
Legal issues relating to AI-generated art

Thida Nittarayada^a, Nuttathida Voonsiri^b, Wisa Punyanitya^c, Tanawat Pisitchinda^d,
Nasharie Punyanitya^e, Jaturong Poemrungruang^f

^{adf}College of Politics and Government, Suan Sunandha Rajabhat University, Thailand

^bTranslation officer under the contract for the Office of the Council of State's Law
Translation Project, Thailand

^cThe director of W Legal Consultant Co., Ltd., Thailand

^eSt. Stephen's International School, Thailand

Corresponding Email Address of Corresponding Author: thida.ni@ssru.ac.th

Abstract

Currently, the ability of AI image-generating models from text has advanced exponentially as an AI-generated artwork won first place at the Colorado State Fair's fine arts competition. This phenomenon shows that Artificial Intelligence (AI), has not only become rapidly widespread throughout society, but it also creates a significant impact on art creation which is defined to be exclusive to humans. As a consequence, the operations of AI inevitably impose challenges to copyright law.

Our findings demonstrate that the current copyright regime regarding the concept of "authorship" and "copyrightable work" in Thai law, along with some of the other laws around the world, does not recognize AI and AI-generated artwork, due to the lack of personhood. Therefore, this work explores the AI image-generating model while also comparing Thailand's legislation and regimes of copyright law from different countries. Furthermore, the gaps in the current copyright regime and the perception of the artist toward AI will also be analyzed. And, to eliminate these gaps, this research introduces suggestions in order to incorporate AI and AI-generated works under the law.

Keywords: legal , authorship , copyrightable work

1. Introduction

As Artificial Intelligence (AI) enters the art scene, it has changed the way humans make art in various creative professions. This phenomenon also raises challenges in the legal field in terms of AI's status in Copyright law and whether it should be regulated by its human participants. To have a better understanding of AI, we examine the realistic aspect of AI of image-generating technology which allows it to generate images. Also, there will be a brief comparison of regimes of copyright law from different countries.

2. Artificial intelligence (AI)

2.1 Definition

As the term, "Artificial" refers to something made by, "intelligence" refers to the ability to learn and perform suitable techniques to solve problems and achieve goals" (Manning, 2020), to imitate the intelligence of humans. Currently, there are no universally recognized definitions for AI due to the nature of the term. For example, Harry Surden describes AI as "...computer algorithms that can 'learn' or improve in performance over time on some tasks". Furthermore, according to the world intellectual property organization, AI refers to "the discipline of computer science that is aimed at developing machines and systems that can carry out tasks considered to require human intelligence (WIPO, 2020)." with limited or no human intervention. As for these definitions, it is observed that the context

in which AI is defined as “narrow AI”, which performs a specific human task such as driving, writing, translating, or image generating. This notion contradicts a Strong AI or Artificial General Intelligence (AGI) which “has an actual understanding of something impossible for a computer to achieve (Searle, 1980)”.

2.2 Image-generating AI Process

To simplify, scientists collect up to millions of samples such as paintings, portraits, or landscapes. When a person enters a text prompt such as “Monalisa painted by Frida Kahlo”, it creates pairs of text and pictures (in pixels) to define the relationship of data it collects. In creating the image, the program classifies the pictures of “Monalisa” and “Frida Kahlo” by measuring and processing forms of multidimensional vectors for each of its elements (e.g., colors, size, shapes, texture) in a “latent space” (Akten, 2018). Then, the program finds the coordination where the characteristics of Monalisa and Frida Kahlo exist in those dimensions’ mathematical forms. To generate images, the program translates mathematical data back into pixels by using a diffusion model (Computerphile, 2022, 2:05) which means “adding noises to the image until it is unrecognizable” and reconstructs the image based on the given text.

3. Copyright-related issues

In creating art, the most two important things are the human intellect and tools such as pencils, pens, paint, etc. First and foremost, this part of the paper will cover the most controversial part of the issue which is authorship, based on laws in various jurisdictions.

3.1 Distinction between tools and AI

The distinction between AI in comparison to its counterpart tools is its reflection on the objective of the humans who uses it. By definition, a tool is an instrument of manual operation to be used and managed by the hand instead of being moved and controlled by machinery Black's Law Dictionary 1660 (rev. 4th ed. 1968). In other words, there is no way a tool can artistic work can be created, as it requires human ideas, working processes, and execution. In the case of AI, as a partially generative machine, it is clear that it still needs human input such as training data and text to create a picture. However, the program and data set provided by the program designer allow them to “complete work by the instruction of the user” as opposed to an ordinary tool (Ginsburg & Budiardjo, 2019). as they can come up with their own choice of compositions of pictures.

3.2 Authorship

According to Section 4 of the Thai Copyright law, the author is the “person who creates the work” by using “their labor, expertise, skills, and capabilities to independently create such work” (Supreme court case no. 8313/2561, 2018). French law requires the “author’s intellectual contribution” (Cour de cassation, 2000). in the original work and US law requires the author to “have personally created the work” which transfers from ideas into a medium of expression (Creative Non-Violence v. Reid, 1989). Similarly, according to Singapore law, work must be original and created by a human author to be copyrightable (Global Yellow Pages Ltd v Promedia Directories Pte Ltd, 2017). In conclusion, a work shall be copyrightable if 1) it is made by humans that have personhood which begins at birth, and rights and duties as a natural person under the law (Pisitchinda, 2018), 2) it contains some level of creativity, 3) conception and execution of work, 4) it expresses on a fixed medium, and 5) it does not copy other works. Some countries are more open to computer-generated work. For example, “computer-generated work (Copyright Designs and Patents Act 1988, 1988)”, means the work is generated by a computer in circumstances such that there is no human author of the work. Furthermore, according to Ireland law, computer-generated work is “work is generated by computer in circumstances where the author of the work is not an individual (Irish Copyright and related Rights Act, 2000).” and the author shall be “the person by whom the arrangements necessary for the creation of the work are undertaken (Irish Copyright and related Rights Act, 2000)”.

For an image to be created, there are 3 main human interventions regarding Image-generating AI which are 1) the program designer that constructs the algorithm and specifies characteristics of the AI's data set, 2) the program user who enters the text prompt, and 3) the artist who creates artwork that is part of a dataset (Rosa, 2022). (further discussed in 3.3). For the program designer, even though her construction of the program plays a significant role in how the AI creates its work, she did not express their thoughts on a fixed medium base on "their labor, expertise, skills, and capabilities" or "fruit of intellect" since there is no knowledge of the user's intention for creation and no control in the creation such work (Balganesh, 2017). Similarly, for the user, even though he or she has the intention to create an artistic work and gives some scope work by text prompt, such a person does not have control over the creative process since there is no close supervision according to such person physical or intellectual labor for the AI exactly follow (Andrien v. S. Ocean Cty., 1991). Moreover, the execution of the AI is beyond the user's control due to its randomness in the process. The designer and user cannot be co-authors without the intention to jointly create such work. Therefore, it is not sufficient for the program designer and user to become an author(s).

3.3 Data-mining and unauthorized collection of copyrightable works

In creating a data set, there must be "data mining", which is a process of discovering patterns and information of any kind (e.g., text, images, audio) by analyzing a large data set, usually by AI. Currently, only some countries allow data mining for academic study. For example, the EU and the United Kingdom have an exception for data mining to be used for scientific studies (Directive (EU) 2019/790, 2019) by cultural institutions or non-commercial studies (Copyright Designs and Patents Act 1988, 1988). Also, Japan's Copyright law permits data mining for "all purposes" including data analysis for AI, provided that it does not cause harm to the right holder (Thai copyright law B.E. 2537, 1994). As some artistic works used as the training data are from late artists and are already a part of the public domain, there are also a large number of copyrightable artist works involved in the AI's data set. To create an image, the program copies the images entirely for its data set, before converting the original image as a part of the program. In this regard, it will be considered fair use as long as the final product is not "detrimental" to the original work's market and is not used for commercial purposes (Thai copyright law B.E. 2537, 1994). On the contrary, it would be "detrimental" if the alteration to the original work is not transformative or too similar to the original work. For example, in 2022, an artist's illustrations train was used to train AI models to purposefully imitate artistic work in that specific style without proper consent and credit (Yang, 2022, 8:02). This case is considered an infringement of the artist's morals and economics.

4. Suggestion

As the issue raised by the image-generating technology is highly complex, it would be impossible for the current Thai copyright law to comprehend the circumstances. Therefore, this study shall suggest a starting point to advance the copyright law as follows:

4.1 Define AI

As AI is still developing, it is necessary to define it in the law to create a base for AI usage shortly. Also, as for the term itself, this study would suggest that the word "artificial" may be considered too restrictive for this ongoing computer development. In this context, we use the term "artificial" intelligence in opposition to "human" intelligence as they are currently used to imitate human thinking processes (Kelsey, 2006). In this regard, AI technology has the potential to come very close to human intelligence without human supervision, not just imitate them. Consequently, using the word "artificial" implies its human dependency that cannot be completely nonexistent (Bianchini, 2021). Moreover, this terms labels AI's way of thinking as "unnatural" as it is not the same as humans. In this case, not having the same thinking process as humans should not be associated with "unnatural", since

having an intelligence, whether by nature or man-made, is still within the realms of science. Consequently, it is common for machines to be intelligent when considering the science involved and its development, regardless of being similar to humans or not. Therefore, it is more appropriate to name this technology “Synthetic and Natural Intelligence” As these programs are getting more it is preferable to have an open definition.

“Natural Synthetic Intelligence (NSI)” means technology that creates intelligent machines and/or computers.

“Narrow SNI” is AI that is trained to perform individual tasks according to a set goal, either with or without human intervention.

“Strong SNI” means AI which is capable of thinking in a way computers are unable to truly comprehend.

4.2 Define computer-generated art

According to Thai copyright law Section 4 (7), applied works are a combination of the same or different types of all works, used apart from the appreciation of such work for commercial use. However, since computer-generated work is not a product of a human, this section cannot be applied. In defining computer-generated work, the most important element is to clearly outline the amount of human intervention. Consequently, there may be a distinction between AI-assisted work and AI-generated work. The reason for separating these 2 types of works is due to the objective of such artistic work and its social context. To clarify, human does not appreciate art only because of its aesthetic qualities or the artist’s excellency. In some cases, the person’s stories and challenges embodied in their work convey a personal message. In this regard, if an artist uses AI as a “tool” to assist the working process, it still allows room for their expression of intellect onto a medium, has control over their work, and is worth being protected under copyright law. The main distinction may include the control of a such person over his/her work, the purpose of use of the AI (whether to generate an image or to explore compositions of such artwork), and/or the author of the work (whether it is clear who is the author). Consequently, the definitions may be as follows:

“computer-generated work” means an output created by SNI during its operation

“computer-assisted work” output that is generated by SNI with material human intervention and/or direction.

4.3 Define authorship for computer-generated work

According to this study, it is observed that the idea of computer-generated work still lacks clarity in terms of its relationship with the notion of authorship in Thai copyright law. On the contrary, copyright laws of the United Kingdom and Ireland have already specified such type of work. Therefore, there should be an amendment to the current law. In this regard, humans facilitate the creation of computer-generated work and exploit it. As AI still needs human instructions and supervision, computer-generated work would not exist if not for the action of such parties. Consequently, there should be some rights for the parties contributing to human intervention: the designers, the user who creates the text prompt, and the artist(s) who create pre-existing works. However, as the human intervention, in this case, is not sufficient to be an “author”, there should be a new definition for the author to include human participants relating to AI as follows:

Human intervention or supervision means the programmer in possession or control of the SNI and/or a person(s) giving sufficient direction, undertaking any other arrangements or methods, and/or providing or permitting the use of pre-existing work necessary for the creation of the work.

[Authorship of generated work] means a generation of computer-generated work with limited human intervention or supervision, provided that such work does not cause harm to any rightsholders.

Consequently, for authorship of generated work, there should also be rights for parties

contributing to the human intervention or supervision. In this regard, the duration of protection of such works would be shorter when compared to the original copyright regime. Since AI generates such work, human participants should not be given moral rights to prevent such work from being used in bad faith (Denicola, 2016). For the parties who would like to commercialize artistic generated work, economic rights will be given. This is to strike a balance between the encouragement of human artists and the commercial use of computer-generated art which are widespread in society. Furthermore, in the case where the computer-generated work recognizably resembles a certain style from an artist, such an artist should be entitled to the right to be credited as the author of the pre-existing work.

4.4 Define data-mining

Data collection is a major part of AI since it learns and processes based on the data given. Since copyright infringement is frequently seen in the digital art community, having an image-generated AI seems to amplify the issue as it rises in popularity. To mitigate risks regarding the unauthorized use of copyrightable artistic work, there should be a requirement for data used for training AI. Consequently, the definitions may be as follows:

“Input” means a set of data, whether copyrighted or not, collect and/or use for training the AI to mimic such data or analyze data to find patterns for a specific purpose, provided that it does not cause harm to any rightsholders.

5. Conclusion

Regarding technological advancement, we could not deny that the benefit of AI will change the way humans make art. However, art is something that humans use to revisit and shape their experience both individually and as a society as a whole. Regardless of the aesthetic elements and skills of an artist, artistic work is not just a piece of the medium, but rather their whole identity as an expression. Therefore, copyright should be able to encourage the capability of efficient and accessible innovations to the general public while also preserving the dignity of artists so they can create something that, not only is pleasing to the eye but also food for the mind.

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