



AI-generated **ARTWORKS** in the legal perspective

A comparative study of copyright
laws in Japan and Indonesia



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Introduction

Technology advances have given rise to a new entity in human civilization. This entity is much more sophisticated than machines that have been replacing human labor since the Industrial Revolution. It is artificial intelligence or AI. Oxford Dictionary defines artificial intelligence as the theory and development of computer systems able to perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.ⁱ AI follows algorithms—a set of instructions arranged to complete certain operations. After the instruction is given, AI will combine data and analyze it. Then, it will generate a particular output. After that, AI will automatically learn the patterns, allowing it to present the same output in the future.ⁱⁱ



Nowadays, AI has matched (even surpassed) human intelligence in work. It makes AI involved in almost all human work today. Siri, for example. This Apple Inc AI program has become a virtual assistant for daily tasks, such as setting alarms, sending messages, and making payments. Not only daily tasks but AI also has reached professional domains, such as medical, law, and government fields.

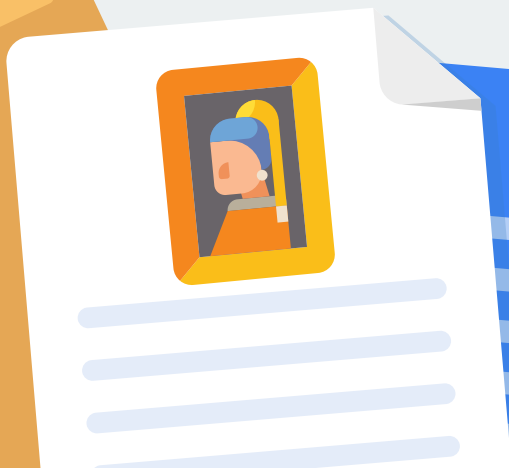
One of the professional domains that are also affected by AI's existence is art.

We can see it from the late trend on the internet where plenty of AI programs are able to generate artwork; they are called AI art generators. One of the most popular and controversial AI art generators on the internet is DALL-E 2—an AI program developed by OpenAI. DALL-E 2 is an AI program that users can use to generate an image only by entering keywords in the text encoder. After users enter the keywords, DALL-E 2 will process data and images associated with the keywords through a program called CLIP (Contrastive-Language-Image-Pre-training). DELL-E 2 will then run diffusion models that eventually generate images according to the keywords.ⁱⁱⁱ In addition to visual artworks, AI has also been able to generate music and literary artworks. Take MuseNet and ChatGPT as examples, both of them developed by OpenAI.

At a glance, the existence of AI in art seems futuristic and mind-blowing. People with no skill or background in art can instantly create artwork using an AI art generator. Indeed, the existence of AI shows how advanced human civilization has become in building such complex technology. However, there are also legal issues related to AI-generated artwork, especially copyright infringement. AI art generators like DALL-E 2 generate artwork by taking millions of images available on the internet and reproducing them according to the text prompt. Do they ask permission from the original owners whose images were taken? Obviously not. Here is where the problem lies. Many people, especially artists, deem the way AI art generator works a copyright infringement. In January 2023, three American artists filed a class action lawsuit against Stability AI, Midjourney, and DeviantArt for copyright infringement of their and millions of other artists' artworks. Those AI developers were being sued for taking millions of images created by artists worldwide without their knowledge and consent.^{iv}



Besides copyright infringement, there are issues related to copyright ownership of AI-generated artworks. For example, who owns the copyright of the artworks? The user, the programmer, the developer company, or the AI itself? Triggered by these issues, this paper will discuss the existence of AI-generated artworks from the perspective of copyright law by comparing copyright law in Indonesia and Japan. First, this paper will explain why Japan and Indonesia were chosen as the countries compared in this case study. Next, this paper will discuss the legality of AI-generated artworks from the perspective of copyright doctrine. Then, this paper will compare copyright regulations related to AI-generated artworks in Japan and Indonesia. Finally, this paper will give recommendations on the actions that all related stakeholders should take in addressing the existence of AI-generated artworks.





Why Japan and Indonesia?

There are three reasons why Japan and Indonesia were chosen as the two countries compared in this study. First, Japan is one of the world's most advanced countries in AI technology development. Based on a report issued by the World Intellectual Property Organization (WIPO) in 2019, 12 of the 20 top companies filing AI-related patents are based in Japan.^v Japan's universities and public research organizations are also ranked among the top AI-related patent applicants after China, the United States, South Korea, Taiwan, and Europe.^{vi} Furthermore, the University of Tokyo ranked among the top 20 universities with the most AI scientific publications.^{vii}

Second, Japan has an ideal ecosystem for developing AI. The development of AI in Japan is not only monopolized by one sector. Three actors play an essential role in Japan's AI development: the government sector, the private sector, and research institutions.^{viii} The government sector shapes regulations and policy frameworks and funds research institutions to develop AI. The private sector provides funds for research institutions whose results are then developed by the electronics, automotive, and robotics industries.

On the other hand, research institutes are in charge of conducting research on AI and sending professionals to the industry.^{ix} Comprehensive regulations and policies also support AI development in Japan. For example, in 2018, Japan amended the Copyright Act by adding several AI-related provisions. This amendment emphasizes the copyright aspects of AI programs.^x Japan also has regulations regarding civil liability when AI causes harm. This regulation ensures legal certainty on who should be liable when AI causes damage to users or third parties.^{xi}



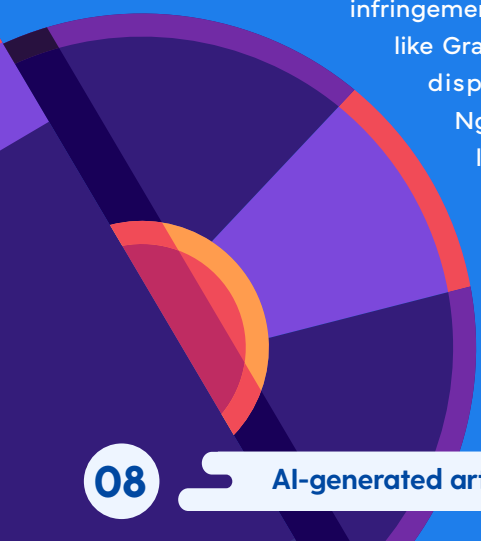
Third, the Japanese government takes intellectual property rights seriously, especially copyright. While other countries consider copyright infringement a civil case, Japan, in specific ways, considers it a criminal matter.^{xii} Furthermore, Japan has strengthened its copyright regulations against the piracy of manga, magazines, and academic texts and banned leech websites that provide pirated content.^{xiv} Apart from the legal aspect, Japan has also embedded copyright education into the high school curriculum. The Agency for Cultural Affairs even provides copyright guidelines for all societies, from students to businesses. Japan's strong commitment to copyright protection is also supported by the high awareness of the Japanese people to respect the copyrights of others' works. This makes the number of copyright infringements in Japan relatively low compared to other countries.^{xv}





In contrast to Japan, which has become a leading country in developing AI, Indonesia has just set foot in this sector. In early 2021, the Indonesian government, through the Agency for the Assessment and Application of Technology (BPPT), launched the Artificial Intelligence Innovation Center (PIKA) as the center for the development of AI in Indonesia.^{xvi} In order to support the AI technology development in Indonesia, the government has also established a National Strategy for Artificial Intelligence (STRANAS KA) as a policy framework for AI development in Indonesia. In addition to the relatively new development of artificial intelligence in Indonesia, Indonesia does not have regulations on copyright aspects of AI. This may cause problems when an infringement of copyright is committed by artificial intelligence. Who will be responsible if this happens? Furthermore, how is the legality?

Moreover, Indonesian society's awareness of recognizing and respecting copyrights is still relatively low. Almost all levels of society, from the grassroots to large companies, still often commit copyright infringement. We can see this, for example, from the high numbers of pirated books sold in the marketplace. The marketplace is even considered a haven for pirated books.^{xvii} Influencers are also no exception. In 2021, the Supreme Court granted PT Nagaswara Publisherindo's lawsuit against Gen Halilintar family members for copyright infringement of the song "Lagi Syantik".^{xviii} A big corporation like Grand Indonesia has also been involved in a legal dispute over copyright infringement of Henk Ngantung's sketch 'Patung Selamat Datang'.^{xix} In light of this, Indonesia needs to learn about the legal aspects of AI-generated artworks and their enforcement from Japan, as the potential for future developments in AI is enormous.



AI-generated artworks from the perspective of copyright doctrine

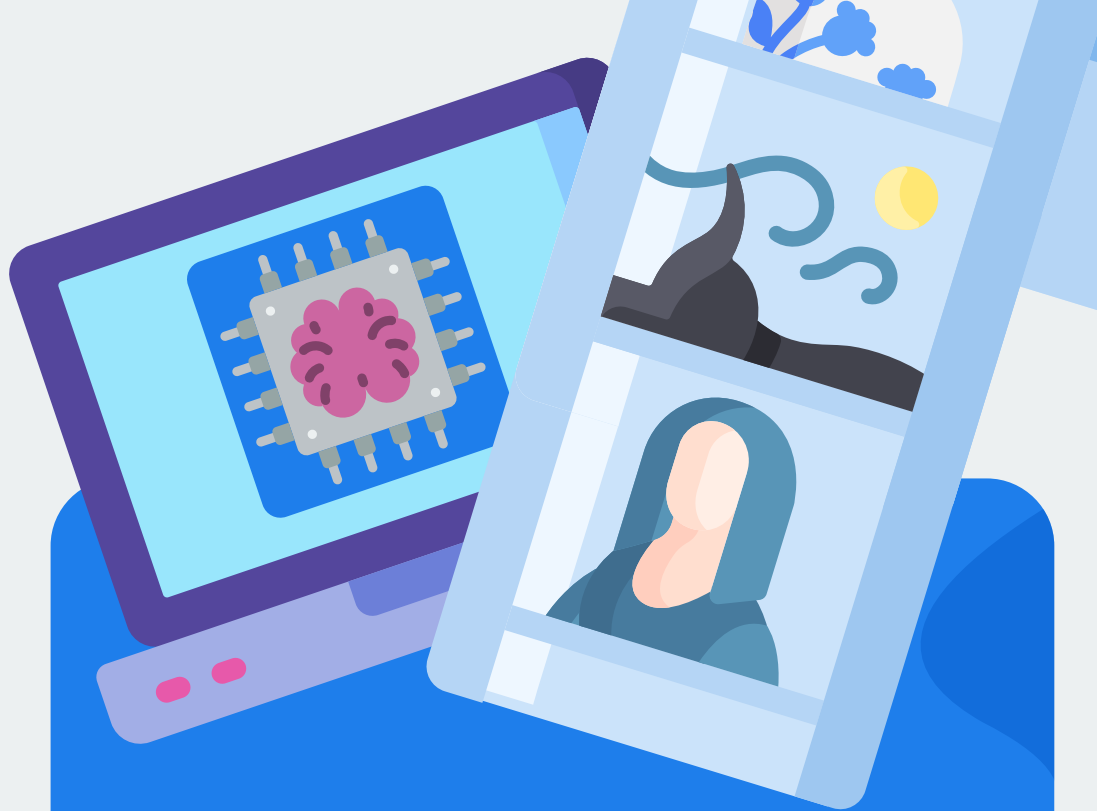
Before discussing the legality of AI-generated artworks from the copyright perspective, we need to discuss the definition of copyright and its protection system. Copyright is the exclusive right owned by the author to publish or reproduce a work or to permit other parties to do the same within the limits of existing laws.^{xx} The exclusive property of copyright means that only certain people can own it. Copyright exists since a work is created and applies according to the declarative principle. This means that a work of authorship is automatically protected without registering it. However, a copyright registration may be done to secure ownership of a work and for evidentiary purposes in court in the case of infringement.^{xxi}

In the copyright regime, there are two distinct types of rights; moral and economic rights. Moral rights are specific rights that only authors have over their works, including the right to publish a work (right of divulgation), the right to attach or not attach a name to a work (right of paternity or right of attribution), the right to withdraw a work (right of retraction), and the right to the integrity of the work from distortion, mutilation, and modification (right of integrity).^{xxii} Moral rights are non-transferable and eternally belong to the author. Meanwhile, economic rights are the rights to profit or economically exploit a work. This includes the right to reproduce, distribute, adapt, translate, and so forth.^{xxiii} Economic rights can be transferred to others through gifts, inheritance, and other ways.



There are two main aspects in the copyright regime; author and works. According to the Law of the Republic of Indonesia No. 28 of 2014 on Copyright, an author is a person or several persons who individually or jointly produce unique and personal works.^{xxiv} According to this definition, the term author only refers to natural persons. The same holds for other countries, such as the United States, which does not recognize non-natural person authors.^{xxv} The same goes for Japan, which defines an author as someone who creates a work.^{xxvi} Meanwhile, works mean any scientific, artistic, and literary works resulting from inspiration, ability, thought, imagination, dexterity, skill, or expertise expressed in tangible form or fixation.^{xxvii} Examples of works are writings, photographs, drawings, paintings, architectural works, sculptures, and music.





Then, what about works created by artificial intelligence? As mentioned in the previous paragraph, the only entity qualified for copyright protection is the author, who is a natural person. In the past decade, there has been a debate on whether AI can be a legal subject like natural persons and legal persons.^{xviii} However, to this day, no country has recognized AI as a legal subject. Thus, works generated by AI cannot be protected by copyright. Users, programmers, or developer companies of AI are also not eligible for protection of works produced by AI as they are not the ones who created the works. The user of the AI art generator only enters instructions into the text prompt, and the programmers and developer companies only build and develop the AI art generator. None of them put their expressions into tangible forms or fixations produced by the AI art generator.

Other than ownership issues, AI art generators also have problems regarding how they work. In essence, AI art generators work by taking works available on the internet and storing them in their database. These works are collected through data mining, most of which are unauthorized. At this point, the AI art generator has infringed copyright by taking other people's works without permission. In the following steps, the AI art generator will combine the collected works and transform them into a new work according to the text prompt. At this point, the AI art generator has also violated one of the moral rights, i.e. the right to integrity. The infringements list gets longer if the AI-generated artworks are then commercialized. Commercialization of AI-generated artwork is a violation of economic rights. A recent example of copyright infringement by AI art generators is the case of Getty Images v. Stability AI. Getty Images—one of the world's most prominent visual media companies—sued Stability AI for taking over 12 million images without permission and compensation. They asked the Delaware District Court to order Stability AI to stop such actions and provide compensatory damages.^{xxix}

The issue of copyright infringement by AI art generators also raises the question of who should be responsible when AI's work infringes others' copyright. In some cases, such as the Getty Images and the three American artists lawsuit mentioned earlier, both parties have sued the AI developer as the responsible party. However, what if the AI program runs automatically based on the patterns it has learned without any intervention from the user or developer? Who should be responsible for this? Well, no one really knows the answer.

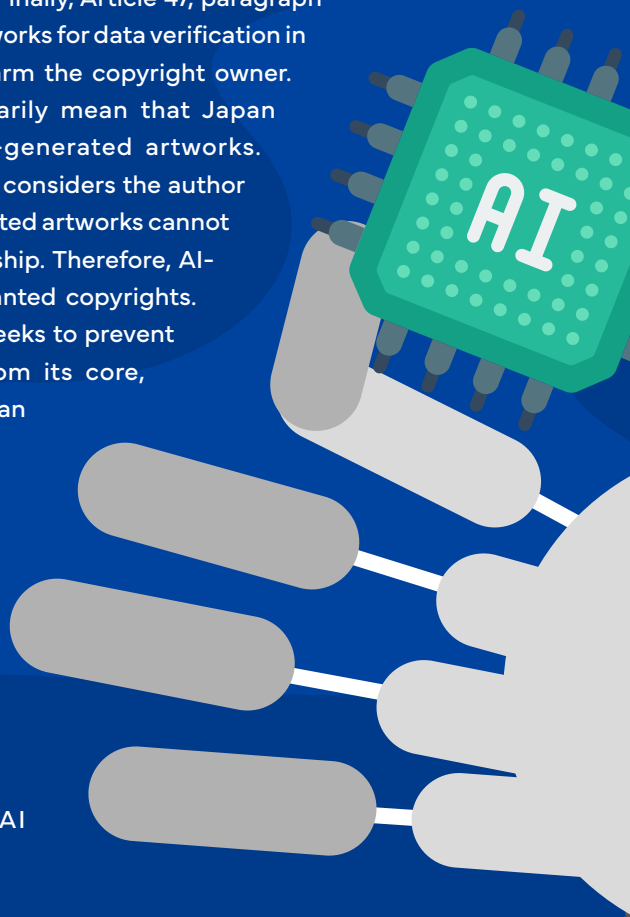




Status quo of the AI-generated artworks in copyright laws in Japan and Indonesia

In 2018, the Japanese government amended their Copyright Act by adding provisions on the aspect of artificial intelligence. This provision is contained in Article 30, paragraph (4), Article 47, paragraphs (4) and (5).^{xxx} Article 30, paragraph (4), permits a person to conduct data mining activities on copyrighted works freely for the purpose of data analysis for machine learning. Data mining, data analysis, and machine learning are the basis of AI programs. However, these activities are only permitted to the extent that they are necessary, are not used for enjoyment as a work, and do not cause harm to the copyright owner.^{xxxi} Judging from this provision, the data mining activities of AI art generators such as DALL-E, Midjourney, and Stable Diffusion are illegal under the copyright law in Japan. Copyright law in Japan only permits data mining of copyrighted works if it does not harm the copyright of the work's original owner.

Then, Article 47 paragraph (4) permits copying copyrighted works for machine learning activities. However, this can only be done if it does not harm the work's copyright owner. Finally, Article 47, paragraph (5) permits the use of copyrighted works for data verification in research as long as it does not harm the copyright owner. These provisions do not necessarily mean that Japan recognizes the copyright of AI-generated artworks. Copyright law in Japan still strictly considers the author to be a natural person, so AI-generated artworks cannot be recognized as works of authorship. Therefore, AI-generated artworks cannot be granted copyrights. Japan, through these provisions, seeks to prevent copyright infringement by AI from its core, which is data mining activities. Japan aims to strike a balance between the two interests through these provisions. It is keen to develop the potential of AI technology on the one hand. Yet, on the other hand, Japan also realizes that the development of AI may potentially infringe on copyright, so this provision was made. This provision reflects the responsible development of AI technology in Japan.





Nonetheless, AI technology still carries great possibilities for copyright infringement, mainly when it is run automatically without human intervention. To address this issue, Japan provides for several types of liability involving users and developers of AI art generators. In case someone creates a work using the AI art generator, and it is found to infringe on someone else's copyright, then they should be liable for it. Such an act can be considered a reproduction of a work. However, such actions are legal if they are only used in the private domain and can only be sued when the work is commercialized or distributed.^{xxxiv} If copyright infringement is committed by an AI art generator that runs automatically, then its developers can be held liable. This is because they do not prevent infringement, even though they know or at least can foresee that such infringement is bound to occur.^{xxxv}



Similar to Japan, copyright law in Indonesia also acknowledges only natural persons as authors. It is shown in Article 1 point 2 of Law No. 28 of 2014, which states that an author is a person or several persons.^{xxxvi} Consequently, AI-generated artworks cannot be protected by copyright because AI does not fall under the definition of an author. However, Indonesia does not have provisions that specifically regulate the liability of copyright infringement by AI art generators. There is also no court decision on copyright infringement by AI in Indonesia that can be a precedent, so it can be considered that the liability for copyright infringement committed by AI in Indonesia is still in the gray area.

This is understandable given the history of Copyright Law, which is currently being enforced in Indonesia and was passed almost ten years ago. At that time, the use of AI art generators was not as significant as today, so the legislators had not thought of it to regulate it. However, as AI art generators become more common in society, the Indonesian government should begin to address how this should be regulated to create legal certainty and protection, especially for the owners of the works.

Recommendation

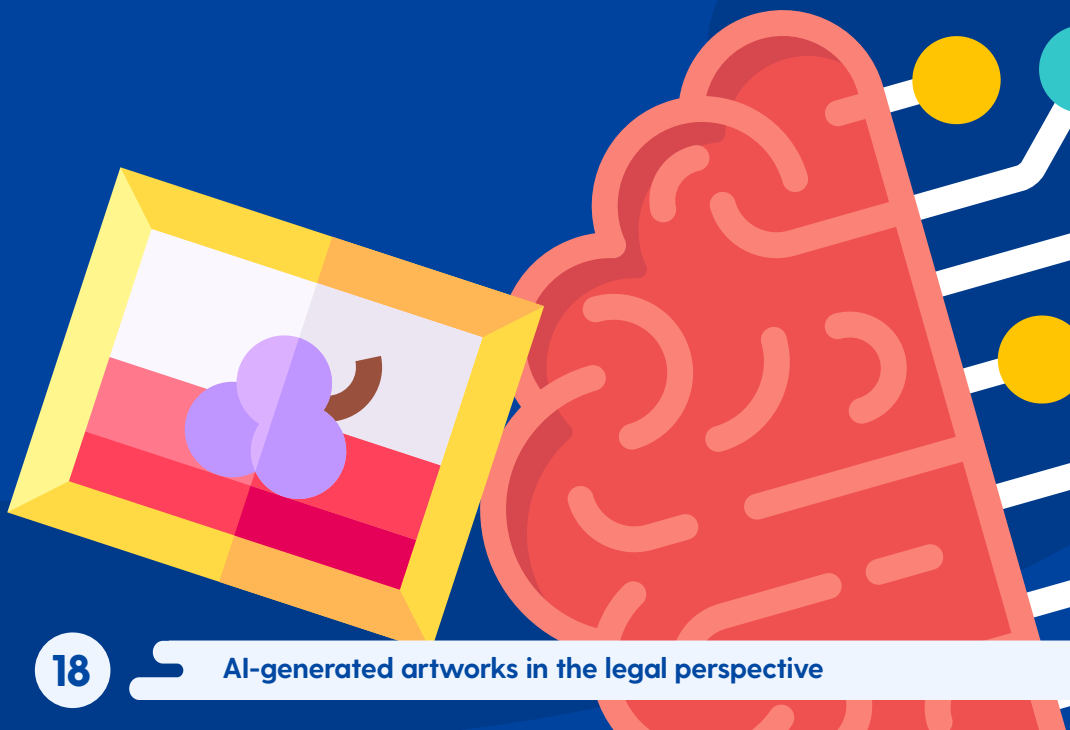
The issue of AI art generators and copyright in Indonesia is an interdisciplinary issue that involves many disciplines and stakeholders. For this reason, a number of stakeholders need to be involved in addressing this issue. However, the state—in this sense represented by the government—has the duty to protect the rights of its citizens, including copyright. Hence, in dealing with artificial intelligence in the copyright domain, the government needs to provide comprehensive regulation to ensure legal certainty regarding the issue. Furthermore, regulating AI in the copyright domain will also ensure liability if, at any time, an AI program infringes on copyrights. In formulating this regulation, the government can learn from other countries that have developed advanced AI technology, such as Japan.

The next stakeholder that needs to be involved in addressing this issue is the AI developers. AI developers need to realize that responsible technological ethics should also follow every technological advancement in accordance with the existing laws. This aims to ensure that the technology developed can benefit humanity instead of harming it. In developing AI programs, developers need to think about copyright aspects so that data mining activities should not violate other copyrights as much as possible.



Another important stakeholder in dealing with this issue is the copyright practitioners, experts, and relevant institutions. Amidst the low awareness and lack of understanding of Indonesian society in copyright, copyright experts and practitioners need to share their knowledge with the public. This aims to raise public awareness of copyright to prevent copyright infringement. Last but not least, as technology users, people should be wiser in responding to existing technological advancements, especially AI technology that can generate artwork. Before using the technology, people need to consider if the technology is safe and has any potential to violate the law, especially copyright. With the involvement of these stakeholders, the issues of AI art generators, AI-generated artworks, and copyright will be addressed.

Artificial intelligence is undeniably one of the greatest milestones in human civilization. However, it may also harm humanity if it is not used wisely. Therefore, the use of AI must be done responsibly and follow the existing laws to benefit humanity, not the other way around.



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