people more control over their personal data.

III. The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:

commonly known as the IT Rules 2021, laid down important rules for online platforms like social media, digital news websites, and OTT services. These rules require such platforms to make sure that no illegal or harmful content is shared through them. This becomes especially important when using AI systems that create content such as deep fakes or auto-generated videos, because they can spread false or harmful material.

Rule 3(1)(b) clearly states that users should not be allowed to post content that is grossly harmful, harassing, or defamatory. If an AI-powered platform fails to control such content, it may lose its legal protection as an "intermediary" and could face serious legal consequences.

IV. The Draft National Data Governance Framework Policy (NDGFP),

released in May 2022, aims to strengthen India's data governance and support AI and data-driven innovation. It proposes creating a central repository of quality datasets that researchers and start-ups can use to train AI models. This policy is important because access to clean, reliable data is key to building accurate and effective AI systems. By improving data availability, the policy helps boost AI research and development in India.

V. National Strategy for Artificial Intelligence (2018)

The National Strategy for Artificial Intelligence (2018), launched by NITI Aayog, was India's first major step toward inclusive AI development, guided by the vision of AI For All. It identified five focus areas: Healthcare, Agriculture, Education, Smart Cities, and Transportation. The strategy aimed to boost AI by improving access to quality data, strengthening research, and developing laws for data protection and cyber security. Its goal was to support innovation while ensuring AI is used responsibly and ethically.

International Collaboration and Investments:

India actively participates in the Global Partnership on Artificial Intelligence (GPAI), which promotes the responsible and ethical use of AI worldwide. At the 2023 GPAI Summit held in New Delhi, key topics like responsible AI, data governance, and the future of work were discussed. The summit highlighted India's strong commitment to ethical AI practices that align with global standards, including the OECD AI Principles.

Artificial Intelligence and Legal Personhood

Legal Personhood - Meaning

The concept of legal personhood dates back to Roman law, where it served to identify who could hold rights, duties, and legal responsibilities. Over time, this idea has evolved, distinguishing between natural person human beings who inherently possess legal rights and legal persons, which are non-human entities like corporations that the law recognizes as capable of acting within the legal system. Legal persons can own property, enter into contracts, sue or be sued, and be held liable, allowing complex

institutions to function efficiently in legal and economic contexts. In recent years, legal personhood has also been extended to elements of nature, such as rivers and forests, reflecting a growing recognition of environmental rights. For example, the Whanganui River in New Zealand and the Ganga and Yamuna rivers in India have been granted legal person status, marking a shift toward more inclusive and ecologically conscious legal thinking. [8]

Artificial Intelligence (AI) is increasingly becoming a part of everyday life, with ongoing efforts by scientists to develop systems capable of independent thinking and autonomous actions. As human interaction with these intelligent systems grows, important legal questions are beginning to emerge for instance, who should be held accountable if an AI system causes harm or engages in unlawful conduct. Addressing such challenges requires our legal framework to evolve alongside technological advancements. One suggested approach is to assign a distinct legal status or limited legal personality to AI systems, particularly those with autonomous decision-making capabilities. Recognising AI in this way could help establish a clear basis for assigning responsibility, ensuring better regulation and reducing the legal uncertainties associated with its widespread use in society.

Legal personhood generally means that an individual or entity has rights and responsibilities recognized by law. While this status is often extended to nonhuman entities like corporations, it has not always been applied equally to all human beings. Throughout history, many marginalized groups have been denied legal personhood. For example, under the Anglo-American common law principle of coverture, married women were not treated as separate legal individuals; instead, their legal identity was merged with that of their husbands until the late 19th century. Similarly, in the 1857 Dred Scott decision, the U.S. Supreme

Court ruled that enslaved people were not entitled to legal personhood and were instead considered property. People with disabilities have also faced denial of personhood, as seen in the 1927 case of *Buck v. Bell*, where the Supreme Court upheld the forced sterilization of individuals with disabilities as part of a eugenics policy. These examples show that legal personhood has often been shaped by social and political power rather than fairness or equality. [9]

The concept of legal personality refers to the ability of an entity to hold rights and obligations and to define its own legal status. Over time, this idea has evolved beyond just human beings to include collective entities such as states, corporations, and other organizations formed by individuals with shared interests. These are known as "artificial" or "legal persons." Although created and operated by real people like government officials or business owners, legal persons are treated as separate entities in the eyes of the law. This separation did not emerge overnight but developed gradually through the evolution of abstract legal thinking. While in everyday language, the term "person" usually refers only to living human beings, in legal terms, "personhood" extends beyond humans and can include organizations and institutions that the law recognizes as capable of bearing rights and duties. When an entity is granted legal personality, it inherently acquires certain rights and obligations. A fundamental feature of legal personality is the capacity to sue and be sued, hold property in its own name, and enjoy various immunities and protections as recognized by the court of law. [10]

Human rights are inalienable and inherent to all human beings by virtue of their humanity. These rights are bestowed upon individuals from birth. They are often associated with key attributes such as consciousness, free will, and rationality. It is widely accepted that human beings are conscious of their existence, exercise

autonomy in decision-making, and are regarded as rational agents. Advocates for granting legal personality to artificial intelligence argue that AI entities also exhibit these very attributes, thereby justifying the extension of certain rights or legal status to them. [10]

Arguments In Favour of Granting Legal Personhood to AI [11]

In recent years, the legal recognition of various forms of artificial intelligence such as drones, autonomous vehicles, and humanoid robots like Sophia (which was even granted citizenship by Saudi Arabia) has become a subject of intense global debate. This growing discourse underscores the need for a thorough examination of the arguments supporting the extension of legal recognition to AI entities.

i. Fixation of Responsibility & Accountability in AI: Artificial Intelligence (AI) systems are becoming more advanced and independent, raising serious questions about who should be held responsible for their actions. Just like corporations are treated as legal persons to limit individual liability and promote business, giving AI legal personality could help clearly assign responsibility for its actions.

For instance, AI is now being used in areas like smart policing, criminal justice, and border security. As AI begins to act beyond its original programming or developer's intention, current laws unfairly hold developers or users accountable—even if they didn't intend the outcome.

ii. Legal Recognition and Empowerment: One of the key arguments in favour of granting legal recognition to Artificial Intelligence (AI) draws parallels with the historical struggles of marginalized groups, such as women and individuals from lower castes, who were once denied full legal personhood and rights, including the right to vote. Legal recognition was a

crucial step toward their social acceptance and empowerment. Similarly, the recognition of AI particularly Artificial General Intelligence (AGI) and other forms of non-biological intelligence (NBI)—could pave the way for a more ethically responsible and socially adaptive legal framework. While the primary aim of law is to safeguard human welfare, it is not necessary that only human beings should be its subjects. As AI systems increasingly integrate into society and influence human lives, it becomes imperative to develop a legally supported set of guidelines for their treatment and regulation. Failing to do so may amount to neglecting our moral responsibility to govern entities that have become integral to the fabric of modern society.

iii. AI fulfils criteria for legal recognition: Many experts argue that Artificial Intelligence (AI) is capable of fulfilling the conditions required for legal recognition. AI systems can identify disruptions or malfunctions in their operations, which shows an ability to recognize harm. Based on this, it is suggested that AI should be granted legal status to ensure its protection and fair treatment especially as it continues to play a growing role in modern society.

iv. AI and Intellectual Property (IP): Artificial Intelligence is no longer just a tool it's becoming a creator. From writing articles and composing music to painting artwork, AI systems are now producing original content that holds real value. This shift has sparked important legal debates around intellectual property: Should AI-generated works be protected? And if so, who should own them?

In 2019, a Chinese court made headlines by ruling that an article written by an AI algorithm could not be copied without permission, highlighting the need to protect creative investments. A few months later, the European Parliament echoed this

sentiment, suggesting that AI-created works could be treated on par with human creations for copyright protection.

While copyright law focuses on who should own AI-generated works, patent law raises a deeper question can inventions made by AI be owned at all? As AI continues to shape our creative world, the law must evolve to keep pace.

Arguments Against of Granting Legal Personhood to AI [12]

There are several concerns raised against extending legal personhood to AI entities, particularly robots. Critics argue that doing so could lead to significant practical challenges in enforcement and accountability. Moreover, it is emphasized that legal personhood should only be granted when it aligns with the foundational principles and coherence of the legal system. The following are key arguments commonly advanced against recognizing AI entities as legal persons:

i. Misuse of Legal Personhood by AI and Developers: Courts have said that if something is given legal personhood, it should also have legal rights and duties. If we give this status to AI, it might start affecting the rights of humans and other legal persons. Some experts suggest that AI should have legal responsibilities, but this only makes sense if they can be held accountable for their actions. The problem is, AI systems like robots cannot truly be held responsible. Even the U.S. Department of Defense has admitted that robotic weapons are not legal agents. This opens the door for misuse, both by AI systems and the people who create or control them.

ii. AI Entities as Shields: There is a growing concern that humans may exploit the legal personality of AI entities as a shield to serve their own selfish purposes while escaping accountability. Although the law does provide tools such as the doctrine of "lifting the corporate veil" to trace actions

back to the real individuals responsible, such remedies are not always accessible or effective. For example, in the Cayuga Indians case, the arbitrators were explicitly allowed to apply equitable principles because the treaty that governed the dispute included equity as part of the applicable law. However, in legal systems where equity or similar doctrines are not recognized, courts and arbitrators may be unable to look beyond the AI's legal identity. In such cases, the human factors behind the AI remain hidden, and justice may not reach those truly accountable for the harm caused.

iii. AI Entities as Unaccountable Rights Violators: Advanced automatic and semi-automatic AI systems with self-learning capabilities pose serious legal and ethical challenges. Granting legal rights to such AI entities without simultaneously ensuring that they bear legal responsibilities could make the situation worse. This imbalance could lead to ongoing conflicts between human rights and AI rights.

This conflict might be manageable if the following conditions are addressed:

- a. Issues related to legal personality, such as legal standing and access to dispute resolution mechanisms, are properly resolved.
- b. Electronic legal persons (AI entities) are financially solvent or otherwise accountable for any violations of rights. However, even if these issues are theoretically resolved, practical problems still remain.

From the above arguments, it becomes evident that it is theoretically possible to declare AI entities as legal persons. However, the real issue lies in the fact that conferring legal personality on AI entities is “morally unnecessary and legally troublesome.

CONCLUSION

The debate around granting legal personhood to artificial intelligence is both timely and complex. As AI continues to perform tasks that were once exclusive to humans such as creating art, making decisions, and interacting autonomously it challenges traditional legal frameworks that distinguish between natural and artificial entities. Granting AI legal personhood could help establish clearer accountability and responsibility, especially in cases of harm, intellectual property, or autonomous decision-making. However, doing so prematurely could also result in misuse, legal ambiguity, and the potential shielding of human developers or corporations from liability. AI systems, unlike humans, lack consciousness, emotion, and moral reasoning qualities that are often central to the concept of personhood. Therefore, while AI may deserve legal recognition in certain functional or limited contexts such as being treated like a corporation for liability purposes, full legal personhood may not be appropriate or necessary at this stage of development.

Instead of granting full legal personhood to AI, what is urgently needed is a carefully crafted legal framework that acknowledges the unique capabilities and limitations of AI systems while firmly safeguarding human interests. Such a framework must strike a balance between encouraging innovation and ensuring accountability, with clear boundaries that preserve human beings as the primary bearers of rights and responsibilities. In conclusion, the future does not lie in granting legal personhood to AI, but in formulating adaptive, transparent, and ethically robust legal frameworks. These should recognize AI's increasing societal influence, provide for robust accountability structures, prevent potential misuse, and most importantly, uphold human dignity and legal certainty as the foundation of any regulatory approach.

REFERENCES

- [1] Legal personhood of artificial intelligence system. (2020, December 22). Prime Legal. <https://blog.primelegal.in/legal-personhood-of-artificial-intelligence-system>
- [2] Koola, S. J. (2022). *Legal regulation on artificial intelligence in India: A human rights perspective*. *International Journal of Law Management & Humanities*, 5(2), 1992–2005. <https://www.ijlmh.com/wp-content/uploads/Legal-Regulation-on-Artificial-Intelligence-in-India.pdf>
- [3] University of Mumbai. (n.d.). *Introduction to artificial intelligence*. https://mu.ac.in/wp-content/uploads/2014/04/Artificial-Intelligent-subjectM.SC_IT-Part-2-pdf
- [4] University of Illinois Chicago. (n.d.). *AI (artificial intelligence): What is the definition of AI and how does AI work?* UIC College of Engineering. <https://meng.uic.edu/news-stories/ai-artificial-intelligence-what-is-the-definition-of-ai-and-how-does-ai-work/>
- [5] Craig, L., Laskowski, N., & Tucci, L. (2024, October 1). *What is AI (artificial intelligence)? Definition, types, examples & use cases*. TechTarget. <https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence>
- [6] Garanhel, M. (2023, March 22). *What are the top 7 branches of artificial intelligence?* AI Accelerator Institute. <https://www.aiacceleratorinstitute.com/what-are-the-top-7-branches-of-artificial-intelligence/>
- [7] Agrawal, A. (2024, October 15). *AI laws in India*. LawBhoomi. <https://lawbhoomi.com/ai-laws-in-india/>
- [8] Lovell, J. J. (2024). Legal aspects of artificial intelligence personhood: Exploring the possibility of granting legal personhood to advanced AI systems and the implications for liability, rights and responsibilities. *International Journal of Artificial Intelligence and Machine Learning*, 4(2), 23–40. <https://doi.org/10.51483/IJAIML.4.2.2024.23-40>
- [9] Matthias, M. (n.d.). *Legal personhood*. In *Encyclopædia Britannica*. <https://www.britannica.com/topic/legal-personhood>
- [10] Sangam, S. (2020). Legal personality for artificial intelligence with special reference to robot: A critical appraisal. *Indian Journal of Law and Human Behavior*, 6(1), 11–17. <https://doi.org/10.21088/ijlhb.2454.7107.6120.2>
- [11] Center for Human Security Studies. (2021, December 6). *ARTIFICIAL INTELLIGENCE: A debate for granting legal personhood*. AI for Human Security. <https://chss.org.in/artificial-intelligence-a-debate-for-granting-legal-personhood/>
- [12] Lovell, J. J. (2024). Legal aspects of artificial intelligence personhood: Exploring the possibility of granting legal personhood to advanced AI systems and the implications for liability, rights and responsibilities. *International Journal of Artificial Intelligence and Machine Learning*, 4(2), 23–40.