

# Who Owns Creativity? Legal Challenges in AI Training Using Copyrighted Content

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## ABSTRACT

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The rapid advancement of Artificial Intelligence (AI) technology has profoundly impacted human life, particularly in the realms of education and the creative industries. However, this progress has also introduced complex challenges, especially in the use of copyrighted works as databases for AI development. Despite the presence of Indonesia's Copyright Law (Law Number 28 of 2014) and Circular Letter Number 9 of 2023, which addresses ethical AI practices, significant legal gaps persist in protecting copyrighted materials amid AI advancements. This research delves into the utilization of copyrighted works as databases for AI development, employing a normative legal research approach to analyze Indonesian regulations and relevant academic literature. The study aims to illuminate these regulatory shortcomings and advocate for the urgent revision of Law Number 28 of 2014 to ensure it remains aligned with the dynamic demands of technological innovation.

**Keywords:** Intellectual Property; Copyrighted Databases; Artificial Intelligence; Legal Protection

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## INTRODUCTION

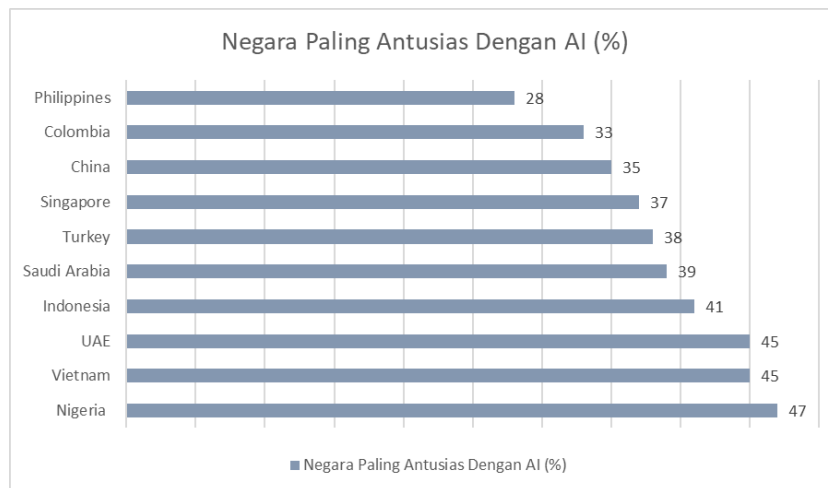
In the current era of technological advancement, numerous innovations are designed to simplify various aspects of human life (Hidayah, 2023). A notable example is Artificial Intelligence

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(AI) (Farwati et al., 2023). AI significantly enhances human convenience across diverse fields, particularly in education, through applications like ChatGPT, Slidesgo, CapCut, Grammarly, Google Meet, Zoom, and others that support learning processes (Kamiliyana et al., 2024; Mufti et al., 2024; Yumna et al., 2024). A more basic application can be observed in tools such as calculators or data processing software like Microsoft Excel (Disemadi, 2021a). According to a Statista Consumer Insight survey, Indonesia ranks fourth among the most enthusiastic countries in adopting AI technology in daily life. The survey revealed that 41% of Indonesian respondents expressed a preference for utilizing AI-powered technologies like ChatGPT for various needs. This level of enthusiasm places Indonesia behind Nigeria (47%), Vietnam (45%), and the United Arab Emirates (45%). The survey involved 1,000 to 2,000 respondents aged 18–64 in each country, conducted between April and June 2024.

**Table 1: Most Enthusiastic Countries for AI**



Source: Statista Consumer Insight

Artificial Intelligence (AI) represents a computer-based system designed to solve problems by imitating human actions (Rizki & Salam, 2023). The development of AI for various purposes inherently relies on input data (databases), as the availability of such data significantly influences how AI systems are designed and the techniques employed to address specific objectives (Gema, 2022; Disemadi & Sudirman, 2025). These databases can be sourced from public information, personal data, and copyrighted works. However, utilizing copyrighted

materials as input data in AI development poses legal challenges in Indonesia if such use disregards the provisions of national legislation, particularly Law No. 28 of 2014 on Copyright (Wijayanti & Kharisma, 2024). An illustrative case highlighting this issue is Getty Images' lawsuit against Stability AI, the company behind Stable Diffusion, an AI-powered art generation software. Stability AI was accused of unlawfully copying and processing millions of copyrighted images owned or represented by Getty Images without proper licensing. This unauthorized use for commercial gain not only benefited Stability AI but also inflicted harm on content creators (Fauzi et al., 2022).

In Indonesia, copyright is governed by Law No. 28 of 2014 on Copyright. According to Article 40, paragraph (1) of the Copyright Law, protected works include those in the fields of science, art, and literature, encompassing compilations of works or data in formats readable by computer programs or other media (Disemadi, 2023). Furthermore, Chapter XVII of the Copyright Law outlines criminal sanctions for individuals who violate the moral and economic rights of copyright holders. The above provisions demonstrate that Indonesia has established legal protection for copyrighted works. However, the use of such works as databases for AI development, particularly when it infringes upon the moral and economic rights of copyright holders, exposes gaps in the current regulatory framework. Addressing these gaps is essential to ensure that the rapid advancement of AI aligns with ethical and legal standards while safeguarding the rights of creators (Arief & Saputra, 2019).

In the context of artificial intelligence (AI), various prior studies have addressed critical aspects of copyright and intellectual property. According to (Gema, 2022), a substantial amount of intellectual creations can be utilized as databases without the consent of their creators, especially by leveraging works whose copyright protection has expired. Furthermore, studies by (Nauval Fadillah, 2023) and (Dian Utami Amalia et al., 2024) assert that works generated solely by machines, without human intervention or creative input, cannot be recognized as protected creations under copyright laws. Nevertheless, it is imperative to implement robust copyright protections for AI and establish effective law enforcement mechanisms to ensure that policies and regulations serve to strengthen legal protections in the digital era (Aulia et al., 2023).

Additionally, research by (Akbari & Fithry, 2024; Wendur, 2024) highlights AI's potential to generate new content that might infringe upon existing copyrights. For example, AI can

produce music, articles, and other derivative works, such as adaptations or modifications of data embedded with intellectual property rights, and even films that closely resemble copyrighted creations. Based on these prior studies, it becomes evident that further research is required to explore the legal protection of copyrights in cases where AI is used as a database for creative outputs.

This study offers a novel contribution by focusing on the importance of copyright protection, particularly in contexts where AI is trained to generate new works automatically by utilizing thousands of copyrighted images, books, music, films, and other creative materials. It examines how copyright protections can be extended to individuals whose works have been appropriated as part of AI databases and proposes actionable steps to safeguard copyright holders from the unauthorized use of their creations in AI training processes (Ihsan & Bintarsari, 2021). Furthermore, this research emphasizes the need for clear regulations outlining the boundaries and rights of data users in the development and application of AI technologies. Current legal frameworks, such as Indonesia's Copyright Law Number 28 of 2014 and Circular No. 9 of 2023 on Artificial Intelligence Ethics, are deemed insufficient to address the rapid advancements in digital technology and AI. This underscores the urgency for a comprehensive and adaptive regulatory approach (Zuiderveen Borgesius, 2020).

This study holds significant importance in advancing the understanding and regulation of copyright law in the context of Artificial Intelligence (AI), a subject of growing relevance in today's digital era. It offers valuable insights that could assist policymakers in designing more adaptive regulations (Solihati & Indriyani, 2021). However, the study is not without limitations. Its primary focus lies on the legal protection of copyright holders whose works are used as AI training databases, thereby overlooking the broader social and economic impacts of copyright infringement in AI development. Another limitation is the lack of technical discussion regarding how copyrighted data is processed by AI systems, which could have provided critical input for drafting more specific and effective regulations.

## **METHOD**

This study employs normative legal research, which is doctrinal in nature. This method was chosen due to its relevance in addressing the research problem, as the objective of this study is to analyze legal issues through the lens of one of the fundamental legal principles: legal certainty. The research aims to articulate applicable legal norms, evaluate existing regulatory gaps, and identify the need for more specific legal norms. Consequently, the study adopts a statute-based approach (Disemadi, 2022). The data used in this research are secondary sources, including legal materials such as Law No. 28 of 2014 on Copyright and Circular Letter No. 9 of 2023 on Artificial Intelligence Ethics. Data collection was conducted through literature review and document analysis, utilizing qualitative analysis methods to yield in-depth findings relevant to the legal issues under investigation (Tan, 2021).

## DISCUSSION AND ANALYSIS

### Copyright Regulation Governing the Use of Copyrighted Works as AI Databases

The digital era has ushered in significant transformations, particularly with the emergence of groundbreaking technologies like Artificial Intelligence (AI), which has driven extensive societal and industrial changes (Fauzi et al., 2022b). Artificial Intelligence, often referred to as AI, is defined in various ways. Kusumadewi (2003) describes it as "a branch of computer science that enables machines (computers) to perform tasks as effectively as humans." Similarly, Barr and Feigenbaum (1982) define AI as a segment of computer science concerned with designing intelligent computer systems that exhibit human-like reasoning characteristics. Rich and Knight (1991) emphasize that AI is a study dedicated to making computers perform tasks that humans currently excel at (Tjahyanti et al., 2022). Across these definitions, AI consistently refers to systems or machines exhibiting intelligent behaviors to achieve specific objectives (Gema, 2022). The advent of such advanced systems has revolutionized how creative works are produced and consumed. Many individuals now create digitally rather than physically, while others prefer accessing creative works through digital platforms instead of their physical formats. Advancements in technology have granted people unprecedented access to a vast array of creative

works, such as music, images, texts, and scholarly works, in digital formats (Manurung, 2022). However, this convenience has led to the misappropriation of copyrighted works, exemplified by the unauthorized use of copyrighted content as databases for AI development.

Copyright grants creator exclusive rights to control, publish, and reproduce their works, ensuring they can derive economic benefits from their intellectual creations (Raihana, Syafruddin, et al., 2023). As a vital component of intellectual property, copyright safeguards various types of works, including those in science, art, literature, and computer programs, from misuse, thus preventing potential losses for creators (Guswandi et al., 2021). In Indonesia, copyright regulation is governed by Law No. 28 of 2014 on Copyright. This legislation outlines the rights of creators and copyright holders, as well as the enforcement mechanisms to prevent unauthorized use of creative works without the owner's consent (Wendur, 2024). The enactment of the Copyright Law stems from Indonesia's status as an archipelagic nation with diverse ethnicities, cultures, languages, and religions, necessitating the protection of its rich artistic and cultural heritage as intellectual property (Raihana, Lina, et al., 2023). This regulatory framework is crucial in addressing challenges posed by technological advancements, including the misuse of copyrighted works in AI databases. It underscores the importance of respecting intellectual property rights while fostering a balanced approach to technological innovation.

Copyright protection generally covers works of literature, music, art, photography, cinematography, and programs, with some countries extending protection to applied arts and choreography under the copyright regime. The distribution of copyrighted products and works has been widely popularized through the internet, reflecting the evolution of the copyright era, where data is publicly available and easily accessible to consumers. This public availability and accessibility are also utilized by AI as a database input into generative AI programs, which subsequently produce new works (Wibowo, 2023). However, the ability of AI to process legal data swiftly and accurately presents ethical and legal dilemmas, particularly regarding legal liability when AI acts beyond its limits or causes harmful outcomes (Azis, 2023).

In Indonesia, the regulation of AI usage is addressed through Circular Letter Number 9 of 2023 on Artificial Intelligence Ethics, which functions as a control mechanism for AI use. However, this circular is only directed at specific parties, providing guidance, directives, or information related to policy implementation. As a result, the circular lacks binding legal force in

general, as it is not part of the legislative hierarchy and cannot serve as a legal basis for establishing broad societal rights or obligations. In cases where copyrighted works are used as training databases for AI, such actions violate the moral and economic rights of copyright holders. These rights, as outlined in the Copyright Law, ensure that copyright holders can derive moral and economic benefits from their creations. Such violations highlight the urgent need for comprehensive regulations addressing the intersection of copyright protection and AI development (Wahyudi Sumari, 2020).

Moral rights refer to the rights held by copyright owners to ensure that their works are not altered or damaged without their consent. These rights are inherent and non-transferable, as they constitute personal rights that remain attached to the creator even after their death (Lestari, 2019). The regulation of moral rights is outlined in Articles 5 and 6 of the Copyright Law. In contrast, economic rights are granted to copyright owners, enabling them to derive financial benefits from their creations. Economic rights provide copyright holders with full control over the use of their works by others, whether for commercial or non-commercial purposes (Jannah, 2018). The provisions governing economic rights are detailed in Articles 9 to 15 of the Copyright Law, which establish the legal framework for copyright holders to manage, transfer, or license the use of their works in accordance with applicable regulations. This research employs several theories as analytical tools, including the theory of progressive law developed by Satjipto Rahardjo. This theory posits that law should serve and empower humanity rather than the reverse. It views law as an instrument for driving positive social change in alignment with the evolving dynamics of society. The theory underscores that law should not be seen as a rigid and formal system of rules but as a dynamic tool to achieve justice and social welfare (Farida, 2016).

Progressive law posits that law is not a static or final institution but must be continually evaluated and adapted to meet the evolving needs of society. This dynamic nature underscores the necessity for the law to align with the principles of justice, equity, and the well-being of humanity. Progressive law embodies the essence of “law as a process” or “law in the making” (Faisal, 2023). The ultimate goal of progressive law—to promote justice and societal happiness—is closely aligned with the foundational objectives of the Indonesian government, as stated in the Preamble to the 1945 Constitution of the Republic of Indonesia (UUD NRI 1945) in its fourth paragraph. This principle also resonates with the second and fifth tenets of Pancasila, namely “Just and

civilized humanity” and “Social justice for all Indonesians” (Nuryadi, 2016). In this study, the Theory of Progressive Law is employed as a foundational framework to address challenges arising from the rapid development of Artificial Intelligence (AI) technologies. Current legal frameworks often fail to accommodate these advancements, resulting in legal vacuums, uncertainty, and injustices that stem from overly procedural legal applications. Progressive law emphasizes the importance of achieving substantive justice that benefits society and keeps pace with contemporary developments (Mamad et al., 2023).

In addition to the Theory of Progressive Law, this research incorporates Gustav Radbruch’s Theory of Legal Certainty. This theory provides a critical lens for understanding how the law ensures the protection of copyright in the context of AI training. Legal certainty refers to a state in which legal rules are consistently applied and readily comprehensible to all stakeholders. This ensures that entities such as AI developers and copyright owners are aware of their rights and obligations (Hastungkara & Triastuti, 2020). By applying Radbruch’s framework, this study evaluates whether current legal provisions adequately safeguard copyrighted works used in AI training. It also examines whether copyright owners can assert their rights or receive compensation when their works are utilized without proper authorization. The combined application of these theories underscores the need for a balanced approach that integrates justice, certainty, and adaptability in addressing the complexities of law in the AI era (Wulandari & Adning, 2022).

If the phenomenon of using copyrighted works as AI databases is analyzed through the lens of Prof. Satjipto Rahardjo’s progressive legal theory—where law should evolve in tandem with societal developments, it becomes evident that there exists a legal vacuum within copyright regulations addressing AI. This legal gap arises due to the prolonged process of legislative drafting by both legislative and executive bodies. By the time such legislation takes effect, the conditions or issues it seeks to regulate may have already shifted (Nasir, 2017). In the context of AI, Indonesia has yet to establish specific regulations governing this matter. Even the Copyright Law, as codified in Law No. 28 of 2014, does not explicitly address copyright issues related to works generated or influenced by AI. This omission stems from the fact that AI technology has only experienced rapid development in recent decades (Mukhidin, 2014). Therefore, the law must adapt to meet the evolving needs and interests of society.



Furthermore, when this phenomenon is examined through Gustav Radbruch's theory of legal certainty, it highlights the importance of legal certainty as a key component of the legal system. According to Radbruch, legal certainty is a product of law, particularly of legislation. While Indonesia does have regulations governing copyright under Law No. 28 of 2014 on Copyright, which outlines provisions for the protection and management of copyright, this legislation does not provide specific rules regarding the procedures, limitations, or requirements for using copyrighted works as databases for AI development. In practice, the existing law has not been able to adequately address copyright-related legal challenges arising from technological advancements, especially with the emergence of AI (Purnomo et al., 2020).

The absence of clear legal provisions regarding the use of copyrighted works as AI databases in Indonesia highlights the lack of certainty in regulating copyright in this context. This regulatory gap reflects a weakness in addressing legal challenges arising from technological advancements. When analyzed through Gustav Radbruch's theory of legal certainty, it becomes evident that Indonesia urgently needs to revise Law No. 28 of 2014 on Copyright to adapt to technological developments, particularly in artificial intelligence (AI). Such revisions would ensure legal certainty for copyright holders while strengthening the protection of both moral and economic rights (Kosasih et al., 2024).

Although Law No. 28 of 2014 on Copyright provides creators with exclusive rights over their works, it fails to adequately address issues arising from AI technologies. AI systems, capable of producing human-like creations or using others' works without permission, remain outside the scope of the current legal framework. Similarly, Circular Letter No. 9 of 2023 lacks binding legal force, as it is not part of Indonesia's statutory hierarchy and cannot serve as a legal basis for establishing public rights or obligations (Disemadi, 2021b). Consequently, both the Copyright Law and Circular Letter Number 9 of 2023 fall short of addressing copyright infringements involving AI. To address these gaps, Indonesia must urgently develop specific regulations governing AI. Such regulations should address legal challenges arising from the rapid advancements in technology, ensuring robust protection for copyright holders and fostering legal certainty in the evolving digital landscape (Murdayantin et al., 2023).

## Legal Protection for Copyright Owners Whose Works Are Used Without Permission as Databases for AI Training

Artificial Intelligence (AI) has become one of the most transformative technologies of the 21st century, revolutionizing industries and reshaping human interactions with machines. Over the last decade, AI has evolved rapidly, driven by advances in computing power, data availability, and machine learning algorithms. Its impact is evident across diverse fields, including healthcare, finance, manufacturing, education, and entertainment (Ramdani et al., 2021). One significant milestone in AI development is the rise of deep learning, a subset of machine learning that utilizes artificial neural networks to process vast amounts of data. This technology has enabled breakthroughs in image and speech recognition, powering tools such as virtual assistants, translation software, and autonomous vehicles. Companies like OpenAI, Google, and IBM are at the forefront of these advancements, introducing AI systems capable of performing complex tasks with human-like proficiency (Rahadiyan, 2020).

In healthcare, AI has revolutionized diagnostics and treatment. Algorithms can now detect diseases like cancer in their early stages with remarkable accuracy, while predictive analytics helps in personalized medicine. Similarly, AI-driven financial tools optimize trading strategies, detect fraud, and enhance customer experiences. Globally, countries are competing to lead in AI innovation (Mazumdar & Wang, 2018). The United States, China, and the European Union have invested billions in research, talent development, and infrastructure. Initiatives like China's AI Development Plan and the EU's Ethical AI Framework underscore the importance of balancing technological progress with ethical considerations. However, the rapid growth of AI also poses challenges. Issues such as bias in algorithms, data privacy concerns, and the displacement of jobs require urgent attention (Fauzi et al., 2022a). Regulatory frameworks are being developed to address these challenges, with an emphasis on responsible AI that benefits society. As AI continues to evolve, its integration into everyday life will deepen, offering opportunities to solve complex problems and improve quality of life globally. The future of AI holds immense promise, provided its development is guided by ethical and inclusive principles (Aulia et al., 2023).

The advancement of AI has given rise to several legal issues, as exemplified by the case of Stability AI, a developer of the artificial intelligence program Stable Diffusion, which is currently

facing a class action lawsuit in the United States. Furthermore, Getty Images has filed lawsuits against Stability AI in both the United Kingdom and the United States, demanding that Stability AI cease the sale of its AI systems (Wibowo, 2023). Based on the analysis of both football game images, it is evident that the original version from the GettyImages.com website contains a clear watermark, designed to protect its works from unauthorized use. However, the output from Stability AI shows a faint watermark belonging to GettyImages.com, indicating that the AI utilized images from the GettyImages website without proper compensation as part of its database for training purposes (Ihsan & Bintarsari, 2021).

If such a case occurred in Indonesia, it could be addressed under Law No. 28 of 2014 on Copyright. The use of a work would be considered a copyright infringement if the work was used without the copyright holder's permission, without a valid agreement concerning its use as part of an AI training dataset, or if the use exceeds the limitations stipulated by copyright law. According to Indonesian legal provisions, works published digitally on the internet are entitled to the same protection as conventional works. Article 40 of Law Number 28 of 2014 on Copyright explicitly states that images, illustrations, and photographs are creations protected by copyright. Even if these works are publicly available on websites, their use must still comply with the law (Zuiderveen Borgesius, 2020). Copyright is exclusive, granting creators sole rights over their works, while copyright holders are only entitled to economic rights. In accordance with Article 4 of the Copyright Law, creators are entitled to royalties or payments for any use of their works (Michael & Sinaga, 2024). However, a significant challenge in addressing such cases, particularly in Indonesia, lies in the difficulty of detecting copyrighted works used by AI. AI-generated outputs can draw from hundreds, thousands, or even millions of works included in the AI's training database, complicating the enforcement of copyright protection.

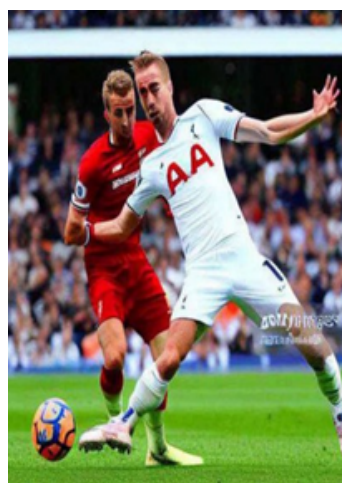
In the case of *Getty Images vs. Stability AI*, Stability AI was sued for unlawfully copying and processing millions of copyrighted images along with their metadata (Liputan6). This case illustrates how rapid technological advancements can lead to legal challenges that are not adequately addressed by existing laws. According to the theory of progressive law by Satjipto Rahardjo, law should function as a tool to serve and empower humanity, aligning with the purpose of the Indonesian government as stated in the Preamble of the 1945 Constitution of the Republic of Indonesia (Solihati & Indriyani, 2021). Currently, Indonesia lacks specific regulations

governing AI technology. The absence of such regulations poses significant risks, including social, economic, and legal issues such as copyright infringement and data misuse. From the perspective of progressive law, Indonesia urgently needs to establish AI-specific regulations to prevent future legal challenges like those seen in the *Getty Images vs. Stability AI* case (Mamad et al., 2023).

Picture 1. Getty Images



Picture 2. Stability AI



Source: Getty Images

Furthermore, the theory of legal certainty underscores the necessity for law to provide clarity, predictability, and assurance in protecting rights. In the context of using copyrighted works as databases for AI training, this theory becomes critical to ensure that individuals or entities utilizing copyrighted works comply with applicable laws. Article 40 of Indonesia's Copyright Law explicitly states that creations in the fields of science, art, and literature, including digital data compilations, are legally protected. However, in practice, regulatory gaps often result in uncertainty for copyright holders, particularly in cases of AI-related infringements, such as Stability AI's unauthorized use of copyrighted works. This highlights the need for firm legal interpretation and enforcement to protect the moral and economic rights of creators (Hastungkara & Triastuti, 2020).

In this context, the principle of legal certainty serves as a crucial foundation to urge legislators to draft regulations that are specific, binding, and capable of accommodating emerging technologies like AI. Law should not only function as a repressive tool but also provide clarity to all stakeholders about their responsibilities and limitations in using copyrighted works.

Moreover, legal certainty necessitates transparency in legal processes concerning copyright violations involving AI (Wulandari & Adning, 2022). Mechanisms such as reporting violations, investigations, and sanctions should be designed to foster a sense of justice and prevent similar infringements in the future. Revising the Copyright Law to clarify rules regarding the use of works as AI databases is an urgent priority to balance technological advancements with the protection of creators' rights. Therefore, the legal protection for copyright owners remains inadequate and requires improvement, particularly in addressing technological developments like AI, which often create legal uncertainties and potential copyright infringements (Purnomo et al., 2020). The lawsuit filed by Getty Images against Stability AI for copyright infringement demonstrates the existing legal uncertainty surrounding the use of works to train AI. However, in Indonesia, Law Number 28 of 2014 on Copyright can be applied to address such cases, as the unauthorized use of copyrighted works constitutes a copyright violation. This case also underscores the need for specific AI regulations in Indonesia to prevent future legal issues, in line with Satjipto Rahardjo's progressive law theory, which emphasizes that law should serve and empower humanity, and the legal certainty theory, which affirms that law must provide clarity, predictability, and protection for rights (Disemadi, 2021).

## CONCLUSION

Artificial intelligence (AI) technology significantly influences how creative works are produced and consumed, but it also raises copyright infringement issues, such as the unauthorized use of works as databases. In Indonesia, copyright is governed by Law No. 28 of 2014, which protects the moral and economic rights of creators. However, this legislation does not fully address AI-related challenges. Additionally, Circular Letter No. 9 of 2023 on AI Ethics serves merely as a guideline and lacks binding legal force. Indonesia urgently requires specific regulations to govern AI usage and prevent legal voids. The Stability AI case in the United States and the United Kingdom highlights copyright violations where AI systems utilized Getty Images without permission as a database. Similar violations in Indonesia could be resolved under Law No. 28 of 2014, which ensures that digital works receive the same protection as conventional works. However, detecting infringements in AI-generated outputs remains a significant challenge. Thus, specialized AI regulations are essential in Indonesia to safeguard copyright in the technological era. This need aligns with Satjipto Rahardjo's progressive law theory, which

emphasizes that the law must adapt to societal developments to serve the community effectively. It also reflects Gustav Radbruch's theory of legal certainty, which asserts that law should provide clarity, predictability, and assurance in protecting rights.

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## REFERENCES

- Akbari, R. N., & Fithry, A. (2024). Menganalisis Pengaruh Hak Cipta Dalam Gangguan Ai Pada Sektor Media. *Prosiding SNAPP: Sosial Humaniora, Pertanian, Kesehatan Dan Teknologi*, 2(1), 377–383. <https://doi.org/10.24929/snapp.v2i1.3159>
- Arief, N. N., & Saputra, M. A. A. (2019). Kompetensi Baru Public Relations (PR) Pada Era Artificial Intelligence. *Jurnal Sistem Cerdas*, 2(1), 1–12. <https://doi.org/10.37396/jsc.v2i1.19>
- Aulia, C., Nugraha, E., & Siahaan, R. (2023). Copyright Responsibilities of Artificial Intelligence in the Digital Age. *Indonesia Law Reform Journal*, 3(2), 145–154. DOI: <https://doi.org/10.22219/ilrej.v3i2.26042>
- Dian Utami Amalia, Bagos Budi Mulyana, Fajar Falah Ramadhan, & Noerma Kurnia Fajarwati. (2024). Perlindungan Hukum Terhadap Kekayaan Intelektual Dalam Era Digital di Indonesia. *Terang: Jurnal Kajian Ilmu Sosial, Politik Dan Hukum*, 1(1), 26–46. <https://doi.org/10.62383/terang.v1i1.52>
- Disemadi, H. S. (2021a). Urgensi Regulasi Khusus dan Pemanfaatan Artificial Intelligence dalam Mewujudkan Perlindungan Data Pribadi di Indonesia. *Jurnal Wawasan Yuridika*, 5. <https://doi.org/10.25072/jwvy.v5i2.460>
- Disemadi, H.S. & Sudirman, L. (2025). Human Dignity Vs. Artificial Intelligence (AI): The Reflection of Kant's Thought In Considering Ai As A Legal Subject In Indonesia. *Masalah-Masalah Hukum*. 54(1), <https://doi.org/10.14710/mmh.54.1.2025.1-12>
- Disemadi, H. S. (2023). *Mengenal Perlindungan Kekayaan Intelektual di Indonesia*. Jakarta: Rajawali Pres.
- Disemadi, H. S. (2022). Lenses of Legal Research: A Descriptive Essay on Legal Research Methodologies. *Journal of Judicial Review*, 24(2), 289. <https://doi.org/10.37253/jjr.v24i2.7280>
- Faisal, A. (2023). Pemikiran Hukum Progresif Prof. Dr. Satjipto Rahardjo. *Journal of Cross Knowledge*, 1. <https://edujavare.com/index.php/IJCK/article/download/172/127/707>

- Farida, A. (2016). Teori Hukum Pancasila Sebagai Sintesa Konvergensi Teori-Teori Hukum Di Indonesia. *Perspektif*, 21(1), 60. <https://doi.org/10.30742/perspektif.v21i1.176>
- Farwati, M., Salsabila, I. T., Navira, K. R., & Sutabri, T. (2023). Analisa Pengaruh Teknologi Artificial Intelligence (AI) Dalam Kehidupan Sehari-hari. *Jurnal Sistem Informasi & Manajemen*, 11. <https://doi.org/10.47024/js.v11i1.563>
- Fauzi, R., Ramli, T. S., & Permata, R. R. (2022a). Masa Depan Hak Cipta: Tinjauan Keabsahan Hasil Karya Kecerdasan Artifisial di Indonesia. *Citizen: Jurnal Ilmiah Multidisiplin Indonesia*, 2(1), 118–128. <https://doi.org/10.53866/jimi.v2i1.51>
- Gema, A. J. (2022). Masalah Penggunaan Ciptaan Sebagai Data Masukan Dalam Pengembangan Artificial Intelligence di Indonesia. *Technology and Economics Law Journal*, 1. <https://doi.org/10.21143/TELJ.voll.no1.1000>
- Guswandi, C. P., Romadona, H. G., Ariani, M., & Disemadi, H. S. (2021). Pengaruh Revolusi Industri 4.0 Terhadap Perlindungan Hukum Hak Cipta di Indonesia. *Conference on Management, Business, Innovation, Education and Social Sciences (CoMBInES)*, 1. <https://journal.uib.ac.id/index.php/combines/article/view/4453>
- Hastungkara, D. P., & Triastuti, E. (2020). Application of E-Learning and Artificial Intelligence in Education Systems in Indonesia. *ANGLO-SAXON: Jurnal Ilmiah Program Studi Pendidikan Bahasa Inggris*, 10(2), 117. <https://doi.org/10.33373/as.v10i2.2096>
- H. Deni Nuryadi, S.H., M. H. (2016). Teori Hukum Progresif Dan Penerapannya di Indonesia. *Jurnal Ilmiah Hukum De'Jure: Kajian Ilmiah Hukum*, 1. <https://doi.org/10.35706/dejure.vli2.515>
- Hidayah, N. (2023). Tantangan dan Strategi Pengajar dalam Menyikapi Perkembangan Teknologi Artificial Intelligence (AI), Study Kasus pada Mahasiswa Keperawatan dalam Penyelesaian Tugas Akhir. *Prosiding Seminar Nasional Pascasarjana*, 6. <https://proceeding.unnes.ac.id/sn pasca/article/view/2181>
- Ihsan, F., & Bintarsari, N. K. (2021). Internet governance forum analysis on artificial intelligence in cyber security. *Journal of International Relations*, 1(1), 32–47. <http://jurnalonline.unsoed.ac.id/index.php/insignia/article/view/3782%0Ahttp://jurnalonline.unsoed.ac.id/index.php/insignia/article/download/3782/2037>
- Jannah, M. (2018). Perlindungan Hukum Hak Kekayaan Intelektual (Haki) Dalam Hak Cipta Di Indonesia. *Jurnal Ilmiah Advokasi*, 6(2), 55–72. <https://doi.org/10.36987/jiad.v6i2.250>
- Kosasih, E. E., Papadakis, E., Baryannis, G., & Brintrup, A. (2024). A review of explainable artificial intelligence in supply chain management using neurosymbolic approaches. *International Journal of Production Research*, 62(4), 1510–1540. <https://doi.org/10.1080/00207543.2023.2281663>
- Lestari, S. N. (2019). Perlindungan Hak Moral Pencipta Di Era Digital di Indonesia. *Diponegoro Private Law Review*, 3. <https://ejournal2.undip.ac.id/index.php/dplr/article/view/6550>

- Mamad, F. S., Pendidikan, D., & Barat, S. (2023). Artificial Intelligence as A Newformula In the Transformation Of Islamic Education In Indonesia. *Proceeding of Conference on Law and Social Studies*, 19(4), 8–25. <https://ibicie.uinib.ac.id/index.php/ibicie/article/view/8>
- Manurung, E. A. P. (2022). Karya digital dan perlindungan hak kekayaan intelektual di era digital. *Verdict: Journal of Law Science*, 1(1), 30–36. <https://doi.org/10.59011/vjlaws.1.1.2022.30-36>
- Mazumdar, S., & Wang, J. (2018). Big Data and Cyber Security: A Visual Analytics Perspective. In S. Parkinson, A. Crampton, & R. Hill (Eds.), *Guide to Vulnerability Analysis for Computer Networks and Systems: An Artificial Intelligence Approach* (pp. 367–381). Springer International Publishing. [https://doi.org/10.1007/978-3-319-92624-7\\_16](https://doi.org/10.1007/978-3-319-92624-7_16)
- Mukhidin. (2014). Hukum Progresif Sebagai Solusi Hukum yang Mensejahterahkan Rakyat. *Jurnal Pembaharuan Hukum*, 1(3), 267–286. <https://jurnal.unissula.ac.id/index.php/PH/article/view/1488>
- Murdayantin, F. U., Agustin, A., & Pebrianti, D. (2023). Moral dan Etika Notaris di Era Society 5.0: Kajian Fungsi Artificial Intelligence Terhadap Profesi Notaris. *Das Sollen: Jurnal Kajian Kontemporer Hukum Dan Masyarakat*, 1(02), 1–18. <https://journal.forikami.com/index.php/dassollen/article/view/396>
- Nasir, G. A. (2017). Kekosongan Hukum & Percepatan Perkembangan Masyarakat. *Jurnal Hukum Replik*, 5(2), 172. <https://doi.org/10.31000/jhr.v5i2.925>
- Nauval Fadillah, R. (2023). Perlindungan Hak Atas Kekayaan Intelektual Artificial Intelligence (AI) dari Perspektif Hak Cipta dan Paten. *Das Sollen*, 2(2), 1–25. <https://journal.forikami.com/index.php/dassollen/article/view/745>
- Purnomo, M., Maulina, E., Wicaksono, A. R., & Rizal, M. (2020). Analysis of the Use of Artificial Intelligence Technology on Digital Startups in Indonesia. *International Journal of Advanced Science and Technology*, 29(3), 750–758. <https://www.researchgate.net/publication/343224942>
- Rahadiyan, I. (2020). Perkembangan Financial Technology di Indonesia Dan Tantangan Pengaturan Yang Dihadapi. *Artificial Intelligence and the Law*, 31–48. <https://journal.ugm.ac.id/v3/MH/article/view/3451>
- Raihana, R., Lina, L., Nasution, AK., & Adri, M. (2023). Eksistensi Pengaturan Hak Cipta di Indonesia. *INNOVATIVE: Journal of Social Science Research*, 3(5), 6039–6049. <https://j-innovative.org/index.php/Innovative/article/view/5547>
- Raihana, Syafruddin, Welli, D., & Sugiharto. (2023). Analisis Yuridis Pengaturan Tentang Hak Cipta di Indonesia. *Innovative: Journal of Social Science Research*, 3(2), 1466–1477. <https://j-innovative.org/index.php/Innovative/article/view/456>
- Ramdani, R., Agustiyara, & Purnomo, E. P. (2021). Big Data Analysis of COVID-19 Mitigation Policy in Indonesia: Democratic, Elitist, and Artificial Intelligence. *IOP Conference Series: Earth and Environmental Science*, 717(1). <https://doi.org/10.1088/1755-1315/717/1/012023>



- Rizki, M. F., & Salam, A. (2023). Pertanggungjawaban Hukum Pengumpulan Data Biometrik Melalui Artificial Intelligence Tanpa Persetujuan Pemilik Data (Studi Kasus Clearview AI Inc. di Yunani dan Inggris). *Lex Patrimonium*, 2. <https://lib.ui.ac.id/detail?id=9999920528002&lokasi-lokal>
- Solihati, K. D., & Indriyani, D. (2021). Managing Artificial Intelligence on Public Transportation (Case Study Jakarta City, Indonesia). *IOP Conference Series: Earth and Environmental Science*, 717(1). <https://doi.org/10.1088/1755-1315/717/1/012021>
- Tan, D. (2021). Metode penelitian Hukum: Mengupas Dan Mengulas Metodologi Dalam Menyelenggarakan penelitian Hukum. *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial*, 8(5), 1332–1336. DOI: <http://dx.doi.org/10.31604/jips.v8i8.2021.2463-2478>
- Tjahyanti, L. P. A. S., Saputra, P. S., & Gitakarma, M. S. (2022). Peran Artificial Intelligence (AI) Untuk Mendukung Pembelajaran di Masa Pandemi Covid-19. *Jurnal Komputer Dan Teknologi Sains (KOMTEKS)*, 1. <https://ejournal.unipas.ac.id/index.php/Komteks/article/view/1062>
- Wahyudi Sumari, A. D. (2020). The Contributions of Artificial Intelligence in Achieving Sustainable Development Goals: Indonesia Case. *IOP Conference Series: Materials Science and Engineering*, 982(1). <https://doi.org/10.1088/1757-899X/982/1/012063>
- Wendur, A. H. B. (2024). Perlindungan Hukum Terhadap Hak Kekayaan Intelektual Di Era Digital Dalam Penggunaan Artificial Intelligence. *Lex Administratum*, 12. <https://ejournal.unsrat.ac.id/v3/index.php/administratum/article/view/55510>
- Wibowo, R. J. A. (2023). Ciptaan dan Invensi Hasil Kecerdasan Buatan dalam Perspektif Hak Cipta dan Paten. *Jurnal Ilmiah Kebijakan Hukum*, 17. <https://doi.org/10.30641/kebijakan.2023.V17.269-288>
- Wijayanti, P. T., & Kharisma, D. B. (2024). Web Scraping dalam Aplikasi ChatGPT oleh Chatbot Berbasis Artificial Intelligence (AI) Berdasarkan Undang-Undang Nomor 28 Tahun 2014 Tentang Hak Cipta. *Jurnal Demokrasi Dan Ketahanan Nasional*, 3. <https://doi.org/10.20961/sovereignty.v3i2.1620>
- Wulandari, D., & Adning, M. (2022). Utilization of Artificial Intelligence Model for Mapping Information and Communication Technology in Education. *ICT For Education*, 1(February), 55–61. <https://doi.org/10.32550/pi.v1i1.25>
- Zuiderveen Borgesius, F. J. (2020). Strengthening legal protection against discrimination by algorithms and artificial intelligence. *International Journal of Human Rights*, 24(10), 1572–1593. <https://doi.org/10.1080/13642987.2020.1743976>