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<p align="center">Why AI Works Need a Unique System of Copyright</p>

Since late 2022, artificial intelligence tools have become more accessible than ever before. DALL-E 2 and GPT-4, both by OpenAI, have single-handedly changed how people look at AI. Other tools are on the rise too. The recently released Midjourney, an image-generating AI, has been widely successful, with over a million users in its Discord interface. However, with the rise in popularity of these tools, so also comes the question of who can copyright them. Some argue that the output of an AI should be the copyrightable property of the user. They believe that the effort and creativity involved are enough to qualify for copyright. Meanwhile, others believe that the output of an AI should be the property of the company that owns the AI tool. Some believe that an AI output should be the property of the artificial intelligence itself. And finally, there's the sentiment that AI works should not be copyrighted, and resultantly be released in the public domain for anyone to use. The latter is the decision made by the US Copyright Office in response to the recent controversy over who should be able to copyright such things. Not being able to copyright AI works is the best option because it follows previous policy, makes the most sense logistically, is fairer to everyone involved, and has the least potential for abuse.

Before starting, it's important to have some background information on how

exactly AI work, as well as the different types. The most notable example, and the one most used in today's AI tools is the neural network. An AI can have thousands or millions of virtual "neurons" connected in layers in which connections are strengthened or decreased to incentivize or discourage certain behaviors and outputs. This is a form of machine learning and is the most widely used method used today. Something else that should be mentioned is the software that uses this method. DALL-E 2 (image generation) and GPT4 (text generation), both owned and developed by OpenAI, are predominant examples of AI tools. However, more recently, a program called Midjourney has been getting more attention. The way that users interact with these tools is also important. A user will typically first provide the AI with a "prompt" in the form of a text input. Then, the program will output a result intended to fit this prompt as closely as possible. For example, giving the prompt "Toaster waffle with wings flying through the air, in the style of Van Gogh", yields a somewhat expected result. In most cases, the AI tool allows one to generate "variations" of a generated image. These images are re-generations of the previous result and look similar. However, they have differences such as the object (the aforementioned toaster waffle), being put at a different angle or moved slightly over to one side. Additionally, in the DALL-E 2 example, users can also erase parts of an image and have the AI regenerate them. Alternatively, the image can also be extended.

In March of 2023, the US Copyright Office released a statement of policy that gave guidance on applying for copyright of AI-generated works. In it, they stated, "In February 2023, the Office concluded that a graphic novel [9] comprised of human-authored text combined with images generated by the AI service Midjourney constituted a copyrightable work, but that the

individual images themselves could not be protected by copyright." (Office 1). This sentiment is also echoed throughout the rest of the paper. With this information, it can be inferred that the US Copyright Office allows the arrangement of AI-generated images and text to be protected under copyright. However, the images alone cannot be copyrighted. For some, this may seem counterintuitive. It can seem unfair that the person putting the work in to think of a prompt and generate variations until they get a desirable result can't apply for copyright for their hard work. However, the US Copyright Office (USCO), has stated that copyright has a requirement of human authorship. Additionally, it is said throughout the text that providing a prompt to an AI does not meet these requirements. (Office 2). Essentially, the current situation in the US is that AI-generated images can't be copyrighted. Personally, this seems like the best option because I believe that providing a prompt and generating variations or re-generating parts of an image isn't enough to amount to "human authorship". However, some disagree, believing that either providing a prompt is enough, or that the policy should be changed to account for AI.

One such example of this belief is the stance of Briana Hopes. Though speaking in the context of patents, in her scholarly works, she has expressed the sentiment that an AI itself should be granted patents for ideas they autonomously create (3). In theory, this is the best option because it's the most fair. The idea behind is a good one, as it's giving ownership to the one who did the work and technically created it. However, there are numerous problems with this argument. Starting with the logistics of such an argument, it's impossible to give an AI ownership over something. Effectively, this would boil it down to one of the other three sides, those being: the output can't be copyrighted, the output can be copyrighted by the user, or the

output can be copyrighted by the owner of the AI. Letting the AI own an image or patent may even mean that *nobody* can use the work. This is because a computer program is completely incapable of making decisions, and will instead follow what it's been programmed to do. This means that it's up to the developer or whoever gave the developer instructions. As a result, any patents or creative works copyrighted by an AI will almost definitely land in the hands of the owner of the AI, because it's not like the AI can make decisions on what to do with the copyright. Though in theory granting artificial intelligence copyright is an interesting proposition, in practice it's simply not feasible. That said, if the copyrights to AI were granted in name only, it could be an interesting way of crediting an AI.

Going with the line of thought of a developer owning the output of an AI creates some interesting points too. Specifically, the point that if someone creates a program that generates beautiful works of art, whether it would qualify for copyright. Surely the effort involved in creating such a program, especially if it's just one person, would warrant "human authorship and creativity" in the eyes of the USCO. In "Do Androids Dream of Copyright", Gia Jung argues this, stating "While AIs do not dream of copyright protection, their creators and proponents do. They need a copyright regime that adequately reflects and delineates the protection of that dream."(Jung 27). Copyright protection shouldn't be ignored for all AI, which is what Jung argues in their paper. The main confliction point on whether the user should be able to own the output of an AI is the human authorship component. It seems indisputable that carefully and creatively writing a program to generate one specific image would count as human authorship, even if the human didn't technically create the final result. Luckily for programmers, the USCO

has addressed this, noting that proceeding forward they will address AI-generated works on a case-by-case basis (Office 2). That said, there may be concerns with the current policy. As such, the USCO could potentially consider a policy change.

Though there are some advantages, there are clear examples of why certain AI works *shouldn't* be copyrighted and instead addressed on a case-by-case basis. One such example is given by Jesus Zatarain. In the text, he cites an example of a thought experiment in which everything generated by AI can be copyrighted. Specifically, the example given in the essay discusses the copyrighting of AI and algorithmically generated work en masse. This kind of situation would result in companies owning every possible intellectual property to ever be conceived. (Zatarain 2). This is a clear example of why it wouldn't work to have unrestricted copyright access, as well as why the human involvement requirement is put in place. Without a human involvement requirement, people could claim ownership of something simply because an algorithm came up with it earlier. The human authorship component is required to preserve the main intention of copyright - to protect creative works. Humans in almost all cases should get priority over computers when it comes to copyright.

Another reason for the human involvement requirement and why it should still be in effect goes back to the reasoning behind copyright in the first place. According to their official website, "Copyright is a type of intellectual property that protects original works of authorship as soon as an author fixes the work in a tangible form of expression." (What is Copyright 1). The goal, as previously stated, is to protect original works. However, giving an AI a prompt doesn't really count as an original work. It's not very creative, and doesn't really involve any expression.

The copyright office addresses the goal behind it, stating "...Copyright protects expression, and never ideas, procedures, methods, systems, processes, concepts, principles, or discoveries." (What is Copyright 1). The main act of creativity when using an AI to generate images and text is the idea. The user can have a vision of what to create, and direct the AI to do so.However, as that statement reveals, copyright does not protect ideas. Essentially, though some creative effort may be involved, the AI is doing the creative work. The user can't accurately and perfectly predict exactly what the output of an AI will be. If they could provide a prompt that could perfectly capture the intent of the user and the visualization they had, it's possible that they could be protected under copyright. However, we are nowhere near that level of communication with computers yet, so that argument is still a long way out.

There is a point to be made, though, that not being able to predict an output doesn't necessarily mean that it can't constitute a creative work. Some paintings, for example, have used unorthodox and unexpected methods such as letting the paint drip in different ways to the end where the artist has no way of knowing what's going to happen. However, arguments that compare the unpredictability of AI to the unpredictability of these kind of methods completely miss the point of why exactly the AI would need the output to be predictable. First of all, most people applying for copyright on AI generated images are not trying to copyright abstract art. The example of paint dripping would end up being abstract in almost every case. On the other hand, there's the case of AI. An artist that draws faces has a say in exactly how these faces are going to look like. They have a say over every minute detail put into the artwork. This is also the case for abstract artists. An AI user, on the other hand, has considerably less say over what the

final image will be. Essentially, the user of an AI doesn't have a say over how everything's going to look like. An artist has a say over everything on the paper. The abstract artist chooses where to drip paint, but the AI user has no such capabilities. At some point in the future it may be possible for computers to be advanced enough to read the exact intent of a human being. Until then, however, AI generated works are simply not creative work.

Though not without its problems, there are certainly some good points to be made when it comes to the user being able to copyright the output of an AI. One point, made by legal professor Pamela Samuelson, states "If anyone needs to be designated as owner of rights in the outputs, it should be the user. That person possesses the outputs, discovered that the potential commercial value of the outputs, and is generally best situated to assess and exploit that value." (3). The author, though not directly opposed to the possibility of AI outputs being in the public domain, expresses that the user should be the owner and copyright holder of any outputs made through their prompts. They point out that the user's unique ability to exploit the commercial value of the output puts them in a good position to copyright it. This statement also implies that there might not need to *be* any human authorship in the first place, or at the very least, the bar should be lowered. This goes back to the main contention point of the argument, what most other points boil down to. That main point is: whether or not the requirements of copyright should be re-evaluated. Presently, there aren't as many points of contention on whether AI generated works *can* be copyrighted under current US policy.

This specific example of whether or not providing an AI a prompt is enough to constitute creative work is simply a matter of opinion. It's difficult to back either stance with data and

evidence. I believe that providing a prompt to an AI, or even editing the image with the built-in tools isn't enough to constitute human authorship and involvement. However, it doesn't even matter that much. In a letter to a person applying for the copyright of a comic book that included AI-generated images, the US Copyright Office stated that if "substantial edits" are made to an AI-generated image, with Photoshop or other similar software, "those edits could provide human authorship and would not be excluded from the new registration certificate" (Letter 12). This creates a situation in which a user can generate an image with AI, photoshop it to be sufficient to the Copyright Office's standards of human authorship, and only share the original with the Office to show the changes made. In this case, the user of the AI can apply for the copyright of a derivative of an AI-generated image and worry less about copyright infringement.

In all honesty, it's quite hard to find a rebuttal to many of the points made by people of opposing sides on the AI copyright field. All parties make great points, and it's difficult to necessarily choose one side over the other. The effectiveness of all these sides, or at least parts of them, leads to the conclusion that copyright policy with AI requires a unique solution. To not allow any machine's outputs to be copyrighted is completely unfair to the developer of the program. That said, if all computer outputs were copyrightable there would be rampant abuse of the system, and human involvement wouldn't even be a factor. To not allow the user of the program to copyright the output is unfair to them because of the effort and time they put in. As such, I believe the best option for this essay is to create a new and unique policy specific to AI and computer outputs. One such unique solution is presented by Kalin Hristov. They state "The paper proposes that instead of redefining "authorship" to include non-humans, it is simply

necessary to reinterpret the terms "employee" and "employer" in the made for hire doctrine of the U.S. Copyright Act. This reinterpretation would allow the current IP system to continue promoting "the progress of science and useful arts" without a lengthy or controversial overhaul of the rules and guidelines currently set in place." (Hristov 1). While the author advocates for more ownership of AI-generated works to the programmers and owners of AI, the sentiment that the US Copyright Act should be updated to fit current world events is a common one.

The USCO's statement of policy, while an effective option, could be improved drastically. Though it creates a good starting point, there are still problems with it that need to be addressed. I believe the current US policy shouldn't be done away with but instead modified. Specifically, it should be left up to the companies making the AIs whether or not they want to release images into the public domain or allow users to copyright them. In addition, computer outputs released by a single person likely have a lot more time and individual creativity attached to them. As such, these cases should be considered a lot more carefully. At the end of the day, though, the US's stance of releasing AI-generated works into the public domain, while an unsavory option for some, is better than alternatives. Moving forward, it's important that people carefully consider AI and the consequences each option will bring. As copyright, professional Dave Davis concluded in his influential article "AI and Copyright: What Is Old Is New Again?", "...now is the right time to be thinking these things through--before an AI comes knocking at the door, demanding its rights." (Davis 1)

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