Reconstruction of Criminal Liability of Artificial Intelligence in Future Positive Criminal Law

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Abstract

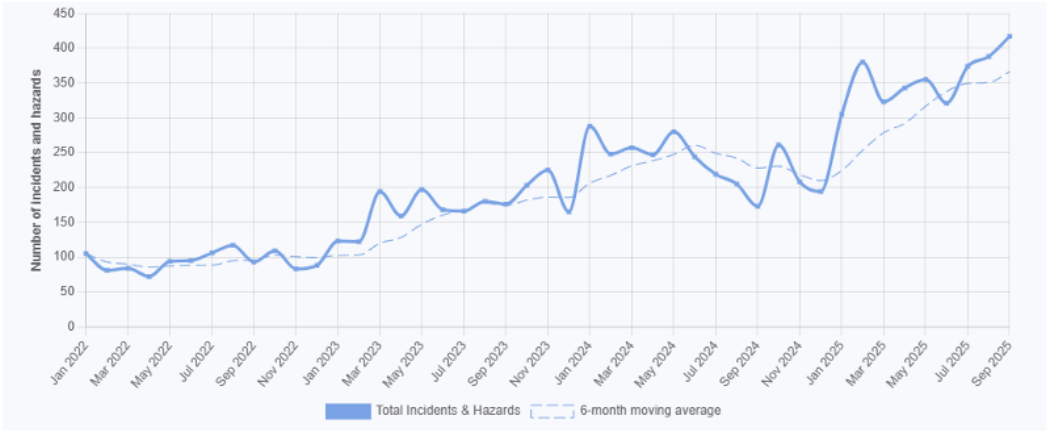
The rapid advancement of Artificial Intelligence (AI) has significantly transformed various sectors while presenting complex legal challenges, particularly in the realm of criminal liability. This study examines the regulation of criminal liability related to AI in Indonesian positive law and explores its future legal construction. Using normative juridical methods with statutory and conceptual approaches, this study analyzes the existing legal framework, doctrine, and comparative perspectives. Indonesian legal regulations do not recognize AI as a legal subject capable of bearing criminal responsibility. Instead, AI is positioned as a tool or object, with responsibility attributed to human actors, such as developers, operators, or users. This is primarily due to the absence of elements of criminal liability in AI, such as mens rea (malicious intent), consciousness, and moral agency. However, the increasing use and misuse of AI, such as in deepfake fraud and data breaches, has exposed significant regulatory gaps and created legal uncertainty in law enforcement. Based on the comparative analysis between the European Union and Indonesia, the future reconstruction of criminal law regarding AI, namely Indonesia, requires a comprehensive and adaptive regulatory framework to address AI-related criminal issues. Rather than recognizing AI as a legal subject, legal systems should strengthen human-centered accountability models while integrating risk-based governance principles. Such reconstruction is crucial to ensure legal certainty, protect the public interest, and responsibly accommodate technological innovation.

Keywords: Reconstruction; Criminal Liability; Artificial Intelligence.

Introduction

The development of technology and communication has influenced the forms and modus operandi of criminal acts. Considering that, at present, human needs for information technology are freely and unlimitedly accessible, this condition provides significant benefits in fulfilling human needs for information in carrying out daily activities (Disemadi & Sudirman, 2025). However, it also brings negative consequences. Technological advancement has both positive and negative impacts. One of the negative impacts of internet usage is the occurrence of personal data breaches. Although AI provides substantial benefits in various fields, its use also opens opportunities for misuse, particularly in highly dynamic digital environments. Artificial Intelligence (AI) utilizes deep learning methods to alter and manipulate a person's facial appearance and audio in digital content that is widely disseminated through social media (Cantika et al., 2025). Based On paper analyses live data from the OECD.AI Incidents and Hazards Monitor (AIM), Between 2022 and 2025, the number of AI incidents and hazards reported by the media increased steadily, from 92 to 324 per month on average (Oecd, 2026).

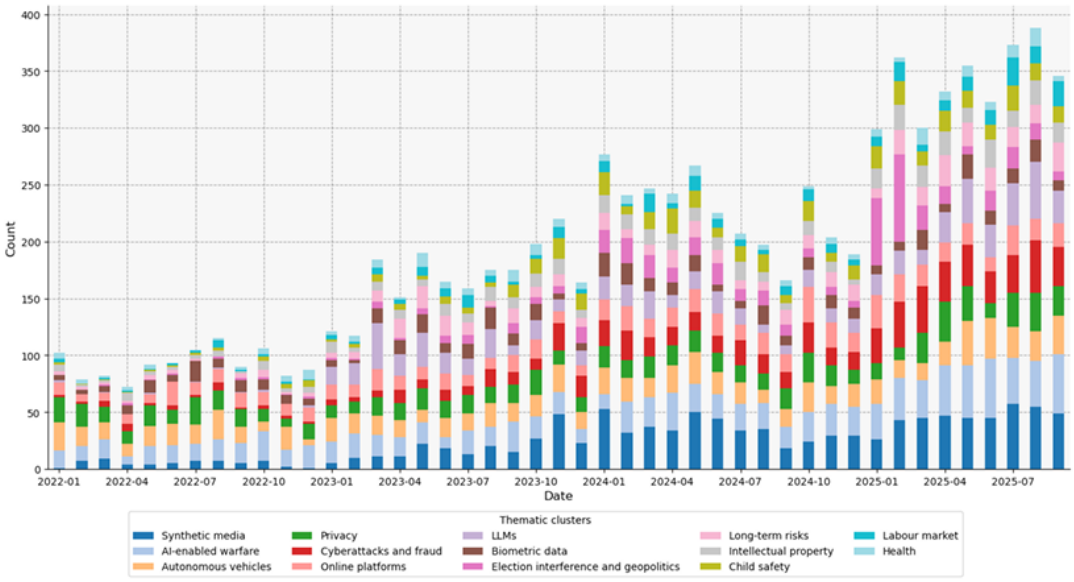
Panel A. Evolution of media-reported AI incidents and hazards over time, absolute number



Note: An AI incident or hazard can be reported by one or more news articles covering the same event.

The presentation of AI incidents and hazards by specific theme varied, Identifying key themes in media-reported AI incidents and hazards, the number and share of media-reported AI incidents and hazards vary significantly across themes On average, from 2022 to September 2025, synthetic media reports accounted for the largest share, at 12.5% of the total, followed by AI-assisted warfare (12.2%), autonomous vehicle risks (10%), and privacy violations (8.9%). Conversely, themes such as health risks and labor market disruption accounted for smaller shares, at 3.1% and 3.5%, respectively (Oecd, 2026).

Panel A. Number of media-reported AI incidents and hazards over time, by theme



Note: To avoid double-counting, each AI incident or hazard reported in the media was assigned to the most relevant theme

Artificial Intelligence (AI) is the ability added to a system to accurately process external data, manage that information, and use it to achieve specific goals. AI is a branch of computer science that focuses on developing intelligent machines that can work in ways that are equal to or close to human capabilities. This technology has developed rapidly in various fields, such as medicine, business, finance, education, and law. Furthermore, in the social and cultural realms, AI has become a new intermediary in social and cultural interactions, for example through the habit of sharing photos or videos on social media to demonstrate user experiences. Based on the Data Reportal report published by

Nur Aliya Rasidah et.al, in 2023 there will be 4.76 billion active social media users worldwide, equivalent to 60% of the global population. This number has increased significantly in the past decade, with the addition of 137 million new users between 2013 and 2023 (Rasyidah et al., 2024).

In Indonesia, the application of AI in the prevention and handling of cybercrime has become an important discourse. AI has great potential to analyze large volumes of data (big data) to identify crime patterns, predict potential locations and timing of attacks, and automate detection and response processes. However, the utilization of this technology is not free from legal issues. Debates have emerged regarding the legal status of AI, who should be held accountable when AI systems make erroneous decisions, and how to ensure that AI-generated evidence can be accepted in court (Muhammad Rizki Kurniarullah, Talitha Nabila, 2021).

This phenomenon became increasingly evident in a viral case in 2025 involving the circulation of deepfake videos depicting the faces and voices of President Prabowo Subianto and Minister of Finance Sri Mulyani, as if they were requesting money from the public. These videos were created using AI technology in a manipulative manner and subsequently distributed for fraudulent purposes. As a result, several victims who believed the content suffered financial losses after transferring money according to the instructions in the videos. Copyright and Ethical Violations by AI Ghibli Works, AI training using visual works of artists (such as Studio Ghibli style) without permission. This case demonstrates that AI technology is not only misused to generate false content but can also be employed as a tool to commit crimes with widespread impacts in the digital sphere (Mughiroh, 2025; Putri, Disemadi & Hutauruk, 2025; Ong, Disemadi & Sudirman, 2025).

From a criminal law perspective, the misuse of AI presents serious challenges. AI-generated content is often difficult to distinguish from authentic content, thereby complicating the process of identifying perpetrators, determining the form of culpability, and proving cases in judicial proceedings. Furthermore, existing regulatory frameworks, such as the Criminal Code (KUHP) and the Electronic Information and Transactions Law (UU ITE), do

not specifically regulate crimes involving AI as a tool or instrument, resulting in legal ambiguity in law enforcement.

This ambiguity also extends to the issue of criminal liability. According to Simons' concept of *strafbaar feit*, criminal liability must involve a human act, an unlawful act (*wederrechtelijke*), an act committed by a person capable of being held responsible (*toerekeningsvatbaar*), and a person who can be held accountable. With the advancement of technology, there has been a shift in the paradigm of legal subjects, where AI is capable of performing human tasks, potentially giving rise to various legal issues related to the actions it performs (Putra, 2025).

AI is an artificial intelligence system whose capabilities are limited by the code underlying its operations. In Indonesia, there is currently no specific and clear regulation governing AI, which may lead to legal problems in the future if AI technology performs acts that violate existing positive law (Abdul Hadi, 2022). Given AI's ability to perform actions, it is not impossible for AI to engage in legal acts similar to humans, including committing criminal acts that harm others. In several countries where AI technology has been widely implemented, some have begun to position AI as a legal subject with rights and obligations. However, this is not the case in Indonesia, where AI is not recognized as a legal subject under positive law. Consequently, issues arise regarding liability for actions carried out by AI.

At the global level, jurisdictions have responded differently to this normative disruption. The European Union has positioned itself as a regulatory pioneer by adopting the EU Artificial Intelligence Act, which establishes the world's first comprehensive legal framework governing artificial intelligence. The Act introduces a risk-based classification system distinguishing between unacceptable-risk AI systems, high-risk systems, limitedrisk systems, and minimal-risk systems (Königs, 2022) . In contrast, Indonesia has yet to adopt a comprehensive AI-specific statute. The Indonesian legal framework relies primarily on general criminal provisions under the Criminal Code (KUHP), the Electronic Information and Transactions Law, consumer protection regulations, and data protection legislation. These instruments may indirectly apply to AI-

related harm, yet they were drafted in an era when autonomous machine decision-making was not a central concern. As a result, Indonesia faces normative ambiguity in determining how criminal liability should be allocated when AI systems cause or facilitate harm. The absence of a structured regulatory framework risks legal uncertainty, inconsistent judicial interpretation, and potential under-deterrence in high-risk technological sectors (Krisna & Anggara, 2026). This research addresses two main problems: (1) how criminal liability for Artificial Intelligence is regulated in Indonesian positive law, and (2) how the future legal construction of criminal liability for AI should be formulated. Therefore, this study focuses on the reconstruction of criminal liability for Artificial Intelligence within future Indonesian positive criminal law. This research employs theories of criminal liability developed by legal scholars from various jurisdictions.

Research Method

The type of research employed in this study is normative juridical research. This research focuses on examining and analyzing legal norms or rules from a theoretical perspective, including principles, concepts, legal doctrines, and the substance of positive law (Taekema, 2018). Each academic discipline possesses its own research methods based on its perspective, approach, and paradigm (Tamanaha, 2010). The approaches used in this study are policy-oriented approaches, namely: the statutory approach and the conceptual approach. The statutory approach is essential in normative research, as it examines various legal regulations that constitute the primary focus and central theme of the study (Huang, Han, Ruyin Long, 2023). Meanwhile, the conceptual approach is employed to analyze legal concepts and doctrines relevant to the research issue (Sansone, Carlo, 2022). The collection of legal materials includes primary, secondary, and tertiary legal sources, utilizing a card system and supported by computerized systems through the internet. This method facilitates the process of analysis. These legal materials are obtained from various legal sources.

The legal materials examined in this study consist of: Primary legal materials, namely statutory regulations related to the “Reconstruction of

Criminal Liability of Artificial Intelligence in Future Positive Criminal Law," including: 1.The 1945 Constitution of the Republic of Indonesia; 2. Law Number 1 of 2023 concerning the Criminal Code (KUHP); 3. Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 on Electronic Information and Transactions (UU ITE). Secondary legal materials include scholarly works, research findings, and legal literature related to criminal law in general, as well as literature specifically discussing the reconstruction of criminal liability of Artificial Intelligence in future positive criminal law. Tertiary legal materials consist of encyclopedias and various legal dictionaries relevant to this research.

Results and Discussions

Regulation of Criminal Liability of Artificial Intelligence (AI) in Indonesian Positive Law

Artificial Intelligence (AI), commonly referred to as artificial intelligence, can linguistically be defined as follows: "artificial" means not natural or not genuine, while "intelligence" refers to cognitive ability. In simple terms, AI can be defined as a system and/or tool designed to assist human tasks by simulating human reasoning and thinking processes based on human instructions. AI represents a form of intelligence that surpasses humans in terms of speed and accuracy. This is evident in how AI operates, as it is capable of performing tasks at a speed equal to or even exceeding that of humans, and its precision in executing programmed functions is generally superior (Haris & Tantimin, 2022).

Artificial Intelligence (AI) can perform various capabilities such as understanding commands given by humans. Artificial Intelligence also has the ability to detect and recognize a person's face, even Artificial Intelligence can also replace human work such as the legal profession in the UK which is starting to be replaced by Artificial Intelligence in the form of chat via the "DoNotPay" platform. This platform has helped provide services to 1000 legal aids which

proves that Artificial Intelligence is functionally running effectively (Nada et al., 2024).

The presence of Artificial Intelligence in this era has given rise to various pros and cons in all levels of society. In general, Artificial Intelligence itself is very helpful for human work because of the ease of access offered by Artificial Intelligence itself. However, on the other hand, there are various questions that arise regarding how to be accountable for what Artificial Intelligence does. In discussing subjects of criminal law, the focus lies on the capacity for responsibility, who bears responsibility, and the form of such responsibility. According to Utrecht, a legal subject is a bearer of rights, namely a human being or a legal entity recognized by law as having rights. Utrecht classifies legal entities based on legal relations, diversity of legal forms, and the distinction between public and private law (Susanto, 2022).

Furthermore, Sudikno Mertokusumo explains that a legal subject is anything capable of possessing rights and obligations under the law. Similarly, Subekti defines a legal subject as a bearer of rights, namely a person. Purbacaraka and Soekanto define legal subjects as parties that interact within the legal system (Aulia et al., 2024). The characteristics of legal subjects include:1. Independence, as they possess full capacity to act; 2. Protection, as they may be considered incapable of acting; 3. Intermediary role, where their capacity to act is limited for the benefit of another party.

They further distinguish legal subjects into:1. Natural persons (natuurlijk persoon), namely all human beings; 2. Legal persons (rechtspersoon), which include: (Organized entities such as cooperatives and limited liability companies; Status-based roles, such as spouses in family law or heirs in inheritance law) (Manullang, 2021). Based on these scholarly views, legal subjects are divided into natural persons and legal persons. Indonesian positive law regulates criminal law subjects under Law Number 1 of 2023 concerning the Criminal Code (KUHP). The KUHP recognizes both individuals and corporations as subjects of criminal law, expanding beyond the previous code, which only recognized individuals.

In criminal law, once an act is classified as a criminal offense, the capacity for responsibility must also be established. Chairul Huda defines criminal

liability as the imposition of punishment on a person based on both the objective occurrence of a criminal act and the subjective fault of the perpetrator. Thus, liability is determined by fault rather than merely the fulfillment of the elements of a crime (Taufikur Rohman, 2023) .

Similarly, Admaja Priyatno emphasizes that criminal liability is based on the perpetrator's fault, not solely on the existence of a criminal act. Therefore, fault becomes the determining factor in criminal responsibility. Sudarto further asserts the principle of *nulla poena sine culpa* (no punishment without fault). Here, "fault" includes both intent and negligence, referring to the mental state of the perpetrator, which justifies blame. Roeslan Saleh explains that fault is assessed normatively, based on whether the perpetrator can be socially reproached, rather than purely on psychological conditions (Gunawan, 2023).

The Memorie van Toelichting (M.v.T.) identifies two grounds for the absence of criminal responsibility: 1. Reasons inherent within the individual; 2. Reasons external to the individual (Kartika, 2025). Regarding legal entities as subjects of law, Sudikno Mertokusumo states that humans are not the only legal subjects; legal entities are also recognized as subjects capable of holding rights and obligations. These entities act as unified legal actors in legal relations. Similarly, H. Riduan Syahrani explains that legal entities, although lacking physical existence, are recognized as legal subjects capable of entering into legal relations and bearing rights and obligations, particularly in the realm of property law.

Subekti and Tjitrosudibio define legal subjects as humans or legal entities. In terms of criminal liability, Dwi Wahyono outlines several doctrines (Rohman & Sugiharto, 2023): 1. Identification Doctrine Corporate liability arises from the mental state of senior officials whose intent is identified as the corporation's intent; 2. Vicarious Liability–Liability imposed on a person for the actions of another without personal fault; 3. Strict Liability Absolute liability without the need to prove fault.

Corporations may be held criminally liable when crimes are committed by their management or controlling persons on behalf of the corporation. However, the KUHP does not regulate AI as either a legal subject or object, thus positioning AI merely as a tool (Susanto, 2022). Outside the KUHP, the

regulation of AI falls under Law Number 19 of 2016 on Electronic Information and Transactions (UU ITE). Under this law, AI is categorized as an electronic system and an electronic agent. This classification aligns with AI's characteristics, as it can collect, process, analyze, and transmit electronic information (Article 1(5) UU ITE). Additionally, AI qualifies as an electronic agent, defined as a system capable of performing actions automatically based on human instructions (Article 1(8) UU ITE) (Yolanda Frisky Amelia, Arfan Kaimuddin, 2024). Thus, AI is not directly recognized as a legal subject capable of bearing legal responsibility. Instead, it is considered an object or tool operated by humans, with responsibility assigned to electronic system providers, as regulated in Government Regulation Number 71 of 2019 (Sebayang et al., 2024).

AI based on the legal regulations in force in Indonesia is not actually a legal subject but only a legal object, which of course AI itself is a technology operated by humans in its implementation, associated with positive law, AI is operated by electronic system organizers, this is in accordance with what is explained in Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions (PP 71/2019). Electronic system organizers in this case are responsible as legal subjects for the implementation of electronic systems they carry out, except in cases of force majeure.

The regulations currently in force in Indonesia also have several regulations that are sufficient in scope to support the integration of AI into positive law comprehensively in the future, including: a. Law Number 11 of 2019 concerning the National System of Science and Technology; b. Law Number 11 of 2008 concerning Information and Electronic Transactions as amended by Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Information and Electronic Transactions; c. Law Number 27 of 2022 concerning Personal Data Protection; d. Presidential Regulation Number 133 of 2017 concerning Amendments to Presidential Regulation Number 53 of 2017 concerning the National Cyber and Crypto Agency; e. Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems; f. Government Regulation Number 82 of 2012 concerning the Implementation of Electronic Systems and Transactions.

In general, Indonesia has begun to adopt policies and regulations related to AI, but there is no specific law that comprehensively regulates AI. Some relevant initiatives include the Personal Data Protection Bill (RUU PDP), which focuses on personal data protection and may impact the use of AI involving personal data. Furthermore, the Indonesian Government has developed a national strategy for AI development with the aim of promoting the ethical use of AI and benefiting society. There are also sector-specific regulations related to AI.

AI regulations may also emerge in the context of certain sectors, such as health, finance, or transportation (Disemadi & Agustianto, 2025). Overall, the development of AI-related laws in Indonesia is ongoing, and it is important to stay abreast of the latest developments to remain compliant with applicable regulations. The biggest obstacle to creating AI regulations in Indonesia is the lack of legal infrastructure and human resources who understand AI technology. The formation of AI regulations requires a deep understanding of the concept of AI technology, including its positive and negative effects. In addition, Indonesia must also address issues related to privacy, data security, and ethics related to the use of AI. Awareness and understanding of AI among policymakers and the public needs to be increased so that the regulations made are effective and useful (Rasyidah et al., 2024).

Although several regulations in Indonesia support the integration of AI into the legal system such as laws on science and technology, data protection, and electronic governance these frameworks remain insufficiently comprehensive. Legal certainty requires clear and unambiguous regulation, including standards, governance, ethics, licensing, data protection, and liability.

AI cannot be equated with a legal entity to become a legal subject. A legal entity has a clear and definite purpose and objective in its establishment and has a human scope. AI cannot stand independently. As is known, computers are controlled and programmed by humans. If a computer or AI makes a decision that can be equated with a human, the perfection of that decision cannot be guaranteed without human supremacy in decision-making, because computers are not always free from system errors.

Currently, the status and position of artificial intelligence, both under the laws of other countries and Indonesian law, remains a matter of debate. The position of artificial intelligence is still uncertain, and there is no law that expressly states the position of artificial intelligence under Indonesian criminal law. With human input and knowledge, Artificial Intelligence is able to receive knowledge through simulation of human reasoning and thought processes to solve various problems that arise in the midst of human life itself. Although Artificial Intelligence has limitations such as not being able to seek experience, even conducting research like what is done by humans. Artificial Intelligence is able to get what is needed.19 From this explanation, it can be interpreted that the presence of Artificial Intelligence that has been designed in such a way has the aim of being able to do the same or more than what humans can do so that Artificial Intelligence can function as a means of assisting and replacing humans in doing small things or things that are more advanced (Ravizki & Lintang Yudhantaka, 2022).

AI cannot be equated with legal entities as a subject of law, as it lacks independence and is entirely dependent on human programming. Consequently, any decisions made by AI cannot be fully separated from human control. Currently, the legal status of AI remains uncertain both in Indonesia and globally. This uncertainty reflects a legal vacuum, which could lead to significant challenges if AI causes harm or unlawful acts. The autonomous nature of AI further complicates the determination of liability.

This clearly indicates a legal vacuum, this would have fatal consequences if it were discovered that artificial intelligence (AI) could one day cause harm and unlawful acts, making it extremely difficult to determine who would be held responsible for the resulting losses. This is undoubtedly problematic because the autonomous nature of AI allows it to act independently. However, this does not mean there are no alternatives. Using alternative analogies and/or applying previously used legal concepts are options that could be implemented to regulate AI within the Indonesian civil law realm. In conclusion, Indonesian positive law does not yet recognize AI as a subject capable of bearing criminal liability. Criminal responsibility requires the presence of intent or negligence (*mens rea*),

unlawfulness, and the capacity for responsibility elements that AI does not possess.

Future Legal Construction of Criminal Liability of Artificial Intelligence (AI) in Indonesian Positive Law

Although several practitioners have defined AI, there is currently no single, universally accepted definition. Thus, it is difficult to clearly define the distinction between what constitutes AI and what does not. Therefore, it is possible that other definitions of AI will emerge in the future as AI capabilities evolve. This diversity of AI definitions is related to the use of AI in human life, the performance and involvement of AI capabilities in solving human problems, and the accuracy of AI when handling algorithms and big data. While the boundaries of AI can be uncertain and likely to change over time, the essential goal of AI research and use has always been to automate (make something run autonomously) or replicate human intelligence. In a different sense, the diversity of AI definitions is not due to the existence of different concepts of AI defined by practitioners, but rather to the ongoing evolution of AI itself.

Artificial Intelligence (AI) is a computational program that enables machines to function in a manner similar to human intelligence. The capability of AI to operate in ways comparable to human cognition indirectly raises the possibility of recognizing AI as a legal subject similar to humans. The intelligence possessed by AI such as answering questions, executing commands, making decisions, and performing other human-like actions must first be initiated by human input in the form of data entered into a knowledge base consisting of facts, theories, ideas, and interrelated information (Ramadhan dan Dinita Andriani Putri, 2018).

A knowledge base is a database containing rules within a specific domain of knowledge. It consists of collections of objects along with their attributes and governing rules, forming the core of expert systems as a representation of knowledge (knowledge representation). The data within the knowledge base is then processed by an inference engine, which enables the system to draw conclusions based on stored knowledge and experience. This component

provides reasoning mechanisms and logical patterns similar to those used by human experts (Disemadi, 2021).

Conceptually, the more intelligent a system is, the more likely it is to perform actions that have legal consequences. Therefore, if this intelligent system has the capacity to act and think like a human, does that mean it should also have the same rights and legal protections as humans? The questions above may seem like vague premises that are not worth considering at this time. However, rapid technological developments are enabling many imagined futures to become reality in a relatively short time. Therefore, it is understandable that many countries are already preparing their legal instruments regarding the legal status of Artificial Intelligence. It's important to understand that AI is a product developed and managed by humans. While AI can operate autonomously, it remains fundamentally dependent on humans. However, with increasingly rapid technological advancements, AI can now make complex and unpredictable decisions, even without direct human intervention. Therefore, appropriate regulations are needed to play a crucial role in ensuring that AI technology is used responsibly without harming public interests. With clear and firm regulations, oversight of AI use can be more effective, thereby minimizing its negative impacts. Furthermore, these regulations also provide legal certainty for AI developers and users in Indonesia, while ensuring that technological innovation does not compromise security or individual rights.

The current normative limitations reflect a crisis in the law's adaptation to technological developments. Traditional criminal law was not designed to address situations where the potential perpetrator is not human. The ambiguity surrounding AI's legal status also has a direct impact on judicial practice. Without explicit norms governing criminal liability for AI actions, law enforcement agencies face difficulties in establishing an appropriate legal basis. This creates uncertainty in the law enforcement process and opens the potential for injustice to victims (Panji et al., 2024).

The conventional criminal law system is built on an anthropocentric paradigm that focuses blame and responsibility on humans as the main perpetrators (Fernando & Kusumah, 2025). The criminal law system, through

two fundamental elements of a crime actus reus and mens rea is built on the assumption that the perpetrator of a crime is a human being who has consciousness, free will, and the moral capacity to be responsible for their actions (Adhyransyah et al., 2025). While it is difficult to equate AI with living beings like humans, a similar situation has occurred in history when debates arose regarding the recognition of corporations as legal subjects. The basic theory of corporate criminal liability is rooted in the recognition that corporations, while legal fictions, act through their organs namely, their directors, employees, and agentsand therefore can be held accountable for crimes committed in the course of their operations. This responsibility can be established through various models, including the doctrine of identification, vicarious liability, and aggregation theory, which allow for attribution of criminal intent and actions to the corporate entity. Corporations possess consciousness, free will, and the moral capacity to be responsible for their actions, as evidenced by the policies adopted by their organs and managers. At that time, even though corporations were not living organisms, the need to recognize them as legal subjects led to the emergence of the legal entity theory and the organ theory (Guswandi, 2025).

The legal entity as a legal subject is a pioneer in the recognition of artificial legal subjects. The emergence of the legal entity is evidence that personification has been implemented and realized. In the development of the concept of legal subjects, the legal entity is no longer merely a form of artificial legal subject. Similar principles should be applied to recognize non-human entities as legal subjects. However, in the context of autonomous and adaptive AI, these two elements become blurred because AI lacks moral consciousness or intent in the legal sense. Autonomous AI decisions cannot be explained through traditional will theory. Consequently, the criminal law system faces an ontological crisis: how to assess culpability when the perpetrator is no longer a human, but a digital system operating algorithmically and independently. Mens rea is a crucial element in proving moral culpability or guilty intent behind an action. AI lacks an identifiable state of mind, making it impossible to prove intent in the context of self-learning or deep learning systems (Brecker et al., 2025). In cases such as autonomous failure or algorithmic bias that cause harm to individuals, it is

difficult to determine clear human intent or negligence (Ahmed Oudah Mohammed Al-Dulaimi, 2025).

The more intelligent a system becomes, the greater the possibility that it may perform actions that produce legal consequences. If such a system possesses the capacity to act and think like a human, this raises the question of whether it should also be granted legal rights and protections equivalent to those of humans. Before determining the current level of AI, it is important to understand that AI continues to become more complex. According to the popular book AI by Stuart Russell and Peter Norvig (Stuart Russell and Peter Norvig, 2009), when determining the level or classification of AI, the following taxonomy can be considered: (1) systems that think like humans, (2) systems that act like humans, (3) systems that think rationally, and (4) systems that act rationally. Peter Norvig's taxonomy is highly relevant for analyzing complex AI. A relevant example of complex AI is the Autonomous Car. AI is ushering in a new paradigm in the automotive world. Global vehicle manufacturers are facing a revolutionary moment as vehicles acquire sophisticated onboard computer systems, internet access, and interactive and sophisticated hardware displays. As such, AI is now a major focus in the testing and development of autonomous vehicles in new and innovative ways. AI's deep learning capabilities are the most significant technology enabling autonomous driving. AI's deep learning capabilities, which can mimic neuron activity, support functions such as voice and speech recognition, voice search, image recognition and processing, motion detection, and data analysis (Ravizki & Lintang Yudhantaka, 2022). With the new development of AI, it helps vehicles/cars recognize pedestrian traffic, other vehicles on the road, and traffic signals, and adhere to mapped routes.

Although such questions may appear speculative, rapid technological advancements make it increasingly plausible that these scenarios will materialize in the near future. Consequently, many countries have begun preparing legal frameworks to address the status of AI (Bagus Gede Ari Rama, Dewa Krisna Prasada, 2023). For instance, in 2016, the European Parliament's Committee on Legal Affairs issued a draft report recommending the establishment of civil law regulations governing intelligent robots, including their creation, use, autonomy,

and societal impact. One proposed solution was the recognition of an "electronic person" status for intelligent robots, allowing them to be treated as legal subjects capable of bearing civil and criminal liability (Amisha, Paras Malik, Monika Pathania & Rathaur, 2019).

Discussions have taken place in other countries, In 2009, Yueh-Hsuan Weng of Peking University noted that Japan and South Korea were preparing legal frameworks to enable harmonious coexistence between humans and intelligent robots. Japan's Ministry of Economy, Trade, and Industry has also issued "robot guidelines" addressing business and safety concerns for next-generation robots (FL. Yudhi Priyo Amboro, 2021).

In Indonesia, however, discussions on AI and its legal implications remain limited. There are currently no specific legal provisions regulating intelligent robots. Nevertheless, from a conceptual legal perspective, there is a possibility that AI may eventually be recognized as a new category of legal subject. It must be admitted that it is difficult to categorize or equate AI with organisms like humans. However, historically, a similar debate has been held regarding the consideration of corporations as legal subjects. The debate that emerged at that time was that corporations were not organisms, but there was a need to recognize corporations as legal subjects. This gave rise to the legal entity theory and the organ theory, the essence of which is that the law can recognize legal subjects other than natural persons (*naturalijk person*).

Criminal liability could, in theory, be attributed directly to AI, similar to human liability. However, as noted by Matthew Scherer, the lack of legal frameworks governing AI-related incidents presents significant challenges. Even in technologically advanced countries such as the United States, there is no comprehensive legal standard determining liability for damages caused by AI. Thus, criminal law originally designed by and for humans must evolve to address crimes resulting from AI malfunction or misuse. According to Chairul Huda, criminal liability involves attributing punishment to a perpetrator based on both the objective criminal act and the subjective fault. Likewise, Admaja Priyatno emphasizes that liability is determined by fault, not merely by the fulfillment of criminal elements (Sintung et al., 2022). Sudarto reiterates the principle of *nulla*

poena sine culpa (no punishment without fault), where fault encompasses both intent and negligence. Roeslan Saleh further explains that fault is assessed normatively, based on whether the act is socially blameworthy rather than purely on psychological grounds.

Jonkers categorizes fault into three elements: 1. Intent or negligence (*dolus* or *culpa*); 2. Unlawfulness (*wederrechtelijkheid*); 3. Capacity for responsibility (*toerekenbaarheid*). Pompe defines fault as a blameworthy condition (*verwijtbaarheid*), where unlawful conduct could have been avoided (De Jong, 2020). According to Gabriel Hallevy, there are three approaches of AI criminal liability: a. Perpetration by Another Liability Model – AI is treated as a tool without liability; responsibility lies with programmers or users. b. Natural Probable Consequence Liability Model liability may be attributed to programmers, users, or potentially the AI system; c. Direct Liability Model AI is treated as a legal subject capable of bearing liability (Hallevy, 2024). These approaches illustrate that AI may be positioned either as a mere tool or, alternatively, as a legal subject. However, the recognition of AI as a legal subject remains highly debated. One key issue is that legal subjects must possess intent (*mens rea*), which AI lacks. According to Van Hamel, AI does not understand the consequences of its actions, cannot determine its own will, and lacks consciousness.

Unlike humans, who may act negligently yet possess awareness, AI is merely a system created and controlled by humans. Therefore, AI lacks the essential element of consciousness required for criminal liability.Various legal theories have attempted to address this issue. Friedrich Carl von Savigny's fiction theory suggests that legal entities are artificial constructs recognized by the state. Similarly, Otto von Gierke's organ theory views legal entities as real entities with will expressed through their organizational structures (Nabillah et al., 2025).

Historically, the concept of legal subjects has expanded beyond humans and corporations. For example, New Zealand recognized the Te Urewera forest as a legal subject under the *Te Urewera Act 2014*, and the Whanganui River under the *Te Awa Tupua Act 2017*. Similarly, India recognized the Ganges River as a

legal subject in *Mohd Salim v. State of Uttarakhand* (2017) (Te Urewera Act 2014, 2014).

At the global level, jurisdictions have responded differently to this normative disruption. The European Union has positioned itself as a regulatory pioneer by adopting the EU Artificial Intelligence Act, which establishes the world's first comprehensive legal framework governing artificial intelligence. The Act introduces a risk-based classification system distinguishing between unacceptable-risk AI systems, high-risk systems, limitedrisk systems, and minimal-risk systems (Königs, 2022) . In contrast, Indonesia has yet to adopt a comprehensive AI-specific statute. The Indonesian legal framework relies primarily on general criminal provisions under the Criminal Code (KUHP), the Electronic Information and Transactions Law, consumer protection regulations, and data protection legislation. These instruments may indirectly apply to AI-related harm, yet they were drafted in an era when autonomous machine decision-making was not a central concern. As a result, Indonesia faces normative ambiguity in determining how criminal liability should be allocated when AI systems cause or facilitate harm. The absence of a structured regulatory framework risks legal uncertainty, inconsistent judicial interpretation, and potential under-deterrence in high-risk technological sectors (Krisna & Anggara, 2026).

The theoretical challenge surrounding artificial intelligence (AI) in criminal law lies in the inconsistency between autonomous technological systems and the classical doctrine of fault. Both Indonesia and the European Union adhere to the fundamental principle of criminal law that responsibility must be based on fault. The doctrines of men's rea and actu reus remain central to criminal responsibility, assuming intent, negligence, or recklessness attributable to a conscious subject. However, AI systems operate through algorithmic computation without subjective consciousness, intent, or moral agency. Consequently, proving that AI intentionally commits wrongdoing is difficult; wrongdoing by AI refers to errors caused by system errors. System errors are negligent acts of humans.

European Union has adopted a structured regulatory framework through the EU Artificial Intelligence Act, which came into force in 2024. Rather than redefining criminal subjectivity, the EU addresses the accountability gap through a risk-based governance model. AI systems are classified into unacceptable risk, high risk, limited risk, and minimal risk categories, each with different compliance obligations. High-risk AI systems, including those used in critical infrastructure, law enforcement, employment, and biometric identification, are subject to stringent documentation, transparency, conformity assessment, and human oversight requirements. This preventative regulatory approach reduces the likelihood of criminally relevant harm and clarifies responsibilities between providers and implementers (Krisna & Anggara, 2026).

This comparison shows that the difference between Indonesia and the European Union is not the recognition of AI as a legal subject both reject the idea but rather the method of allocating responsibility. Indonesia, using classical doctrine principles, would struggle to prove fault in complex AI systems where the causes are spread across multiple actors and layers of the system. Without explicit legislative clarification, courts may struggle to determine the extent of fault attributable to the developer or company, especially when AI systems evolve through self-learning mechanisms. This uncertainty risks weakening deterrence and undermining legal predictability.

Within the Indonesian legal system, which follows a hierarchical structure of legislation under Law Number 12 of 2011, AI regulation must align with broader legal frameworks governing science and technology. Thus, AI regulation should be integrated within existing legal policies while also being addressed through sector-specific regulations. Therefore, specific regulations tailored to the unique nature of AI are needed. For example, in the financial sector, AI requires regulations that ensure financial transparency, unlike companies that are already overseen by audit bodies. Similarly, in the legal sector, specific regulations are needed to prevent bias and abuse of the law by AI. This targeted approach is crucial to ensuring AI can operate ethically and responsibly in various fields.

According to the Indonesian Agency for the Assessment and Application of Technology (BPPT), AI regulation can be categorized into: a. Regulations

specifically governing AI technologies (e.g., automated decision-making, facial recognition); b. Regulations governing AI applications in specific sectors (e.g., finance, healthcare); c. Legal liability for unintended consequences (civil and criminal); d. Ethical codes developed by industry and professional groups.

Filling the legal gap in AI regulation requires the establishment of an international standards framework, starting with the development of technical and governance standards, followed by the establishment of a regulatory body, potentially under the Ministry of Communication and Information Technology. Effective AI governance must include legal certainty regarding licensing, funding, data protection, and accountability. A key question remains: who should be held responsible? Liability may be assigned to corporations or entities that create and operate AI systems. Analogously, just as animal owners are responsible for harm caused by their animals, developers and operators of AI should bear responsibility. Based on the above discussion, Indonesia does not require a radical transformation of criminal law doctrine regarding criminal liability. Rather, it requires clarification of regulations regarding AI that integrates risk-based governance principles into a human-centered and corporate-centered responsibility framework. Such integration would enhance accountability while maintaining doctrinal coherence with fundamental principles such as culpability and legality.

Conclusion

Based on the data and discussion in this study, it can be concluded that the development of Artificial Intelligence (AI) technology has had a significant impact on the dynamics of criminal law, particularly regarding criminal liability. The increasing use of AI in various sectors is accompanied by an increased potential for encryption, such as deepfakes, personal data breaches, and crimes based on automated systems. This indicates that AI is not merely a tool but also has the potential to become a vehicle for criminal acts with complex and difficult-to-prove characteristics. In the context of Indonesian positive law, AI has not been recognized as a legal subject capable of being held criminally responsible. The Indonesian criminal law system still adheres to an anthropocentric

paradigm, which requires the elements of fault (mens rea), the capacity to be responsible, and unlawful acts committed by humans or legal entities. Because AI lacks consciousness, free will, or intent, conceptually, AI cannot fulfill these elements of criminal liability. Therefore, in practice, AI is still positioned as a tool or object, and legal responsibility rests with humans or the parties operating, developing, or controlling the system. However, there are gaps in norms (legal vacuums) in the regulation of AI in Indonesia. Existing regulations, such as the Criminal Code (KUHP), the Electronic Information and Transactions Law (UU ITE), and other related regulations, do not specifically regulate crimes involving AI. This creates legal uncertainty and difficulties in law enforcement, particularly in determining who is responsible for losses caused by autonomous and complex AI systems.

From a disclosure perspective, several announcements, such as the European Union's, have developed a more comprehensive regulatory framework through a risk-based approach, without recognizing AI as a legal subject. This approach emphasizes the regulation of human responsibility (developers, operators, or users) and strict oversight of high-risk AI systems. This demonstrates that the indirect liability approach remains the most realistic and relevant model. Going forward, restoring criminal liability for AI in Indonesia does not require radical changes by making AI a legal subject, but rather requires adaptive and comprehensive enforcement. The recommended approach is to maintain the basic principles of criminal law while clarifying the division of responsibility between parties involved in the development and use of AI. This will ensure legal certainty, public protection, and technological development can be balanced.

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Declaration of Generative AI Use

The author(s) declare that no generative AI or AI-assisted technologies were used in the preparation or writing of this manuscript. All content was produced entirely by the author(s) without any automated assistance.

Competing Interest

There is no conflict of interest in the publication of this article.