Copyright Issues for Artificial Intelligence Artworks in Strengthening Creative Industry 5.0: A US Comparison

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Abstract

AI made human work easier in creating many things, like works of art. However, this is worrying for creators or owners. They are concerned about fulfilling exclusive rights to works of art. AI is part of technological developments that should be used as a tool for creators to create works of art. Therefore, clear boundaries are needed regarding how much AI can be used by creators as a tool in creating works of art so there is no reduction in the value of the creator's own efforts and creativity. The type of research that the author uses is applied descriptive with a qualitative nature. The inductive method is applied to analyze and process data which is linked to existing theories and laws and regulations. The author analyzes the comparison of copyright law protection in Indonesia and in the United States regarding works of art created by AI.

1. Introduction

Artificial Intelligence (AI) is a technology that assists humans in performing their tasks during the era of Industrial Revolution 5.0. Artificial intelligence (AI) refers to a simulated representation of human intelligence that operates through machine learning systems. These systems are designed to process extensive quantities of labeled training data, conduct data analysis to identify correlations and patterns, and utilize these patterns to make predictions about future scenarios.[1] AI employs deep learning methodologies by analyzing extensive datasets of images, paintings, and other artworks in a database. This enables the AI program to differentiate between various artwork styles and techniques. Additionally, it utilizes neural network learning techniques to acquire knowledge of patterns, features, and connections within the provided data, which is then

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[1] Rian Saputra and others, 'Artificial Intelligence and Intellectual Property Protection in Indonesia and Japan', *Journal of Human Rights, Culture and Legal System*, 3.2 (2023), 210–35 <https://doi.org/10.53955/jhcls.v3i2.69>.

utilized in the creation of the final artwork.[2]

Artificial intelligence (AI) exhibits a notable degree of intricacy in its operations in comparison to preceding human technologies. Moreover, artificial intelligence (AI) leverages substantial volumes of data to train intricate algorithms. As AI continues to advance, it is progressively assuming responsibilities that traditionally necessitate human cognitive capacities, such as generating harmonious literary compositions in the form of songs, as well as producing paintings of exceptional quality. This has prompted us to acknowledge that humans are no longer the exclusive creative asset on the planet, and the utilization of AI in the production of art is no longer an unfamiliar notion. Prominent corporations such as Google have demonstrated their interest in harnessing the potential of artificial intelligence (AI) by introducing an AI system named Deep Dream. This AI uses artificial neural networks to employ mathematical techniques in its training engine, enabling it to manipulate images.[3]

In the year 2016, a pair of photographs generated by the Deep Dream software received a monetary value of $8,000 each during the San Francisco Art event, which Google orchestrated. The transaction of these artworks generated by artificial intelligence gives rise to inquiries over the ownership of copyright pertaining to the artworks, in conjunction with other copyright-related rights, including economic and moral rights. Stakeholders have expressed worries over the possible impact of AI in the creative industry, including a significant rise in unemployment and the possibility of human technology misuse.[4]

The rapid and unpredictable evolution of technology presents novel obstacles for anybody seeking to comprehend the convergence of law and technology. The convergence of technology is currently experiencing a notable increase due to the emergence of artificial intelligence (AI) as a driving force behind this convergence. Technology is frequently classified as an external element that contradicts the law, as exemplified by instances of copyright infringement by the Napster application, patent violations by 3-Dimensional Printers, and labor law violations by the Uber application.[5] Similarly, the utilization of AI technology possesses the capacity to violate copyright laws in the absence of appropriate regulation. The lack of legal oversight pertaining to artificial

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[2] Rian Saputra, 'Development of Creative Industries as Regional Leaders in National Tourism Efforts Based on Geographical Indications', *Bestuur*, 8.2 (2020), 108 – 120 <https://doi.org/10.20961/bestuur.v8i2.43139>.

[3] Margaret A. Goralski and Tay Keong Tan, 'Artificial Intelligence and Sustainable Development', *International Journal of Management Education*, 18.1 (2020) <https://doi.org/10.1016/j.ijme.2019.100330>.

[4] Christian Rammer, Gastón P. Fernández, and Dirk Czarnitzki, 'Artificial Intelligence and Industrial Innovation: Evidence from German Firm-Level Data', *Research Policy*, 51.7 (2022) <https://doi.org/10.1016/j.respol.2022.104555>.

[5] Hanita Mayasari, 'A Examination on Personal Data Protection in Metaverse Technology in Indonesia : A Human Rights Perspective', *Journal of Law, Environmental and Justice*, 1.1 (2023), 64–85 <https://doi.org/10.62264/jlej.v1i1.4>.

intelligence (AI) will inevitably influence the unbridled advancement of AI technology. The necessity of establishing a legal framework that governs the role of artificial intelligence (AI) within the copyright system aligns with the convergence legal theory put forth by Danrivanto Budhijanto. Convergence theory posits that society can attain order and regularity by leveraging the presence of law inside it.[6]

America is ahead of Indonesia in allowing copyright to artworks created by artificial intelligence. According to Section 313.2 of the Compendium of U.S. Copyright Office Practices, the Copyright Office is prohibited from registering copyrighted works that are produced by machines or mechanical processes that operate in a random or automated manner without the involvement of a human creator.[7] The presence of certainty regarding the capacity of artificial intelligence (AI) to engage in the production of copyrighted artworks serves as a foundation for artists to comprehend the boundaries of AI's involvement in the artistic process, necessitating the artist's creativity or participation.[8] This aligns with the theoretical framework of transformational law, which posits that the law should possess the capacity to serve as a fundamental basis capable of transforming. It should function as an infrastructure that bolsters the resilience of a nation in the face of the inevitable digital revolution. In order to achieve sufficient legal reinforcement, it is imperative to enhance the Indonesian Copyright Law pertaining to the integration of artificial intelligence (AI) inside the creative sector.[9]

In their scholarly article titled "Analysis of the Problems of Artificial Intelligence Creation Paintings According to Copyright Law," Rahmafida and Sinaga delve into the examination of the role of artificial intelligence (AI) in generating artwork by extracting data from copyrighted works that are safeguarded by copyright laws. The author also addresses the necessary stance to be adopted regarding the assumption that the data retrieval process conducted by AI to generate a piece of artwork is not regarded as an imaginative process but rather a violation of copyright that necessitates reevaluation in accordance with the Indonesian Copyright Law.

Olivia Agatha Kusuma did a study titled "Review of Copyright Protection of AI-Generated Works in Indonesia," which investigates the use of artificial intelligence (AI) in

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[6] Yogesh K Dwivedi and others, 'Artificial Intelligence (AI): Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy', *International Journal of Information Management*, 57 (2021), 101994 <https://doi.org/https://doi.org/10.1016/j.ijinfomgt.2019.08.002>.

[7] Ulrike Reisach, 'The Responsibility of Social Media in Times of Societal and Political Manipulation', *European Journal of Operational Research*, 291.3 (2021), 906–17 <https://doi.org/https://doi.org/10.1016/j.ejor.2020.09.020>.

[8] Olesya Dudnik and others, 'Trends, Impacts, and Prospects for Implementing Artificial Intelligence Technologies in the Energy Industry: The Implication of Open Innovation', *Journal of Open Innovation: Technology, Market, and Complexity*, 7.2 (2021), 155 <https://doi.org/10.3390/joitmc7020155>.

[9] Onur Sari and Sener Celik, 'Legal Evaluation of the Attacks Caused by Artificial Intelligence-Based Lethal Weapon Systems within the Context of Rome Statute', *Computer Law and Security Review*, 42 (2021), 105564 <https://doi.org/10.1016/j.clsr.2021.105564>.

artistic creations. The study focuses on the analysis of Trade-Related Aspects of Intellectual Property Rights (TRIPs) and Copyright Law. According to the researcher's findings, it is established that TRIPs and Copyright Law govern the classification of AI, a computer program, as a form of artistic expression. The author's analysis incorporates the Law and Economics Theory, Personality and Labour Theoretical Justification, and Work Made for Made-for-Hire Theory (WMFH), all of which tacitly assert that copyright ownership is vested in human beings.

The Indonesian Copyright Law still lacks legal clarity about the boundaries of AI's permissibility in the production of copyrighted works. The complexity arises when attempting to identify the subject of copyright, specifically the inventor and copyright holder, in copyrighted works that use AI.[10] In contrast to prior studies that have highlighted the potential challenges stemming from the absence of stringent copyright regulations for copyrighted works created by artificial intelligence (AI), this study aims to investigate the current state of legal protection for AI-generated artworks in Indonesia as compared to the United States. Specifically, it will explore the implications of AI's presence in the copyright system on the registration process for AI-generated copyrighted works, as well as the efforts made to enhance copyright regulation in Indonesia to safeguard copyright holders from the recognition of AI-generated artworks, taking into account the principles of originality and the Labour Theory of Property.

2. Research Method

This study employs a normative juridical research methodology, which involves utilizing legal sources such as laws, regulations, court decisions, legal theories, and scholarly opinions. The research primarily relies on secondary data, commonly referred to as a literature review.[11] Despite the absence of explicit legislation regulating AI in Indonesia, the author employs a conceptual methodology to construct concepts based on existing legal statutes.[12] Additionally, a comparative approach is employed, examining legal frameworks and precedents from other countries in order to develop recommendations for enhancing copyright law in Indonesia. The methodology is executed through the utilization of Primary Legal Materials, specifically the 1945 Constitution (UUD 1945), Law No. 28 of 2014 on Copyright (Copyright Law), Law No. 19 of 2016 on Amendments to Law No. 11 of 2008 on Electronic Information and Transactions (Amendments to the ITE Law), and Compendium of

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[10] Garikai Chimuka, 'Impact of Artificial Intelligence on Patent Law. Towards a New Analytical Framework – [the Multi-Level Model]', *World Patent Information*, 59.October (2019), 101926 <https://doi.org/10.1016/j.wpi.2019.101926>.

[11] Rian Saputra, M Zaid, and Devi Triasari, 'Executability of the Constitutional Court ' s Formal Testing Decision : Indonesia ' s Omnibus Law Review', *Journal of Law, Environmental and Justice*, 1.3 (2023), 244–58 <https://doi.org/10.62264/jlej.v1i3.18>.

[12] Muhammad Khalif, FX Hastowo Broto Laksito, and Andriamalala Laurent, 'Role and Position of Indonesian Medical Disciplinary Honour Council : Fair Medical Dispute Resolution', *Journal of Law, Environmental and Justice*, 1.3 (2023), 185–201 <https://doi.org/10.62264/jlej.v1i3.15>.

U.S. Copyright Office Practices. In addition, the author incorporates Secondary Legal Materials, which offer elucidations of primary legal materials derived from literature reviews, as well as Tertiary Legal Materials, including literature pieces and books relevant to this research.[13]

3. Results and Discussion
Legal Protection of Artificial Intelligence-Made Artworks in Indonesia: Current Status

The copyrighting of AI-generated artworks is a subject of confusion. The determination of copyright ownership will be based on whether the AI developer, the AI itself, or the person who creates the artwork utilizing the AI will be granted a copyright. The permissibility of AI involvement in the creation of copyrighted works has not been explicitly restricted under the Copyright Act. Furthermore, the utilization of artificial intelligence (AI) in the production of artistic creations obviates the necessity for individuals to possess specialized expertise in the creation of copyrighted artworks. In essence, the act of creating artwork necessitates the possession of abilities such as accurate comprehension of shapes, light, colors, and lines, despite the abstract nature of the images. This could lead to a decrease in the recognition and admiration for the expertise and artistry of human inventions.[14]

AI has been employed in Indonesian art production, specifically in the creation of the Pasutri Gaje film poster. The film initially emerged as a Webtoon narrative entitled "Pausutri Gaje," which was released in 2016. It narrates the tale of a newly formed couple who are employed as civil workers (PNS). Subsequently, the poster faced criticism from internet users for failing to acknowledge the webtoonists who personally created the content. Given this incident, it is imperative to implement stringent regulations on the use of AI in the production of artwork in Indonesia.[15] With regards to copyright and AI, AI possesses the ability to initiate legal proceedings and be subject to legal actions for its rights and responsibilities. Furthermore, when AI is recognized as a legal entity, it can proclaim and officially record its creation. In the event that he fails to attain legal status, his artwork will be transferred into the public domain. Public domain, as defined by Black's Law Dictionary, refers to a copyrighted work that is not owned by any individual and is accessible and permissible for use by anybody without the need for payment or permission from a third party.[16]

According to current regulations, in the event that an intellectual property right is revoked or its validity period has lapsed, the intellectual property will transition into the public domain.[17] Artists are concerned about the potential impact of copyrighting AI works, as it can

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13 Agung Basuki and others, 'Establishing Ecological Justice in the Governance of Land Inventory , Ownership , and Utilisation in Indonesia', *Journal of Law, Environmental and Justice*, 18.2 (2023), 137–54 <https://doi.org/10.62264/jlej.v1i2.12>.

14 Sari and Celik.

15 Jack Clark and Ray Perrault, *Artificial Intelligence Index Report Introduction to the AI Index Report 2023, Human-Centered Artificial Intelligence*, 2023.

16 Tariq Ahamed Ahanger, Abdullah Aljumah, and Mohammed Atiquzzaman, 'State-of-the-Art Survey of Artificial Intelligent Techniques for IoT Security', *Computer Networks*, 206 (2022), 108771 <https://doi.org/https://doi.org/10.1016/j.comnet.2022.108771>.

17 Nicola Palladino, 'The Role of Epistemic Communities in the "Constitutionalization" of Internet Governance: The Example of the European Commission High-Level Expert Group on Artificial

lead to a decline in the economic worth of their artwork. Nevertheless, the absence of copyright protection for AI will impede technical advancement. Hence, in order to establish legal certainty, it is imperative to govern the role of AI in the production of artistic creations and their copyright protection.[18]

According to Article 28C, paragraph (1) of the 1945 Constitution, individuals possess the entitlement to satisfy their fundamental necessities, including those pertaining to art and culture.[19] When creators document their creations, they will receive one of the benefits, which is economic rights. However, the level of uncertainty arises when artificial intelligence is included in the process of creation. Indonesia, as a member nation of the World Trade Organisation (WTO), has enacted Copyright Law by invoking the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which primarily governs the standards governing intellectual property rights regulation. Either TRIPs or the Copyright Law does not explicitly govern AI-generated artwork. To now, Indonesia has exclusively acknowledged AI programmes as a kind of artistic expression.[20]

Copyright, as defined by the Copyright Law, is an exclusive right that is granted to a work that has been created based on the declaratory principle. The declarative principle refers to a system that operates without the need for recordkeeping, instead relying on the creator's statement as a sufficient means of communication. Exclusive rights encompass both economic and moral entitlements. The act of freely sharing a work on social media entails certain rights as outlined in Article 5, Paragraph (1) of the Copyright Law, which pertains to moral rights. One such right is the ability to attribute the work with the creator's name.[21] Nevertheless, artificial intelligence (AI) compositions are derived from datasets that are inputted without acknowledging the originator. The utilization of artwork-based data for the AI database constitutes a copy, as stipulated in Article 1, point 12 of the Copyright Act. The commercialization of AI results constitutes a breach of Article 9, Paragraph (3) of the Copyright Act. Hence, it is imperative to establish a structure that safeguards both moral and economic rights, as the utilization of work necessitates the explicit consent of its creator.

According to Article 1, Point 8 of Law Number 19 Year 2016, which amends Law Number 11 Year 2008 on Electronic Information and Transactions (known as the Amendment to ITE Law), an electronic agent is defined as an electronic system that is organized by an individual in relation to economic rights. Hence, the rights and responsibilities of Public Sector Entities (PSEs) are equally applicable to Electronic Agents. Can an AI independently accomplish this

Intelligence', *Telecommunications Policy*, 45.6 (2021), 102149 <https://doi.org/https://doi.org/10.1016/j.telpol.2021.102149>.

18 Gonenc Gurkaynak, Ilay Yilmaz, and Gunes Haksever, 'Stifling Artificial Intelligence: Human Perils', *Computer Law and Security Review*, 32.5 (2016), 749–58 <https://doi.org/10.1016/j.clsr.2016.05.003>.

19 Saputra, Zaid, and Triasari.

20 Colin R. Davies, 'An Evolutionary Step in Intellectual Property Rights - Artificial Intelligence and Intellectual Property', *Computer Law and Security Review*, 27.6 (2011), 601–19 <https://doi.org/10.1016/j.clsr.2011.09.006>.

21 Prince Chacko Johnson and others, 'Digital Innovation and the Effects of Artificial Intelligence on Firms' Research and Development – Automation or Augmentation, Exploration or Exploitation?', *Technological Forecasting and Social Change*, 179.March (2022), 1 <https://doi.org/10.1016/j.techfore.2022.121636>.

task? Upon reviewing the paper, it becomes evident that the individual who possesses the ability to coordinate an electronic agent is accountable for the AI they employ. According to Article 1, point 21 of the revised ITE Law, an individual is defined as an individual, regardless of their nationality, whether they are an Indonesian citizen, foreign citizen, or legal entity.

Based on the articles above, it can be inferred that the legal responsibility for AI as an electronic agent lies with a legal entity, specifically the individual or legal body responsible for organizing the electronic agent. Within the realm of copyright, this article affirms that in the event of a lawsuit against an AI creation, the AI developer can be held accountable. The Copyright Law regulates the subject matter. One of the key components of copyright is the Creator. According to Article 1 point 2 of the Copyright Law, the Creator refers to an individual or group of individuals who create unique and personal works. Human involvement in AI-generated artworks is limited to providing instructions to the AI rather than actively making the artworks themselves. This scenario might be likened to providing instructions to a commissioned artist, who subsequently executes those instructions only through the utilization of artificial intelligence.[22]

According to the Theory of Originality, this aligns with the concept. The creation of a work necessitates a specific degree of inventiveness. Granting copyright to an individual who only utilizes artificial intelligence (AI) to create a piece of artwork is unsuitable, as AI plays a more significant role in the creation of the result. Nevertheless, AI is ineligible for copyright protection of copyrighted artwork in Indonesia due to its lack of legal recognition as a distinct entity. According to Article 1, Point 27 of the Copyright Law, the individual or legal entity being addressed to is specified. Furthermore, upon examining its functioning, AI cannot be considered a creator as the act of creation lacks originality and personalization, instead relying on the extensive information it processes. According to article 1 point 3 of the definition of Creation, a work of authorship refers to any copyrighted creation in the domains of science, art, and literature that arises from the manifestation of inspiration, ability, thought, imagination, dexterity, skill, or expertise in a physical format.[23]

The essay highlights that the creations encompassed by Copyright Law are those that undergo specific procedures. However, the artwork produced by artificial intelligence (AI) is derived from extensive datasets inputted by AI developers, and it does not incorporate the cognitive processes of imagination and inspiration. Nevertheless, the Copyright Law has acknowledged AI as a form of computer programming as one of the creative works. According to paragraph (2) of Article 68 of the Copyright Act, the evaluation of copyright applications is conducted based on two criteria: the registration status of the work and the presence of significant similarities to the recorded creation. The lack of attention to AI engagement in the

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[22] Rua-Huan Tsaih and Chih Chun Hsu, 'Artificial Intelligence in Smart Tourism: A Conceptual Framework', 2018.

[23] Gwo-Jen Hwang and Shu-Yun Chien, 'Definition, Roles, and Potential Research Issues of the Metaverse in Education: An Artificial Intelligence Perspective', *Computers and Education: Artificial Intelligence*, 3 (2022), 100082 <https://doi.org/10.1016/j.caeai.2022.100082>.

development of artworks is seen in the recording of artworks in Indonesia.[24]

It has been previously stated that Indonesia has not implemented explicit regulations pertaining to AI artworks. The articles above indicate that Indonesia does not acknowledge AI as a legal entity. The granting of Copyright on AI-created artworks is affected by these considerations. In this manner, copyright protection is not applicable to artwork produced by AI.[25] However, given the current advancements in technology, wherein several creators employ artificial intelligence (AI) to produce their artistic creations, it becomes imperative to establish precise regulations governing the requirements for utilizing AI in the creation of artworks, thereby ensuring their protection under copyright laws. The Transformative Legal Theory posits that the presence of law is vital in addressing the advancements in technology.

United States Copyright Protection of Artificial Intelligent-Defined Artworks Comparison

Compendium: Chapter 300 on Copyrightable Authorship: What Can Be Registered governs the scope and nature of copyright protection for various entities and types of creations. According to Section 306, the Human Authorship Requirement stipulates that copyright protection will be conferred upon a work that is created by a human being. Moreover, Section 308, known as The Originality Requirement, affirms that in order to obtain copyright protection, a work must be the product of the creator's creative process. Subsequently, Section 313.2 Insufficient Works The concept of Human Authorship posits that copyright protection is not applicable to works that humans do not create. In addition, it should be noted that the Copyright Office does not provide registration to works produced by machines that function in a random or automated manner, devoid of any human creativity or intervention.[26]

Guidance on Copyright Registration in the United States: The field of Works Containing Material Generated by Artificial Intelligence acknowledges the existence of artwork produced by AI, but it does not confer Copyright protection to such artwork unless a human creator is involved. The inception of this paper occurred with the acknowledgment of advancements in the utilization of artificial intelligence (AI) capable of generating artistic compositions. The generation of these works involves the input of pre-existing works into a database, followed by the use of the datasets contained inside the database to produce novel works. The United States acknowledges the necessity of implementing precise regulations to establish legal certainty. This document encompasses provisions pertaining to inquiries regarding the potential copyrightability of said works. Is it possible to register works produced by both AI

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[24] Ali A. Guenduez and Tobias Mettler, 'Strategically Constructed Narratives on Artificial Intelligence: What Stories Are Told in Governmental Artificial Intelligence Policies?', *Government Information Quarterly*, 40.1 (2023), 9–10 <https://doi.org/10.1016/j.giq.2022.101719>.

[25] Hidemichi Fujii and Shunsuke Managi, 'Trends and Priority Shifts in Artificial Intelligence Technology Invention: A Global Patent Analysis', *Economic Analysis and Policy*, 58.2018 (2018), 60–69 <https://doi.org/10.1016/j.eap.2017.12.006>.

[26] João Pedro Quintais, Giovanni De Gregorio, and João C Magalhães, 'How Platforms Govern Users' Copyright-Protected Content: Exploring the Power of Private Ordering and Its Implications', *Computer Law & Security Review*, 48 (2023), 105792 <https://doi.org/https://doi.org/10.1016/j.clsr.2023.105792>.

and humans.?[27]

Section II of the document posits that the Copyright Office maintains that copyrightable works only pertain to works of human ingenuity. The specific type of creativity that is deemed necessary was not explicitly outlined by the Supreme Court. However, it is important to note that copyright protection can be granted to a work that involves non-human interaction, provided that there is a component of "human selection and arrangement of the revelations." Subsequently, section III governs the inclusion of technical or machine involvement, specifically AI, in recorded works. Prior knowledge of the role of humans and AI in its production is necessary. The Copyright Office will not register the copyright of the work if AI contributes to the traditional parts. Copyright will be awarded to the portion of the work that humans create if their contribution is deemed adequate.[28]

In Section IV, the Copyright Office mandates that the applicant utilize the Standard Application for recordation. The applicant is encouraged to be transparent on the presence of AI in the job and provide a concise explanation of the human involvement, covering aspects such as selection, coordination, and arrangement.[29] If the applicant lacks familiarity with the Standard Application, it suffices for them to indicate that their work incorporates contributions from artificial intelligence. The Copyright Office will contact him to determine the appropriate course of action. This study presents a comparative analysis of copyright registration rates for AI-generated artworks in Indonesia and the United States.

Variable	Indonesia	US
Conditions for a work to be registered	Through creativity, talent, thought, imagination, dexterity, skill, or expertise	A human creation, originality, and creativity. There is an explanation of each of these requirements.
Works that Cannot be Protected by Copyright	Works that contain similarities with creations that have been recorded.	Works that are unoriginal, not the creation of a person, and/or produced by a machine that operates without any human creativity.

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27   Davies.
28   Hannah van Kolfschooten and Carmel Shachar, 'The Council of Europe's AI Convention (2023–2024): Promises and Pitfalls for Health Protection', *Health Policy*, 138 (2023), 104935 <https://doi.org/https://doi.org/10.1016/j.healthpol.2023.104935>.
29   Eva Nave and Lottie Lane, 'Countering Online Hate Speech: How Does Human Rights Due Diligence Impact Terms of Service?', *Computer Law & Security Review*, 51 (2023), 105884 <https://doi.org/https://doi.org/10.1016/j.clsr.2023.105884>.

Enhancing Copyright Regulations to Protect Copyright Holders of Artificial Intelligent Artwork

According to Freddy Harris, the former Director General of Intellectual Property (Dirjen KI), it is imperative to proactively consider the interests of stakeholders in the creative economy and advocate for the development of legal products that can effectively safeguard their interests. In addition, he proposed that legal professionals in Indonesia explore the development of a legal framework for granting copyright protection to copyrighted works that incorporate artificial intelligence in their production. Indonesia should promptly engage in deliberations with multiple stakeholders to expeditiously establish a legal framework akin to that devised by the United States, given the current capability of AI to generate valuable artistic creations.[30] The lack of a comprehensive legal framework that can elucidate copyright protection for copyrighted works created by artificial intelligence creates uncertainty regarding the permissibility of AI involvement in such works. Given the current lack of sufficient regulations in Indonesia, it is imperative to enhance copyright regulations in order to safeguard copyright holders against the recognition of AI-generated artworks. In light of this pressing need, the author suggests a number of modifications that can be implemented in the Indonesian Copyright Law.

Addition of Copyright Recording Requirements

Copyright protection is granted not only after the production is recorded but also when the creation is in physical form. This means that the creator of copyrighted works will have copyright protection on their work, even if they simply declare it. In Indonesia, the declarative principle in copyright is acknowledged. This principle is stated in article 1, number 1, which states that the creator's exclusive rights automatically arise based on the declarative principle once a creation is put into physical form, without any reduction in restrictions as per the legislation. The importance of documenting copyright is further substantiated in Article 64, paragraph (2), which explicitly indicates that the act of recording Creation and Related Rights items mentioned in paragraph (1) does not amount to the acquisition of Copyright and Related Rights.[31]

The purpose of copyright registration is to enhance copyright protection and establish evidence of copyright ownership. The DJKI has also outlined several benefits associated with copyright registration. These advantages encompass enhancing the evidentiary support for copyright in case of a dispute, incorporating information regarding creations and related rights products into the DJKI database, and offering copyright owners a heightened sense of security. Despite the significant impact of AI technology on the creative industry, such as increased unemployment and the potential for human misuse of technology, Indonesia currently lacks regulations pertaining to copyright registration in the presence of AI. Upon

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[30] Rowena Rodrigues, 'Legal and Human Rights Issues of AI: Gaps, Challenges and Vulnerabilities', *Journal of Responsible Technology*, 4 (2020), 100005 <https://doi.org/https://doi.org/10.1016/j.jrt.2020.100005>.

[31] M Syaifudin and S Handayani, 'Relasi Hukum, Moral Dan Hak Kekayaan Intelektual (Analisis Kontroversi Hukum Dan Moral Rekayasa Genetika Makhluk Hidup Di Indonesia)', *Jurnal Dinamika Hukum*, 26.1 (2014), 97–109 <https://doi.org/10.20884/1.jdh.2014.14.1.280>.

contemplation of the United States regulation of Works That Lack Human Authorship in section 313.3, we suggest the inclusion of a language mandating the recording of artworks, along with the inclusion of physical evidence or a request to verify the artwork with the DJKI. The author suggests enhancing the copyright protection of artworks created by artificial intelligence (AI) by drawing upon John Locke's Labour Theory of Property. According to Locke, an individual can acquire ownership of an object by their diligent efforts.[32]

Revised Creator Definition in Indonesian Copyright Law

Article 1 point 2 of the Indonesian Copyright Law mandates that producers of artistic works must possess a "distinctive and personal" character. Regrettably, there is no additional elucidation pertaining to this component. The concept of "distinctive and personal" can be comprehended by examining the judicial review of the Banjarnahor v. PT Holcim case in 2015. In this case, the court inquired about the functioning of computer programs in order to ascertain the copyright of a computer program. Ultimately, the plaintiff was granted copyright ownership after providing a comprehensive explanation. The court rendered a decision stating that the plaintiff possessed certain "distinctive and personalized" attributes. Furthermore, the Government of the Republic of Indonesia v. Arifin case in 2016 established that the copyrighted work must possess the quality of being "distinctive and personal" if it is the outcome of an individual's thoughts or ideas, expressed tangibly and uniquely and has a recognized creator. Based on these two instances, it can be inferred that the "distinctive and personal" nature of knowledge pertaining to the work itself is a determining factor in granting Copyright to individuals who possess the ability to elucidate the process of production. Similarly, the computer scientist responsible for developing the AI.[33]

The presence of clarity regarding this aspect can enhance comprehension regarding the capacity of AI to participate in the production of copyrighted artworks, given that AI can only offer a chronological record in the form of layers and nodes but has not been capable of elucidating the knowledge that embodies the significance of copyrighted artworks created by AI. AI programmers do not actively participate in the creation of the outcome of AI-generated artworks. Instead, their role is limited to identifying and selecting characteristics that enhance the network's capabilities. Furthermore, the attainment of a clear and unique character would provide a challenge if the AI were solely guided by cues in order to generate the artwork.[34]

Addition of a waiver clause for works that fully utilise Artificial Intelligence

AI technology in the art sector should serve as a fresh platform for artists to express their

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[32] Dewi Sulistianingsih and Apriliana Khomsa Kinanti, 'Hak Karya Cipta Non-Fungible Token (NFT) Dalam Sudut Pandang Hukum Hak Kekayaan Intelektual', *Krtha Bhayangkara*, 16.1 (2022), 197–206 <https://doi.org/10.31599/krtha.v16i1.1077>.

[33] Huang-Chih Sung, 'Can Online Courts Promote Access to Justice? A Case Study of the Internet Courts in China', *Computer Law & Security Review*, 39 (2020), 105461 <https://doi.org/https://doi.org/10.1016/j.clsr.2020.105461>.

[34] Christian Laue, *Virtual Worlds and Criminality*, *Virtual Worlds and Criminality*, 2011 <https://doi.org/10.1007/978-3-642-20823-2>.

creativity. According to Abdul Wahid Maktub, a Special Staff to the Minister of Research Technology and Higher Education for the period of 2015-2021, the inevitability of this phenomenon is justified in the context of globalization, characterized by swift technological advancements and digitalization. Nevertheless, we must effectively harness these developments to transform them into opportunities for enhancing the caliber of human resources.[35] Regrettably, the Copyright Law has failed to offer explicit guidance on the applicability of AI in the production of artistic works. Consequently, the author suggests incorporating provisions pertaining to the documentation of copyrighted works produced by machines. This would establish distinct parameters for artists to utilize AI technology in their creations, as outlined in Article 74, paragraph (1) of Chapter X on Procedures for Recording. The inclusion of Article 74, paragraph (1) in the Copyright Act is undertaken in accordance with the Compendium of U.S. Copyright Office Practices, which has pre-established regulations pertaining to copyright registration. These regulations specifically address the inclusion of contributions from machines that operate in a random and automated manner, such as artificial intelligence (AI).

4. Conclusion

Indonesia lacks robust legal safeguards for the authors of AI-generated artworks in the era of Society 5.0. When linked to established theories and realities, such safeguarding is highly necessary. Upon examination of the Compendium of U.S. Copyright Office Practises and U.S. Copyright Registration Guidance, it becomes evident that there exist explicit restrictions and constraints pertaining to the recognition of copyrighted artworks, particularly those produced by artificial intelligence (AI) or aided by AI during their creation. There exists a potential avenue for adapting copyright legislation to align with the evolving landscape of AI technology, so ensuring the ongoing safeguarding of copyright holders against copyright infringement pertaining to artworks generated by AI. The proposed measure involves enhancing copyright regulations through the inclusion of additional criteria for copyright registration, the revision of the creator definition as outlined in article 1 number 2 of the copyright law, and the inclusion of a provision to revoke copyright for copyrighted works that employ artificial intelligence (AI) entirely without human involvement. The author proposes that the Indonesian government establish a standard that explicitly governs the reasonable boundaries of AI usage in the production of copyrighted works. Additionally, the government should promptly enhance legislation to offer enhanced legal safeguards to copyright holders of copyrighted works generated by AI. The author suggests that the implementation of appropriate standards and legislation can be achieved through the examination of legal comparisons with other nations that have already established regulations pertaining to copyrighted works of art created by artificial intelligence. The author specifically references the United States as a point of comparison in this paper. Furthermore, the government can carry out observations and studies and engage in conversations with intellectual property

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[35] Saputra and others.

specialists and individuals who experience the impacts of AI in the creative sector. The implementation of the invention proposed by the author as a potential solution to the current urgency can be undertaken by the government. By incorporating innovation, it is anticipated that the legal framework in Indonesia, particularly in the realm of copyright, will consistently adapt to technical advancements and social and economic circumstances and facilitate the growth of the creative industry sector in Indonesia throughout the Era Society. 5.0.

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