

Who Bears the Risk? Mapping the Legal Liability of Artificial Intelligence Providers in Indonesia's Regulatory Landscape

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Abstract

The accelerating advancement of Artificial Intelligence (AI) presents complex legal concerns in Indonesia, particularly in determining liability for damages arising from autonomous systems characterized by algorithmic opacity. Existing legal frameworks, including the Copyright Law, the Electronic Information and Transactions Law, and the Government Regulation on Electronic System Providers, have yet to adequately capture the legal implications of AI-based decision-making processes. This study employs a normative legal approach to examine Indonesia's regulatory landscape and argues that AI cannot be acknowledged as a legal entity, thereby placing primary responsibility on AI system providers. While civil liability may be grounded in Articles 1365–1367 of the Civil Code, fault-based frameworks encounter significant challenges because of AI's "black box" characteristics. Accordingly, this article proposes a

shift toward risk-based approaches, including strict liability, shifting of the burden of proof, and mandatory transparency obligations. Furthermore, it emphasizes the need to transform ethical principles, as reflected in the Ministerial Circular on AI Ethics, into enforceable legal norms. A comprehensive regulatory framework integrating accountability, human rights, and legal certainty is therefore essential for responsible AI governance in Indonesia.

KEYWORDS *Artificial Intelligence, Legal Liability, AI Ethics, Electronic System*

Introduction

The epoch marked by industrial innovation, encompassing both 4.0 and 5.0, has spurred the emergence of new technologies and elicited diverse responses globally. This technological advancement is driven by the development of automation and cyber systems, notably the Internet of Things (IoT), Artificial Intelligence (AI), and various other systems in science and robotics. AI, a part of computer science engineered to emulate human cognitive abilities, is particularly impactful. AI systems are capable of identifying patterns, making decisions, and completing complex tasks with greater speed and efficiency.¹ The growth and development of AI have been remarkably rapid, enabling the creation of automated products through the extensive use of algorithms and data.² This is because AI can analyze and collect data to perform tasks effectively, accurately, flexibly, and even creatively, allowing for the independent generation of products.³ According to Ed Burns, as cited by Abdul Hadi and Bima Guntara, AI has the unique ability to make decisions and

¹ Eduard Awang Maha Putra, Muhammad Khairi Muslimin, and Lalu Aria Nata Kusuma, "Posibilitas Kehadiran Artificial Intelligence (AI) Sebagai Pengganti Profesi Notaris Di Era Digital," *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional* 13, no. 2 (2024): 255–273.

² Muhammad Zidan Karimullah, Ria Wierma Putri, and Rohaini Rohaini, "Hak Cipta Atas Hasil Tulisan Kecerdasan Artifisial: Tinjauan Etika Kekayaan Intelektual Dan Status Kepemilikannya," *AKADEMIK: Jurnal Mahasiswa Humanis* 5, no. 2 (2025): 1079–1094.

³ Edy Chrisjanto and Roni Sulistyanto Luhukay, "Perlindungan Hukum Terhadap Artificial Intelligence (AI) Di Indonesia," *Jurnal Legal Reasoning* 7, no. 2 (2025): 224–248.

comprehend how to achieve objectives through optimal decisions and understanding.⁴

One of the most widely used AI applications currently is ChatGPT, a “*Chat Generative Pre-Trained Transformer*”, first released in November 30, 2022, by OpenAI. ChatGPT is an AI-based chatbot designed to engage in direct communication with human operators. It can generate essays, explain various subjects, and even compose programming code using *Natural Language Processing* (NLP). The development method for ChatGPT is *Reinforcement Learning from Human Feedback* (RLHF), an AI training model where humans act directly as trainers, also known as “*human AI trainers*.” The responses from these trainers then serve as training data for ChatGPT, enabling the AI to present received data and generate responses in a conversational dialogue format. This refinement process continues through *Proximal Policy Optimization* (PPO) to produce the best possible responses.⁵ According to data reported by Visual Capitalist, Indonesia ranked fifth among countries with the highest ChatGPT usage as of August 2025, recording approximately 216 million visits,⁶ which reflects the rapid adoption of AI-based applications in Indonesian society. This rapid evolution and widespread application of AI raise concerns, particularly regarding personal data protection. The question of accountability for violations, given that AI is merely a computer system, becomes paramount.⁷

The growth and development of AI have substantially influenced diverse areas of human activity, including social, economic, and legal sectors in Indonesia. AI's potential across these sectors is expected to foster significant advancements, particularly in crucial areas, and enhance the quality of human life. In the context of Industry 5.0, AI is poised to become a pivotal catalyst for

⁴ Abdul Hadi and Bima Guntara, “Pembaharuan Hukum Nasional Dalam Upaya Perlindungan Data Pribadi Di Era Distrupsi Kecerdasan Buatan (Artificial Intelligence),” *Jurnal Hukum Mimbar Justitia* 8, no. 1 (2022): 233.

⁵ Ferdinand Lisaldy, Ismail Ismail, and Dewi Iryani, “Indonesia Lex AI Sebagai Tata Kelola Kecerdasan Buatan Sui Generis Di Indonesia,” *Technology and Economics Law Journal* 3, no. 1 (2024): 429–444.

⁶ Dorothy Neufeld, “Ranked: The Top Countries Driving ChatGPT Traffic in 2025,” *Visual Capitalist*, 2025, <https://www.visualcapitalist.com/top-countries-driving-chatgpt-traffic-in-2025/>.

⁷ Dedi Komarudin, Edi Candra, and Ismail Nurdin, “Dinamika Kebijakan Publik dan Inovasi Kecerdasan Buatan di Indonesia Tahun 2020-2024,” *Arus Jurnal Sosial dan Humaniora* 4, no. 3 (2024): 1793–1803.

change in socio-economic life.⁸ AI is gaining increasing popularity, with its implementation in industrial sectors reaching 56% in some countries.⁹ Indonesia's Circular Letter No. 9 of 2023 from the Minister of Communication and Informatics regarding AI Ethics highlights the rapid growth of AI-related businesses. Large corporations are developing AI to boost productivity, optimize business processes, and provide more personalized services across diverse sectors, including Indonesia's creative, medical, academic, and governmental service fields.¹⁰

While the advent of AI represents a commendable technological advancement, its development necessitates anticipation and even oversight.¹¹ In recent years, Indonesia has increasingly adopted AI-driven systems in electronic government services, financial technology, and digital platforms, raising serious legal and ethical concerns regarding automated decision-making accountability. One illustrative example can be found in AI-assisted electronic government services, particularly in the distribution of social assistance (*bantuan sosial*). Automated data-matching and eligibility assessment systems have been used to determine beneficiaries of social welfare programs. However, multiple reports have indicated exclusion errors, outdated data processing, and systemic bias against vulnerable groups, such as informal workers and residents without updated population records. These harms arise not from individual officials' discretion, but from automated systems that classify citizens based on incomplete or biased datasets.¹² Despite the tangible social and economic losses suffered by affected individuals, Indonesian law does not clearly define liability

⁸ M. Wildan Mufti et al., "Urgensi Pembentukan Peraturan Perundang-Undangan Teknologi Berbasis Artificial Intelligence," *Socius: Jurnal Penelitian Ilmu-Ilmu Sosial* 11, no. 1 (2024): 137–141.

⁹ Kirana Rukmayuninda Ririh et al., "Studi Komparasi Dan Analisis Swot Pada Implementasi Kecerdasan Buatan (Artificial Intelligence) Di Indonesia," *J@ti Undip: Jurnal Teknik Industri* 15, no. 2 (2020): 122–133.

¹⁰ Sukarta Atmaja, "Pemanfaatan Artificial Intelligence (AI) dalam Transformasi Digital untuk Pelayanan Publik," *Jurnal Manajemen Dan Bisnis* 6, no. 1 (2024): 9–21.

¹¹ Michael Reskiantio Pabubung, "Persoalan Dan Degradasi Martabat Manusia Dalam Pengawasan Berbasis Kecerdasan Buatan (AI)," *Jurnal Filsafat Indonesia* 7, no. 2 (2024): 198–206.

¹² Augustin Rina Herawati, Nina Widowati, and Maesaroh, "The Implementation of Artificial Intelligence in Indonesia's Public Service: Challenges and Government Strategies," in *Proceedings of the First Australian International Conference on Industrial Engineering and Operations Management*, 2022, 2471–2480.

when such harm results from algorithmic decision-making embedded in electronic systems.¹³

Similar issues arise in AI-based automated credit assessment systems widely used by fintech and digital lending platforms in Indonesia. Credit scoring algorithms often evaluate users based on behavioral data, digital footprints, and non-traditional indicators, which may indirectly discriminate against certain socio-economic groups. Borrowers may face loan rejection, higher interest rates, or aggressive debt collection without transparent explanations. While such outcomes directly affect individuals' economic rights, the current legal framework does not explicitly regulate algorithmic accountability or provide clear standards for assessing fault when harm is caused by opaque AI systems.¹⁴ Problems of algorithmic bias are also evident in automated content moderation systems used by digital platforms operating in Indonesia. AI-driven moderation tools frequently remove or suppress lawful content due to misclassification, including journalistic, academic, or socio-political expression.¹⁵ Although such actions may interfere with freedom of expression, responsibility is often obscured by claims that decisions are made automatically by "the system," leaving users without effective legal remedies.¹⁶

Under Indonesian law, these practices fall within the scope of electronic systems as regulated by the Electronic Information and Transactions Law (UU ITE) and Government Regulation No. 71 of 2019 on the Operation of Electronic Systems and Transactions (PP PSTE). However, these instruments primarily emphasize technical compliance, system security, and administrative obligations, while failing to address substantive harms arising from algorithmic bias, automated decision-making, and the lack of explainability in AI systems.

¹³ Badan Pemeriksa Keuangan, "Laporan Hasil Pemeriksaan Atas Laporan Keuangan Pemerintah Pusat Tahun 2020" (Jakarta: BPK, 2020), https://www.bpk.go.id/assets/files/lkpp/2020/lkpp_2020_1624341011.pdf.

¹⁴ Ooi Kok Loang, "Analysis of Artificial Intelligence in Financial Regulation in Malaysia, Indonesia, and The United States," *Journal of Central Banking Law and Institutions* 4, no. 3 (2025): 473–504.

¹⁵ Citizen Experience, "Indonesia: AI-Driven GovTech to Streamline Public Services," 2025, <https://opengovasia.com/indonesia-ai-driven-govtech-to-streamline-public-services/?c=id>.

¹⁶ Basel Committee, *Basel Committee on Banking Supervision Sound Practices Implications of Fintech Developments for Banks and Bank Supervisors* (Bank for International Settlements, 2018).

The obligation to ensure reliability and accountability of electronic systems remains normatively vague when applied to autonomous AI technologies.¹⁷

From a criminal law perspective, the Indonesian Penal Code (KUHP) presupposes the existence of human intent (*mens rea*) and conscious wrongdoing. When harm results from autonomous AI decisions, such as wrongful exclusion from public services or discriminatory financial assessments, the attribution of criminal responsibility becomes conceptually problematic. The absence of clear legal standards to connect algorithmic outcomes with human intent exposes a significant gap in Indonesia's criminal liability framework.¹⁸

This issue is particularly relevant for Indonesia, which records the highest level of AI adoption in Southeast Asia, with 24,6% of organizations implementing AI systems, followed by Thailand (17,1%), Singapore (9,9%), and Malaysia (8,12%), as reported by the IDC Asia Pacific Enterprise Cognitive/AI survey in 2018.¹⁹ Given this rapid expansion, there is an urgent need for clear identification, regulatory safeguards, and effective oversight in the implementation of AI-based systems in Indonesia, especially in light of the potential legal consequences arising from their use.

AI is predicted to revolutionize life at an accelerated pace. As an intelligent computer program capable of learning and performing human-like activities, and even surpassing human capability,²⁰ AI's primary goal is to make machines smarter.²¹ Andreas Kaplan and Michael Haenlein define AI as a system capable of correctly interpreting external data as a means of learning from that data to

¹⁷ Dewi Oktaviani, "Transforming Government Decision-Making by Utilizing Artificial Intelligence (AI) in the Future," in *AAPA-EROPA-AGPA-IAPA International Conference 2024 Towards World Class Bureaucracy*, 2024, 1200–1220.

¹⁸ Mardian Putra Frans et al., "Pertanggungjawaban Pidana Bank Sebagai Pengguna Artificial Intelligence," *Jurnal USM Law Review* 7, no. 2 (2024): 2–7.

¹⁹ Regina Damaris, Sinta Dewi Rosadi, and I Made Diyosena Bratadana, "Data Governance for Artificial Intelligence Implementation in The Financial Sector: An Indonesian Perspective," *Journal of Central Banking Law and Institutions* 4, no. 3 (2025): 445–472.

²⁰ Pierre-luc Racine, "Fostering Expressive Knowledge: The Copyrightability of Computer-Generated Works in Canada," *IDEA* 544, no. July 2019 (2020): 544–610, https://law.unh.edu/sites/default/files/media/2020/06/fostering_expressive_knowledge_the_copyrightability_of_computer-generated_works_in_canada_by_pierre-luc_racine.pdf.

²¹ Reka Dewantara, "Regulatory Impact Asessment Terhadap Pengaturan Penggunaan Artificial Intelligence Pada Jasa Keuangan Perbankan," *Tanjungpura Law Journal* 4, no. 1 (2019): 59–81.

complete designated goals and function through versatile adjustment.²² Many companies are adopting AI to expand their businesses and enhance the efficiency of human work. While AI's impact is generally positive, improper use can lead to technological misuse.²³ Indonesia's National Artificial Intelligence Strategy 2020-2045, issued through the Agency for Technology Evaluation and Implementation in July 2020, serves as a guiding policy for beneficial AI implementation. However, this policy remains at a broad level, necessitating more detailed regulations for more beneficial and ethical AI applications.

These Indonesian cases demonstrate that algorithmic bias and accountability issues are not abstract or foreign phenomena but concrete legal challenges already occurring within Indonesia's digital governance and economy. The existing legal framework, while formally applicable, remains insufficient to address the complexities of AI-driven decision-making, thereby creating ambiguity regarding responsibility, legal protection, and remedies for affected individuals.

Previous research has explored various aspects of AI. N. Nurlaela Arief and M. Arkan Ariel Saputra focused on how AI will revolutionize *Public Relations* (PR) and journalism, discussing AI's role and the existence of these professions amid AI's development,²⁴ Edy Chrisjanto and Roni Sulistyanto Luhukay's research highlighted the inadequacy of current regulations to address AI's impacts, such as misuse of personal data protection and ethical AI use, as well as associated legal obligations. They argue that the lack of specific AI regulations in Indonesia creates uncertainty,²⁵ Pauline T. Kim and Matthew T. Bodie found that current U.S. law is insufficiently prepared to handle challenges arising from the increasing use of AI in the workplace. They suggest that regulations primarily emphasize business activities rather than workers, and despite worker protection through anti-discrimination and privacy laws, the legal framework is not comprehensive enough to address risks posed by AI in worker management. As AI becomes more integrated with business interests, the law needs to adapt to prevent discrimination, protect privacy, and address concerns for workers

²² Andreas Kaplan and Michael Haenlein, "Siri, Siri, in My Hand: Who's the Fairest in the Land? On the Interpretations, Illustrations, and Implications of Artificial Intelligence," *Business Horizons* 62, no. 1 (2019): 15–25.

²³ Dimas Irmansyah et al., "Analisis Perkembangan Artificial Intelligence Dalam Bidang Bisnis: Systematic Literature Review," *Djtechno: Jurnal Teknologi Informasi* 4, no. 2 (2023): 298–309.

²⁴ N. Nurlaela Arief and M. Arkan Ariel Saputra, "Kompetensi Baru Public Relations (PR) Pada Era Artificial Intelligence," *Jurnal Sistem Cerdas* 2, no. 1 (2019): 1–12.

²⁵ Chrisjanto and Luhukay, "Perlindungan Hukum Terhadap Artificial Intelligence (AI) di Indonesia."

and the loss of personal security,²⁶ Mariano-Florentino Cuéllar and Aziz Z. Huq mapped the potential benefits and risks of AI-driven regulation, which utilizes computational algorithms or other AI to define legal norms or guide their application. They also outlined possible advantages and disadvantages of AI-generated regulations concerning costs and benefits, particularly for AI used as a supporting element within existing hierarchies, or AI embedded in legal frameworks designed and evaluated to improve life, the environment, and the future,²⁷ Ernest Lim's research discussed private legal liability in business transactions using AI systems, focusing on the dynamic relationship between AI system providers and goods or service providers. He proposed a three-step framework for data management, system development, and implementation, and external threat management to analyze the AI design and development process and understand respective responsibilities. Based on English commercial law, specifically the Goods and Services Supply Acts and the Sale of Goods Act, AI system providers would bear liability.²⁸ In contrast to the aforementioned studies, this research specifically examines the accountability of AI providers under criminal law, civil law, and administrative law, as well as ethical considerations. Previous research broadly discussed the revolution of the *Public Relation* (PR) profession due to AI, the significant impacts of AI that current regulations are insufficient to handle (necessitating specific AI rules), worker protection when employers use AI and how workers' losses and rights are addressed, the mapping of AI benefits and risks when used as a primary or supporting tool in regulation creation, and private liability stemming from AI's legal consequences in commercial transactions via AI provider systems. Therefore, this discussion distinguishes itself from previous research and presents a critical and timely area for further research.

This research is grounded in normative legal methodology, combining statutory and conceptual approaches to examine the regulation of Artificial Intelligence in Indonesia. Rather than relying on empirical data, the study is based on documentary research, drawing primarily on legal norms and authoritative texts. The analysis centers on key regulatory instruments, including Law No. 28 of 2014 on Copyright, Law No. 11 of 2008 concerning Electronic Information and Transactions as amended by Law No. 19 of 2016,

²⁶ Pauline T Kim and Matthew T Bodie, "Artificial Intelligence and the Challenges of Workplace Discrimination and Privacy," *ABA Journal of Labor and Employment Law* 35, no. 2 (2021): 289–316.

²⁷ Mariano-Florentino Cuéllar and Aziz Z. Huq, "Artificially Intelligence Regulation," *Daedalus* 151, no. 2 (2022): 335–47.

²⁸ Ernest Lim, "B2B Artificial Intelligence Transaction," *Singapore Journal of Legal Studies*, (2022): 46–74.

Government Regulation No. 71 of 2019 on the Implementation of Electronic Systems and Transactions, and the Minister of Communication and Informatics Circular Letter No. 8 of 2023 on Artificial Intelligence Ethics. These primary materials are complemented by secondary sources—such as academic publications, legal scholarship, and expert analyses—that provide critical perspectives on AI liability and regulatory developments. Tertiary references, including legal dictionaries and encyclopedias, are used selectively to support conceptual clarification.²⁹ Data collection was conducted through a structured literature review, followed by a qualitative analytical process.³⁰ The analysis process was conducted in several stages. First, the identification and classification of relevant primary legal sources, namely the Copyright Law, the ITE Law, Government Regulation No. 71 of 2019, and Circular Letter of the Minister of Communication and Information Technology No. 9 of 2023 on AI Ethics. Second, secondary legal materials were selectively chosen based on three main criteria: (i) substantive relevance to the issue of AI legal liability, (ii) academic authority such as reputable journals, legal textbooks, and publications by international institutions, and (iii) the novelty of the analysis, particularly those addressing AI liability, algorithmic accountability, and comparative legal development. Tertiary legal materials are used sparingly to reinforce conceptual definitions. Third, the study undertakes a normative assessment by linking positive legal norms with the evolving characteristics of autonomous and opaque AI systems, intending to identify regulatory gaps and propose more adaptive legal constructions in response to emerging technological risks.

Artificial Intelligence and Its Legally Relevant Characteristics

This section will focus on Artificial Intelligence (AI) in a legal context; therefore, it will not provide a comprehensive historical overview of AI that is purely descriptive, but will instead focus on the fundamental characteristics of AI that have direct implications for the construction of legal liability. Therefore, this section is not intended to chronologically outline the technical developments of AI, but rather to identify the key characteristics of AI that pose challenges within the framework of positive law, particularly regarding the attribution of liability.

Conceptually, Artificial Intelligence was first introduced as a field of study by John McCarthy in 1956 at the Dartmouth Conference, which defined AI as

²⁹ Peter Mahmud Marzuki, *Penelitian Hukum*. (Jakarta: Prenadamedia Group, 2015).

³⁰ Soetandyo Wignjosoebroto, *Hukum: Konsep dan Metode* (Malang: Setara Press, 2013).

the effort to create machines capable of performing functions that, if performed by humans, require intelligence.³¹ In line with this, Alan Turing had previously posed the fundamental question “Can machines think?” in his influential article, “Computing Machinery and Intelligence,” which later gave rise to the concept of the Turing Test as an indicator of a machine’s ability to mimic human behavior.³² Although historically significant, these two ideas are particularly relevant in a legal context because they affirm that from the outset, AI was designed to simulate human cognitive capacities, not merely as a passive mechanical tool.

In its evolution, modern AI is no longer limited to rule-based systems but has advanced to machine learning and deep learning, enabling systems to identify patterns, make predictions, and make decisions independently based on large amounts of data.³³ These characteristics mark a fundamental shift from deterministic technology toward probabilistic and adaptive technology. In a legal context, this change is highly significant because it results in systems that are not fully predictable by their creators.³⁴

One of the key legally relevant characteristics of AI is its ability to engage in autonomous decision-making. AI systems can make decisions without direct human intervention, particularly in contexts such as credit scoring, social assistance distribution, and digital content moderation. According to Stuart Russell and Peter Norvig, modern AI is designed as rational agents that act to maximize specific goals based on available information.³⁵ In practice, this means that AI does not merely execute instructions but also optimizes outcomes based on parameters that are often complex and not fully transparent.

The second characteristic is self-learning capability, which allows the system to continue evolving after implementation. Machine learning systems are trained on specific datasets, but their performance can change over time as they interact with new data.³⁶ This creates significant legal challenges because

³¹ John McCarthy, “What Is Artificial Intelligence?,” *Computer Science Department, Stanford University*, 2004, 1–14, <http://www-formal.stanford.edu/jmcl/>.

³² Larry Cao and CFA CFA, eds., *Handbook of Artificial Intelligence and Big Data Applications in Investments* (Virginia: CFA Institute Research Foundation, 2023), cfainstitute.org/ai-and-big-data.

³³ Ian Goodfellow, Yoshua Bengio, and Aaron Courville, *Deep Learning: Adaptive Computation and Machine Learning* (Cambridge: MIT Press, 2016).

³⁴ Tom M. Mitchell, *Machine Learning* (Portland: McGraw-Hill Science/Engineering/Math, 1997).

³⁵ Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach*, Pearson Education, 4th Editio (London: Pearson Education, 2022).

³⁶ David Demortain et al., “Algorithmic Regulation”, *Research Report* (2017), <https://hal.science/hal-02422177v1>.

the system's behavior during operation may differ from the conditions under which it was originally designed or tested. Consequently, traditional concepts of control and predictability in law become increasingly difficult to apply.

Furthermore, one of the most critical issues from the perspective of AI's legal liability is its non-transparent nature, often referred to as the "black-box problem." In many AI models, particularly deep neural networks, the internal processes generating a decision cannot be intuitively explained even by the developers themselves.³⁷ This phenomenon gives rise to what is known as epistemic opacity, a condition in which humans cannot clearly understand the connection between input and output.³⁸ In the context of the law of evidence, this condition creates a serious obstacle, as legal systems generally require an explainable causal relationship between an action and its consequence.

This "black box" characteristic of AI systems complicates the enforcement of fault-based liability under Article 1365 of the Civil Code. This is because a successful tort claim requires the injured party to substantiate fault, actual harm, and a clear causal connection—elements that become difficult to ascertain within opaque algorithmic processes. However, in AI cases, proving fault becomes highly complex because it is not always clear whether the harm was caused by design flaws, biased data, or the system's behavior evolving autonomously beyond initial predictions.³⁹

Moreover, the data-driven nature of AI implies that its outputs are intrinsically shaped by the datasets on which it is trained. As a result, any embedded bias within the training data can be reproduced, if not amplified, in the system's outputs.⁴⁰ In a legal context, this raises questions regarding liability for algorithmic discrimination. Does liability rest with the developer who selects the data, the system provider who implements the AI, or another party using the output? This complexity demonstrates that AI is not merely a tool, but a socio-technical system involving various actors in the chain of responsibility.

Another characteristic is scalability and systemic impact. Decisions made by AI can affect a large number of individuals simultaneously, such as in credit scoring systems or the distribution of social assistance. This differs from human

³⁷ Andrew W. Torrance and Bill Tomlinson, "Training Is Everything: Artificial Intelligence, Copyright, and Fair Training," *Dickinson Law Review* 128, no. 233 (2023): 1–22.

³⁸ Wei Liu and Weijie Huang, "Authorship in Human-AI Collaborative Creation: A Creative Control Theory Perspective," *Computer Law & Security Review* 57, no. April (2025): 106139.

³⁹ Karen Yeung, "Algorithmic Regulation: A Critical Interrogation," *Regulation & Governance* 12, no. 4 (2017): 1–19.

⁴⁰ Nicoletta V. Kolpakov, "Agents of Disruption: Legal Dilemma and the Future of AI," *New York State Bar Association Journal* 97, no. 4 (2025).

actions, which typically have a limited impact on specific individuals. In this context, even minor errors in AI systems can result in widespread and systemic impacts, thereby heightening the urgency for stricter legal regulation.⁴¹

Within the Indonesian legal context, these characteristics have not yet been fully accommodated within the existing legal framework. Present rules, such as the ITE Law and the PSTE Regulation, still focus on the technical and administrative aspects of electronic systems, without explicitly addressing the autonomous and adaptive nature of AI. Consequently, there is a normative gap in regulating legal liability for decisions generated by AI systems.

Therefore, the legal approach to AI can no longer rely on the assumption that technology is always under full human control. Instead, the law must acknowledge that AI possesses a certain degree of autonomy that influences how liability must be constructed. In this regard, as noted by Frank Pasquale, a regulatory approach emphasizing transparency, accountability, and protection of individuals from unexplained algorithmic decisions is required.⁴²

AI represents a highly advanced technological reform and is a significant development that can expand knowledge or bridge information gaps. Currently, AI is widely utilized in society, making work easier and more productive.⁴³ Within computer science, AI is commonly defined as the pursuit of building intelligent machines and systems that can undertake tasks historically associated with human intellect. It encompasses advanced technologies that enable machines to possess human-like abilities to understand, perceive, act, and learn.⁴⁴ AI can be understood as "Science Intelligence," a concept guided by systems that combine and synthesize information from various sources at a level incomprehensible to humans, thus operating beyond direct human control.⁴⁵

Thus, the relevance of the discussion of AI in this article lies not in the history of its technological development, but in its structural characteristics that challenge fundamental concepts in law, such as fault, causation, and liability.

⁴¹ Roger Brownsword, *Law 3.0*. (London: Routledge, 2020).

⁴² Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information* (Cambridge: Harvard University Press, 2015).

⁴³ Paulus Wisnu Yudoprakoso, "Kecerdasan Buatan (Artificial Intelligence) Sebagai Alat Bantu Proses Penyusunan Undang-Undang Dalam Upaya Menghadapi Revolusi Industri 4.0 Di Indonesia," *Simposium Hukum Indonesia* 1, no. 1 (2019): 450–461.

⁴⁴ Richard A Bales and Katherina V.W. Stone, "The Invisible Web at Work: Artificial Intelligence and Elektronik Surveillance, Under the Labor Laws," *Berkeley Journal of Employment and Labor Law* 41, no. 1 (2020): 1–61.

⁴⁵ Ferti Sri Muliati Latowa and I Gede Edi Sunadi, "Pemanfaatan Artificial Intelligence (AI) Sebagai Inovasi Digital dalam Tata Kelola Pemerintah Daerah," *J-Multitechno: Jurnal Multi Technology* 1, no. 1 (2025): 44–53.

This focus is crucial for establishing the basis of the argument that the existing legal framework needs to be reconstructed to effectively address the increasingly complex and autonomous technological reality.

Artificial Intelligence in the Indonesian Legal Framework

Artificial Intelligence (AI), as an intelligent computer program, possesses the capacity to learn and perform human-like activities such as understanding, perceiving, and making decisions. In Indonesia, Article 1, Paragraph 9 of the Copyright Law defines a computer program as: *“An instruction set, conveyed through language, code, schematic representation, or any other medium, that aims to compel a computer to perform a distinct function or attain a desired result, constitutes a computer program.”*

Based on this definition within the Copyright Law, from a definitional standpoint, AI aligns with the characteristics of a computer program. AI falls into the category of a computer program with directions or commands manifested through codes, schemes, languages, and other forms to create an electronic device capable of performing specific functions or achieving specific results.⁴⁶ In the context of copyrightable works and current reality, many literary works are now generated by intelligent computer programs or AI, such as ChatGPT. Beyond text, ChatGPT can also create images. Both text and image outputs from AI are considered subject matter potentially qualified for copyright safeguarding. Other AI systems, such as Aiva, are capable of creating musical instruments. The musical instruments produced by Aiva are original works of the AI itself, and to date, no human composer has claimed their creation. However, regarding creativity and skill, these instrumental outputs originate from a programming language system, where the AI's program input comes from users or programmers with technological skills rather than musical creativity. Although it's possible that music experts were involved in the creation of the programming language, the emergence of AI-generated works consequently raises ambiguities regarding who constitutes the creator. This stands in opposition to copyright legislation, which characterizes a creator as a

⁴⁶ Berliana Bahiyaturrohmah, “Mimpi Buruk Dunia Digital: Tindak Kejahatan Yang ‘Dilakukan’ Oleh Entitas Artificial Intelligence,” *Online*, Universitas Indonesia, 2023, <https://lk2fhui.law.ui.ac.id/portfolio/mimpi-buruk-dunia-digital-tindak-kejahatan-yang-dilakukan-oleh-entitas-artificial-intelligence>.

natural or legal person vested with rights over an original work, with such work being defined as a product of human ideation, creativity, aptitude, or expertise.⁴⁷

The subject in copyright law is the copyright holder or creator, or any person or legal entity who legitimately obtains the right. A creator is defined as “one or more individuals who, either independently or in concert, bring forth a distinct and personal work” (Copyright Law Article 1, Paragraph 2). In line with this definition, copyright, being a core component of intellectual property, exclusively extends protection to works stemming from human intellectual effort. This is explicitly stated in Article 1, Paragraph 2 of the Copyright Law; the “distinct and personal work” nature of a creation necessitates a process of human mental creation, in line with this definition, copyright, being a core component of intellectual property, exclusively extends protection to works stemming from human intellectual effort. This is explicitly stated in Article 1, Paragraph 2 of the Copyright Law, which aligns precisely with the fundamental concept of intellectual property. Black’s Law Dictionary characterizes intellectual property as “intangible rights protecting commercially valuable results of human intellect.” Similarly, the World Intellectual Property Organization (WIPO) considers intellectual property to be products of the human mind. Consequently, the core essence of intellectual property is that it emanates from human cognition, not from animal intelligence, mechanical systems, or other non-human sources.⁴⁸

Considering the preceding discussion, it follows that, under existing intellectual property law pertaining to copyright, works produced with the aid of Artificial Intelligence are not eligible for protection. The legal implications for creators are that they should benefit from their efforts in creating works beneficial to society, which in copyright, includes moral rights and economic rights. However, according to Edy Chrisjanto and Rony Sulistyanto Luhukay, these rights are not necessary for AI because AI does not require such elements for its survival. Therefore, based on copyright law, AI-generated works cannot be considered copyright-protected works, and AI itself is not considered a creator. Nevertheless, users may still be bound by contracts with platform operators, which could lead to restrictions on the use of AI-generated works and obligations that users must fulfill towards the platform operator.⁴⁹

⁴⁷ Nina I Brown, “Artificial Authors: A Case for Copyright in Computer-Generated Works,” *Columbia Science & Technology Law Review* XX (2018): 1–41.

⁴⁸ Chrisjanto and Luhukay, “Perlindungan Hukum Terhadap Artificial Intelligence (AI) Di Indonesia.”

⁴⁹ Chrisjanto and Luhukay.

Shlomit Yanisky-Ravid's research views AI systems as creative employees operating under employer directives. This perspective is based on the clear identifiability of the accountable person or legal entity, extending to dispute resolution processes.⁵⁰ For instance, Australia has determined that copyright owners must be human creators. Similarly, the World Intellectual Property Organization (WIPO) has also discussed AI and its impact on copyright. The European Union has currently recognized robots and AI systems as independent entities and imposed taxes on robots, although early recognition of robots as creators later encountered issues in dispute resolution processes.

This issue becomes even more salient when viewed through the lens of Jane C. Ginsburg's "Human Authorship Paradigm", which conceptualizes copyright law as a legal framework designed to protect human creative expression as a manifestation of the author's personality and autonomy. Within this paradigm, the role of user prompts in AI-based systems warrants critical examination. In the context of Indonesian copyright law, this approach aligns with the Copyright Law's characterization of authorship as producing works that are "original and personal." From this perspective, copyright functions as an instrument for recognizing and safeguarding human intellectual contribution in the creation of works.⁵¹

As explained previously, AI's characteristic in information processing is its automatic nature. Closely examined within Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE Law), Article 1, Paragraph 8 defines "Electronic Agent" as follows:

"An electronic agent functions as an automated device within an electronic system, orchestrated by a person, to carry out tasks on designated electronic information."

The classification of AI as an "Electronic Agent" by Pratidina, as cited by Zahrashafa PM and Angga Priancha, is justified by AI's automated functionalities, aligning with the definition of an electronic agent in Article 1, Paragraph 8 of the ITE Law, specifically its emphasis on "automatically." Consequently, the regulatory framework for "Electronic Agents" within the ITE Law encompasses AI.⁵²

⁵⁰ Shlomit Yanisky-Ravid, "Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in The 3A Era-The Human-Like Authors Are Already Here-A New Model," *Michigan State Law Review*, no. 659 (2017).

⁵¹ Jane C. Ginsburg, "The Concept of Authorship in Comparative Copyright Law," *DePaul Law Review* 52, no. 1063 (2003).

⁵² Putri Zahrashafa Mahardika and Angga Priancha, "Pengaturan Hukum Artificial Intelligence Indonesia Saat Ini," *Online*, Universitas Indonesia, 2021,

Within the framework of the ITE Law, AI functions as an "Electronic Agent," a digital system device configured to autonomously process designated electronic information and overseen by an accountable individual. This conceptualization is consistent with Government Regulation Number 71 of 2019 (PP PSTE), which likewise references "Electronic Agents." As per Article 21 of the ITE Law, accountability for electronic transactions extends to individuals, principals, and electronic agents. Therefore, an electronic agent also serves as an electronic system provider. Consequently, the responsibilities and entitlements of an electronic system provider apply *mutatis mutandis* to the entity offering electronic agent services.

In cases where AI results in harm, acknowledging its status as an electronic agent and, by extension, an electronic service provider, the provision of AI services, as outlined in the ITE Law, is restricted to natural persons, government bodies, commercial entities, and the public. Thus, legal responsibility is borne by the electronic system provider furnishing the AI services.⁵³

The ITE Law, in Article 15, obligates electronic system providers to maintain operational reliability and assume responsibility for system performance. This implies that AI providers are responsible if the AI system they operate causes harm or disseminates unlawful content. Furthermore, the PP PSTE emphasizes the obligations of electronic system providers, as stated in Article 3 of the PP PSTE, which mandates that electronic system providers must ensure the security of managed information and be responsible for their system's operation. Additionally, Article 14, Paragraph 1 of the PP PSTE specifies that electronic systems must be reliable, secure, and accountable concerning their functions and outcomes.

As a result, AI systems employed for public services, commercial purposes, or government functions must adhere to principles of cybersecurity, transparency, and accountability. If legal issues arise from the operation of AI, the responsible party is the legal entity that organizes or operates the AI system. It remains crucial to regard AI as a tool, as its development could extend beyond human control and become hazardous. Therefore, treating AI as a tool ensures that it can be managed effectively by its owner.

<https://law.ui.ac.id/pengaturan-hukum-artifical-intelligence-indonesia-saat-ini-oleh-zahrashafa-pm-angga-priancha/>.

⁵³ Mahardika and Priancha.

Legal Liability of Artificial Intelligence Providers in Indonesia

In Hans Kelsen's concept, legal liability is understood as a relationship with legal obligations, where the responsible party is subject to sanctions for unlawful acts. Alternatively, legal liability can be defined as the obligation of a legal subject, whether an individual or a group, for actions that violate legal norms or rules. Thus, an individual, as a legal subject facing sanctions, is obligated to bear responsibility for those sanctions if their actions are unlawful.⁵⁴

Any harm caused by AI to other parties due to its violation of legal provisions must be accounted for.⁵⁵ Currently, the legal subject status of AI is not regulated in the legal system of Indonesia. For instance, AI's pervasive adoption within online commercial activities lacks specific regulation, potentially creating legal uncertainty in society. Indonesia's legal system, to date, legitimizes only humans and formal organizations as legal subjects, with no inclusion of AI within this scope. Consequently, legal responsibility can only be attributed to humans and legal entities as valid legal subjects, as stipulated in relevant laws and regulations. Nevertheless, legal doctrine asserts that AI actions that violate or contravene regulations and cause harm to various parties can still lead to accountability.⁵⁶

A. Civil Liability

The rapid deployment of Artificial Intelligence (AI) systems across various sectors has introduced complex challenges for private law, particularly in determining civil liability for harm caused by autonomous or semi-autonomous decision-making systems. In Indonesia, AI is increasingly utilized in digital platforms, financial services, healthcare, creative industries, and public administration. Despite its widespread adoption, Indonesian law has not recognized AI as a legal subject capable of bearing rights and obligations. Consequently, when AI systems cause harm, whether material, immaterial, or economic, the central legal question concerns the attribution of responsibility.

⁵⁴ Shofika Hardiyanti Qurrahman, Safira Ayunil, and Tsabita Aurelia Rahim, "Kedudukan Dan Konsep Pertanggungjawaban Artificial Intelligence dalam Hukum Positif Indonesia," *UNES Law Review* 6, no. 4 (2024): 45–60.

⁵⁵ Ni Made Yordha Ayu Astiti, "Strict Liability of Artificial Intelligence: Pertanggungjawaban Kepada Pengatur AI Ataupun AI Yang Diberikan Beban Pertanggungjawaban?," *Jurnal Magister Hukum Udayana (Udayana Master Law Journal)* 12, no. 4 (2023): 962–980.

⁵⁶ Qurrahman, Ayunil, and Rahim, "Kedudukan Dan Konsep Pertanggungjawaban Artificial Intelligence dalam Hukum Positif Indonesia."

From the perspective of Indonesian private law, liability must necessarily be attributed to recognized legal subjects, namely natural persons or legal entities. This reflects a fundamental principle of civil liability: liability follows control, supervision, and benefit. Accordingly, AI systems are not treated as autonomous legal actors, but rather as instruments operating under human direction. This conceptualization provides the doctrinal basis for attributing responsibility to AI developers, system providers, operators, or users, depending on the degree of control exercised and benefits obtained from the system.⁵⁷

Article 1365 of the Indonesian Civil Code (KUHPPerdata) establishes the general principle of liability for unlawful acts (*perbuatan melawan hukum*), requiring the presence of four elements: an unlawful act, fault or negligence, damage, and causation. Within the context of AI-related harm, fault does not necessarily require intent (*dolus*), but may be satisfied by negligence (*culpa*), including failures in system design, biased datasets, insufficient testing, or inadequate oversight mechanisms.⁵⁸ Article 1366 reinforces liability arising from negligence or lack of prudence, particularly relevant in situations where AI systems operate with partial autonomy but remain subject to human supervision.⁵⁹ Meanwhile, Article 1367 extends liability to harm caused by persons or objects under one's control. Although AI is not a legal person, it may be analogized as a technological instrument under supervision, thereby enabling the attribution of liability to entities exercising effective control over its operation.⁶⁰

Taken together, Articles 1365, 1366, and 1367 KUHPPerdata provide a doctrinal framework that allows courts to attribute liability based on fault, negligence, and supervisory control. In this sense, Indonesian civil law offers a *formal basis* for addressing harm caused by AI systems.

However, the primary challenge lies not in the absence of legal doctrine, but in its limited operational capacity when applied to the technical characteristics of contemporary AI systems. The increasing use of machine learning and adaptive algorithms introduces a fundamental difficulty: the

⁵⁷ Ugo Pagallo, *The Laws of Robots: Crimes, Contracts, and Torts*, ed. Pompeu Casanovas (New York: Springer, 2013).

⁵⁸ Yolanda Simbolon, "Pertanggungjawaban Perdata Terhadap Artificial Intelligence Yang Menimbulkan Kerugian Menurut Hukum Di Indonesia," *Veritas et Justitia* 9, no. 1 (2023): 246–273.

⁵⁹ Simbolon.

⁶⁰ Bintang Maharani D. M and Muh. Ali Masnun, "Prospek Artificial Intelligence Sebagai Quasi Subjek Hukum: Dinamika Pengaturan Hukum Perdata di Indonesia," *Jurnal ISO: Jurnal Ilmu Sosial, Politik dan Humaniora* 4, no. 2 (2024): 1–9.

opacity of decision-making processes, commonly referred to as the *black box* problem.

In such systems, decision pathways are not fully transparent, and even system developers may be unable to provide complete explanations for specific outputs. This condition creates a significant evidentiary barrier within the fault-based liability regime. Under Article 1365 KUHPerdata, the burden of proof rests on the claimant to establish fault and causation. Yet, in practice, affected individuals often lack access to essential technical information, including training data, model logic, and system architecture. This asymmetry of information substantially weakens the effectiveness of fault-based liability.⁶¹ Furthermore, the autonomous and adaptive nature of AI systems complicates the attribution of causation. Traditional liability models assume that harm can be traced to identifiable human conduct. In contrast, AI systems generate outputs through complex and evolving processes that may not be directly linked to a single human decision.⁶²

These conditions reveal a structural limitation of fault-based liability in the context of AI. While Articles 1365–1367 KUHPerdata remain doctrinally valid, their practical application risks producing a liability gap, where harm exists but cannot be effectively remedied due to evidentiary and conceptual constraints. Accordingly, civil liability for AI-related harm requires a calibrated normative adjustment, not a complete doctrinal replacement. The objective is to preserve the foundational principles of Indonesian civil law while enhancing their operational effectiveness in addressing technologically complex harms.

In response to the limitations identified above, this article proposes a set of complementary legal mechanisms designed to strengthen the effectiveness of civil liability in the context of AI systems. These mechanisms do not replace existing doctrines but function as corrective extensions aimed at addressing evidentiary asymmetry, algorithmic opacity, and systemic risk. First, the adoption of a strict liability regime (*tanggung jawab mutlak*) for high-risk AI systems is necessary to shift the focus from fault attribution to risk allocation.⁶³ Under this model, liability arises from the occurrence of harm caused by the system, without requiring proof of negligence. This approach is particularly appropriate in sectors where AI systems have a significant impact on fundamental rights and socio-economic conditions, such as financial services,

⁶¹ Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information*.

⁶² Mireille Hildebrandt, “Law as Computation in the Era of Artificial Legal Intelligence: Speaking Law to The Power of Statistics,” *University of Toronto Law Journal* 68 (2018): 12–35.

⁶³ Astiti, “Strict Liability of Artificial Intelligence: Pertanggungjawaban Kepada Pengatur AI Ataukah AI Yang Diberikan Beban Pertanggungjawaban?”

public administration, and healthcare.⁶⁴ By reallocating risk to those who design and benefit from AI systems, strict liability ensures more effective victim protection.⁶⁵

Second, the implementation of the reversal of the burden of proof (*pembalikan beban pembuktian*) is essential to address informational asymmetry. Once the claimant demonstrates that harm is plausibly linked to an AI system, the burden shifts to the system provider to prove that appropriate standards of care have been fulfilled. These standards may include data governance practices, bias mitigation, system testing, and the presence of human oversight mechanisms. This approach enhances procedural fairness without abandoning the logic of liability grounded in responsibility.⁶⁶

Third, the establishment of algorithmic transparency and explainability obligations should be recognized as a minimum legal standard. AI providers must ensure that decisions produced by their systems, particularly those affecting individual rights, can be meaningfully explained. This obligation may be operationalized through documentation requirements, audit mechanisms, and regulatory oversight, thereby transforming transparency from a technical aspiration into a legal duty.⁶⁷

Fourth, a risk-based regulatory approach should be adopted to align the intensity of legal responsibility with the level of risk posed by AI systems. High-risk systems should be subject to stricter liability standards and regulatory scrutiny, while lower-risk systems may be governed by more flexible requirements. This approach reflects emerging global regulatory trends and enables a more proportionate and adaptive legal framework.⁶⁸

Through the expansion and adaptation of the meaning of legal acts in civil law, AI's actions are situated as a lawful instrument for executing human will, as long as its parameters and limits of control are determined and accounted for

⁶⁴ Simbolon, "Pertanggungjawaban Perdata Terhadap Artificial Intelligence Yang Menimbulkan Kerugian Menurut Hukum di Indonesia."

⁶⁵ European Parliamentary Research Service, *Proposal for a Directive on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence*. (Brussels: European Union, 2024)

⁶⁶ Woodrow Barfield, "Liability for Autonomous and Artificially Intelligent Robots," *Paladyn, Journal of Behavioral Robotics* 9 (2018): 193–203.

⁶⁷ Sandra Wachter, Brent Mittelstadt, and Luciano Floridi, "Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation," *International Data Privacy Law* 7, no. 2 (2017): 76–99.

⁶⁸ Tambiama Madiaga, "Artificial Intelligence", *Briefing EU Legislation in Progress, European Parliamentary Research Service*, PE 698.792, 2024. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI\(2021\)698792_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI(2021)698792_EN.pdf)

by the human or legal entity behind it.⁶⁹ Shlomit Yanisky-Ravid's research argues that responsibility for works generated by AI rests with the human actors or legal entities that employ AI systems and derive benefits from their use.⁷⁰ Yanisky-Ravid conceptualizes AI systems as "creative employees" that operate under the instructions and control of their employers. This approach is grounded in the principle of accountability,⁷¹ emphasizing that responsibility must be attributed to clearly identifiable persons or legal entities throughout works, and remains with the persons or organizations that supply, implement, and gain from AI systems. AI itself remains a non-subject of law, functioning as an instrument whose risks must be borne by those who design, deploy, and benefit from it. This approach preserves the integrity of civil liability principles while accommodating the realities of emerging technologies.

Taken together, these mechanisms represent a shift from a purely fault-based liability model toward a hybrid framework that integrates fault, risk allocation, and procedural fairness. Such recalibration is essential to ensure that civil liability remains capable of addressing the unique challenges posed by AI technologies, while preserving the integrity of existing legal principles.

B. Criminal Liability

The components of a legal subject regarding criminal liability must satisfy the criteria of *actus reus* (material component of a criminal offense) and *mens rea* (subjective component of a criminal offense). There must be a fault requirement, whether intentional or unintentional, within the subjective element. Intent implies that a person is deemed capable of knowing, imagining, or estimating the consequences of their actions, while negligence involves carelessness accompanied by a certain knowledge of the consequences or risks of such carelessness. In the *corpus delicti* (body of the crime), a causal relationship must be proven between the perpetrator's actions and the unlawful consequence.⁷²

According to S.R. Sianturi, as cited by Shofika Hardiyanti Qurrahman, Safira Ayunil, and Tsabita Aurelia Rahim, the elements of a criminal offense

⁶⁹ Uria Bernandus Anovanko, Andika Wijaya, and Satriya Nugraha, "Implikasi Hukum Perdata Terhadap Penggunaan Kecerdasan Buatan (AI) Dalam Kontrak Komersial," *Innovative: Journal of Social Science Research* 5, no. 2 (2025): 3637–53.

⁷⁰ Yanisky-Ravid, "Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in The 3A Era-The Human-Like Authors Are Already Here-A New Model."

⁷¹ Yanisky-Ravid.

⁷² Qurrahman, Ayunil, and Rahim, "Kedudukan Dan Konsep Pertanggungjawaban Artificial Intelligence Dalam Hukum Positif Indonesia."

include: the presence of a fault element; the act being unlawful; the act being prohibited by law with a threatened penalty; and the occurrence of the act at a specific time, place, and under certain circumstances. These elements can be categorized into subjective and objective elements. The subjective component refers to the presence of fault, and the objective element refers to the unlawful act.⁷³

From a criminal law perspective within the Criminal Code, parties who can be legal subjects and incur criminal liability are humans (*natuurlijk persoon*) and legal entities (corporations). Reverting to the concept of criminal liability, in the event of an unlawful act by AI, the entity bearing criminal responsibility would be the recognized legal subject, in this case, a human or a legal entity recognized as a legal subject. This is because AI is instructed to perform in alignment with the creator's intent. AI requires human assistance to act or operate because it cannot perform independently.⁷⁴ The complexity arising from AI can indeed target various sectors, either as a threat or as an aid. If legal frameworks specifically addressing AI are absent, this should serve as a reflection for all parties to avoid rigidity in responding to technological developments by clearly defining the boundaries of authority and solutions for AI development.⁷⁵

In criminal law, *mens rea* (the guilty mind or wrongful mental state) constitutes a core element in establishing individual criminal liability. *Mens rea* reflects the perpetrator's awareness or intent at the time of committing a legally prohibited act, and in the absence of this element, criminal responsibility generally cannot be imposed. However, when harm arises from autonomous decisions made by AI systems, both conceptual and practical obstacles emerge in proving *mens rea*, due to the technical characteristics of such systems.⁷⁶

Artificial intelligence operates as software driven by algorithms, input data, and programmed rules, rather than by intention, consciousness, or moral understanding of right and wrong as possessed by human actors. AI systems function through machine learning and statistical models and therefore never "possess" intent or directly contemplate the moral consequences of their actions. In this context, AI cannot hold the mental state required to satisfy the *mens rea* element.⁷⁷ Consequently, it is practically impossible to demonstrate that an AI system has a mental condition supporting criminal intent, for instance, that the

⁷³ Qurrahman, Ayunil, and Rahim.

⁷⁴ Aaron L. Davis, "Artificial Intelligence and the Fight Against International Terrorism," *American Intelligence Journal* 38, no. 2 (2021): 63–73.

⁷⁵ Dennis C. Blair and William "Bud" Roth, "Cyber Crime and Geostrategic Clash Over the Internet," *The Cyber Defense Review* 7, no. 2 (2022): 15–33.

⁷⁶ Kolpakov, "Agents of Disruption: Legal Dilemma and the Future of AI."

⁷⁷ Kolpakov.

system “knew” or “understood” that a particular action was unlawful, since AI lacks consciousness and moral reasoning capacities relevant to *mens rea*.⁷⁸

Additionally, many advanced AI and complex predictive models operate in a black-box manner, meaning their internal logic cannot easily be made transparent or explained. This opacity renders the evidentiary linkage between the required *mens rea* and the conduct produced by AI highly problematic. There is no internal motivation or mental interaction that can be reconstructed through legal investigation, as algorithms merely generate outputs based on statistical patterns in data. As a result, even where a provider or developer may have been aware of potential system risks, proving that they possessed a specific criminal intent at the time of deploying an AI system that later caused harm remains practically challenging, especially when the system exhibits unexpected or uncontrollable behavior.⁷⁹

Given that AI lacks mental capacity, several scholars argue that legal analysis should shift away from the *mens rea* of AI itself towards the human intent underlying its development, deployment, and supervision, through doctrines such as vicarious liability or alternative models including product liability. These approaches relocate the evidentiary burden to human conduct or omissions—such as system design, programming decisions, or inadequate oversight—rather than to the non-existent mental state of AI. For example, where AI causes harm, liability may be established by demonstrating that developers or providers were aware of foreseeable risks and failed to implement adequate mitigation measures.⁸⁰

Another fundamental issue lies in the fact that traditional criminal law is premised on the existence of conscious and accountable legal subjects (natural persons). Without normative adaptation, the *mens rea* requirement remains inherently inapplicable to AI systems. Accordingly, proposed future approaches include the reformulation of criminal liability through new liability models or legal categories that acknowledge the role of human actors in the creation, deployment, and governance of AI systems.⁸¹

⁷⁸ Akanksha Priya, “Criminal Accountability for AI: Mens Rea, Actus Reus, and the Challenges of Autonomous Systems,” *LawFoyer International Journal of Doctrical Legal Research* 3, no. 1 (2025): 273–303.

⁷⁹ Kolpakov, “Agents of Disruption: Legal Dilemma and the Future of AI.”

⁸⁰ Vicko Taniady, “AI-Induced Fatalities: A Criminal Law Perspective from Indonesia and International Perspective,” *Yustisia Jurnal Hukum* 14, no. 2 (2025): 126–251.

⁸¹ Wawan Fransisco, “Drafting Laws for the Lifeless: A Legal Framework for Criminal Liability and Punishment for Artificial Intelligence,” *Jurnal Hukum Dan Peradilan* 2 14, no. 3 (2025): 701–718.

Practically, autonomous AI systems give rise to tangible difficulties in proving *mens rea* because AI lacks moral understanding or an internal mental state; the black-box nature of the algorithm obstructs the identification of motives or intent; and traditional criminal law is not designed to address non-human agents. Therefore, although ultimate legal responsibility remains with human actors, establishing criminal intent in relation to autonomous AI decisions necessitates alternative legal approaches, such as attributing liability to developers or system providers based on internal policies, system design choices, or the degree of human control rather than attributing intent to AI itself.

C. Administrative Liability

Administrative liability represents a consequence of sanctions that can be imposed by the government or authorized bodies for violations of legal rules within the scope of state administration. Regarding AI, administrative liability applies to AI providers who violate relevant laws and regulations concerning its development, use, or management. AI implementation in various sectors can enhance performance efficiency; however, it also presents several legal challenges that must be adhered to, including: privacy and data protection; transparency and accountability; bias and discrimination; and cybersecurity.⁸²

Consistent with regulations about the operation of electronic systems, as outlined in Government Regulation No. 71 of 2019 concerning Electronic System and Transaction Provision (PP PSTE), a basis for administrative liability is provided. AI providers are obligated to meet standards of security, transparency, and personal data protection. Privacy and data protection, as also regulated in Articles 14-23 of the PP PSTE and Article 26 of the ITE Law, are crucial because AI use necessitates accessing and analyzing large volumes of data for training purposes, including citizens' personal data, which raises concerns regarding privacy and data protection.⁸³

Transparency and accountability are vital because AI algorithms can be complex, posing challenges in ensuring transparency and accountability. If AI results are not transparent, public distrust may arise.⁸⁴ Furthermore, AI training data can lead to bias and discrimination, as AI uses databases for training without considering fairness. Therefore, providers must protect AI information

⁸² Loso Judijanto, "Aplikasi Artificial Intelligence (AI) Dalam Proses Administratif Pemerintah: Aspek Hukum Dan Regulasi," *Jurnal Administrasi Negara* 3, no. 2 (2025): 8–15.

⁸³ Judijanto.

⁸⁴ Latowa and Sunadi, "Pemanfaatan Artificial Intelligence (AI) Sebagai Inovasi Digital Dalam Tata Kelola Pemerintah Daerah."

or decisions from bias and discrimination. Cybersecurity is also paramount. AI can be susceptible to attacks, so providers need to establish systems with strict security protocols and configurations to protect against threats.⁸⁵

PP No. 71 of 2019 regulates the obligations for both public and private electronic system providers,⁸⁶ including maintaining system security, registering systems, protecting personal data, and providing access for law enforcement. AI providers, when offering systems for general public use, are classified as electronic system providers. Articles 24-28 of the PP PSTE emphasize the security of electronic systems, including the availability, integrity, and confidentiality of information, as AI's vulnerability to internet or cyber-attacks can lead to losses.

If an electronic system provider fails to comply with these standards, the government is authorized to impose administrative sanctions, ranging from a warning as the lightest penalty for initial notification. Subsequent sanctions include temporary suspension of access to the electronic system until the provider rectifies the issue, and a statement from the Minister deeming the electronic system provider unregistered if they fail to register their system. Social sanctions may also be imposed, where violations can be publicly announced on the Ministry's official website. Additionally, administrative fines may be levied; although PP No. 71 of 2019 does not specifically regulate the amount of fines, it provides a legal basis for their imposition. These various sanctions escalate from written warnings to system blocking, the most severe penalty, meaning the electronic system provider is no longer permitted to operate their electronic system. For instance, if AI is used to process user data without consent or if there is a lack of transparency in the algorithms used, the provider can be subject to administrative sanctions by the Ministry of Communication and Informatics.

Administrative liability is also a crucial element in establishing responsible AI governance in Indonesia. Although there is no specific law yet regulating AI, PP No. 71 of 2019 concerning Electronic System Provision has substantially established an administrative legal framework for AI provision by categorizing AI providers as electronic system providers. PP No. 71 of 2019 mandates compliance from electronic system providers with system security standards, transparency, personal data protection, and the obligation to register their systems. However, given the dynamic development of AI, it is essential for

⁸⁵ Judijanto, "Aplikasi Artificial Intelligence (AI) Dalam Proses Administratif Pemerintah: Aspek Hukum Dan Regulasi."

⁸⁶ Atmaja, "Pemanfaatan Artificial Intelligence (AI) Dalam Transformasi Digital Untuk Pelayanan Publik."

the government to continuously enhance regulatory capacity and ensure that AI in Indonesia develops innovatively while remaining responsible and ethical. This approach will mitigate risks posed by AI while maximizing its potential benefits for national advancement.

D. Ethical Principles in the Implementation of Artificial Intelligence

The governance of Artificial Intelligence (AI) in Indonesia cannot be understood solely through binding legal instruments, but must also be examined through the role of normative policy frameworks, including ethical guidelines. In this regard, the Circular Letter of the Minister of Communication and Informatics No. 9 of 2023 on Artificial Intelligence Ethics represents a significant regulatory development. Although it does not possess a legally binding force, this instrument should not be dismissed as merely symbolic. Instead, it functions as a form of *soft law* that reflects the State's normative orientation in shaping responsible AI governance.

From a legal-theoretical perspective, *soft law* instruments play an important transitional role in emerging regulatory fields, particularly where technological developments outpace formal legislation. They contribute to shaping expectations of conduct, guiding institutional practices, and often serve as a precursor to binding legal norms.⁸⁷ In the Indonesian context, the Circular Letter signals an official recognition that AI governance must be grounded not only in technical compliance but also in ethical considerations such as accountability, transparency, fairness, and safeguarding of human rights. However, the primary limitation of the Circular Letter lies in its declarative nature. The ethical principles articulated therein, such as inclusivity, humanity, security, accessibility, transparency, accountability, personal data protection, sustainability, and respect for intellectual property, remain framed as general normative commitments rather than operational legal standards. As a result, these principles lack direct enforceability and are not yet integrated into concrete mechanisms of legal responsibility.

This limitation becomes particularly significant when AI systems are deployed in contexts involving automated decision-making that directly affects individuals' rights and interests, such as public service delivery, financial access, or digital content regulation. In such cases, ethical principles should not function merely as aspirational guidelines, but must operate as legally relevant

⁸⁷ Kenneth W Abbott and Duncan Snidal, "Hard and Soft Law Law in International Governance," *International Organization* 54, no. 3 (2000): 421–456.

benchmarks for evaluating conduct, determining liability, and ensuring effective remedies.⁸⁸ Without such transformation, the gap between ethical expectations and legal accountability persists, thereby weakening protection for affected individuals. A closer examination reveals that the Circular Letter does not provide sufficient operational criteria for implementing its ethical principles. For instance, the principle of transparency is not accompanied by obligations relating to *algorithmic explainability*, documentation of decision-making processes, or access to meaningful information for affected users. Similarly, the principle of non-discrimination is not supported by requirements for bias testing, dataset auditing, or impact assessment procedures. This absence of technical-legal translation limits the practical applicability of the ethical framework and reduces its effectiveness in addressing real-world harms caused by AI systems.

In a comparative perspective, global regulatory developments demonstrate a clear shift toward integrating ethical principles into binding legal frameworks through risk-based approaches. The European Union, for example, has operationalized ethical concerns into enforceable obligations by categorizing AI systems based on risk levels and imposing corresponding regulatory requirements.⁸⁹ This model illustrates that effective AI governance requires not only the articulation of ethical values but also their institutionalization into legal norms, compliance mechanisms, and enforcement structures.

Accordingly, to enhance the normative and practical effectiveness of the Circular Letter, this article proposes a threefold transformation of ethical principles into operational legal standards. First, ethical principles must be codified into binding legal instruments. This may be achieved either through amendments to applicable rules, such as the ITE Law, or through the enactment of a dedicated AI regulatory framework. By elevating ethical principles into statutory obligations, violations of transparency, accountability, or non-discrimination can give rise to administrative sanctions, civil liability, or other legal consequences. Such codification would also provide greater legal certainty and strengthen the enforceability of AI governance standards.⁹⁰

Second, ethical principles must be integrated into compliance obligations for electronic system providers. This requires translating abstract values into

⁸⁸ Luciano Floridi et al., “AI4People — An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations,” *Minds and Machines* 28, no. 4 (2018): 689–707.

⁸⁹ European Parliamentary Research Service, *Proposal for a Directive on Adapting Non-Contractual Civil Liability Rules to Artificial Intelligence*.

⁹⁰ Mireille Hildebrandt, *Law for Computer Scientists and Other Folk*, First (United States of America: Oxford University Press, 2020).

concrete duties, including: (i) mandatory algorithmic impact assessments before deployment; (ii) periodic independent audits of AI systems; (iii) documentation of training data and decision-making processes; and (iv) implementation of human oversight mechanisms, particularly for high-risk AI applications. Through this approach, ethical principles can function as measurable standards of due care, thereby supporting the application of liability doctrines, including negligence, strict liability, and reversal of the burden of proof, as discussed in the context of civil liability.⁹¹

Third, effective AI governance requires institutional enforcement through regulatory oversight. The absence of a competent supervisory authority with technical expertise risks rendering ethical principles ineffective in practice. Therefore, it is necessary to either establish an independent AI regulatory body or strengthen the mandate of existing authorities to oversee AI systems, conduct investigations, ensure compliance, and impose sanctions where necessary. Institutional capacity is particularly crucial in addressing challenges posed by opaque (*black box*) systems, where accountability cannot rely solely on individual claims but requires systemic oversight. Through these mechanisms, ethical principles can evolve from non-binding guidelines into enforceable legal standards that directly inform the allocation of responsibility and the protection of individual rights. This transformation is essential in bridging the gap between normative aspirations and legal reality, particularly in a context where traditional fault-based liability regimes face significant limitations in addressing algorithmic harm.

Therefore, the Circular Letter should be understood as a foundational step in the development of Indonesia's AI regulatory framework, rather than a complete solution. Its true significance lies in its potential to serve as a normative bridge toward a more comprehensive and enforceable legal regime. Without such development, there is a risk that ethical governance will remain confined to symbolic compliance, failing to provide meaningful protection for individuals affected by AI systems. Conversely, by integrating ethical principles into binding law, compliance mechanisms, and liability frameworks, Indonesia can establish a model of AI governance that is not only technologically adaptive but also grounded in justice, accountability, and respect for human rights.

Conclusion

Indonesia's current legal framework remains insufficient to address liability arising from Artificial Intelligence (AI), as existing laws such as the

⁹¹ Wachter, Mittelstadt, and Floridi, "Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation."

Copyright Law, the ITE Law, and Government Regulation No. 71 of 2019 were not designed to regulate autonomous and opaque AI systems. Because AI lacks consciousness, intent, and moral agency, it cannot be recognized as a legal subject; therefore, liability must remain with identifiable human or corporate actors, particularly AI system providers who control the design, deployment, and economic exploitation of AI technologies. Although Articles 1365, 1366, and 1367 of the Civil Code provide a basis for liability, fault-based approaches are inadequate in cases involving algorithmic opacity and evidentiary imbalance. This article argues that Indonesia should adopt a comprehensive, risk-based AI liability framework centered on strict liability for high-risk AI systems, reversal of the burden of proof, and mandatory transparency and audit obligations. While criminal liability is limited by the absence of mens rea in AI, and administrative mechanisms remain largely procedural, ethical principles such as transparency, accountability, and non-discrimination must be transformed into enforceable legal norms through regulatory codification and institutional oversight. Such reforms are necessary to ensure legal certainty, effective accountability, and public trust in the development and deployment of AI in Indonesia.

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