Artificial Intelligence as Artist:

Copyright and the Rise of Creativity

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The meteoric rise of the use of artificial intelligence (AI) in the arts has sparked fierce debate globally about ethics, copyright, fair use, and authenticity. David Tan, from the National University of Singapore, addresses some of the most salient issues on the use of AI in the creative process, including how the licensing markets of literary works could be adversely impacted. Nonetheless he makes a case that AI could ultimately be harnessed by working artists as a tool to further their creative potential and artistic vision.

Introduction

In May 2023, artists in Singapore were reportedly outraged when a Twitter user posted about DBS Bank employees using an artificial intelligence (AI) tool to generate art. The activity, albeit part of an internal DBS event, involved employees producing a picture using the tool and having it printed on a tote bag, unsettling local artists concerned with a displacement effect. Illustrator Nur Sabrina commented: "AI art in Singapore will essentially destroy local art talents and urban culture to an extent." Ahmed Elgammal, founder and director of the Art and Artificial Intelligence Laboratory at Rutgers commented that: "Everybody is now talking about generative A.I., and 'A.I. Art,' about the dawn of a new era of creative A.I. that will take the jobs of artists. We see a huge backlash from artists and the art community."

Globally, and in Singapore, there is certainly significant public interest in what ChatGPT can deliver, whether in assisting students with writing school assignments or in generating scam emails. It

has been reported to be the fastest-growing consumer application in history, far surpassing the success of TikTok, Facebook and Instagram. In addition to ChatGPT, OpenAI also operates DALL·E which is an artificial intelligence (AI) system that can create realistic images and art from a description in natural language. These sophisticated AI technologies which train on vast quantities of authorial works to generate new content in response to text prompts are often described as "generative AI", and the manner in which these copyright-protected works are employed in training the AI has attracted a number of high-profile lawsuits since the start of 2023.

The new GPT-4 by OpenAI, touted to be revolutionary in how it can respond to both text and image commands, is available for a modest fee of USD$20 a month to ChatGPT Plus subscribers in the United States (US). Not too long ago, many of us were obsessed with apps that could make us look like superheroes; today we are using a chatbot to help us write school essays and magazine articles, compose poems, and create artworks.

While the debate on whether autonomous AI-generated works deserve copyright protection appears to have momentarily taken a backseat, the present legal issues with AI systems that can produce essays or create realistic images and art from a description in natural language text prompts are very much occupying the centre stage in copyright law discussions as well as within the arts community in Singapore.

Singapore made headlines when it ambitiously revamped its Copyright Act in 2021 that consolidated all previous amendments, rewrote the legislation in plain English and positioned the Act to be future-ready. The new Act was carefully calibrated to negotiate the complex relationships between protecting rights owners and artists and enabling

the public and other users to have access to these works to create new ones. Significantly, by codifying an open-ended fair use provision akin to that in the United States, works protected by copyright—which include music, videos, images, lyrics—may just be more readily available for transformative repurposing on social media platforms such as TikTok, Instagram and Facebook. However, at the time of public consultation in the mid-2010s, the generative AI applications such as ChatGPT, DALL·E and Stable Diffusion were not even in the public consciousness.

This article discusses how Singapore copyright law is poised to tackle two issues relating to generative AI and the creation of artworks:

1. Whether AI may be recognised as author;

2. Whether the use of copyright-protected works for machine learning ("input") and the works created from natural language command ("output") are infringing copyright;

3. Whether a fair use defence applies to such uses.

Authorship of Works— The Author Must Be a Human Being

In April 2016, advertising executive Bas Korsten unveiled *The Next Rembrandt*, a computer-generated 3D painting that had been created by a deep learning algorithm with facial recognition software that had spent 18 months examining 346 known paintings by the Dutch painter, using 150 gigabytes of digitally rendered graphics. It was the result of a partnership between several industry leaders like ING, Microsoft and T.U. Delft. In 2018, Obvious, a Paris-based collective, developed its painting *Portrait of Edmond de Belamy* through Generative Adversarial Networks (GAN), which used a sample set—in this case, thousands of portraits— to recognise patterns before creating new pieces with that knowledge. In October that year, revered auction house Christie's in New York marketed the painting as the first portrait generated by an algorithm to come up for auction, and sold it for USD\$432,500, over 40 times its initial estimate. Although the price paled in comparison against traditional masterpieces like Claude Monet's *Meules* or Pablo Picasso's *Le Rêve*, *Portrait of Edmond de Belamy* was noteworthy for its claimed artist: it was not a person but an algorithm (min G max D x [log (D(x))] + z [log (1 − D (G(z)))]). In the field of music, the composition of polyphonic chorale music in the style of Johann Sebastian Bach by a deep learning neural network called DeepBach, developed by Gaetan Hadjeres and Francois Pachet at the Sony Computer Science Laboratories in Paris, has also made headlines in respect of AI-composed music.

Today, rapid advancements in AI capabilities to create art continue to redefine the human role in the creative process. Most of these works of art generated by computers rely heavily on the underlying algorithm and creative input of the programmers; the computers are akin to paintbrushes or chisels—they are tools used in the creation of the artworks. Many online commentaries, however, do not make a clear distinction between whether the AI is used as a tool by a human individual or the AI independently and autonomously produces a work without supervision or significant human intervention. For the services provided by OpenAI, which includes ChatGPT and DALL·E, the terms of use state that "OpenAI hereby assigns to you all its right, title and interest in and to Output" but cautions that "[d]ue to the

nature of machine learning, Output may not be unique across users and the Services may generate the same or similar output for OpenAI or a third party." What this means is that, *assuming* the work generated by ChatGPT or DALL·E is capable of attracting copyright protection, the copyright owner is the user who inputs the text prompts. Under the DALL·E Content Policy help section of OpenAI's website, it is stated that "subject to the Content Policy and Terms, you own the images you create with DALL·E, including the right to reprint, sell, and merchandise— regardless of whether an image was generated through a free or paid credit."

But the assignment of copyright to the user who provides the text prompts is valid *if and only if* the AI-generated output may be attributed to a human author/creator in the first place. The Singapore Court of Appeal had said that for copyright to exist in any literary work, the authorial creation must causally connect with the "engagement of the human intellect."[1] The Court then proceeded to define human intellect as "the application of intellectual effort… or the exercise of mental labour," which a non-human author is deemed to be unable to provide.[2] Furthermore, in Singapore's new Copyright Act 2021, a suite of statutory provisions when read together indicate that only a human individual may be an "author". In summary, works autonomously generated by AI would not reflect human personality.

However, this does raise questions for works produced by generative AI systems such as ChatGPT and Midjourney responding to human text prompts—whether these are merely AI-assisted outputs in response to the human user's free and creative choices. In most scenarios involving generative AI systems such as ChatGPT or DALL·E, the text prompts provided by human users may not qualify as sufficient human intervention. What is clear today is that when the human input lacks a

sufficient causal connection with the final work, then the human author, from whom a work originates, cannot be identified. As a result, what we have is an authorless work, no matter how aesthetic, useful or valuable. Therefore, there may be no copyright in these AI-generated works.

Both Generative AI Learning Input and Output Can Infringe Copyright

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For ChatGPT to respond to the questions we input, it needs to have access to millions or even billions of literary works—many of which are protected by copyright—in order to produce fully fleshed out answers and results based on digitally accessible text-based information. Often referred to as the input of data for machine learning or machine training, an AI system is "fed" the relevant works in order for it to function effectively. To date, the companies behind these impressive generative AI systems have not disclosed the datasets they use for machine training. Nonetheless, for an AI system like Stable Diffusion to generate images based on text prompts, billions of text-and-image pairings have to be loaded into the computer memory, which are then encoded as an essential element of training the model. When "fed" with images for machine learning, another algorithm will be scraping the internet for content from various websites, invariably accessing content without permission and in violation of express prohibitions against such conduct contained in the terms of use of these websites. Generally, in the first stage of the data mining process (even if the AI system is not directly fed the relevant input), web robots may infringe the reproduction rights of the

owners in the original literary, dramatic, musical and artistic works if such works are copied. It is therefore not surprising when Getty Images filed a lawsuit against Stability AI in the US in February this year for copying over 12 million photographs from its collection. This follows a class action lawsuit by artists filed in January against Stability AI, Midjourney and DeviantArt for infringing their copyright through the use of training images.

When ChatGPT or Stability Diffusion generates text or images based on the user's questions or commands, the output can also infringe copyright in a source text or image if it is substantially similar to the original. For instance, in generating an essay, ChatGPT may not necessarily paraphrase all the sentences from its training dataset of literary works, and will invariably reproduce significant amount of text verbatim from its sources. In the Getty Images lawsuit, the claim identified some of the output delivered by Stability AI to include a modified or distorted version of a Getty Images watermark, underscoring the clear link between the copyrighted images and the final product. In such circumstances, this would be another instance of copyright infringement. One should further note that copyright does not protect the style of an artist, no matter how distinctive; this includes a painting-style (like Picasso's distinctive cubist style or Warhol's silkscreen treatments of photographs), writing-style or singing-style. In the same way that we can freely paint and sell a scenery of the Singapore Botanic Gardens in a Monet impressionist-style (assuming that Claude Monet's paintings are still protected by copyright), it is not copyright infringement if DALL·E, in response to a prompt "Singapore Botanic Gardens in the style of Monet", generates a particular image that evokes Monet's *Bridge Over A Pond Of Water Lilies*.

Is It Fair Use?

But is it nonetheless fair use? In Singapore, section 191 of the Copyright Act enumerates a non-exclusive list of four factors to be weighed to determine whether an unauthorised use is fair, and hence a permitted use, much akin to the legal position in the US. In the US, fair use has allowed Google Books, acting without permission of rights holders, to make digital copies of tens of millions of books to establish a publicly available internet search function. An important feature is an internet user can use this function to search without charge to determine whether the book contains a specified word or term and also see snippets of text containing the searched-for terms. It was important to the US court that Google Books augmented public knowledge by making available information about the books without providing the public with a substantial substitute for matter protected by the copyright interests in the original works. But ChatGPT, Stable Diffusion and many other comparable AI programs are not search engines. A number of them are highly successful commercial enterprises, with Stability AI valued at USD$1 billion, and some charging a user fee for their services. In evaluating the extent to which a work is transformative, the court will typically consider the *purpose* of the original vis-à-vis infringing secondary works; the secondary use should be plainly different from the original purpose for which they were created (the first of the four factors). There is also little transformative purpose to be found as the AI would be accessing and reproducing the creative expression in these works in the outputs, i.e., the works would have been appropriated for their creative elements rather than their underlying facts. Generative AI systems are trained essentially with existing creative works

and then they typically remix them to derive more works of the same kind based on our text prompts.

ChatGPT's replies to our text prompts are not based on a process of reasoning or akin to human comprehension; it is based on the probabilities of certain words occurring together, and may generate paragraphs of text from copyrighted literary works in its response. To be clear, some of the output generated by AI may be highly transformative, but it is the use of the creative works in the machine learning process that is arguably not transformative. Last but not least, such unrestricted and widespread would have a substantially adverse impact on the licensing markets of these copyrighted works.

Conclusion

As technology develops at a breathtaking pace and more and more generative AI systems become freely accessible, the traditional mode of producing, disseminating and licensing literary, dramatic, musical and artistic works will also have to evolve. On one hand, this is a welcomed renaissance in which AI has enabled the democratisation of art such that anyone may be an artist. On the other hand, artists will now have to change their way of creating art, and perhaps work hand-in-hand with AI to break new frontiers.

In his interviews with artists between 2017-2020, unlike the current backlash, Ahmed Elgammal discovered that many artists who worked with AI found that it gave them sparks of new ideas, new directions, new ways to create their art. However, he noted that with many of the generative AI systems today:

"Text-promoting helped A.I. get out of the uncanny valley. But it killed the surprise… using language as part of training makes the model very constrained in creating inspiring visual deformations. A.I. now creates its visual output confined by our language, losing its freedom to visually manipulate pixels freely without prevarication from human semantics. In a sense, A.I. is becoming more like us—no longer able to see the world with an eye that complements or challenges us."

Artists should not fear that they will be replaced by AI. They should be looking at how internationally renowned artist Sougwen Chung uses hand-drawn and computer-generated marks in her drawings, sculptures and installation works, and how Scott Eaton creates and trains AI to translate his drawings and animation into photographic, figurative representations as well as abstracted sculptural forms, and then redefine their own oeuvre by using AI as a tool to further their artistic vision. The future is not one of the decline of the arts, but the rise of creativity. □

About The Author

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Notes

1. *Global Yellow Pages* Ltd v *Promedia Directories* Pte Ltd [2017] 2 SLR 185 at [24] ("*Global Yellow Pages*").

2. *Global Yellow Pages* [2017] 2 SLR 185 at [24].

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