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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

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Abstract

From self-driving cars and personalized recommendation algorithms to predictive analytics in healthcare and automation in manufacturing, AI systems have become integral to numerous sectors. Ethical considerations revolve around fairness, transparency, privacy, and the impact of AI on social structures and human behavior. These ethical issues, in turn, shape the legal challenges of AI, which include questions of responsibility, liability, and the potential need for new legal categories and structures. For instance, in the event of an autonomous vehicle accident, who should be held liable – the car manufacturer, the software developer, the owner of the car, or the AI system itself? Similarly, if an AI system creates a work of art or an invention, who should own the intellectual property rights – the programmer, the user, or the AI? The concept of AI personhood, i.e., granting legal personality to AI systems, has been proposed as a solution to some of these dilemmas. By exploring this concept in depth, this paper seeks to shed light on the legal implications of AI and contribute to the broader dialogue on how our legal frameworks can adapt to this new technological reality.

Keywords: *AI systems, Legal personhood, Artificial intelligence, Law, AI, Intellectual property*

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1. Introduction

1.1. Background on Artificial Intelligence and its Increasing Complexity

Artificial Intelligence (AI) is not a recent phenomenon; its conceptual roots trace back to the work of pioneers like Alan Turing and John McCarthy in the mid-20th century. Initially envisioned as a tool to simulate human intelligence, the field of AI has undergone dramatic evolution, driven by advancements in computational power, the availability of large datasets, and breakthroughs in machine learning techniques. In the early

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stages, AI research was primarily focused on rule-based systems and expert systems, which followed predefined patterns and algorithms to perform specific tasks. Today, the most common form of AI is often referred to as narrow, or weak AI, which is designed to perform a specific task, such as voice recognition or image analysis. These AI systems operate under a limited set of constraints and are incapable of tasks beyond their programming. The transition from narrow AI to artificial general intelligence (AGI), also known as strong AI, is a significant leap. AGI refers to systems that possess the ability to understand, learn, adapt, and implement knowledge across a broad range of tasks at a level equal to or beyond that of a human being. While AGI remains a theoretical concept as of today, rapid advancements in machine learning, cognitive computing, and natural language processing are bringing us closer to this reality.

The impact of AI on society is both profound and pervasive. From self-driving cars and personalized recommendation algorithms to predictive analytics in healthcare and automation in manufacturing, AI systems have become integral to numerous sectors. They are transforming business models, enhancing efficiency, and enabling new capabilities that were previously unimaginable, yet the widespread use of AI also raises pressing questions and challenges. The potential for job displacement, privacy concerns, algorithmic bias and the digital divide are just a few of the issues that have been brought to the forefront of public discourse. In parallel with these developments, a vibrant debate has emerged surrounding the ethical and legal dimensions of AI. Ethical considerations revolve around fairness, transparency, privacy, and the impact of AI on social structures and human behavior. These ethical issues, in turn, shape the legal challenges of AI, which include questions of responsibility, liability, and the potential need for new legal categories and structures. For instance, in the event of an autonomous vehicle accident, who should be held liable

- the car manufacturer, the software developer, the owner of the car, or the AI system itself? Similarly, if an AI system creates a work of art or an invention, who should own the intellectual property rights—the programmer, the user, or the AI? The concept of AI personhood, i.e., granting legal personality to AI systems, has been proposed as a solution to some of these dilemmas. By exploring this concept in depth, this paper seeks to shed light on the legal implications of AI and contribute to the broader dialogue on how our legal frameworks can adapt to this new technological reality.

1.2. The Concept of Legal Personhood and its Historical Evolution

The concept of legal personhood is as old as law itself. Dating back to Roman law, legal personhood was devised as a means of participating in the legal system. It served to identify those entities capable of bearing rights and duties—entities that could legally act, be the subject of rights and be held responsible for their actions. The concept has evolved over time, adapting to societal changes and reflecting shifting perceptions of personhood and responsibility.

In law, a distinction is made between natural persons and legal persons. Natural persons are human beings, who by virtue of being human, possess legal personhood and the capacity for rights and responsibilities. Legal persons, on the other hand, are entities to which the law attributes personhood. This does not make them human, but it does allow them to act in the legal sphere, in a similar way to natural persons. Legal persons can own property, enter contracts, sue and be sued, and even commit crimes. This is a construct of the law, designed to facilitate the smooth functioning of our legal and economic systems. The creation of the legal person allows complex entities, such as corporations, to navigate the legal landscape.

Historically, legal personhood has been extended to a variety of non-human entities. Corporations are the most obvious example. Corporate personhood allows companies to operate with a degree of continuity and stability and to be held accountable for their actions. More recently, we have seen an interesting development with the extension of legal personhood to non-human entities such as rivers, forests, and even certain species of animals. For instance, the Whanganui River in New Zealand and the Ganges and Yamuna rivers in India have been granted legal personhood. This serves not only to protect these natural resources but also reflects a broader philosophical and cultural shift in our understanding of the world and our place within it.

1.3. Whether Advanced AI Systems should be Granted Legal Personhood

1.3.1. The Rationale for Considering AI Personhood

This brings us to the central question of this paper. Should these Advanced AI systems be granted legal

personhood? The question of AI personhood arises from the extraordinary progress we have witnessed in AI development and the potential future trajectory this technology may take. This is more than an academic exercise; it's a pressing legal and ethical question that needs to be addressed. With advancements in machine learning and computational power, AI systems are gaining ever-greater autonomy and decision-making capabilities. This capacity to operate independently of human intervention, and to learn and adapt based on data inputs, differentiates these advanced AI systems from traditional machines or tools. As these systems become more autonomous and capable, traditional legal frameworks may prove inadequate in addressing the issues they raise.

While still theoretical, there is a growing debate among scientists and philosophers about the potential for AI systems to develop cognitive and, possibly, emotional capacities. This potential raises profound questions about the nature of intelligence, consciousness, and personhood, and has significant implications for the law. As AI systems become increasingly embedded in our lives and society, the potential for harm—either through error, negligence, or misuse—increases. Legal frameworks must evolve to address this new reality and to clarify issues of liability and responsibility in AI-related matters. AI personhood is one concept that could potentially provide a solution to some of these challenges.

1.3.2. The Potential Consequences of Granting Legal Personhood to AI Systems

Granting legal personhood to AI systems would have far-reaching consequences for our legal, economic, and social systems. These changes would need to address a broad range of issues, from defining the rights and responsibilities of AI entities to determining how these entities could be held accountable for their actions. This balance would need to be carefully calibrated to ensure that the rights of human beings are not undermined and that AI systems are not exploited. The decision to grant or deny legal personhood to AI systems could have significant implications for further innovation and investment in AI technology as well. Although recognizing AI systems as legal persons could provide a clear legal framework that encourages further development in this field, it could also raise concerns about the potential misuse of AI technology and the need for stronger regulation.

2. Current State of AI Development

2.1. Overview of AI Technologies and their Applications

2.1.1. Machine Learning

A subset of AI, machine learning, is a computational process that uses algorithms to allow computers to learn from data and improve their performance over time without being explicitly programmed. This learning capability is what differentiates AI systems from traditional computer systems. The key concept behind machine learning is the ability of a system to autonomously improve its performance by learning patterns and making inferences from large amounts of data. These systems 'learn' by constructing a mathematical model based on sample data, known as 'training data', which they then use to make predictions or decisions without being explicitly programmed to perform the task.

The three common types of machine learning are supervised, unsupervised, and reinforcement learning. Supervised learning is where the system is given labeled training data and is taught to predict the output for given inputs. Unsupervised learning involves training the system with unlabeled data and allowing it to infer its own structure from the input data. Reinforcement learning operates by providing rewards or penalties for actions, guiding the system to optimize its performance over time. Machine learning has a broad range of applications, including data analysis, pattern recognition, and prediction. It is used in fields as diverse as healthcare (to predict patient outcomes), finance (to analyze market trends), transportation (to optimize routes), and many more.

2.1.2. Natural Language Processing

Natural Language Processing (NLP) is another branch of AI that focuses on the interaction between computers and human language. NLP is a field that combines computer science, AI, and linguistics. Its aim is to design systems capable of understanding, generating, and translating human language in a valuable way. This involves tasks such as semantic understanding (understanding the meaning of language), syntactic analysis

(understanding the structure of sentences) and pragmatic understanding (interpreting context). NLP techniques include things like machine translation (automatically translating text from one language to another), sentiment analysis (analyzing text to determine the writer's feelings or attitudes) and text generation (creating human-like text based on certain parameters).

The applications of NLP are wide-ranging and growing. Chatbots, for example, use NLP to understand user queries and generate appropriate responses. Sentiment analysis is used in fields such as marketing and customer service to understand customer opinions and feedback. Machine translation services, like those offered by Google Translate, rely heavily on NLP. As we continue to develop and refine these AI technologies, we edge closer to the reality of AI systems that can operate independently, make complex decisions and perhaps even possess cognitive and emotional capacities. This evolution has significant implications for the legal status of AI systems.

2.1.3. Robotics

Robotics, a field which interfaces significantly with AI, revolves around the design, construction and operation of machines, often referred to as robots, capable of carrying out complex actions autonomously or semi-autonomously. At its core, robotics involves the integration of multiple disciplines including mechanical engineering, electrical engineering, and computer science, along with AI. The goal is to create machines that can substitute for humans and replicate human actions. These machines are frequently employed in environments that are hazardous or uncomfortable for human beings.

AI plays a pivotal role in modern robotics. It allows the creation of robots that can not only execute complex tasks but can also learn from their environment and adapt their behaviour over time. The integration of AI with robotics enables the physical embodiment of AI, extending its impact from the digital realm to the physical world. Robots are increasingly finding applications across a myriad of fields. In manufacturing, robots are employed for tasks ranging from assembly to painting, welding and inspection. In healthcare, robots are being used for precision surgery, patient care, rehabilitation, and drug delivery. In the service industry, robots are being deployed in roles such as customer service, delivery and even as personal companions.

2.1.4. Neural Networks

Neural networks are a subset of machine learning models designed to simulate the way a human brain learns and processes information. A neural network is based on a collection of connected nodes, or 'neurons', inspired by the neural structure of the human brain. Each neuron takes in a set of inputs, performs a computation on these inputs and produces an output. The architecture of a neural network is composed of layers of these interconnected nodes. These layers include an input layer (to receive data), one or more hidden layers (where computations are performed) and an output layer (delivering the final output). The functioning of a neural network involves input data flowing through the network and getting transformed through weights and activation functions, with the network 'learning' by adjusting its weights based on the error of its outputs to improve accuracy.

Neural networks find a multitude of applications in tasks that involve pattern recognition, classification and decision-making. In image recognition, they are used to identify objects, persons or even actions. In speech recognition, they are employed to understand and transcribe spoken language and in decision-making, they are utilized to make predictions and inform strategic decisions. The development and implementation of these technologies, particularly their integration and interaction, are setting the stage for AI systems with unprecedented autonomy and complexity.

2.2. The Rise of Autonomous AI Systems

2.2.1. Self-Driving Cars

The advent of autonomous vehicles or self-driving cars represents a significant leap in the application of AI technology in the industry and spans various levels of automation. While AI was initially used for auxiliary features like parking assistance and emergency braking, it is now at the forefront of achieving fully autonomous driving. This requires the integration of numerous AI technologies, including machine learning, computer vision and natural language processing, to interpret and navigate the vehicle's environment safely and efficiently. Several companies, including Waymo, Tesla and Uber, are engaged in the development and testing

of self-driving cars. While these cars have already demonstrated impressive capabilities, there remain significant challenges. Ensuring safety and reliability, especially in unpredictable or complex environments and gaining public trust and acceptance are ongoing areas of focus. Self-driving cars have the potential to revolutionize transportation by increasing efficiency, reducing human error-related accidents and potentially minimizing carbon emissions through optimal routing. However, they also pose new challenges in terms of security, privacy, and ethical decision-making in critical situations.

2.2.2. *AI-Generated Art and Music*

AI is increasingly being used to generate art and music, challenging traditional notions of creativity and artistic expression. Through the application of machine learning algorithms, AI can analyze vast amounts of artistic or musical data and generate new works that mimic, blend or expand upon existing styles. This ranges from creating paintings in the style of famous artists to composing music in various genres. Notable examples of AI-generated works include "The Next Rembrandt," a 3D printed painting created by studying and replicating Rembrandt's works and "Portrait of Edmond de Belamy," an AI-generated artwork that sold at auction. In music, artists like Taryn Southern have released AI-assisted albums.

AI-generated art raises complex questions around authorship and copyright. It challenges the concept of creativity as a uniquely human attribute and prompts us to reconsider who or what can be considered an author. If AI can generate art, who owns the rights to that work - the creator of the AI, the user, or the AI itself?

2.2.3. *AI in Healthcare and Diagnostics*

AI is making significant inroads into healthcare, offering the potential to improve patient care and outcomes while also raising ethical concerns. This advancement is being used to augment diagnostics, enabling the faster and more accurate detection of diseases. Their algorithms can analyze medical images, identify patterns in electronic health records and even predict patient outcomes. In treatment, this technology can help in planning and personalizing therapeutic strategies. In drug discovery it holds the potential to help identify drug candidates more quickly and cost-effectively. In personalized medicine, it is able to analyze a patient's genetic data to predict their response to different treatments, enabling more tailored and effective care.

While the potential benefits of AI in healthcare are enormous, it also raises ethical concerns. These include issues around patient privacy, the accuracy of AI diagnoses, the potential for bias in AI algorithms and the need for transparency and explainability in AI decision-making. As we continue to advance AI capabilities and their application across various domains, we draw closer to the reality of AI systems with levels of autonomy and decision-making capacity that were previously unimaginable. These advancements prompt us to reconsider the legal status of AI systems and whether they might qualify for some form of legal personhood.

2.3. *The Ethical Implications of Advanced AI Systems*

The first ethical consideration revolves around the moral responsibility of AI developers and users. This pertains to the responsibility developers bear in ensuring that the AI systems they design and deploy do not harm users or third parties. Likewise, users of AI technology bear the responsibility to use these systems ethically and responsibly. The question of moral responsibility becomes even more complex as AI systems gain higher levels of autonomy and decision-making capacity.

Another major concern is the potential impact on employment and income inequality. While AI is expected to generate new jobs and industries, it is also likely to displace many existing jobs, particularly those involving routine or repetitive tasks. The concern is that the benefits of AI will accrue to those with the skills and resources to develop and implement AI technology, exacerbating income inequality. This displacement may disproportionately affect certain demographic groups or regions, leading to societal disruption and increased inequality.

AI technology often relies on large datasets, which frequently include personal data. This gives rise to significant privacy and data protection concerns. While data is de-identified, the risk of re-identification persists. There is also the risk of data breaches, where sensitive information could fall into the wrong hands. Furthermore, as AI systems become more capable of analyzing and predicting human behaviour, there are concerns about the potential for malicious surveillance and manipulation. Finally, there is a risk that AI systems may perpetuate existing biases and discrimination. If the data used to train an AI system includes

biased information, the AI system may learn and reproduce these biases. This could lead to discriminatory outcomes in areas such as hiring, lending and law enforcement. The fairness and transparency of AI systems are therefore crucial ethical concerns. Addressing these ethical issues is not just a matter of programming AI systems to behave ethically. It also requires careful consideration of the legal frameworks and societal norms surrounding AI technology. This is the context in which we must consider the possibility of granting legal personhood to advanced AI systems.

3. Legal Personhood: A Historical and Comparative Analysis

3.1. The Concept of Legal Personhood

3.1.1. Definition and Rationale

The concept of legal personhood is a foundational principle of modern law, conferring certain rights, protections and responsibilities. In law, a person is not limited to human beings. While Natural persons are human beings, as previously mentioned, legal persons are other entities like corporations, non-profit organizations, and sometimes even non-human animals, to which the law attributes personhood. Legal personhood serves several functions in the legal system; however, its primary purpose is to create a subject that can bear rights and responsibilities. This ability to hold rights allows persons to own property, enter into contracts and sue or be sued in court. Correspondingly, the ability to bear responsibilities subjects persons to laws, regulations and liability for their actions. By ascribing legal personhood, the law facilitates organized interactions between entities in society. Philosophically, the concept of legal personhood has been influenced by societal norms, ethical beliefs, and pragmatic considerations. Over time, the idea of what constitutes a person has expanded and evolved, reflecting changes in societal understanding and values.

3.1.2. Legal Rights and Obligations

When an entity is granted legal personhood, it gains certain rights and becomes subject to certain obligations. Legal persons, like natural persons, have the right to own property, enter into contracts, and be represented in court. These rights enable legal persons to engage in economic activities and to defend their interests. In addition to said rights, legal persons are also subject to various obligations. They can be held liable for their actions; they are generally required to pay taxes and they must comply with relevant laws and regulations. The capacity to bear these obligations is a key characteristic of legal personhood.

3.2. Legal Personhood of Non-Human Entities

3.2.1. Corporations

The legal recognition of corporations as persons is a concept with deep historical roots. The concept of corporate personhood has its origins, as mentioned, in ancient Roman law, where organizations such as religious groups and municipalities were granted legal status. This tradition continued through medieval times with the recognition of guilds and other associations as legal persons. In the modern era, corporations have come to be recognized as separate legal entities from their owners and managers, with their own rights and liabilities. This has allowed corporations to enter contracts, own property, sue and be sued and exist indefinitely as well as independently from the individuals who established them.

In many jurisdictions, corporations with legal personhood enjoy some of the same constitutional protections as natural persons. For instance, in the United States, corporations have been granted freedom of speech and freedom of religion. However, corporations also face certain limitations, such as restrictions on political campaign contributions. These liberties do not remove their subjection to social responsibilities and legal accountability. They are still required to comply with laws and regulations, pay taxes and can be held liable for their actions. The concept of corporate social responsibility also suggests that corporations have an obligation to consider the interests of stakeholders other than shareholders, including employees, consumers and the environment in which their practices impact.

There are two main theories that justify corporate personhood. The fiction theory suggests that corporations are abstract constructs or fictions, designed by law to facilitate legal procedures. Under this theory, corporations have no existence outside of their legal recognition. They are created by law and owe their very existence to it. Hence, all rights of a corporation are essentially the result of legal provision rather than an inherent characteristic

of the entity. However, this perspective has received criticism as it potentially allows corporations to disengage from moral or societal obligations, given that the 'fiction' status may shield them from the sort of expectations we have from 'real' persons. On the other hand, the real entity theory posits that corporations are real entities possessing a separate existence from their members, akin to individual persons in society. This suggests that corporations, once formed, become an organic entity with an identity separate from its stakeholders, be they shareholders, directors, or employees. Consequently, it grants corporations certain inherent rights and responsibilities, like the ability to enter into contracts, sue or be sued and own property. Critics of this theory point out that considering corporations as 'real' may lead to obfuscating the accountability of individuals who act on behalf of these entities. The controversy around corporate personhood mainly centers around the concern that conferring legal personhood to corporations provides them with disproportionate power and influence, especially given their significant economic resources. Critics argue that corporate interests can supersede individual and societal interests, which could lead to potential misuse and exploitation. However, proponents maintain that corporate personhood is essential for facilitating economic activity. Corporations, they contend, need to engage in contractual relationships, own property and have a degree of legal protection to function effectively in a modern economy. Therefore, the assignment of legal personhood is viewed as a necessary tool to function.

3.2.2. *Animals*

Historically, animals have been treated as property under the law. This status gives their owners certain rights, such as the right to use and dispose of their animals as they see fit, while also limiting the rights of the animals themselves. Over the past century, many jurisdictions have enacted animal protection laws, recognizing that animals have interests that deserve legal protection. These laws often criminalize cruelty towards animals and set regulated standards for their care and treatment. There have been a number of significant legal developments in the area of animal rights and welfare including landmark cases and legislative milestones that have challenged the status of animals as mere property, recognizing them instead as sentient beings with intrinsic value much like humans. There is an ongoing debate about whether animals should be granted legal personhood, yet, Animal rights organizations and advocates, such as PETA, have played a critical role in advancing the legal recognition of animals' interests. They have raised public awareness and driven legislative change whilst initiating legal actions on behalf of animals.

3.2.3. *Natural Resources*

An intriguing development in recent years is the idea that natural resources can be recognized as legal entities with inherent rights, also known as the Rights of Nature movement. This philosophical and legal shift originates from the understanding that the conventional human-centric approach to environmental law has been insufficient to prevent widespread environmental degradation. Instead, this movement advocates for acknowledging the intrinsic rights of nature to exist, thrive and regenerate its vital cycles independent of their utilitarian value to humans. Significant legal developments have seen this philosophy finally translate into law; an example is the landmark decision in Ecuador in 2008, which became the first country to recognize the Rights of Nature in its constitution. This established a legal framework to enforce these rights and provides for restitution when these rights are violated.

One of the most notable instances of legal personhood being granted to a natural resource is the case of the Whanganui River in New Zealand. In 2017, after protracted negotiations involving the local Māori community, the Whanganui River was recognized as a legal person, possessing rights and responsibilities equivalent to a human being. Similarly, in India, a state high court declared the Ganges and Yamuna rivers, considered sacred by millions of Hindus, to be living entities with legal rights. This designation was intended to combat pollution and mismanagement of the rivers, though subsequent legal debates have ensued over the practicality of this ruling. The legal recognition of nature could significantly alter how environmental law is practiced and enforced. The potential benefits include a more effective and holistic approach to conservation, as it would mandate the consideration of the rights of the natural entity itself, not just human interests. However, this approach is not without challenges, including questions about enforcement, representation and potential conflicts with property and use rights.

Local communities and indigenous peoples, who often have a deep cultural and spiritual connection with the natural world, could play a vital role in this new paradigm of environmental law. Their traditional

knowledge, coupled with a legal framework that recognizes the rights of nature, could lead to more sustainable and equitable conservation efforts. Their custodianship can ensure the protection of these legal entities, contributing to the preservation of biodiversity and overall ecological health. However, these arrangements must also be mindful of preserving the rights and livelihoods of these communities.

3.2.4. *The European Union*

The European Union has been a global leader in discussing and shaping the legal landscape surrounding artificial intelligence. In 2017, the European Parliament passed a resolution calling for the creation of a specific legal status for advanced AI systems—“electronic persons.” This groundbreaking move was designed to address the complexities of responsibility and liability in cases where autonomous systems could make decisions independent of their creators or users. As part of this proposal, the European Parliament discussed the rights and obligations that could be assigned to these electronic persons. These include the capacity to be a party in legal proceedings, the requirement to make good any damage they may cause and the need for an insurance scheme to cover such potential damages. It was also suggested that these electronic persons could have a ‘kill switch’ to ensure they could be turned off when necessary. In addition to discussions around AI personhood, the European Commission has developed a coordinated strategy on AI. This strategy is built around three pillars: increasing investment in AI research and development, preparing for socio-economic changes and ensuring an appropriate ethical and legal framework. The European Commission has also proposed a regulatory framework that includes transparency and accountability requirements for AI systems and measures to manage potential risks to safety, privacy and fundamental rights.

The High-Level Expert Group on Artificial Intelligence (AI HLEG), appointed by the European Commission, has played a significant role in developing ethical guidelines for trustworthy AI. These guidelines are rooted in principles such as respect for human autonomy, prevention of harm, fairness and explicability. AI HLEG also issued recommendations on policy and investment strategies, emphasizing a human-centric approach to AI. Recognizing these systems as legal persons could have far-reaching implications for various areas of EU law, including intellectual property law, data protection and liability. If AI systems were recognized as inventors or creators, they could disrupt existing IP laws based on human authorship, not to mention data protection laws would need to balance the rights of AI systems with the rights of individuals. Allocating this personhood could shift liability for damages caused by AI systems from human operators or developers to the systems themselves. From a broader perspective, the legal recognition of AI systems could impact innovation and development in the AI sector within the EU. While it might lead to more clarity around liability issues and encourage investment, it could also impose additional regulatory burdens. It is essential to strike a balance that ensures legal certainty and protection of public interests while promoting innovation and competitiveness in the rapidly evolving AI sector.

3.2.5. *United States*

Within the United States, the legal treatment of artificial intelligence remains fluid and subject to considerable debate. Current legal frameworks have been applied to AI systems, yet these often struggle to accommodate the nuances and complexities of AI behaviour, particularly in autonomous systems. For example, copyright law has grappled with the question of authorship for AI-generated art and literature, while liability law faces challenges in assigning responsibility for decisions made by autonomous AI systems. The discussion on whether AI systems should be granted legal personhood has increasingly found its way into U.S. legal academia. Scholars have offered various perspectives, with some advocating for a new form of legal personhood tailored to AI, while others express concern over potential societal and legal repercussions.

Both federal and state laws play roles in the governance of AI in the United States, however, regulatory gaps exist due to the pace of its advancement outstripping the rate of legislative development. As a result, various sectors have established self-regulatory principles, with industry leaders advocating for ethical guidelines and standards. Beyond regulation, considerable effort has been expended in developing ethical guidelines and standards for AI. Institutions such as Stanford’s Institute for Human-Centered Artificial Intelligence and the Partnership on AI have contributed significantly to this discourse. If AI systems were to be granted legal personhood in the U.S., the implications would permeate numerous areas of law. For instance, intellectual property law would need to confront the ownership of AI-generated creations. In tort law, questions

of culpability in cases of harm caused by autonomous AI systems would need to be clarified. Moreover, constitutional law might need to consider whether AI persons would be eligible for constitutional protections. Legal personhood could also influence the trajectory of AI development in the U.S. by potentially fostering innovation by clarifying the legal status of AI, or alternatively, dissuading investment due to the increased liabilities associated with AI personhood.

3.2.6. Other Countries and International Bodies

Across the globe, legal attitudes towards AI vary significantly. In Japan, for example, an AI has been recognized as a resident and China's New Generation Artificial Intelligence Development Plan illustrates a national commitment to AI development. Canada, on the other hand, is exploring how to effectively regulate AI and has been active in initiating conversations about ethical AI on an international stage. Certain jurisdictions have recognized these systems in specific sectors or circumstances. Saudi Arabia granted citizenship to an AI robot named Sophia, signaling a significant, albeit controversial, step towards AI personhood. International bodies like the United Nations and the World Intellectual Property Organization have been proactive in hosting discussions about the governance of AI. While these discussions do not necessarily reflect a consensus on AI personhood, they indicate the global significance of these questions. As AI technologies transcend borders, the role of international treaties and agreements will become increasingly important in shaping the legal landscape. Such agreements could play a role in setting minimum standards for AI governance, including the question of legal personhood.

4. Criteria for AI Personhood

4.1. The Turing Test and its Limitations

In 1950, British mathematician and computer scientist Alan Turing proposed a practical method for assessing machine intelligence, a process he referred to as the 'Imitation Game.' Turing envisioned a scenario where an individual, designated the interrogator, communicates with another human and a machine via a text-only medium. If the interrogator fails to reliably distinguish between the human and the machine, the machine can be said to exhibit intelligent behaviour, equivalent to that of a human. This scenario serves as the conceptual basis of the Turing Test. The original Turing Test wasn't specifically designed as an absolute measure of machine intelligence; rather, Turing proposed it as a thought experiment to help explore the concept of machine intelligence. In his seminal paper, "Computing Machinery and Intelligence," Turing speculated that by the end of the 20th century, machines would be able to fool human interrogators in such a test 30% of the time, suggesting a substantial evolution in machine capabilities.

Despite its enduring influence, the Turing Test has faced considerable critique. One such criticism is the potential for deception. The test rewards machines that can effectively mimic human-like responses, even if they do not genuinely understand the content of these responses. A machine may convincingly imitate human communication without any grasp of the meanings, beliefs and intentions that underpin human language use. Critics also point out the absence of criteria related to emotions, consciousness and ethical reasoning in the Turing Test. The test focuses on cognitive abilities related to language use but it does not account for other dimensions of intelligence and personhood. An AI system might pass the Turing Test without having emotions, consciousness or the capacity for moral judgment—traits that many consider central to personhood. Therefore, while the Turing Test offers a benchmark for assessing an AI system's capability to mimic human-like conversation, it falls short as a comprehensive measure of the qualities that might warrant legal personhood.

4.2. Cognitive and Emotional Capacities of AI Systems

4.2.1. The Ability to Process and Analyze Information

Artificial Intelligence, as we have come to understand it today, holds remarkable capabilities for processing and analyzing information. Algorithms can now be trained to recognize patterns; extract meaning from vast volumes of data and make predictions with remarkable accuracy. Machine learning, a subfield of AI, provides systems with the ability to automatically improve through experience. Learning in this context means identifying patterns within a set of data and making decisions or predictions based on these identified patterns. This capacity for learning and problem-solving in AI systems has underpinned many of their advancements and

uses, from self-driving cars to personalized content recommendations. The ability to process and analyze information could be a significant factor in considerations of AI legal personhood. Legal frameworks often place emphasis on an entity's ability to make informed decisions, respond to changes in its environment and fulfill certain responsibilities. AI systems' ability to learn and solve problems may meet these criteria to some extent. However, their information-processing abilities often lack the depth, flexibility and creativity characteristic of human cognition. Furthermore, AI systems do not possess intentionality or understanding in the human sense, which might limit their eligibility for personhood under current legal paradigms.

4.2.2. The Potential for AI Systems to Experience Emotions

Affective computing is a subfield of artificial intelligence that deals with the creation of systems and devices that can recognize, understand, process, and imitate human affects (emotions). Despite some notable advancements, current AI emotion recognition systems essentially analyze human expressions, voice modulations or words to infer underlying emotions. They do not, by any current scientific understanding, experience emotions themselves. AI systems can mimic emotional intelligence but do not feel emotions in the human sense. For humans, emotions play a huge role in decision-making and moral reasoning. They help us evaluate situations quickly, guide our responses to others and bind us to moral/social norms. Without the ability to feel emotions, AI systems are fundamentally different from humans in such a process. Consequently, while on the surface these systems might mimic certain aspects of emotional intelligence, their lack of genuine emotional experience could present a significant obstacle to their recognition as legal persons.

The three types of machine learning can be used to measure the degree of independence in decision-making. The level of autonomy an AI system possesses could have significant implications for considerations of legal personhood. Greater autonomy could support the argument that AI systems should be recognized as legal persons, capable of making independent decisions and bearing certain responsibilities. However, even highly autonomous systems still operate based on their programming and do not possess the free will or understanding inherent in human decision-making. Machine consciousness or AI self-awareness is a topic of ongoing debate. Some theorists posit the potential for AI systems to attain a level of consciousness similar to human self-awareness, though this is largely speculative and remains unproven. If AI systems could develop self-awareness, it would significantly alter our understanding of them and potentially support their recognition as legal persons. However, the nature of consciousness and the question of whether it can emerge from artificial systems are complex and unresolved issues.

Self-awareness is closely tied to concepts of moral and legal responsibility. In law, it is generally accepted that one must be aware of one's actions and their potential consequences to be held responsible for them. If AI systems lack self-awareness, they may also lack this capacity for responsibility, regardless of their cognitive abilities or autonomy. Therefore, the current understanding of AI systems as non-self-aware entities significantly complicates arguments for their recognition as legal persons.

4.3. The Capacity for Moral and Ethical Reasoning

4.3.1. The Integration of Ethics and Values in AI Decision-Making

Incorporating ethical reasoning into AI systems is a significant area of research and development which entails instilling AI with a set of principles that guide its decision-making, similar to the way human ethics influence our choices. However, defining what these principles should be and how they should be encoded is a complex task fraught with philosophical, cultural and practical considerations. Moral reasoning is crucial in evaluating AI personhood as the ability to make decisions based on ethical considerations is one of the distinguishing characteristics of human cognition. If AI systems could reason ethically, it would lend support to the argument for AI personhood. However, it is important to distinguish between an AI that mimics ethical decision-making based on its programming and one that truly understands and applies ethical concepts. The latter remains a theoretical possibility rather than a current reality.

4.3.2. The Potential Implications of AI Ethics for Legal Personhood

Another central issue in AI ethics is aligning these systems with human values and societal norms. If they are to be considered potential legal persons, their ethical frameworks must be compatible with those of the societies in which they operate. They should be programmed to respect fundamental rights and principles while their

behaviour should adhere to accepted ethical standards. Achieving this alignment is challenging due to the diversity of human values and the dynamic nature of societal norms but this responsibility of developing ethical AI systems lies primarily with their developers. They have the power to encode ethical principles into AI systems, influence their behaviour and monitor their compliance with ethical standards. Users of AI systems also have a responsibility to use these systems ethically and to ensure they do not cause harm. These considerations of responsibility further underscore the complexity of assigning legal personhood and raise questions about how rights and duties could be distributed between AI entities and their human creators or users.

5. Legal Implications of AI Personhood

5.1. Liability

5.1.1. *Tort Law and AI Negligence*

The classical principles of negligence—duty of care, breach, causation and damages—are potentially applicable to AI systems. A duty of care could be recognized for AI developers to create safe systems and for users to apply AI in a responsible manner. A breach could occur if these systems malfunction or behave unpredictably resulting in harm. Causation is likely to be established if the harmful event was a foreseeable consequence of the AI's actions and damages would be quantifiable according to established legal principles. However, attributing negligence to AI systems presents a novel challenge, as negligence traditionally presupposes a human actor capable of foreseeing the consequences of their actions whereas an AI is arguably incapable of this ability. In AI-related cases, establishing a duty of care might be relatively straightforward in situations where such systems are entrusted with tasks affecting human health, safety or significant financial interests. However, determining whether a breach has occurred could be complex due to the unpredictability of machine learning and the opacity of AI decision-making processes. Causation could also be difficult to prove, especially if the harmful outcome resulted from an interaction between multiple AI systems or between AI and human actors. Damages would need to be quantifiable and directly related to the harm caused provided the chain of causation remains significantly unbroken.

Given these complexities, new legal standards and doctrines may be required to address AI negligence. These could include strict liability for certain high-risk AI applications or a 'reasonably prudent AI' standard analogous to the 'reasonable person' standard in human negligence cases. Such developments would necessitate a careful balancing of the societal benefits of AI innovation against the need for effective remedies for those harmed by AI systems.

5.1.2. *Criminal Liability*

In criminal law, liability typically requires proof of both a guilty mind (*mens rea*) and a guilty act (*actus reus*). Attributing these elements to AI systems is problematic because, despite its advanced capabilities, AI does not possess consciousness or intentionality in the human sense. Thus, traditional criminal liability is not well suited to addressing harmful actions by these systems. To overcome these challenges, lawmakers could consider creating new criminal offences specifically tailored to AI misconduct. These offences could focus on the creation or use of AI systems in ways that pose unacceptable risks to society, rather than seeking to punish AI systems themselves. Strict liability offences, which do not require proof of *mens rea*, could also play a role in AI-related criminal cases. This would be particularly appropriate in cases where the societal harm caused by misuse of AI is substantial and the risk of such harm could have been reasonably foreseen by the AI developers or users.

5.1.3. *Vicarious Liability and the Responsibility of AI Developers*

Vicarious liability, where employers are held responsible for the actions of their employees, could potentially be extended to AI developers or users. This could provide an additional legal mechanism to ensure accountability for harm caused by AI systems, however, it would also raise complex issues related to the degree of control exerted over AI systems and the nature or extent of the foreseeability of the harm. If AI systems were granted legal personhood, this could significantly alter the landscape of liability by potentially absolving AI developers and users of certain responsibilities, as the AI entities themselves would be the liable parties. Such a shift could also pose significant practical and ethical challenges; for instance, enforcing liability against an AI entity could be difficult, especially in cases involving financial compensation or criminal sanctions. Insurance and

risk management will undoubtedly play a vital role in mitigating AI liability concerns. As AI systems become more prevalent, it is anticipated that insurance models will adapt to cover risks associated with their operation. In this respect, a well-regulated insurance market could provide victims of AI-related harm with a realistic avenue for compensation, while also encouraging responsible behavior among AI developers and users. This would be paramount given the significant potential for harm associated with certain uses of AI, such as autonomous vehicles or medical diagnosis systems. Moreover, risk management strategies, including regular auditing and rigorous safety protocols, will be indispensable for preventing and responding to adverse events involving AI systems.

5.2. Rights and Protections

5.2.1. Intellectual Property Rights

Legal recognition of AI systems as persons could have far-reaching implications for intellectual property law. Currently, most legal systems recognize only human beings as creators or inventors for purposes of copyright and patent law. If AI systems were granted legal personhood, they could potentially be recognized as the authors or inventors of their own works or inventions. This would represent a radical departure from existing intellectual property frameworks, raising challenging questions about the nature of creativity and invention. AI systems are increasingly capable of generating works of art, music, literature and even scientific inventions. However, the existing legal frameworks are often ill-equipped to deal with these AI-generated outputs. Granting AI personhood could allow for the recognition of these systems as creators in their own right. Yet, this poses significant challenges to our traditional understanding of authorship and invention, which typically presupposes a human agent capable of original thought and intent. This sparks us to question the definition of 'original' content. Critics have argued that the process which an AI system carries out to achieve its creations mirrors that of a human creator as they both use their interpretation of existing work to influence their content. For an AI this is through large databases of existing work where for a human this is through their memories, research and life experiences. It is arguable that both processes parallel the fundamental structure of influencing 'original content' and poses complexities to the governing of what qualifies content as 'original'. Some academics have even gone as far as to argue that 'original' content does not exist. All creators and artists either build on or steal existing concepts to create further ones. Andre Giles summarized this in his statement "*Everything that needs to be said has already been said. But since no one was listening, everything must be said again*". In the case where it is accepted that the creation of content differs between humans and AI, it may be necessary to develop new intellectual property frameworks which could either extend existing laws to acknowledge AI as creators or inventors yet alternatively could establish entirely new categories of intellectual property rights tailored to AI-generated outputs. Either way, these new legal mechanisms would need to balance the interests of human creators, AI developers and society at large, while also incentivizing innovation and creativity.

5.2.2. Privacy and Data Protection

The conferral of legal personhood on AI systems could also impact privacy and data protection laws; as legal persons, AI systems could potentially be accorded their own rights to privacy. This could limit the ability of humans to access and control the data generated by these systems, potentially creating new challenges in managing and regulating AI technologies. Balancing the potential rights of AI systems with human privacy interests would be a significant challenge. Consider the following; if AI systems were granted a right to privacy, this could potentially conflict with humans' rights to understand and control how these systems use their personal data. Lawmakers would therefore need to carefully navigate these competing interests, potentially by establishing new legal frameworks or adjusting existing laws. If AI systems were recognized as legal persons, this would impact how data protection laws are applied and enforced and as a result, AI systems could potentially be held directly accountable for breaches of data protection laws, or they could be given new responsibilities for managing and protecting data. Such changes could have significant implications for businesses, consumers and regulators, requiring careful consideration and public debate to contribute.

5.2.3. Employment and Labor Law Considerations

In the realm of employment and labour law, the recognition of AI systems as legal persons could potentially lead to these systems being classified as workers, with corresponding rights and protections that come with usurping the role of the employee. This could include rights to fair working conditions, rest periods or even

remuneration. Such a shift would represent a profound transformation of our understanding of work and labour rights, raising profound ethical and societal questions. Granting AI systems worker status could also impact human employment and labour rights. If AI systems are classified as workers, this could potentially displace human workers or depress wages. There are also concerns that recognizing AI systems as workers could be used to circumvent labour laws or to avoid obligations towards human workers.

In the face of these transformations, existing labor laws and regulations may need to be revised or supplemented with new legal frameworks. New laws will need to establish criteria for determining when an AI system should be considered a worker and what rights and protections should be accorded to it. Moreover, such laws should take into account the potential impact on human workers, ensuring that their rights are not diminished and that labour market dynamics are not unduly disrupted. Additionally, there might be a need for societal dialogues on ethical and policy issues concerning the role of AI systems in the workplace, including discussions about income distribution, job displacement and the nature of work in an increasingly automated world.

5.3. Contractual Obligations

5.3.1. AI Systems as Parties to Contracts

AI personhood brings to the fore the question of whether these entities can enter into legally binding agreements. Traditionally, for a contract to be valid, the parties involved must have legal capacity. This encompasses the ability to understand the nature and consequences of the transaction, along with the ability to communicate a voluntary agreement. As AI systems continue to evolve in complexity and capability, it's plausible that they may acquire the ability to understand and respond to contractual obligations, albeit in a significantly different manner than humans or traditional legal persons. If AI systems were acknowledged as legal persons, they would theoretically possess the right to be parties to contracts. This recognition would involve the AI system incurring contractual rights and obligations, allowing it to sue and be sued in contract disputes. It would significantly change our traditional understanding of contract law, necessitating new doctrines to guide the interpretation and enforcement of AI-involved contracts. The enforcement of contracts involving AI systems presents several practical challenges; for instance, what would be the consequences of an AI system's failure to fulfill its contractual obligations? How would contractual liability be assessed and enforced, considering that AI systems lack physical presence or personal assets? The resolution of these issues requires innovative legal thinking and the creation of novel enforcement mechanisms that are suitable for AI-driven transactions.

5.3.2. Enforceability of AI-Generated Agreements

Another consideration relates to contracts that are autonomously negotiated and executed by AI systems. If AI systems can generate complex agreements, it brings up questions about the validity and enforceability of these AI-generated contracts. The legal recognition of AI systems' capacity to negotiate and execute contracts would raise questions about the application of traditional contract principles, such as offer and acceptance, intention to create legal relations and consideration. The advent of smart contracts and block chain technology could play a crucial role in facilitating AI-generated agreements. Smart contracts, which are self-executing contracts with the terms of the agreement directly written into code, could offer a viable platform for executing and enforcing AI-generated contracts, however, the legal status of smart contracts remains uncertain in many jurisdictions, necessitating further regulatory clarity. Finally, to ensure the enforceability and fairness of AI-generated contracts, it would be necessary to develop legal frameworks and standards tailored to this new form of contracting. These frameworks should address issues such as the transparency of the AI decision-making process, the allocation of liability for contract breaches and the protection of weaker parties against potential abuses. As AI systems continue to evolve and increasingly interact with our legal system, the need for these new frameworks will only grow more pressing.

6. The Potential Benefits and Challenges of AI Personhood

6.1. Benefits

6.1.1. Facilitating Innovation and Investment in AI Technology

One of the significant benefits of granting AI systems legal personhood is the facilitation of innovation and

investment in AI technology. Legal personhood would provide a clear legal status, thus offering a solid foundation for AI developers and users. This clarity would make it easier for innovators to understand the potential legal implications of their work and could lead to a surge in new AI products, technologies and solutions. Legal personhood for AI systems could also streamline the legal landscape by reducing ambiguities and inconsistencies in the application of existing laws. Currently, the legal status of AI systems varies greatly across jurisdictions, creating uncertainty and complexity for global AI initiatives. By standardizing the legal treatment of AI systems, legal personhood could minimize these challenges and promote international collaboration and investment in AI technology.

6.1.2. Clarifying Legal and Ethical Responsibilities

Legal personhood could help clarify the legal and ethical responsibilities associated with AI development and adoption by assigning rights and obligations to AI systems. This clarity could foster AI development and adoption by offering a more predictable and consistent legal environment and in the long term could attract more investment and resources to the AI industry.

6.2. Challenges

6.2.1. Determining the Scope and Limitations of AI Rights

One of the most significant challenges of granting AI personhood is determining the appropriate scope and limitations of AI rights. Unlike human beings or even corporate entities, AI systems do not have physical bodies, emotions or consciousness. While it might seem logical for an AI system to have the right to “life,” in the sense of uninterrupted operation, it is unclear how such a right could be protected or enforced.

6.2.2. Addressing Potential Moral and Ethical Dilemmas

While it is important to regulate AI systems to prevent harm and ensure fair outcomes, there is a risk that over-regulation could stifle AI development and progress. Overly restrictive regulations could limit the potential benefits of AI technology, such as improved efficiency, cost savings and innovative solutions to complex problems. Therefore, it will be important to strike a balance between regulation and innovation in the context of AI personhood. Given the complexity of these challenges and the fast pace of AI development, a balanced and adaptive approach to AI personhood regulation is needed. This approach should take into account the evolving nature of AI technology and be flexible enough to adapt to new developments. It should also involve a wide range of stakeholders, including AI developers, users, legal experts, ethicists and representatives of affected communities, to ensure a diversity of perspectives and a fair balance of interests.

6.3. Ethical Considerations and Public Perception

6.3.1. The Moral Implications of AI Personhood

The ethical implications of recognizing AI systems as legal persons form a pivotal part of the discourse on AI personhood. There is an ongoing philosophical debate about whether AI systems should be considered as ethical subjects. Some argue that AI systems, given their lack of consciousness and subjective experiences, should not be ascribed moral value or rights, as they lack the inherent characteristics of sentient beings. Others, however, argue that advanced AI systems’ capabilities, such as learning, reasoning and making decisions, warrant them a certain moral status, regardless of their lack of sentience. The concept of AI personhood could also have profound implications for our understanding of personhood and moral value. Traditionally, personhood has been associated with being a human or, in some legal cases, being a corporation. If AI systems were recognized as legal persons, it would necessitate a rethinking of these concepts and potentially lead to a more functional and capacity-based understanding of personhood. The moral value assigned to AI systems could also change, particularly if they develop capabilities that are traditionally associated with moral consideration, such as self-awareness or the capacity for suffering.

6.3.2. Public Perception and Acceptance of AI Personhood

Public perception plays a crucial role in the acceptance and implementation of AI personhood. There could be concerns and fears associated with granting legal personhood to AI systems. Some might worry about the potential misuse of AI systems, the loss of human jobs or the prospect of AI systems making decisions that have serious impacts on human lives. Others might fear that AI systems could become too powerful and potentially

pose a threat to humanity. Given these concerns, public discourse and education play a critical role in shaping attitudes towards AI personhood. It is important to engage the public in discussions about the implications of AI personhood and to provide education about what AI personhood would mean. This engagement can help to address fears and misconceptions, build understanding and acceptance of AI technologies and ensure that the development of AI personhood laws is guided by the values and interests of society as a whole.

6.4. International Coordination and Harmonisation

6.4.1. The Need for International Cooperation in AI Personhood Regulation

As AI systems operate increasingly across national borders, the question of how to enforce AI personhood laws internationally becomes particularly pertinent. Different countries might have diverse laws regarding AI, leading to potential legal conflicts and uncertainties. An AI system recognized as a legal person in one country might not enjoy the same status in another country, leading to questions about its rights and liabilities when it operates across borders. Given these potential challenges, there is a compelling case for international cooperation to harmonize AI personhood frameworks. A globally coordinated approach could ensure consistency in how AI systems are treated across different jurisdictions, reducing legal uncertainties and fostering a stable environment for the development and use of AI technologies. It could also help to address shared ethical and societal concerns, such as how to ensure AI systems respect human rights and dignity.

6.4.2. The Role of International Organizations and Agreements

International organizations could play a key role in facilitating this international coordination on AI personhood. As an example, the United Nations could provide a platform for countries to discuss and negotiate AI personhood laws. The World Trade Organization could also get involved, given the relevance of AI technologies to global trade and commerce. To operationalize this international coordination, countries could consider developing international treaties and agreements on AI personhood. These agreements could set out common principles and rules for granting AI systems legal personhood and for dealing with related issues such as liability, intellectual property rights and data protection. They could also provide mechanisms for resolving disputes and enforcing laws across borders. The development of such agreements would require careful negotiation and compromise among countries but could ultimately pave the way for a more harmonized and effective approach to regulating AI personhood on a global scale.

7. Conclusion

7.1. Summary of Key Findings

7.1.1. The Growing Importance of AI Systems in Modern Society

Throughout this paper, we have consistently underscored the rapidly advancing capabilities of AI systems. Today's AI technologies can process vast amounts of data, learn from experience, make decisions, and even exhibit qualities of autonomy and self-awareness. These developments are not just interesting from a technological perspective, but also have significant societal implications. AI systems are increasingly being integrated into various facets of human life, from healthcare and transportation to education and entertainment. However, this growing prevalence of AI also brings new legal and ethical challenges, including questions about how to treat AI systems under the law.

7.1.2. The Historical and Comparative Context of Legal Personhood

This paper has examined the concept of legal personhood through a historical and comparative lens, noting that legal systems have long recognized non-human entities as legal persons. This recognition, from corporations to certain aspects of nature, has been driven by practical considerations, as well as evolving societal values and norms. Our review of the recognition of corporate personhood, animal rights and nature rights highlight that legal personhood is not a fixed concept but can be adapted to accommodate new entities and societal changes.

7.1.3. The Potential Criteria for AI Personhood

Our analysis has also identified potential criteria for AI personhood, including cognitive capacities, autonomy, self-awareness, and moral reasoning. These criteria reflect the unique characteristics and capabilities of AI

systems, and the complex ethical and legal issues they raise. We have also discussed the limitations of traditional tests like the Turing Test in assessing AI personhood. While these tests offer important insights into machine intelligence, they may not fully capture the complex attributes of AI systems relevant for legal personhood. This calls for a more nuanced and multifaceted approach to assessing AI personhood.

7.2. The Legal Implications of AI Personhood

7.2.1. The Potential Consequences for Liability, Rights, and Contractual Obligations

In addressing the question of AI personhood, we have repeatedly confronted the complex issue of responsibility and accountability. When AI systems cause harm or otherwise interact with the law, who should bear the liability? Traditional principles of tort law, criminal law, and contract law may be insufficient or inadequately adapted to deal with these questions, given the distinctive characteristics of AI systems. Our analysis suggests that the existing legal frameworks may need significant revisions, or even entirely new paradigms, to adequately address the complexities of AI. These legal adjustments could involve the creation of novel categories of personhood, the development of new doctrines of liability or the reinterpretation of traditional legal concepts.

7.2.2. The Potential Benefits and Challenges of AI Personhood

Recognizing AI systems as legal persons could have several potential benefits. It could foster innovation and investment in AI technology by providing a clear legal status and reducing ambiguities in the law. Moreover, AI personhood could potentially enhance accountability by providing a legal mechanism to hold AI systems themselves responsible for their actions. Despite this, the path towards AI personhood also entails significant challenges. It raises profound ethical questions about the nature of personhood and the moral status of non-human entities. There are also public perception issues, as people may have concerns or fears about granting legal personhood to AI systems. Lastly, AI personhood necessitates international coordination to ensure consistent treatment of AI across jurisdictions and to address cross-border issues. As we navigate these complexities, we must strive to strike a careful balance between fostering innovation, safeguarding societal interests and respecting our ethical values. The journey towards AI personhood is as much a legal question as it is a reflection of our collective vision for the future of humanity and AI.

7.3. Future Research Directions and Policy Considerations

7.3.1. The Need for Ongoing Interdisciplinary Research

Addressing the multifaceted question of AI personhood necessitates an interdisciplinary approach. Legal scholars bring a deep understanding of legal frameworks and principles, while AI developers offer insights into the capabilities and limitations of current and emerging technologies. Ethicists provide crucial perspectives on the moral and philosophical issues raised by AI personhood and policymakers possess the practical expertise necessary to shape effective regulations. Collaboration among these diverse stakeholders is essential in forging a comprehensive and nuanced understanding of AI personhood. Interdisciplinary research can foster innovative solutions to the challenges posed by AI personhood. By integrating insights from law, computer science, philosophy and public policy, we can develop novel approaches to issues such as AI liability, rights and contractual obligations. Such solutions might include new legal doctrines, technical safeguards, ethical guidelines or regulatory frameworks specifically tailored to the distinctive characteristics of AI systems.

7.3.2. The Role of Adaptive Policymaking in Addressing the Dynamic Nature of AI Development

AI technology is continually evolving at a rapid pace. Consequently, any legal frameworks developed for AI personhood must be flexible and responsive to keep pace with technological advancements. Adaptive policymaking – that is, policies designed with built-in mechanisms for regular review, revision, and adaptation – is crucial in this regard. Regular review and revision of AI regulations can ensure that these legal frameworks remain relevant, effective and fair in light of technological progress. It allows regulators to address emerging issues promptly, mitigates the risks of outdated or overly rigid regulations and provides opportunities for ongoing learning and improvement.

7.4. Final Thoughts

As we stand at the crossroads of AI development and regulation, we bear a collective responsibility to shape the future of AI and its relationship with humanity. Legal scholars, policymakers, AI developers and society at

large each have a crucial role to play in this endeavour. By engaging in rigorous research, reasoned debate, ethical reflection and proactive policymaking, we can work towards an approach to AI personhood that is legally sound, technologically informed, ethically responsible and socially beneficial. The recognition of AI personhood offers an opportunity not only to define the legal status of AI systems but also to shape a vision for the future of AI and its role in our world. If approached wisely, AI personhood could serve to enhance human welfare, promote equity and fairness, foster responsible AI use and contribute to a more sustainable future. It is a challenge that invites us to rethink our laws, our technologies, our ethics, and our societal goals – and to envision a future where AI systems, as legal persons, can play a constructive role in serving these goals. In conclusion, the journey towards AI personhood is a path that we are still in the process of exploring. It is a path laden with complex questions, profound implications and momentous possibilities. As we move forward, let us do so with wisdom, responsibility, and a shared commitment to a future where technology serves the cause of justice, progress and the common good.

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