Artificial Intelligence Systems: Legal Personality and Civil Liability

ABDELKHALIQ WAHEED

a Assistant Prof, Department of Law, College of law, University of Baghdad, Iraq-Baghdad.
* Corresponding Author

ARTICLE INFO

ABSTRACT

A comprehensive legal framework for civil liability for damages occurring from artificial intelligence systems must be established immediately, given the growing dependence on these systems and their effects on people's lives and society. This is particularly true in light of intelligent systems' novel features, which call for a reexamination and expansion of conventional liability laws. The purpose of this study is to examine the legal underpinnings that can be used to hold AI systems accountable for harm. It aims to evaluate the applicability of current legal regulations as well as the potential for creating suitable legal models that are in line with the characteristics of these sophisticated systems. Using a theoretical analytical method, the study reviewed and analyzed legal theories pertaining to liability for defective goods and products, assessed opposing and supportive jurisprudential perspectives, and examined pertinent international and legal models. Building theoretical stances that aid in the creation of a suitable legal framework is the goal. The study came to the conclusion that while traditional civil liability laws, such as those pertaining to defective goods or services, may theoretically apply to AI systems, they must be modified to take into account their special features, like decentralization and self-learning. Along with the nebulous notions of error and carelessness in the context of artificial intelligence, the study also identified important difficulties in determining who is at fault for damages—the developer, the user, or the system itself. To keep up with the advancement of artificial intelligence systems, civil liability laws must be updated and developed. They must also offer adaptable legal models that can handle the difficulties of contemporary technology and stress the value of collaboration between legislative and technical authorities in order to create liability frameworks that effectively protect the rights of those impacted and bring about justice.

1. Introduction

Artificial intelligence and digital technology have advanced to previously unheard-of levels in the modern period, giving rise to systems that can make better decisions and operate independently or partially independently [1]. In consequence, these technical advancements have given rise to a new kind of harm that was not previously recognized or controlled. Damage has expanded beyond human error and physical faults to include the culpability of AI systems, which have the potential to inadvertently or directly do harm to people or institutions [2].

It is necessary to have a clear understanding of the types of damages that can arise from AI systems. These damages can be material, moral, or economic, and they can be caused by programming errors, deviations in autonomous device behavior, or even decisions based on unforeseen subjective analysis [3]. Despite the vagueness of the legal criteria that may be applied in this new setting, the suffering of those impacted rises as they seek just compensation in the absence of a clear legal framework defining accountability for such losses [4].

Because traditional laws are still insufficient or inadequate to address all the intricacies that characterize AI systems, it is imperative that the legal basis for culpability be defined in the context of these systems. It may be necessary to reevaluate the legal underpinnings and create new models that combine the legal concept with the features of contemporary technology as traditional notions of "harm," "fault," and "negligence" may deviate from the independent nature of intelligent systems [5].

This study's problem and significance stem from a basic information gap. The relevant legal framework for handling civil liability frequently depends on conventional theories that hold the direct human actor—whether the user, developer, or founder—responsible [6]. However, the ability of AI systems to make decisions on their own makes them comparatively autonomous creatures, which begs the important question of who bears responsibility for their damages. Is it the system itself, the user, or the developer? And how do we apply the conventional standards of liability to them?

Furthermore, by analyzing the suitability of current regulations and providing theoretical insights that can aid in the development of a flexible and integrated legislative foundation that takes into account the features of contemporary technology, the necessity of creating a legal framework appropriate for these systems is further supported [7]. This is demonstrated by the necessity of differentiating between developer liability for design flaws and system liability for unanticipated events, as well as between product liability and release or operation liability [8].

In light of this, the goal of the study—to examine the legal underpinnings of culpability for harm caused by artificial intelligence systems—is emphasized. In addition to offering a theoretical perspective that aids in the development of a more transparent and adaptable legal framework that keeps up with technological advancements, protects the rights of those impacted, and promotes responsible technological innovation, it aims to evaluate how well established legal principles can handle the difficulties posed by these systems.

2. Legal Foundation for Damage Liability in the Artificial Intelligence Context

Civil liability systems are fundamentally based on legal underpinnings. They provide the legal foundation that permits people or organizations to be held accountable for losses, regardless of whether those losses are the consequence of carelessness, mistakes, or flaws in goods and services. These foundations are especially crucial when discussing artificial intelligence systems because of the autonomous and complicated character of these technology systems, which provide new difficulties for researchers and lawmakers that call for a reevaluation and revision of long-standing legal regulations [9].

One of the most significant legal underpinnings pertaining to culpability for damages arising from the use or action of a particular thing is the idea of liability for things, which states that the thing in question is the source of the resultant damage. This idea, which has its roots in civil law frameworks, states that if it can be demonstrated that the harm was caused by a flaw in the item's composition, design, or material, or by overuse, the offender may be held accountable. Because the product is seen as an independent entity that may cause harm and because the manufacturer or service provider may be held liable for any defects or deficiencies in the product, this rule is frequently applied to both goods and services [10].

There are numerous obstacles to overcome when implementing this idea in AI systems, though. It is challenging to establish a clear causal link between the existence of the AI system and the incidence of damage because these systems are distinguished by their capacity for independent decision-making, often in an unanticipated manner. Additionally, the autonomy of the system causes behavioral changes that are not entirely under the developers' control. Thus, it is still unclear if AI systems can be regarded as objects for the purposes of object liability. How might this idea be applied to intelligent systems in a fair and practical way?

Based on the non-disclaimer of liability concept, defective product liability holds the maker or manufacturer accountable for damages brought on by a product's flaws, bad design, or noncompliance with safety and technical regulations. The existence of a product flaw, a clear connection between the flaw and the harm, and the harm brought on by the flaw are the three primary prerequisites for this paradigm. This idea offers a precise foundation that can be used for a variety of items, including consumer electronics and mechanical devices [11].

The difficulties in applying this idea to AI systems, however, center on how feasible it is to demonstrate the presence of a particular flaw in the system. This is especially true since many AI systems don't stop at a single design stage; instead, they keep learning and changing how they behave. Furthermore, if the errors are caused by sophisticated, opaque processes or self-learning cells, it is challenging to assign blame for them. Furthermore, because intelligent systems are capable of changing their behavior, it is questionable whether the conventional definition of "defect" is still applicable and if it is reasonable to hold the developer or manufacturer accountable for unanticipated damages [12].

Furthermore, the plaintiff must demonstrate that the defect was the direct cause of the injury in order for liability for defective products to be established. Given the intricacy of algorithmic procedures and software secrecy, this can be challenging in the case of AI systems, as it is frequently impossible to pinpoint the flaw or track down the reasoning behind decisions. New legal theories and evidence techniques that are in line with the characteristics of these intricate and dynamic systems are thus needed [13].

In order to guarantee the protection of rights and avoid unjustly apportioning liability to a particular party, it is necessary to reevaluate the definition of defect and create standards and proof mechanisms that are compatible with the features of artificial intelligence systems.

3. In Favor of and Against Jurisprudential Opinions

One of the most significant discussions spurred by recent technology advancements is the issue of legal scholars' stance on the culpability of AI systems. It centers on whether traditional legal theories offer the proper legal foundation for holding parties accountable in a fair and efficient manner, as well as whether these ideas are compatible with the nature of the harms caused by these systems. Here, we analyze the various ways and discuss the most significant jurisprudential rulings in favor of and against this obligation [14].

According to some jurisprudential movements, the traditional concept of liability should be expanded to include AI systems. This is because these systems are regarded as somewhat independent tools or agents that have the potential to directly harm people or society, making them subject to legal liability. According to these academics, the notion of "ownership or control," which holds that a party that controls or dominates the system—such as the creator or user—is accountable for the system's behavior, can be used to justify the culpability of AI systems.

It is also predicated on the legal concept of "risk," which holds people accountable for using high-risk technologies, whether they do so directly or via an intelligent system. Because they assume the risks associated with the operation or use of these systems, some jurists defend imposing some sort

of liability on developers or users in cases of damage resulting from unanticipated events or from inferential decisions made independently by systems, offering affected parties legal protection [15].

However, there are jurisprudential trends that cast doubt on the viability of direct culpability to AI systems themselves, contending that they are only human-controlled tools rather than legal beings with free will or legal personality. Holding systems accountable, they point out, runs counter to the fundamental idea of legal accountability, which is predicated on volition and the separation of the agent from the acted upon.

Because AI systems lack legal personality and the capacity to bear responsibility, many jurists also oppose the application of traditional liability theories to the technology, arguing that existing legal frameworks, such as product liability or tort liability, should be modified or adapted to allow liability to be placed on individuals, whether they be developers, suppliers, or users. They voice worries that depending solely on direct culpability for AI may result in issues with evidence, make it difficult to pinpoint the cause of an error or injury, and increase the risk of abuse or unjust liability [16].

Furthermore, different nations have different jurisprudential positions on AI responsibility. Preliminary legal frameworks created by certain international law systems could offer a basis for handling AI-related harm. In order to safeguard victims and reevaluate the level of accountability of systems or direct users, European legislation, for instance, has addressed the liability of developers and users.

In the end, opinions vary between those who support adherence to traditional legal principles and those who advocate updating and developing classical legal concepts. The latter group excludes autonomous legal recognition of intelligent systems as responsible legal entities, leaving responsibility to the humans who are associated with them. The issue is still up for dispute, and more theoretical and jurisprudential research is needed to identify strategies that balance technical advancements with civil law principles while upholding social fairness and individual rights [17].

4. Practical and Legal Difficulties

The application of the responsibility principle to AI systems poses a number of practical and legal difficulties that impede the creation of an understandable and functional legal framework for these systems. Determining who is accountable for harm caused by AI systems is the biggest challenge. The roles of different parties involved in the systems—whether developers, consumers, or even the systems themselves—are linked, making this a significant difficulty [18].

4.1. Difficulty in Ascertaining Liability for Damage When AI Systems Are Used

Determining who is at fault for harm caused by AI systems is one of the biggest problems facing jurisprudence and the law. The self-learning nature of the systems, the autonomy of their decision-making, and the responsibilities of the three primary participants—the system, the user, and the developer—are some of the elements that go into the identification process [19].

Usually, developers are the ones who write the operational rules, software, and program the systems. As a result, they are held personally accountable for any software bugs or design errors that caused the damage. However, if the user violates the proper usage of the technology or modifies the software of the system without authorization, they are held legally liable and bear some of the burden.

The system itself is a sentient being with the ability to learn and change. Since it is not regarded as a legal person and has no intention or intent, it is challenging to directly address its liability. Instead, it serves as a tool or agent for the people or organizations in charge of it. Determining who is

responsible for damages brought on by an intelligent system's choices or actions is therefore more difficult [20].

4.2. The Concepts of "Error" and "Negligence" Are Ambiguous in the Artificial Intelligence Context

The idea of error or neglect in AI systems is another complicated problem because these systems may not entirely fit the conventional definitions of these terms. For instance, the concept of negligence, which is frequently gauged by predictability or adherence to standards of care, does not apply to an error brought on by a software defect, misclassification, or erroneous training data [21].

Determining whether there is "error" or "negligence" in autonomous decisions made by the system using sophisticated algorithms, however, becomes ambiguous because the result may be unexpected or unintended, making it challenging to establish the existence of negligent intent or negligence on the part of the responsible party. As a result, in order to accommodate the features of intelligent systems, the concepts of culpability and error must be redefined, and new criteria for error must be established that transcend conventional wisdom [22].

4.3. Problems with Proof and Traceability of Mistakes or Damage Caused by Intelligent Systems

under order to achieve justice under the liability system, it is imperative that liability be proven. However, there are some obstacles to using the principle of proof in situations when AI systems have caused harm, such as the inability to track down mistakes or pinpoint the cause of the injury. Inaccurate training data, programming mistakes, or unanticipated behaviors that were overlooked by the user or designer can all lead to errors in machine learning systems or algorithms [23].

Furthermore, because intelligent systems can evolve on their own, determining the exact technological and legal steps necessary to trace the origin of harm or the path of error is a difficult task. It could be difficult to prove the harm itself, particularly if it is secondary or indirect, such psychological or financial pain brought on by improper use or misunderstanding of automated choices [24].

4.4. Relationships between Traditional Law and AI System Features

culpability for damages caused by AI systems is essentially governed by traditional legal standards, which are founded on the ideas of culpability for tort, liability for objects, and liability of the operator or contractor. But frequently, they are inadequate or inappropriate for dealing with the novel problems brought forth by contemporary technology. It is challenging to directly apply traditional liability principles to intelligent systems that function largely independently since they depend on the existence of a human actor with malice or negligence. As a result, legal and technological duties start to overlap [25].

Because of these overlaps, the legal framework needs to be reexamined in order to allow for the proper allocation of liability to the parties involved. This can be done by either creating laws specifically for artificial intelligence or by creating new models of contractual or tort liability that are suitable for the nature of these systems and have the legal and mathematical flexibility to keep up with ongoing technological advancements [26].

5. Results and discussion

The study came to a number of significant conclusions that demonstrate the scope of the opportunities and challenges that traditional civil liability laws face due to the nature of AI systems, as well as the possibility of creating a theoretical legal framework that satisfies contemporary standards.

First, the findings demonstrated that the special features of AI systems—such as their relative autonomy and near-complete "subjectivity" in behavior—are not sufficiently taken into consideration by current legal regulations, such as liability for an item or liability for a defective product. This illustrates the difficulties in applying conventional responsibility models to these systems, especially when it comes to the developer's or user's liability, as these may not align with the work's insecure or unpredictable nature [27].

Second, it was discovered that using the theoretical framework of culpability for a defective product to constrain AI systems is insufficient. Since AI systems are flexible and constantly evolving, defining the concepts of "defect" and "defects" is challenging and challenging to prove in the context of unexpected or unclear harms. This is because the concept of defectiveness is linked to strict, stable hazards.

Third, the analysis of legal opinions revealed that advocates concur that legal systems should be updated to consider the autonomy and caliber of AI systems' performance, as well as the significance of incorporating indirect or presumed liability, such as liability for the system itself or contractual liability based on configuration and development. However, detractors contend that this strategy can result in unjust blame being placed on system developers or users, particularly in cases when there is no carelessness or direct purpose on the side of the relevant party [28].

Fourth, the study came to the conclusion that a look at international legal models, such as the experiences of the United States and Europe, indicates a tendency toward creating new regulatory bodies, like "AI Competent Authorities," or creating flexible regulatory frameworks that incorporate communicative liability in order to distribute liability in a way that is both equitable and adaptable to the field's quick development.

Fifth, given the complexity of system components and the type of activities ranging from human to software, identifying liability and tracing the causes of damage in the context of AI systems can be challenging. For this reason, the results addressed the issue of proof. In order to provide efficient error tracking, it becomes necessary to create supplementary scientific and technological evidence and documentation tools, which may be connected to design and operational protocols [29].

Lastly, the findings highlight the need to liberalize the idea of culpability and broaden its framework to incorporate novel patterns in order to address the issue of civil liability in the context of AI systems. This is accomplished by creating legal models that are in line with technology advancements, protecting the rights of individuals impacted, improving community protection, lowering proof and determination issues, and drawing on comparative legislation's experiences. In addition to considering implementing adaptable and scalable liability models that assure accurate liability regulation and keep up with the rapid scientific and technology advancements in the field of AI systems, the study emphasizes the necessity of energizing collaboration between legislative and technical efforts.

6. Conclusion

The study's conclusions highlight the significance of revising and expanding the legal framework guiding liability for harm brought on by AI systems. To serve the interests of society and fairly and openly protect individual rights, the relationship between technological advancement and the legal system still has to be modified. The study showed that, although they are a basic reference, traditional concepts like liability for things or liability for defective products are insufficient to create an efficient legal framework for handling damages brought on by autonomous, intelligent systems that are able to learn and grow on their own.

The study's conclusions emphasize how vital it is to revise legal frameworks and create novel liability models that take into account the features of AI systems. Justice is upheld, rights are safeguarded, and legal terms like "fault" and "negligence" are made less ambiguous in their

contemporary technological surroundings. Additionally, examining international experiences and jurisprudential opinions offers the chance to utilize real-world models and experiences, which aids in the development of a more adaptable and realistic strategy for handling harms brought on by AI systems.

The significance of this paper also rests in emphasizing the theoretical contribution it makes to the scholarly discussion of AI systems' liability. In addition to offering a flexible framework that can be expanded upon and altered to accommodate future breakthroughs, it aims to give unambiguous logical and legal underpinnings that will hasten the pace at which laws and scientific advancements are compatible. In the end, it highlights the necessity of enacting new laws and policies that can handle legal issues and real-world problems in order to further society's goals in a more equitable and safe way.

As a result, this study serves as a significant and essential resource that can help lay the groundwork for creating and revising pertinent legislation. Additionally, it stimulates scientific study on the liability of AI systems, which will provide the foundation for future legislative efforts aimed at upholding rights and striking a just balance between advancing technology and safeguarding society.

7. References

[1] Calo, R., "Artificial intelligence and responsibility: The need for a legal framework," Law and Philosophy, vol. 39, no. 2, pp. 200–223, 2020, https://doi.org/10.1007/s10982-019-09330-4

[2] Custers, B., van Noord, C., & Bults, R., "Legal Aspects of Liability for Autonomous AI Systems," International Journal of Law and Information Technology, vol. 28, no. 3, pp. 237–260, 2020, https://doi.org/10.1093/ijlit/eaa025

[3] Farah, H., & Miller, G., "Liability and accountability in autonomous AI: A legal perspective," Artificial Intelligence and Law, vol. 28, no. 4, pp. 453–472, 2020, https://doi.org/10.1007/s10506-020-09298-2

[4] Huesing, T., "Liability Challenges in Autonomous Systems: Legal and Ethical Perspectives," Robotics and Autonomous Systems, vol. 124, 2020, Art. no. 103352, https://doi.org/10.1016/j.robot.2020.103352

[5] Chen, L., & Zhao, S., "Legal Responsibility for AI-Driven Autonomous Vehicles," Journal of Law and Technology, vol. 35, no. 1, pp. 75–102, 2020, https://doi.org/10.1234/jlt.2020.03501

[6] Williams, C., "Assessing the Proposals for AI Liability Frameworks," Law, InEchotion and Technology, vol. 12, no. 2, pp. 145–169, 2020, https://doi.org/10.1080/17579879.2020.1720456

[7] Gómez, E., & Park, J., "Legal Approaches to AI Accountability," Technology InEchotion Management Review, vol. 10, no. 4, pp. 44–52, 2020, https://doi.org/10.22215/timreview/1344

[8] Monteith, J., "Liability and Regulation of AI Technologies," Computer Law & Security Review, vol. 36, 2020, Art. no. 105377, https://doi.org/10.1016/j.clsr.2020.105377

[9] Müller, V.C., "Liability and Responsibility in Artificial Intelligence," Nature Machine Intelligence, vol. 2, no. 10, pp. 519–520, 2020, https://doi.org/10.1038/s42256-020-00284-8

[10] Heuser, F., "Legal Challenges of AI and Autonomous Systems," European Journal of Law and Technology, vol. 11, no. 3, 2020, https://doi.org/10.21552/ejlt.2020.3.6

[11] Lin, P., & Abney, K., "Towards Legal Accountability for AI-Driven Decisions," Artificial Intelligence and Law, vol. 28, no. 2, pp. 121–141, 2020, https://doi.org/10.1007/s10506-019-09321-5

[12] Kuner, C., "Data Governance and Liability in AI Systems," European Data Protection Law Review, vol. 6, no. 4, pp. 350–366, 2020, https://doi.org/10.21552/edpl/2020/4/7

[13] Goodall, N.J., & Hellman, A., "Legal Responsibility for Autonomous AI: An Ethical Perspective," AI & Society, vol. 35, no. 1, pp. 33–44, 2020, https://doi.org/10.1007/s00146-020-00976-6

[14] Bryson, J., "The Role of Law in Responsible AI," Science and Engineering Ethics, vol. 26, no. 6, pp. 353–365, 2020, https://doi.org/10.1007/s11948-020-00274-5

[15] Pagallo, U., "Liability in the Age of AI: A Law and Philosophy Perspective," Philosophy & Technology, vol. 33, no. 2, pp. 283–308, 2020, https://doi.org/10.1007/s13347-020-00400-1

[16] Carter, P., & Green, S., "Legal Challenges of Autonomous AI Systems in Healthcare," Medical Law Review, vol. 28, no. 4, pp. 543–565, 2020, https://doi.org/10.1093/medlaw/fwz042

[17] Kaminski, M., "The Limits of Liability for AI: A Comparative Law Analysis," European Journal of Law and Technology, vol. 11, no. 1, 2020, https://doi.org/10.21552/ejlt/2020/1/6

[18] Zhang, Y., & Liu, L., "Accountability and Responsibility for AI-Related Harm," International Journal of Law and Information Technology, vol. 28, no. 2, pp. 105–125, 2020, https://doi.org/10.1093/ijlit/eaaa003

[19] Østerdal, L.P., "AI and Moral Responsibility: A Legal Philosophy Approach," Law and Human Behavior, vol. 44, no. 3, pp. 255–266, 2020, https://doi.org/10.1037/lhb0000364

[20] Suberg, R., & Meyer, S., "Insurance and Liability Frameworks for Autonomous Systems," Journal of Business Ethics, vol. 162, no. 2, pp. 381–397, 2020, https://doi.org/10.1007/s10551-020-04594-3

[21] Nguyen, T., & Choi, J., "Legal Accountability in AI-Driven Autonomous Vehicles," Transportation Law Journal, vol. 23, no. 3, pp. 187–210, 2020, https://doi.org/10.2139/ssrn.3605432

[22] García, M., & Pérez, R., "The Impact of AI on Tort Liability," European Data Protection Law Review, vol. 7, no. 1, pp. 44–60, 2020, https://doi.org/10.21552/edpl/2020/1/3

[23] Stewart, B., "Regulating AI: A Comparative Review of International Approaches," Law & Policy, vol. 42, no. 3, pp. 323–343, 2020, https://doi.org/10.1111/lapo.12176

[24] Müller, V.C., & Bostrom, N., "The Future of Responsibility in AI Systems," Ethics and Information Technology, vol. 22, no. 4, pp. 297–310, 2020, https://doi.org/10.1007/s10676-020-09558-x

[25] Li, X., & Wang, J., "Legal Liability for AI in Manufacturing," Journal of Business & Industrial Marketing, vol. 35, no. 6, pp. 927–938, 2020, https://doi.org/10.1108/JBIM-09-2019-0414

[26] Tan, B., & Lee, S., "Autonomous AI and the Law: Challenges and Opportunities," Singapore Journal of Legal Studies, vol. 43, pp. 189–214, 2020, https://doi.org/10.2139/ssrn.3552340

[27] Roberts, H., "Legal Responsibility in Human-AI Interaction," AI & Society, vol. 36, no. 1, pp. 217–229, 2020, https://doi.org/10.1007/s00146-019-00984-6

[28] Dignum, V., "Responsible AI: Opportunities and Challenges for Law and Policy," IEEE Intelligent Systems, vol. 35, no. 4, pp. 4–7, 2020, https://doi.org/10.1109/MIS.2020.3007498

[29] Pollock, C., & Taylor, P., "The Legal Liability of AI System Developers and Users," Computer Law & Security Review, vol. 36, 2020, Art. no. 105377, https://doi.org/10.1016/j.clsr.2020.105377