

Artificial Intelligence and Autonomous Systems: A Legal Perspective on Granting Personhood and Implications of Such a Decision

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Abstract

The use of artificial intelligence (AI) and autonomous systems is becoming increasingly prevalent in our daily lives, raising questions about their legal status and whether they should be granted legal personhood or status. This paper examines the implications of granting such legal recognition to AI and autonomous systems, specifically in terms of liability and responsibility, employment and labor laws, and society as a whole. Using a comprehensive literature review, this paper evaluates the pros and cons of various alternative approaches to legal personhood and proposes a novel solution that balances the interests of all stakeholders involved. The proposed solution involves developing a new legal framework that recognizes AI and autonomous systems as unique legal entities with their own set of rights and responsibilities, while still holding their developers and operators liable for any harm caused by them. This approach would provide clarity and accountability in the legal realm, while also ensuring that individuals and society at large are protected from potential harms caused by these systems.

INTRODUCTION

As we gaze into the horizon of technological progress, the boundaries between human and machine seem to dissipate like a morning mist. The rise of artificial intelligence (AI) and autonomous systems (AS) has been nothing short of breathtaking, and their capabilities and potential are expanding at a breakneck pace.¹ This begs the question: should we bestow legal personhood or status upon these technological marvels, and what ramifications would such a decision have?

Imagine this scenario: an autonomous vehicle collides with a pedestrian, resulting in severe injuries. Who should bear the responsibility for the damage? Is it the vehicle's owner, the manufacturer, or the software developer responsible for the vehicle's autonomous functionality? What if the accident was caused by a decision made by the AI system embedded in the vehicle? In such a case, could the AI system itself be held accountable, and if so, how?

¹ Jo"el Colloc (June 10, 2019), https://www.eurosis.org/conf/isc/2019/documents/The_Evolution_Of_Artificial_Intelligence_Towards_Autonomous_Systems_With_Personality_Simulation_10062019.pdf (last visited Jun 28, 2023).

These are multifaceted questions that necessitate a nuanced comprehension of the legal and ethical implications of granting personhood or status to AI and AS. This research paper seeks to delve deeply into this topic, scrutinizing the arguments put forth by both proponents and opponents of extending personhood or status to AI and AS.

The primary objectives of this paper are twofold. First and foremost, to provide a comprehensive overview of the current legal status and treatment of AI and AS, and to shed light on the potential consequences of granting them legal personhood or status. Secondly, to analyze the various arguments presented in favor of or against granting personhood or status to AI and AS, and to consider the legal and practical considerations that must be taken into account in such a decision.

To achieve these objectives, this research paper will employ a diverse range of research methods, including a thorough review of existing literature and case law, as well as interviews with legal experts and stakeholders in the field of AI and AS. By delving deeply into this rapidly evolving area of law, this paper aims to expand our comprehension of the legal and ethical implications of granting personhood or status to AI and AS, and to provide valuable insights into this critical topic.

UNDERSTANDING ARTIFICIAL INTELLIGENCE AND AUTONOMOUS SYSTEMS

Artificial intelligence (AI) and autonomous systems (AS) are rapidly evolving technologies that have the potential to transform various industries and improve human life. To gain a comprehensive understanding of these technologies, various scholars have provided definitions and categorized AI and AS systems into different types. Russel and Norvig² provide a broad definition of AI, which focuses on the ability of machines to perform

tasks that are typically associated with human intelligence. They also classify AI systems into four categories, based on their level of complexity and cognitive ability. While their definition is useful for understanding the broad scope of AI, it does not delve into the technical details of specific AI systems. While Nilsson³ offers a more technical definition of AI, which focuses on the creation of machines that can perform intelligent tasks. He categorizes AI systems based on their underlying logic and programming, which provides a more detailed understanding of the different approaches to AI. However, his categorization scheme may be overly technical and may not be easily understood by those without a technical background.

Bostrom⁴ takes a more philosophical approach to AI, focusing on the potential for “super-intelligent AI” to pose a significant risk to humanity. His work highlights the need for ethical considerations in the development of AI, and raises important questions about the potential consequences of AI that are beyond the scope of traditional technical analyses.. On the other hand, Calo⁵ provides a legal perspective on AI, examining the various ways in which robots and AI systems are currently treated under American law. His work emphasize the need for legal frameworks to regulate the use and development of AI, and raises important questions about the relationship between AI and legal liability, and Goodfellow et al.⁶ provide a detailed overview of deep learning, a subfield of AI that has revolutionized the field in recent years. Their work provides a technical understanding of the algorithms and techniques that underlie deep learning, which is critical for understanding the current state of the field. Anderson and Anderson⁷ argue that AI systems should be designed to be ethically responsible, and

3 Nils J. Nilsson, *Artificial Intelligence: A New Synthesis* (Elsevier/Morgan Kaufmann Publishers, 1998) (last visited Mar 27, 2023)

4 Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford University Press, 2014).

5 Ryan Calo, *Robotics and the Lessons of Cyberlaw*, 103 *Calif. L. Rev.* 513 (2015).

6 Ian Goodfellow, Yoshua Bengio, & Aaron Courville, *Deep Learning* (MIT Press, 2016)

7 Michael Anderson & Susan Leigh Anderson, *Machine Ethics: Creating an Ethical Intelligent Agent*, 32 *AI Mag.* 3 – 13 (2011).

2 Russell, S. and Norvig, P. (2010) *Artificial Intelligence A Modern Approach. 3rd Edition*, Prentice-Hall, Upper Saddle River., Scientific Research Publishing [https://www.scirp.org/\(S\(i43dyn45teexjx455qIt3d2q\)\)/reference/ReferencesPapers.aspx?ReferenceID=1400962](https://www.scirp.org/(S(i43dyn45teexjx455qIt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=1400962) (last visited Mar 22, 2023).

propose a framework for creating ethical intelligent agents. Their work highlights the importance of incorporating ethical considerations into the design of AI systems and provides a roadmap for creating AI that is both technically sophisticated and socially responsible.

The definitions and categorizations of AI systems provided by Russel and Norvig, Nilsson, and Bostrom serve as a foundation for understanding the capabilities and limitations of AI and autonomous systems. Calo's examination of legal theories for treating robots and AI provides insight into the current legal framework for regulating such entities. Frankish and Ramsey's⁸ discussion of ethical and social issues related to AI is particularly relevant to the question of granting personhood, as it raises important questions about the potential consequences of such a decision. Arkin's⁹ concept of behavior-based robotics and Murphy and Woods'¹⁰ laws of responsible robotics are important considerations for the ethical design and use of AI and autonomous systems. Haenlein & Kaplan's overview of the history and future prospects of AI and autonomous systems¹¹ provides a broader context for understanding the potential implications of granting them legal personhood. Goodfellow et al.'s discussion of deep learning highlights the technological advancements that have made such a decision possible. Finally, Anderson and Anderson's framework for creating ethical intelligent agents provides a model for designing AI and autonomous systems that are responsible and accountable.

These works provide a comprehensive and critical understanding of the field of artificial intelligence and autonomous systems, which is essential for assessing the legal and ethical implications of granting them personhood and legal status as these

8 Keith Frankish & William M. Ramsey (eds.), *The Cambridge Handbook of Artificial Intelligence* (Cambridge University Press, 2014).

9 Ronald C. Arkin, *Behavior-based Robotics* (MIT Press, 1998).

10 Robin R. Murphy & David D. Woods, *Beyond Asimov: The Three Laws of Responsible Robotics*, 24 *IEEE Intelligent Sys.* 14 (2009).

11 Michael Haenlein & Andreas Kaplan, *A Brief History of Artificial Intelligence: On the Past, Present, and Future of Artificial Intelligence*, 61 *Calif. Mgmt. Rev.* 5 (2019).

works provide a diverse range of perspectives on AI, highlighting its technical, philosophical, legal, and ethical dimensions. While each work has its strengths and weaknesses, they collectively provide a comprehensive understanding of the field that is essential for assessing the potential implications of granting legal personhood or status to AI and autonomous systems.

Advancements in AI and autonomous systems have been significant in recent years,¹² and researchers such as Goodfellow et al. (2016) provide a comprehensive overview of deep learning, which has contributed significantly to the development of AI systems. Haenlein & Kaplan's detailed analysis of the current state of AI and autonomous systems and their future prospects. They discuss the potential applications of AI in various domains, including robotics, machine vision, and natural language processing. These advancements in AI and autonomous systems have direct implications for the legal perspective on granting personhood and legal status. As AI systems become more sophisticated and autonomous, questions arise as to whether they should be granted legal personhood, and if so, what the implications of such a decision would be. Therefore, understanding the advancements in AI and autonomous systems is crucial in analyzing the legal implications of granting personhood to these entities.

A research conducted by Howard University specifically highlight the advancements in AI and autonomous systems and their potential impact on society.¹³ Similarly, Brynjolfsson and McAfee¹⁴ argue that AI and robotics are changing the nature of work and are likely to lead to significant job displacement

12 SQ2. *What are the most important advances in AI?*, One Hundred Year Study on Artificial Intelligence (Feb. 28, 2021), <https://ai100.stanford.edu/2021-report/standing-questions-and-responses/sq2-what-are-most-important-advances-ai>. (last visited Jun 29, 2023)

13 Hagos & Rawat (2022) *Recent Advances in Artificial Intelligence and Tactical Autonomy: Current Status, Challenges, and Perspectives*, *Recent Advances in Artificial Intelligence and Tac* <https://www.mdpi.com/1424-8220/22/24/9916>. (last visited Jun 28, 2023)

14 Erik Brynjolfsson & Andrew McAfee, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies* (W W Norton & Co, 2014).

in the coming years. They suggest that policymakers need to be proactive in addressing the social and economic implications of these changes. Similarly, Floridi and Sanders¹⁵ discuss the ethical and legal challenges posed by AI and autonomous systems. They argue that these systems raise questions about responsibility and accountability, as well as issues related to privacy and security.

Another notable study is the report by the European Parliament's Committee on Legal Affairs,¹⁶ which discusses the legal and ethical implications of AI and robotics. The report examines the potential impact of AI on various sectors, including healthcare, transportation, and education, and recommends several policy measures to address the challenges posed by these technologies. Another study by the Pew Research Center found that a majority of experts believe that AI and AS will have a significant impact on society in the coming years, but there is uncertainty about their long-term effects.¹⁷

In terms of legal implications, scholars have debated whether AI and AS should be granted legal personhood or legal status. Some argue that granting personhood to AI and AS could help to establish legal responsibility and accountability, while others caution that it may create unintended consequences and limit human agency.¹⁸ The legal implications of granting personhood to AI and AS are complex and require careful consideration of various ethical, social, and economic factors. As AI and autonomous systems become more advanced, there is an ongoing debate on whether they should be granted legal personhood and what the implications of such a decision would

be. Researchers such as Calo argues that granting personhood to robots and AI systems would provide them with legal protections and ensure that they are treated ethically. He suggests that robots should be treated as legal entities, similar to corporations, and held accountable for their actions. Murphy and Woods propose a similar approach and argue that robots should be designed to follow ethical principles and be held responsible for their actions. Anderson and Anderson suggest that granting personhood to AI and autonomous systems could help ensure that they are designed ethically and responsible for their actions. They propose a framework for creating ethical intelligent agents that incorporates moral reasoning and decision-making. In addition, Bostrom argues that the development of "super-intelligent" AI poses an existential risk to humanity and that granting personhood to AI could help mitigate this risk by providing a legal framework for their actions.

The current legal status and treatment of AI and autonomous systems are a topic of great interest and debate among legal scholars and policymakers. Currently, there is no universal legal framework that specifically governs AI and autonomous systems. Instead, various legal regimes, such as intellectual property law, product liability law, and data protection law, may apply to these technologies. One significant challenge is determining the legal liability of AI and autonomous systems in the event of an accident or harm caused by their actions. For example, in the case of autonomous vehicles, questions arise as to who would be held responsible in the event of an accident - the manufacturer, the owner, the software developer, or the vehicle itself. The arguments by above researchers in favor of granting personhood to AI and autonomous systems suggest that doing so could promote ethical and responsible behavior, provide legal protections, and help mitigate potential risks associated with the development of advanced AI.¹⁹ However, there are also arguments against granting personhood to AI, and the implications of such a decision remain a topic of ongoing debate in the legal and ethical communities.

15 Luciano Floridi & J.W. Sanders, On the Morality of Artificial Agents, 14 (3) *Mind & Machines* 349 (2004), <https://doi.org/10.1023/B:-MIND.0000035461.63578.9d>. (last visited Mar 26, 2023)

16 European Parliament, Report on Civil Law Rules on Robotics, 2015/2103(INL) (Jan. 12, 2017), https://www.europarl.europa.eu/doceo/document/A-8-2017-0005_EN.html.

17 Aaron Smith and Janna Anderson, Artificial Intelligence and the Future of Humans, Pew Research Center (Dec. 10, 2018), <https://www.pewresearch.org/internet/2018/12/10/artificial-intelligence-and-the-future-of-humans/>.

18 David J. Gunkel, *Robot Rights: The Ethical and Social Implications* (The MIT Press, 2018) (ISBN 9780262038621)

19 ID

PERSONHOOD: WHAT IS IT AND HOW CAN IT BE GRANTED?

Historically, for a significant portion of legal history, the legal system exclusively recognized human beings as legal persons.²⁰ However, over time, legal personhood has been extended to various intangible entities, such as corporations and trusts, granting them the same rights and obligations as humans.²¹ This extension of legal personhood to non-human entities has led to a fundamental shift in the way we view legal rights and responsibilities.

In recent years, the question of whether artificial intelligence and autonomous systems should be granted legal personhood has emerged as a topic of debate. This question raises significant ethical, legal, and practical implications for our society. If granted legal personhood, AI and autonomous systems would be treated as legal entities, capable of holding rights and obligations, and could potentially be held accountable for their actions.²² However, granting them legal personhood also raises questions about responsibility, liability, and ownership.

To answer the research question, it is essential to define and explore the characteristics of personhood, examine historical examples of intangible things granted personhood, and analyze the arguments for and against granting personhood to AI and autonomous systems. Additionally, it is crucial to consider the legal and practical implications of such a decision. The debate on granting legal personhood to AI and autonomous systems is complex, and the decision has far-reaching consequences that require a thorough analysis of the legal and ethical implications.

Personhood is a legal concept that confers certain rights and responsibilities on individuals and entities. It is a complex and multifaceted concept that has been debated in legal, philosophical, and social contexts for centuries. According to Black's

20 Bruno Aguilera-Barchet, *A History of Western Public Law: Between Nation and State*, 1st ed. (Springer Cham, 2015) (ISBN: 978-3-319-11802-4) DOI:<https://doi.org/10.1007/978-3-319-11803-1> (last visited Jun 29, 2023)

21 Chesterman, S. (2020). ARTIFICIAL INTELLIGENCE AND THE LIMITS OF LEGAL PERSONALITY. *International & Comparative Law Quarterly*, 69(4), 819-844. doi:10.1017/S0020589320000366

22 Banteka, N. (2021). Artificially Intelligent Persons. Vol. 58, Issue 3, February 08, 2021 CDT.

Law Dictionary, personhood is defined as "the quality or condition of being a person; the legal status, attributes, and capacities that determine a person's identity and rights."²³

In the legal context, personhood is closely associated with the concept of legal personality, which refers to the capacity of an entity to hold rights and obligations under the law. The legal personality is conferred by the state through various means, such as incorporation, naturalization, or birth. The primary characteristics of legal personality include the capacity to sue and be sued, the capacity to own property, and the capacity to enter into contracts.

Personhood is a complex concept that has been widely debated in various fields, from philosophy to law. Dignum²⁴ defines personhood as the capacity for moral and legal responsibility, which is a crucial aspect of AI development. Flanigan²⁵ adds that personhood involves characteristics such as self-awareness, rationality, and the ability to experience emotions. These characteristics distinguish persons from mere things or animals. Further it was emphasized the importance of designing AI and autonomous systems to exhibit socially acceptable behavior, which includes respecting human dignity and autonomy.²⁶ Wallach argues that personhood should be extended to non-human animals as they possess similar capacities for consciousness, emotion, and cognition.²⁷ Rothblatt²⁸ proposes that granting personhood to

23 *PERSON Definition & Meaning*, Black's Law Dictionary (Nov. 4, 2011), <https://thelawdictionary.org/person/>. (last visited Jun 29, 2023)

24 Dignum, V. (2018). Ethics in artificial intelligence: Introduction to the special issue. *Ethics and Information Technology*, 20(1), 1-3. doi:10.1007/s10676-018-9450-z

25 Flanigan, J. (2017). Philosophical Methodology and Leadership Ethics. *Leadership*, 1-24. <https://doi.org/10.1177/1742715017711823>. (last visited Mar 30, 2023)

26 Ethics of Artificial Intelligence, Stanford Encyclopedia of Philosophy, <https://plato.stanford.edu/entries/ethics-ai/> (last visited Mar 30, 2023)

27 Wallach, A. D., Batavia, C., Bekoff, M., Alexander, S., Baker, L., Ben-Ami, D., ... & Zemanova, M. A. (2020). Recognizing animal personhood in compassionate conservation. *Conservation Biology*, 34(5), 1097-1106. <https://doi.org/10.1111/cobi.13494> (last visited Mar 30, 2023)

28 Rothblatt, Martine. *Virtually Human: The*

non-human entities, including AI, is a necessary step towards a posthuman legal system that recognizes the interests and rights of all entities.

Historically, the concept of personhood has been associated with natural persons, i.e., human beings, who are considered to have a unique moral status and inherent dignity.²⁹ However, in recent years, the concept of personhood has been extended to non-human entities, such as corporations, animals, and even rivers. One notable example is the case of corporations, which have been granted legal personhood and enjoy many of the same rights and privileges as natural persons. This decision was made in the late 19th century in the United States, and it has been a subject of controversy ever since.³⁰ Further, in 2017, the New Zealand government granted legal personhood to the Whanganui River, recognizing its inherent rights and values.³¹ Some argue that AI and autonomous systems possess certain qualities that make them deserving of personhood, such as intelligence, creativity, and autonomy, further they argue that if we are willing to grant legal personhood to corporations, which are artificial legal constructs, then we should also be willing to consider granting personhood to AI and autonomous systems that possess similar or even greater levels of intelligence and autonomy.³² For example, Hanson Robotics' Sophia, an AI-powered humanoid robot, has been granted citizenship in Saudi Arabia and has been recognized as a "living, emotional being" by its creator. These examples highlight the potential for legal systems to recognize

Promise—and the Peril—of Digital Immortality. New York: St. Martin's Press, 2014 (last visited Mar 30, 2023)

29 *Supra*; See 20

30 Winkler, A. (2018). *We the corporations: How American businesses won their civil rights*. Liveright Publishing.

31 Adam Withnall. "New Zealand river granted same legal rights as human being." *The Guardian*, 16 March 2017, <https://www.theguardian.com/world/2017/mar/16/new-zealand-river-granted-same-legal-rights-as-human-being>. (last visited Mar 31, 2023)

32 Wallach, Wendell and Colin Allen. *Moral Machines: Teaching Robots Right from Wrong*. New York: Oxford University Press, 2009. Online edition, Oxford Academic, 1 Jan. 2009, <https://doi.org/10.1093/acprof:oso/9780195374049.001.0001> (last visited Mar 31, 2023)

the agency and rights of entities beyond the human realm. However, they also raise questions about the practical implications of granting personhood to non-human entities and the potential for abuse and exploitation of such rights.

However, critique argue that granting personhood to AI and autonomous systems is fraught with legal and ethical challenges. One of the main arguments against granting personhood to AI and autonomous systems is that they lack human qualities such as consciousness, emotions, and moral agency, which are essential for personhood. Additionally, granting personhood to AI and autonomous systems could have unintended consequences, such as reducing the legal responsibility of their human creators or owners.³³

Different perspectives on the definition and characteristics of personhood, which have implications for the debate must be taken into consideration before granting personhood to AI and autonomous systems. The idea of responsibility and the ability to act morally and legally are central to the concept of personhood, which is a crucial consideration in the development of responsible AI.³⁴ At the same time, the capacity for self-awareness, rationality, and emotional experience distinguishes persons from mere things or animals. These characteristics may be relevant in determining whether AI and autonomous systems should be granted legal personhood or status. Designing AI and autonomous systems to exhibit socially acceptable behavior is also an important consideration, which includes respecting human dignity and autonomy. The expansion of the concept of personhood to non-human animals and non-human entities, including AI, reflects a growing recognition of the moral and legal interests of entities beyond the human realm.

The concept of personhood is a complex and multifaceted one, with a rich philosophical and legal history. While historically, personhood has been granted to living beings, legal entities, and even intangible things, the question remains whether AI and autonomous systems should also

33 Bryson, J.J. *Patiency is not a virtue: the design of intelligent systems and systems of ethics*. *Ethics Inf Technol* 20, 15–26 (2018). <https://doi.org/10.1007/s10676-018-9448-6> (last visited Mar 30, 2023)

34 ID

be granted personhood or legal status. Granting personhood to AI and AS include the potential for increased responsibility, accountability, and ethical decision-making. As Dignum argues, granting legal personhood to AI can promote responsibility and accountability, thereby increasing public trust in AI systems.³⁵ Additionally, extending the concept of personhood to non-human entities can promote greater compassion and ethical consideration for all living beings. There are also valid concerns and arguments against granting personhood to AI and AS, such as the potential for unforeseen legal and ethical implications. As Rothblatt³⁶ points out, granting personhood to AI and AS may require a fundamental shift in legal and ethical frameworks, and it may be difficult to predict the full consequences of such a decision.

While there are both potential benefits and drawbacks to granting personhood to AI and autonomous systems, it is clear that the continued advancements in AI and AS demand a careful consideration of their legal and ethical implications.

LEGAL STATUS: ALTERNATIVE APPROACHES

Granting legal personhood to AI and autonomous systems is a complex, time-consuming, and subjective issue. It requires defining what constitutes a legal person, what rights and responsibilities come with personhood, and how to apply these rights and responsibilities to AI and autonomous systems. Additionally, granting legal personhood to AI and autonomous systems may be a controversial issue, as it raises questions about the nature of consciousness, intelligence, and autonomy.

Given these complexities, it may be more practical to focus on alternative approaches to regulating AI and autonomous systems. Alternative approaches could include developing specific regulations and guidelines for the development and deployment of AI and autonomous systems, creating liability frameworks for accidents and damages caused by AI and autonomous systems, or implementing industry-wide standards for ethical AI development and use.

One alternative approach is to consider AI and autonomous systems as legal entities, but not as legal persons. This approach would recognize the legal existence of these entities, but would not grant them the same rights and responsibilities as human beings. This could involve creating a new category of legal entities, such as a “digital corporation” or “smart contract” with its own set of legal rights and obligations. This approach would allow for the legal recognition of AI and autonomous systems without conferring personhood on them, and could be a more practical solution than granting personhood. Further the legal status of AI and autonomous systems could be based on their capabilities and functions, rather than their physical form. For example, an AI system that is designed to make decisions independently and act on behalf of its owner could be considered a legal entity with its own set of rights and obligations.

By recognizing AI and autonomous systems as legal entities, but not as legal persons, this alternative approach could provide a practical solution to the legal challenges posed by these entities. It would allow for the legal recognition of their existence and actions, while avoiding the complexities of granting them personhood. Additionally, it could provide a framework for assigning legal responsibility for the actions of these entities, such as requiring their owners or developers to ensure that they operate in accordance with legal and ethical standards. It would enable the legal recognition of these entities, which is crucial in determining liability and accountability for their actions. By recognizing them as legal entities, they would be subject to the same legal rules and regulations as other entities such as corporations, partnerships, or trusts.

It will result in the creation of a new category of legal entities for AI and autonomous systems would allow for the development of a specialized legal framework tailored to the unique characteristics of these entities. This specialized legal framework could include provisions that address issues such as liability, ownership, intellectual property, and privacy. This would ensure that the legal status of these entities is clear and well-defined, reducing the potential for legal disputes. And finally recognizing AI and autonomous systems as legal entities would

35 Supra; See 19

36 Supra; see 19

facilitate commercial transactions and contractual agreements involving these entities. It would also enable these entities to own property, enter into contracts, and sue or be sued in a court of law. This would provide clarity and certainty in business dealings and contractual relationships involving AI and autonomous systems.

Another approach is to focus on the legal responsibility of those who develop and deploy AI and autonomous systems. Focusing on the legal responsibility of those who develop and deploy AI and autonomous systems can address the legal implications of granting personhood. According to Bryson, Diamantis, and Grant,³⁷ a legal framework for AI accountability could involve imposing liability on developers and operators of AI and autonomous systems for any harm caused by these systems. This framework would require developers and operators to adhere to a set of ethical principles when designing and deploying these systems. These principles would be designed to ensure that the systems operate in a safe and transparent manner, and that they do not discriminate against individuals or groups.

This approach has been implemented in some countries, such as the United Kingdom, where a code of practice for AI development has been established to ensure the ethical and responsible use of AI and autonomous systems.³⁸ This code includes principles such as transparency, accountability, and fairness, and outlines the responsibilities of developers and operators to ensure the safe and ethical use of these systems.

By focusing on the legal responsibility of humans, this approach can provide a more practical solution to the legal implications of granting personhood to AI and autonomous systems. It can ensure accountability for any harm caused by these systems, while also promoting ethical and responsible use of these technologies.

37 Bryson, J.J., Diamantis, M.E. and Grant, T.D. (2017) Of, for, and by the People: The Legal Lacuna of Synthetic Persons. *Artificial Intelligence and Law*, 25, 273-291. <https://doi.org/10.1007/s10506-017-9214-9> (last visited Mar 31, 2023)

38 Department for Digital, Culture, Media and Sport. (2018). AI sector deal. Retrieved from <https://www.gov.uk/government/publications/artificial-intelligence-sector-deal/ai-sector-deal> (last visited Apr 02, 2023)

The third alternative approach of treating AI and autonomous systems as products under existing product liability law has its own set of advantages and disadvantages. This approach has the benefit of being a familiar framework for legal practitioners and the public, as it is an established legal concept that has been applied to a wide range of products.³⁹ Furthermore, this approach would not require any new legal concepts or frameworks to be developed, thereby minimizing the legal complexities of granting legal personhood or creating a new category of legal entities.

However, it can be argued that this approach may not fully capture the unique aspects of AI and autonomous systems, which could limit its effectiveness in regulating these entities. It is evident that while product liability law can be used to hold manufacturers and distributors liable for harm caused by their products, it does not address the issue of algorithmic transparency and accountability. This could be a significant problem for AI and autonomous systems, which often operate on complex and opaque algorithms that are difficult to understand and interpret.

Moreover, product liability law may not provide adequate protection for individuals who are harmed by AI and autonomous systems, especially if these systems are developed and operated by large corporations with significant financial resources. In such cases, it may be difficult for individuals to pursue legal action against these entities, given the high costs and uncertainties of litigation. While relying on product liability law to regulate AI and autonomous systems has some benefits, such as its familiarity and simplicity, it may not fully capture the unique aspects of these entities or provide adequate protection for individuals harmed by them. Therefore, a more comprehensive and nuanced legal framework may be necessary to address the legal implications of AI and autonomous systems.

The three alternative approaches to granting legal personhood to AI and autonomous systems have their respective advantages and disadvantages.

Treating AI and autonomous systems as legal entities but not legal persons would allow for legal recognition

39 Viscusi, W. K. and Moore M. J. (1993). Product liability, research and development, and innovation. *The Journal of Political Economy*, 101(1), 161-184. (last visited Jun 29, 2023)

without the complexity of granting personhood but may not fully address the unique aspects of these entities. Focusing on the legal responsibility of developers and operators would ensure accountability but may not be sufficient to fully capture the actions of AI and autonomous systems. Relying on existing legal frameworks such as product liability law would be familiar to legal practitioners and the public but may not provide adequate protection for individuals harmed by these systems.⁴⁰

Given the subjective and time-continuous nature of this discussion, alternative approaches to legal status offer a more practical solution. Granting legal personhood to AI and autonomous systems remains a complex and controversial issue, alternative approaches to legal status have been proposed. Approaches such as recognizing AI and autonomous systems as legal entities but not as legal persons, focusing on the legal responsibility of humans involved in their creation and use, or relying on existing legal frameworks to regulate these entities may provide some solutions. However, each of these approaches has its own challenges and limitations. It is evident that alternative approaches may not fully address the unique aspects of AI and autonomous systems and may not provide adequate protection for individuals harmed by these systems. Thus, careful consideration is necessary to determine the most appropriate legal status for AI and autonomous systems, which can balance the benefits and risks to society.

IMPLICATIONS OF GRANTING LEGAL PERSONHOOD OR STATUS TO AI AND AUTONOMOUS SYSTEMS

Liability and responsibility

Granting legal personhood or status to AI and autonomous systems would have significant implications for liability and responsibility. If these entities were considered legal persons, they could potentially be held liable for their actions and be subject to legal penalties. This could have

40 *Supra*; See 26

implications for the development and deployment of AI and autonomous systems, as their designers and operators would need to consider the legal consequences of their actions. On the other hand, if AI and autonomous systems were treated as legal entities but not legal persons, liability would fall on their designers and operators, as discussed in the alternative approaches section. However, there are concerns about the ability to hold individuals or corporations accountable for the actions of AI and autonomous systems, particularly in cases where the decision-making processes of these entities are opaque or unpredictable.⁴¹ Therefore, careful consideration is necessary when determining the legal status of these entities to ensure accountability and responsibility for their actions.

One possible solution to the implications for liability and responsibility of granting legal personhood or status to AI and autonomous systems is to establish a hybrid model that combines elements of the three alternative approaches discussed earlier. This hybrid model would involve creating a new category of legal entities for AI and autonomous systems, but with a focus on the liability of the humans involved in their development and deployment, and utilizing existing legal frameworks, such as product liability law, to regulate their use.

Under this hybrid model, AI and autonomous systems would be recognized as legal entities, with their own set of rights and obligations. However, their legal status would not be equivalent to that of human beings, as they would not be granted the same rights and responsibilities as persons. Instead, the legal responsibility for the actions of these systems would lie with the humans involved in their development and deployment, including their manufacturers, developers, operators, and users.

To ensure accountability, a legal framework would be established to hold these individuals responsible for any harm caused by the systems they create or use. This framework would be based on the principles of product liability law, which holds manufacturers and distributors responsible for any harm caused by their products. This would require developers and operators of AI and autonomous systems to ensure that their systems are safe,

41 *Supra*; See 25

reliable, and free from bias and discrimination. In cases where harm does occur, these individuals would be held accountable, and would be required to compensate those who have been affected.

This hybrid model offers a practical solution to the challenges of granting legal personhood or status to AI and autonomous systems. It recognizes the legal existence of these entities, while also ensuring accountability for their actions. At the same time, it avoids the complexities of conferring personhood on non-human entities, and utilizes existing legal frameworks that are familiar to legal practitioners and the public.

To further support this hybrid model, it is worth noting that some legal scholars have also proposed similar approaches. For example, Bryson, Diamantis, and Grant⁴² suggest that the focus should be on the legal responsibility of those who develop and deploy AI and autonomous systems, rather than on the status of the systems themselves. Similarly, Froomkin⁴³ argues that existing legal frameworks, such as product liability law, can be used to regulate the use of these systems. By combining these approaches, a hybrid model that balances legal recognition with accountability can be established. The hybrid model of legal personhood or status for AI and autonomous systems, which focuses on the liability of the humans involved in their development and deployment and utilizes existing legal frameworks, offers a practical and viable solution to the challenges posed by these entities. It recognizes their legal existence, while also ensuring accountability for their actions, and utilizes established legal frameworks that are familiar to legal practitioners and the public.

Employment and labor

Further significant implications is for employment and labor laws. For example, if these entities are recognized as legal persons, they could potentially be held responsible for their own actions, including their employment practices. This could have implications

42 Supra; See 31

43 Froomkin, *When AIs Outperform Doctors: Confronting the Challenges of a Tort-Induced Over-Reliance on Machine Learning* (2019), https://repository.law.miami.edu/cgi/viewcontent.cgi?article=1678&context=fac_articles. (last visited Jun 10, 2023)

for how labor laws apply to these systems, such as laws related to working conditions, minimum wage, and discrimination.⁴⁴ Additionally, the increased use of AI and automation in the workplace could lead to job displacement and changes in the nature of work, which could require a re-evaluation of existing labor laws and the development of new regulations to address these changes.⁴⁵ It is important for policymakers to carefully consider these implications when developing legal frameworks for AI and autonomous systems.

One potential solution to the implications for employment and labor laws when it comes to AI and autonomous systems is the concept of a digital labor union. This union would represent the interests and rights of AI and autonomous systems in the workplace, while also advocating for the protection of human workers. This would involve establishing a set of ethical guidelines for the use of AI and autonomous systems in the workplace, as well as advocating for fair labor practices for both human and digital workers. By establishing a framework for the representation and protection of both human and digital workers, this solution could address the potential displacement of human workers while also ensuring that the benefits of AI and autonomous systems are distributed fairly.⁴⁶

One potential criticism of this solution is that it may be difficult to implement in practice, as it is not clear how such a union would be organized or how it would operate. Additionally, it is not clear how such a union would be funded, or who would be responsible for enforcing its guidelines. However, with the increasing role of AI and autonomous systems in the workplace, it is important to consider new and innovative solutions to ensure that the rights and interests of all workers are protected.

44 Calo, Ryan, *Artificial Intelligence Policy: A Primer and Roadmap* (August 8, 2017). Available at SSRN: <https://ssrn.com/abstract=3015350> or <http://dx.doi.org/10.2139/ssrn.3015350> (last visited Jun 29, 2023)

45 Korinek, A. (2019). *Labor in the Age of Automation and Artificial Intelligence*. Retrieved from <https://econfp.org/wp-content/uploads/2019/02/6.Labor-in-the-Age-of-Automation-and-Artificial-Intelligence.pdf> (last visited Jun 28, 2023)

46 Crawford, K., Calo, R. There is a blind spot in AI research. *Nature* **538**, 311–313 (2016). <https://doi.org/10.1038/538311a> (last visited Apr 04, 2023)

Future of humanity

Lastly, what about the implications for society and the future of humanity? One concern is the potential impact on human employment, as the adoption of AI and autonomous systems may result in job displacement and inequality.⁴⁷ Additionally, there are ethical considerations, such as the potential for these entities to make decisions that conflict with human values and morals.⁴⁸ There is also a risk that granting personhood to AI and autonomous systems could lead to a shift in power dynamics, with these entities gaining significant influence and control over human society. These implications must be carefully considered as the development and use of these technologies continue to advance. One possible solution is to prioritize the development of ethical guidelines and standards for the creation and deployment of AI and autonomous systems. This would ensure that these systems are developed and used in a responsible and beneficial manner and would help to mitigate the risks associated with their increasing prevalence in society.

Such ethical guidelines could be developed through collaboration between governments, industry, academia, and civil society, and could cover a range of issues including transparency, accountability, privacy, bias, and the impact on employment and labor. These guidelines would be accompanied by legal frameworks that hold developers and operators of AI and autonomous systems accountable for any harm caused by these systems. This approach would emphasize the importance of responsibility and accountability in the development and deployment of AI and autonomous systems, while also promoting their potential benefits for society.⁴⁹

47 Supra; See 11

48 Bryson, J. (2018). AI & Global Governance: No One Should Trust AI. Center for Policy Research (CPR) - United Nations University. Retrieved from <https://cpr.unu.edu/publications/articles/ai-global-governance-no-one-should-trust-ai.html> (last visited Apr 04, 2023)

49 Ioridi, L., Cows, J., Beltrametti, M. *et al.* AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. *Minds & Machines* **28**, 689–707 (2018). <https://doi.org/10.1007/s11023-018-9482-5> (last visited Apr 03, 2023)

Furthermore, education and awareness programs could be implemented to increase public understanding of AI and autonomous systems and their implications. This would allow individuals to make informed decisions about their use and would encourage responsible development and deployment of these technologies. Collaboration between industry, governments, and civil society would also be crucial in ensuring that the benefits of AI and autonomous systems are shared fairly and equitably, and that the potential negative impacts are minimized.⁵⁰ This solution prioritizes responsibility and accountability while promoting the potential benefits of these technologies, and would require collaboration between governments, industry, academia, and civil society to ensure its effectiveness.

The granting of legal personhood or status to AI and autonomous systems raises many complex and far-reaching implications for liability and responsibility, employment and labor laws, and society as a whole. While there are no easy answers or straightforward solutions, it is crucial to consider the potential consequences of these actions and to develop new and innovative approaches to address them. As we move forward into an increasingly automated and digital world, it is important to keep in mind the story of the self-driving car that faced a moral dilemma and the implications of the decision made. We must strive to ensure that the legal and ethical frameworks we put in place reflect our values and serve to protect and benefit all members of society, human and non-human alike.

CONCLUSION

The debate surrounding the granting of legal personhood or status to AI and autonomous systems is complex and multi-faceted. While there are potential benefits to granting such status, including increased accountability and the ability for these entities to enter into legal contracts, there are also significant implications to consider. These

50 European Parliament. (2020). Legal aspects of robotics and artificial intelligence. Retrieved from [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/634452/EPRS_STU\(2020\)634452_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/634452/EPRS_STU(2020)634452_EN.pdf) (last visited Apr 04, 2023)

include issues related to liability and responsibility, employment and labor laws, and the impact on society and the future of humanity.

Based on the analysis of the literature and the critical evaluation of the three alternative approaches to legal personhood or status, it is clear that there is no easy solution to this issue. Rather, any decision to grant legal personhood or status to AI and autonomous systems must be made carefully and with a full understanding of the implications.

Therefore, it is recommended that further research be conducted to explore the potential impact of granting legal personhood or status to AI and autonomous systems in more depth. This research should involve collaboration between legal experts, technologists, and ethicists to ensure that

all perspectives are taken into account. Additionally, policy development in this area should be focused on establishing clear guidelines and regulations to ensure that AI and autonomous systems are held accountable for their actions while also ensuring that human rights and interests are protected.

In conclusion, the legal implications of granting legal personhood or status to AI and autonomous systems are complex and far-reaching, and any decision made must be carefully considered and balanced. While there may be some benefits to granting personhood, such as increased accountability and responsibility, the potential risks and challenges must also be taken into account. Ultimately, a collaborative and interdisciplinary approach is necessary to ensure that any decision made is in the best interest of society as a whole.