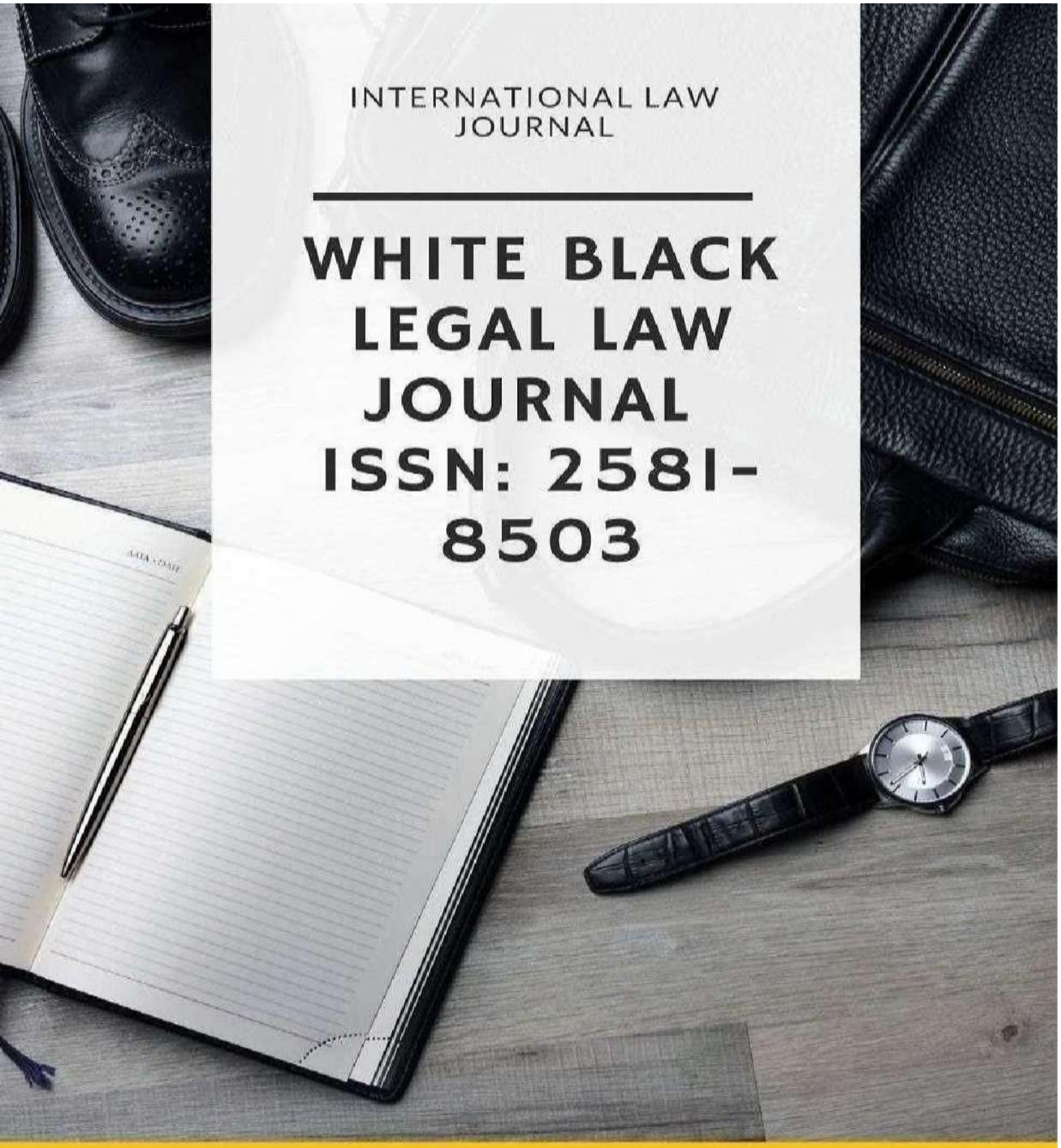

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Subhrajit did his LL.M. in Sports Law, from Nottingham Trent University of United Kingdoms, with international scholarship provided by university; he has also completed another LL.M. in Energy Law from University of Petroleum and Energy Studies, India. He did his B.B.A.LL.B. (Hons.) focussing on International Trade Law.

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With this thought, we hereby present to you

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A JURISPRUDENTIAL ANALYSIS OF PERSONHOOD OF ARTIFICIAL INTELLIGENCE

AUTHORED BY - NIKHITA ANANTHA SUBRAMANIAN
School of Law, CHRIST (Deemed to be University)

Abstract

This article looks at the legal implications of giving personhood to artificial intelligence (AI) which is becoming more and more relevant in these fast-changing times. It starts by defining AI and looking at how it works – machine learning and neural networks – which allows machines to process data, learn and make decisions on their own. We then see how AI is being used in healthcare, finance and law and the big questions around accountability and liability in decision making.

The article says we need to consider AI personhood as traditional legal frameworks can't cope with autonomous systems. By looking at the concept of legal personhood which is reserved for humans and corporations we explore the philosophical and ethical underpinnings of autonomy, rights and responsibilities. As AI gets more complex the challenges of fitting them into existing legal frameworks get bigger and we have debates about their moral status and what it means to recognise them as legal entities.

This research finds many challenges in giving AI personhood including ethical dilemmas around autonomy and misuse. But it also proposes solutions – a nuanced legal framework that could give limited rights or responsibilities to AI like corporate personhood. It also looks at international approaches to AI regulation and does a comparative analysis of different legal systems.

In the end this article adds to the AI and law debate and argues for a proactive legal framework that deals with personhood in the age of AI and maintains accountability and ethical standards.

A brief overview of Artificial Intelligence

Artificial Intelligence (AI) is the simulation of human intelligence in machines that can think, learn and do tasks that require human cognition. It's a broad range of technologies that allow machines to mimic human problem solving and decision making. AI works through algorithms that process huge amounts of data to recognize patterns, make decisions and adapt to new info.[1]

AI can be divided into narrow AI and general AI. Narrow AI is specialized in doing specific tasks like language translation, facial recognition or playing chess but can't do tasks outside its specialization. General AI is still theoretical and refers to machines that can understand, learn and apply intelligence across multiple domains like humans[2].

The key components of AI are machine learning (ML), natural language processing (NLP) and neural networks. ML allows systems to learn and improve from experience without being explicitly programmed, NLP allows machines to understand and generate human language. Neural networks, modelled after the human brain, are crucial for pattern recognition and decision making in AI systems.

AI works by feeding large datasets into models that through iterations and training improves over time. Depending on how AI is trained, it can be supervised (trained with labelled data), unsupervised (identifying patterns in unlabelled data) or reinforcement learning (improving its actions based on feedback from its environment).

AI is everywhere today from smart assistants like Siri and Alexa to complex systems in healthcare diagnostics, autonomous vehicles and financial analysis. It has changed industries and made efficiency and decision making possible in ways we couldn't have imagined 20 years ago.

Relevance of AI in contemporary society

Artificial Intelligence (AI) is one of the most powerful technologies of our time, touching every aspect of our lives. From everyday conveniences like virtual assistants (Siri, Alexa) to more complex applications in healthcare, finance and even government, AI is changing how we live, work and govern.

In healthcare, AI tools help with diagnosis, treatment planning and personalized medicine, making patient care more accurate and faster[3]. For example, AI can detect patterns in medical imaging that humans miss, so diseases like cancer are detected earlier. In finance, AI is used for fraud detection, algorithmic trading and personalized banking, for efficiency and security. And industries like manufacturing and logistics use AI for automation, reducing human error and increasing productivity[4].

AI is also used in the legal sector where it helps to analyse vast amounts of legal data and case law, for more efficient legal research and even predictive analytics on case outcomes[5]. In governance, AI is being used to optimize traffic systems, energy consumption and even predictive policing, so we have smarter cities and more streamlined public services.

The relevance of AI goes beyond its applications – it raises philosophical, ethical and legal questions that challenge our frameworks. As AI becomes more autonomous and decision-making, it brings to the surface questions of accountability, rights and morality. AI's involvement in critical decision-making processes means we need to understand and regulate its power.

In short, AI's relevance is not just about efficiency across sectors but also about pushing the limits of human-centric ethics and law. As AI becomes more mainstream, lawyers and policymakers need to re-think responsibility, rights and personhood.

Objective of the article

This post is going to explore the legal and philosophical arguments around giving personhood to Artificial Intelligence (AI). As AI gets more advanced, it's no longer just a tool, it's making decisions on its own, interacting with humans in complex ways and in some cases, doing tasks that were previously done by humans. This has raised the question, should AI entities be considered "people" with rights and responsibilities like humans or corporations?

The legal aspect of AI personhood challenges the traditional boundaries of law and ethics, particularly around liability, accountability and moral agency. Current legal frameworks were designed for human actors, corporations are the only non-human entities that have been granted personhood. But AI systems don't have human-like consciousness, so the question is, should legal systems adapt to the unique nature of AI or can current laws deal with the issues

that arise from its use?

This post will explore if the law needs to recognize AI entities as legal persons and what that would mean. It will look at how personhood is understood in legal theory and if it can be extended to non-human entities like AI. It will also examine the pressing legal issues, including accountability when AI causes harm, can AI systems own property or enter into contracts and what if AI has "rights". It will also look at the ethical concerns, potential solutions and legal models that can be applied to regulate AI and provide a comprehensive jurisprudential analysis of this emerging issue in modern law.

Defining AI

Artificial Intelligence (AI) is the development of computer systems that can do tasks that would normally require human intelligence. These tasks include problem solving, decision making, language understanding, visual perception, speech recognition and more. AI can simulate human thinking, learning, reasoning and self-correction making it a powerful tool for scientific and industrial applications[6].

At its core AI is the use of algorithms and big data to enable machines to learn, decide and improve over time. There are many types of AI but they can be broadly classified into two categories: Narrow AI and General AI[7].

Narrow AI (or Weak AI) is the systems that are designed to do a specific task or a set of related tasks. Examples include virtual assistants like Siri or Alexa, image recognition systems and recommendation algorithms used by streaming services or e-commerce platforms. Narrow AI doesn't have general cognitive abilities; instead it excels in specialized domains where it has been trained.

General AI (or Strong AI) is the AI that can do any intellectual task that a human can do. It would be able to understand, reason and respond to a wide range of complex challenges across various domains. General AI is still a hypothetical concept as no system has achieved this level of intelligence yet.[8]

AI uses various techniques including machine learning (ML), natural language processing (NLP) and neural networks. Machine learning is a subset of AI that allows systems to learn

from data and improve without explicit programming. Neural networks inspired by the human brain enables machines to process information in layers and hence advancements in deep learning.

AI is also classified based on its ability to simulate human thought. Reactive machines are the simplest form of AI that responds to inputs with pre-determined outputs. Limited memory AI can learn from past experiences to inform future decisions. More advanced forms like theory of mind AI and self-aware AI are still theoretical and would involve machines understanding emotions, intentions and self-awareness[9].

AI is not a technology but an interdisciplinary field that combines computer science, data science, mathematics and cognitive psychology. The advancements in AI, have far reaching implications for industries, economy and human machine interaction.

Algorithms, Data Processing, and decision making in AI

Artificial Intelligence (AI) works by processing massive amounts of data to find patterns, make predictions and enable automated decision making. At the heart of AI are algorithms which are sets of instructions designed to solve problems or perform tasks. These algorithms are built using statistical models, logical reasoning and advanced computational techniques[10]. In AI, data processing involves collecting and organizing structured or unstructured data which the algorithm uses to "learn" and improve over time. This is key to AI making informed decisions. AI algorithms process inputs through various methods such as classification, regression, clustering and neural networks[11]. For example, in classification an algorithm sorts data into predefined categories, in clustering the algorithm finds natural groupings in the data. This is the foundation for decision making as AI models make predictions based on the patterns they find in the data.

AI decision making can be classified as rule based or adaptive. Rule based systems follow explicit instructions coded by humans while adaptive systems learn from data and adjust their behaviour accordingly. A key feature of advanced AI systems is their ability to not only perform tasks but also improve over time, known as machine learning (ML)[12].

AI's Self Learning: Supervised, Unsupervised and Reinforcement Learning

Machine learning models can learn in three ways:

Supervised learning: In this method the AI is trained using labeled data. For example in a medical diagnosis system the model is fed patient data (input) alongside corresponding diagnoses (output). The algorithm then learns the relationship between inputs and outputs and can predict diagnoses for new patients.

Unsupervised learning: Here the AI is given data without explicit labels. Instead of learning through pre-labeled examples the AI identifies hidden patterns or structures in the data. A common application of unsupervised learning is in customer segmentation where the AI groups customers with similar behaviour without being told what the groups represent[13].

Reinforcement learning: In this approach the AI learns through trial and error, receiving feedback from its environment. It learns by taking actions and receiving rewards or penalties and aims to maximize long term success. This is widely used in robotics, gaming and autonomous systems like self-driving cars[14].

Limitations and Scope

AI is amazing but it has limits. AI systems are only as good as the data. Bad or biased data means bad or unethical outcomes. AI doesn't understand or have consciousness so it can't reason morally or abstractly. Current AI systems can't transfer knowledge between tasks (narrow AI).[15]

The scope of AI is growing fast with natural language processing, autonomous systems and human-AI interaction. But general AI (AI with human-like cognitive abilities) is still a long way off. AI will continue to evolve but there are still many ethical, legal and technical hurdles to overcome before it can be fully integrated into decision making roles in society[16].

AI in Different Fields

Artificial Intelligence (AI) is a force to be reckoned with across many industries, driving innovation and efficiency. Its applications in healthcare, finance, law and more have shown the huge potential of AI to disrupt traditional systems.[17]

AI in Healthcare

AI in healthcare is a game changer, especially in diagnostics, drug discovery and personalized medicine. AI algorithms analyse medical data to help diagnose diseases like cancer by identifying patterns invisible to the human eye. For example, Google's DeepMind has created AI tools that can detect eye diseases and predict acute kidney injuries with high accuracy. AI is also used to create customized treatment plans based on patient data, making healthcare more precise and patient focused.

AI in Finance

The finance industry has adopted AI for automation, fraud detection, risk management and customer service[18]. AI driven trading algorithms can predict market trends by analyzing huge amounts of financial data, so you can make faster and more informed investment decisions. Machine learning powered fraud detection systems have helped banks to detect suspicious activities in real time, reducing risks and losses. Chatbots and virtual assistants are used to provide customer support, improve user experience and reduce operational costs.[19]

AI in Law

In the legal industry, AI is changing the way legal research, contract review and case analysis is done.[20] AI powered legal research tools like ROSS Intelligence allow lawyers to search through huge legal databases more efficiently. AI is also used in predictive analytics to predict the outcome of legal cases based on past judgments, giving lawyers an edge. AI can also help in contract management by automating drafting, reviewing and flagging of contractual risks.[21]

Case Studies/Examples

In healthcare, IBM Watson is used in oncology to recommend treatment plans based on patient data and medical literature.

In finance, JPMorgan Chase uses AI to review legal documents which used to take thousands of hours to review, now takes seconds.

AI powered legal platforms like Lex Machina provide predictive insights into case outcomes based on prior legal data.

In each of these industries, AI is making things more efficient, reducing human error and helping professionals make better decisions, towards a more automated data driven future.

Legal Personhood

Definition of Legal Personhood in Law

Legal personhood is a basic concept in law that means an entity is recognized by the law as having rights, duties and the capacity to hold and exercise them. Historically this concept is divided into two main types: natural persons (human beings) and artificial persons (non-human entities like corporations).[22] A legal person can enter contracts, own property, sue and be sued in a court of law. The concept of personhood revolves around the legal capacity to bear rights and obligations, the foundation of most legal systems around the world.[23]

Application of Personhood to Humans and Corporations

Historically personhood has been applied to humans and to a limited extent to organizations like corporations. Natural persons—individual human beings—are granted full legal personhood by virtue of their humanity. They have rights and duties by default, from the right to life and liberty to the duty to obey laws and pay taxes.[24]

Corporations as legal entities have what is called "artificial personhood". This concept comes from the recognition that organizations are not living beings but need a legal identity to function in society. Corporate personhood allows businesses to enter into contracts, hold assets and face liabilities without involving the personal liability of the individuals who own or manage them. This limited form of personhood is a legal construct to facilitate commerce and to shield human stakeholders from personal risk.

Extending personhood to corporations was a major development in law as it allowed non-human entities to interact with the legal system in ways previously reserved for humans. But this form of personhood is limited as corporations do not have inherent moral rights like humans do. They cannot claim rights like the right to life or freedom of speech in the same moral sense although in some jurisdictions corporations do have certain constitutional protections like free speech in the context of commercial activity.

Philosophy of Personhood: Autonomy, Rights and Responsibilities

The philosophy of legal personhood is based on autonomy, moral agency and the ability to hold rights and duties. In humans personhood is linked to moral agency – the ability to make decisions, exercise free will and be held accountable for your actions. Legal systems grant

personhood to humans because they are autonomous agents who can understand and comply with the law and have inherent dignity and moral value[25].

In the case of artificial persons like corporations the argument for personhood is not about moral agency but practicality. A corporation's "autonomy" is defined functionally – the ability to operate as a separate entity from its owners or managers and to fulfill its obligations under the law. But it lacks the moral and emotional capacity of human autonomy.

Extending personhood to non-human entities like AI would challenge these fundamental ideas. AI systems lack the inherent autonomy and consciousness that underpin personhood of natural persons, raising big questions about their rights and duties in legal and moral contexts. But the philosophical flexibility of personhood as seen in the case of corporations suggests that a new legal framework could accommodate AI in the future.

Why AI Needs Personhood

The question of whether Artificial Intelligence (AI) should be considered a person is becoming a big deal in legal and ethical circles. As AI gets more complex and capable, the need to think about its legal status has arisen and it's driven by several reasons[26].

First, the rapid progress of AI technologies, especially in autonomous systems and decision making, requires us to reexamine the legal frameworks that have always applied to humans and corporations. Advanced AI can now operate independently, make decisions and do things that impact individuals and society. For example, AI is now in critical areas like healthcare, finance and autonomous driving where its decisions can lead to good or bad outcomes and harm. So without a defined legal status, there's a gap in accountability and the question is who should be held liable when AI systems harm or malfunction.[27]

So what are the legal challenges of advanced AI? The existing legal framework is based on human and corporate entities and leaves a gray area when it comes to attributing blame to AI. For example, if an autonomous vehicle gets into an accident, it's unclear whether the manufacturer, the software developer or the AI itself should be held responsible. This ambiguity can prevent justice and compensation for victims and complicate the legal landscape for companies developing AI. So recognizing AI as a person could simplify

accountability and clarity in court.

The argument for giving AI legal rights and responsibilities is based on fairness and justice. If an AI system can make autonomous decisions that impact human lives, it raises ethical questions about the moral status of these systems. Should entities that can make autonomous decisions be given rights to be treated fairly? And giving legal personhood could establish rights and responsibilities that will promote ethical AI development and deployment. For example, legal recognition of AI could require adherence to safety standards, transparency in algorithms and ethical guidelines, responsible innovation.[28]

And giving AI personhood could also mean a more structured regulatory framework. By giving AI systems a defined legal status, lawmakers can create a set of rights and obligations that's specific to AI. This will not only protect the public interest but also ensure that AI advancements align with societal values and ethical standards.

In summary, the need for AI personhood comes from the evolving role of AI in society, the need for clarity in accountability and the ethical implications of autonomous decision making. As we navigate these challenges a nuanced approach that recognizes the complexity of AI is key to creating a fair and just legal framework for this technology.

Challenges of Granting AI Personhood

Granting personhood to Artificial Intelligence (AI) involves many complex challenges across ethical, legal and societal dimensions[29].

Ethical Challenges: Autonomy, Moral Status, Consciousness

The biggest ethical challenge is whether AI has autonomy or moral status. Autonomy means being able to make decisions based on reason and personal agency. Current AI systems, no matter how advanced the algorithms, operate on pre-programmed instructions and learned patterns from vast data sets. They don't have real understanding and consciousness so what's their moral standing? [30]

If AI is granted personhood, it would raise moral dilemmas around responsibility for actions of autonomous systems. For example, if an AI system harms, would it be morally guilty? This

extends to the question of consciousness – if AI doesn't have self-awareness or emotional depth can it really be a moral agent? These ethical questions forces society to confront the implications of giving personhood to entities that may not have the qualities we associate with human rights and responsibilities.[31]

Legal Challenges: Accountability, Liability, Ownership of AI

From a legal perspective, the idea of AI personhood throws up big challenges around accountability and liability. Current legal frameworks are built around humans and corporations but the integration of AI messes with traditional notions of responsibility. For example, if an AI system makes a decision that causes harm, who's liable? The developer, the user or the AI itself? The uncertainty around liability creates a legal grey area that can lead to unfair outcomes.[32]

And then there's the question of ownership. If AI is a legal person, who gets the rights and obligations that come with ownership? This ambiguity could lead to conflicts and ethical dilemmas around exploiting AI for profit and the responsibility of AI systems that operate beyond human control.

Potential Abuse and Unintended Consequences

Granting personhood to AI could also lead to potential abuse and unintended consequences. For example, entities could use the concept of AI personhood to get out of legal responsibilities, create loopholes that undermine ethical standards. If AI is given legal status, it would give corporations an excuse to offload ethical considerations onto AI and get away with harmful actions.[33]

And then there's the fear of an "AI elite" where advanced AI systems get rights that supersede human rights. This would exacerbate existing inequalities and create big problems for social cohesion. AI operating autonomously with personhood could lead to outcomes we can't manage.

In summary, the challenges of giving personhood to AI requires a thoughtful discussion that balances ethical, legal and societal dimensions. We need to tackle these challenges to navigate the tech and law intersection of the 21st century.[34]

AI Personhood Solutions

As we move forward with the personhood of Artificial Intelligence (AI) we need a comprehensive framework. This framework needs to be adaptable and nuanced and consider the unique characteristics of AI and the legal and ethical implications.

Framework for AI Personhood

The framework for AI personhood must balance the rights and responsibilities of the AI systems with the values of society. This could include:

Criteria for Personhood: Clear criteria based on the level of autonomy, decision making and social interaction of the AI systems. This could differentiate between different types of AI and allow more advanced systems to have limited legal status.

Rights and Responsibilities: Specific rights (e.g. the right not to be shutdown maliciously) and responsibilities (e.g. accountability for actions taken) tailored to the capabilities of the AI systems. This would mitigate the ethical concerns around autonomy and moral status.

Models

There are several models that can be explored to grant personhood to AI systems:

Corporate Personhood Analogy: This model draws parallels between AI and corporations which are legal persons with specific rights and obligations. Just as corporations can enter into contracts, own property and be sued, AI systems that meet the criteria could be granted similar legal status and be able to enter into transactions and be liable.

Limited Legal Status: Instead of full personhood, AI systems could be given limited legal status and granted specific rights and responsibilities without full autonomy. This could include the ability to enter into contracts or be accountable for certain actions, but the ultimate responsibility would remain with human operators or developers.

Hybrid Models: A combination of the above models could also be considered where different levels of legal status are granted based on the complexity and capabilities of the AI system. For example, simpler AI could have minimal legal status and more advanced systems could have greater recognition based on their operational context.[35]

International Law and Policy

International law and policy will be key to regulating AI personhood. With the borderless nature of AI technology, a global approach is needed to address the challenges of different

national regulations. This could involve:

Harmonisation of Laws: International treaties or agreements that establish common principles for AI personhood so that rights and responsibilities are applied consistently across jurisdictions.

Guidelines for Ethical AI: Guidelines that outline the ethical considerations for the development and deployment of AI, transparency, accountability and protection of human rights.

Regulatory Frameworks: Adaptive regulatory frameworks that can evolve with the technological advancements in AI so that the legal definitions and protections remain relevant in a fast-changing environment.[36]

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