



Issue 16, Volume 2 April 2024

Can AI Have a Signature? Legal Ownership and Authorship of Creative Materials Involving Artificial Intelligence

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ACKNOWLEDGEMENTS

This paper was written for WRI 100: Advanced Writing with Yiran Xu.

Can AI Have a Signature?

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Abstract

The question of authorship and legal ownership in AI-generated creative materials has become a contentious issue on an international level. This paper investigates the complexity of attribution of legal copyrights within the framework of the U.S. Copyright Law system and explores potential solutions to this evolving dilemma. The U.S. Copyright Law, rooted in the protection of inventors' exclusive rights, extends to both authors and owners, intending to safeguard intellectual property in the judicial field. AI-generated works, however, present a unique issue as they blur the lines of authorship in presented works. The U.S. Copyright Office, while expressing interest in addressing these issues, currently rejects applications attributing AI as the primary creator due to historical legal precedents, marking uncertainty with both creators and the general public about the future of commercialized AI-generated works. This paper highlights the intricate legal and philosophical questions surrounding AI and copyright law, emphasizing the need to carefully consider the roles and responsibilities of both AI and its users in the creative process. As AI technology continues to evolve, these debates will shape the future of copyright law's application to AI-generated works. The current application of AI in the creative process does fit within the U.S. Copyright Law, but with further evolution, the scope of human involvement could be reduced.

Keywords: AI, copyright, authorship, ownership, AI-generated, technology

1. Introduction

1.1 A Digital New Age

The recent introduction of generative artificial intelligence has made waves in the way we perceive creativity and creative works. Creatives have increasingly used AI as a part of their process. Traditional and digital artists have begun to experiment with different AI engines to generate prompts, audio recordings, images, and more.

Inventors of innovative products also are starting to look towards artificial intelligence to push the boundaries of all current technology. As users utilize AI as part of their own creative process, the idea of how much of the work must be attributed to AI technology has been brought up. Should AI-created works receive copyright protection, and if so, who should that protection be attributed to?

1.2 An Apple by Any Other Name

For creatives, the need to protect their work through the legal system is paramount to the ownership of their work. Any person can apply to have their work copyrighted, and rather than explain what can be under copyright, it is simpler to outline what cannot be under copyright. A title, name, short phrase, slogan, or simplistic description of a product is not protected. For example, you could receive copyright protections for a certain variety of apple that you have cultivated that is different from others in the market, and name it a 'Scholarly Apple,' but you would not be able to copyright the term 'apple.' The purposes behind copyright are more nuanced. With the use of copyright registration, one can ensure their work can be used commercially without having a competitor diminish the time and personal investment they have made. Copyright gives the power to the owner of the work, which is why it is a useful tool for all artists. As the owner, you can decide to be the only person able to commercialize your product,

but on the other hand, you also have the right to place your works into the public domain. Going back to the Scholarly Apple, you could decide that any farmer could follow your cultivation process and make their own apples to sell using your ideas with your implicit permission.

Applications for copyright registration require the applicant to detail the people involved in the creation of the work so that it can be considered. Due to this, AI engines have been attributed credit in applications for copyright registration. However, historically only people who have contributed directly to the application have been included in the credit section. Attribution is how we detail who is involved in the creation of a work. If you were to invent a new fork, you would likely attribute copyright to yourself, the person who drafted and made the design. If you worked with a company that will produce that fork for you by using their tools, you may agree to offer them partial ownership so long as they give you a percentage of their profits. Likewise, if you and your associates write the script of a new movie, the authorship of that unique creation would be split between you all.

Copyright attribution is not always equal, sometimes one party could be the sole author and owner of a work, or in other cases one person could be the sole author, while a group of people or a company could have ownership of the work. The idea that a program would need to be given credit is commonly disregarded, but because of how AI can generate material some believe it should be included. This has become a decisive argument, as the U.S. Copyright Office has so far rejected all applications that heavily credit or involve AI generation in the work (Federal Register, 2023). Scholars are in no unanimous agreement on what should be done about copyright attribution involving AI with several varying theories that range from keeping all AI works in the public domain, to those who attribute all credit in any work created using AI to the original programmer of the AI's software. The theories consider whether the person who used AI

would be able to make any legal decisions over the work they have done using the technology, even if the resulting product is sufficiently unique to be attributed copyright protection.

1.3 Change on the Horizon

For this paper, I will be focusing on the U.S. Copyright Law's decision on AI, as technological development involving AI and other startups were spearheaded in the United States. The U.S. Copyright Office to this point still has not made a decisive stance on the attribution of copyright to AI works (Federal Register, 2023). However, it has rejected some copyright claims due to the argument that all works of authorship must be created by a human being, declaring that "[it] will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author." (U.S Copyright Office, 2021, pp. 300.21-300.22). By the U.S. Copyright Office refusing to attribute the copyright this would mean the work would be bounced back to square one, with nobody involved having legal right over the idea. Neither the person creating the prompt, the programmer who made the program, or any company involved in the project would be able to obtain copyright. The creative work would be in limbo, that is effectively the public domain until a person, or some third party obtains copyright over it.

However, The U.S. Copyright Office's decision has not yet been set in stone, so any of the presented theories is a candidate to be the amendment to current copyright regulation. In the future, all works using AI in some way could be attributed credit, regardless of the current opinion of the U.S. Copyright Office. In my research I have discovered the basis of copyright laws, how these laws are currently being upheld in relation to AI works, and proposed models on how the laws could be changed to better support a society with rapidly advancing technology.

2. AI is a Tool, Not Unlike the Camera

2.1 Copyright's Fundamental Purpose

Copyright protection is vital for inventors, and it is such an inalienable right that it was included in the United States Constitution. The reason behind this is because copyright protection is the driving force for innovation in modern society. Governing bodies must encourage progress through innovation for their economy to advance, but how can this be done? This is a deeply philosophical question, but we can say that innovation is stifled without motivation for growth. Medicine is often developed to combat diseases we are currently experiencing; just as new laws are made when loopholes are found. Technology as well, thrives in a constant cycle of both refinement and exploration.

Exploration can be attributed to unique works, works that have no prior work attached to it. For example, if you were to invent a device that could read someone's thoughts, this would be considered a unique work. Derivative works on the other hand are closer to refinement. If you invented a light bulb that operated not on electricity but pure sugar, this would not be unique, as a light bulb was created before. However, while your work is derived from that original lightbulb, it is still different enough to be your own idea. Most works that are copyrighted are derivative works, but that does not mean the creator worked any less than the creator of a unique work. If a doctor were to develop a better medication for seizures, one that is derived from medications used in the past, they would still have worked hard to achieve this goal.

No ethical person would ask for said doctor to spend years creating this improved medicine without being able to live off their work, as everyone deserves to be compensated for both their aptitude and experience. The delegates who wrote the constitution understood this too, but how do you compensate for something intangible? It is impossible to decide the worth of an

idea that has not even gone into fruition yet. Rather, it is easier to empower innovation by giving control to those who can innovate. If someone can create something, they are given the right to decide what happens with it within the bounds of the law.

2.2 Why Copyright?

Copyright law is extensive and complex, with many in law specializing in copyright attribution and protection. Alongside allowing you to decide who gets to use your idea, it also gives the owner of the work exclusive rights to do and to authorize any of the following actions:

- (1) to reproduce the copyrighted work in copies or phonorecords;
- (2) to prepare derivative works based upon the copyrighted work;
- (3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending; ... (Copyright Law, 1947).

These rights, while exclusive to the U.S., still carry over internationally, as the Berne Convention for the Protection of Literary and Artistic Works holds a baseline copyright protection that is internationally supported by over 181 states (WIPO, 2005). This means that even if you only apply for copyright protections in the U.S. you still receive some protections internationally. By applying and receiving copyright to one's work, you receive legal protection for your intellectual property that is tangible and fixed.

However, it is important to note that these rights must be exercised by the owner of the work, and works cannot receive these protections under a court of law without copyright registration by the owner or author. Authors also have rights protected under the Copyright Law (1947) which protects the work and name of the author in the public sphere. The distinction between an author and an owner is that an author has created the work, while an owner owns the copyright. Authors can also be owners, but owners are not always authors. For example, an artist

could have written a song and is the sole author of the song, owning the copyright to it. This artist can also assign a group to be co-owners of the song, like their family or their label. The group of owners would then also be able to make decisions on the song, like the artist. This is why attribution is so significant in copyright, as attribution determines how the right to exercise the copyright is distributed to all the parties involved.

These rights, at their core, are most beneficial to authors and owners who can actively make decisions on their intellectual property. If you do not make decisions on your work and enforce these decisions with the tools that the copyright system offers, then the copyright is useless. The rights are not only for works that are completely unique, but derivative works are also covered under the Copyright Law and have their own basis that we will go over in the next section.

2.3 The Current Stance of AI in the U.S Copyright Office

Due to complexity of copyright law, many have begun to inquire if the introduction of AI will lead to historic changes. Particularly to how we attribute copyright in these cases. If artificial intelligence is the one doing most of the work in developing the finished product, shouldn't it in some way be given copyright protection? Following this line of reasoning, if copyright protection is going to be given, who should it go to, and should there be a unilateral decision made on what will happen to any work that has been created by using AI? Due to these concerns the U.S. Copyright Office (2023) is currently launching an initiative around AI and copyright, announcing that, “[the] initiative is in direct response to the recent striking advances in generative AI technologies and their rapidly growing use by individuals and businesses. The Copyright Office has received requests from Congress and members of the public, including creators and AI users, to examine the issues raised for copyright, and it is already receiving

applications for registration of works including AI-generated content.” While there is an expressed interest to make changes to accommodate this new technology, in practice the U.S. Copyright Office has already begun rejecting applications that credit an AI as the sole creator or outline that the majority of the creative work was performed by AI (Federal Register, 2023). However, it is possible for these decisions to be reversed if the Copyright Office receives a compelling argument to accept these works regardless, so the potential for change is tangible.

2.4 Why Reject an AI’s Application?

The decisions against works which credit AI were made based on previous federal and state court decisions on copyright, authorship, and ownership (U.S. Const. art. I, § 8.). While the basis of copyright was based on historic legislation, it is true that copyright has evolved alongside our culture, and the most notable reasons for the Copyright Office to reject these works are from newer changes to the system. We will review three cases that are fundamental to understanding the current argument around authorship and ownership attribution to AI works in order to understand what the U.S. Copyright Office is basing its opinion on.

In *Naruto v. Slater* (2018), a case that examined the ownership of a selfie taken by a monkey, the court affirmed that animals lack statutory standing under the Copyright Act, and therefore have no claim to the authorship or ownership of a work. The court explicitly outlines that the decision was made because animals are not human, so the present guideline is that *only humans* are protected under the Copyright Act, not AI. This means that AI cannot be attributed as the sole author or owner since their status as a non-person invalidates them from the outset. While AI is often meant to model after how human brains learn and solve problems, to argue that a human is no different than an algorithm that responds to outside prompts or directives is outside of what the Copyright Office is focusing on. Copyright law was created by humans, for

humans, and even if the image created by a human or a monkey is indistinguishable, the decision made would not have changed.

Even if the AI is not the author of the work, copyrightable works are thought to need to be unique and creative. Publicly available AI's use databases: large libraries that represent all the information the algorithm is given to learn and develop off. For example, if you wanted to create an AI that would create paintings in a certain style, you would give it as many paintings as you could find that match what you want it to reproduce. The bigger the library, the 'smarter' the AI is at achieving the goal you have set for it. Like people, if you are given a photo of a plane and asked to rebuild it you would struggle immensely, but if you were given hundreds of blueprints, instruction manuals, and videos you would have a better result. But one could argue that if an AI uses a database to derive their work from, then how could the work ever be considered unique enough to deserve copyright protection?

Well, not quite, in *Feist Publications, Inc v Rural Telephone Service Company, Inc* (1991) the baseline- the absolute minimum any work that is being considered by the Copyright Office needs to meet- of copyrightable works was made, with the term "modestly" creative coined. Also known as the threshold of originality, modestly creative refers to the fact that labor or uniqueness does not represent originality. For a work to be copyrightable, it must have a "minimum degree of creativity." We know that AI typically uses databases, so there is some original source that is being used to generate what the AI has given to us. Generative AI is sometimes described as a black box for users, where your prompt is magically transformed into a result. But we know that this black box is powered by the library the AI was given. So, if we know exactly what the AI is using to generate material, the threshold of originality could not be met.

But unique works are not the only types of works that are attributed copyright; derivative

works also receive equal copyright protection. Derivative works are more nuanced when it comes to how they meet the threshold of originality. It is accepted that derivative works build off an existing idea, like the light bulb example mentioned previously. What makes the sugar-powered light bulb an acceptable derivative work is that it has transformed the original electric light bulb in a way that does not diminish the original design. Both are light bulbs, but they are not the same.

Since all AI works derive from an original source in some way, we know that the works can be categorized as derivative works rather than unique works. So, the threshold of originality must be passed through proving that the works involving AI were transformative in some way, and therefore a valid copyrightable work. For a work to be declared sufficiently transformative, it must prove that it does not have the exact same purpose as the original work. The Supreme Court case *Andy Warhol Foundation for the Visual Arts, Inc. v. Goldsmith* (2021) declared that fair use, "is an objective inquiry into what a user does with an original work, not an inquiry into the subjective intent of the user, or into the meaning or impression that an art critic or *judge* draws from a work." A work's transformative nature cannot be decided based on the judgment of any individual person, or whether the work had used the source material in a way that is pleasing or groundbreaking. Because of how subjective creativity is, the only way to create a true equal standard is to view originality in what changes the user has decided to make, not just in the similarities. Andy Warhol created many of his famous works based on celebrities' likeness, and this case pertained to an orange print that he had created of Prince, the late musician. However, unlike his silk screen prints of Marilyn Monroe, he was told that the Orange Prince print was not in fair use. By objectively looking at both works from an outside perspective, there is no difference between the two, so why was one not allowed under copyright law?

It all came down to the details. In both art pieces, Warhol took an existing photograph and created a silk screen print from the image. But for the Orange Prince print, he had received permission to use the photograph owned by Lynn Goldsmith *one time* for the article the print was going to be used for. Andy Warhol's foundation continued to commercialize the print after the original article, breaking the agreement he had originally made with Lynn Goldsmith. Alongside this, both works had the exact same purpose; the photograph had been taken to be used commercially, and if magazines used the print Andy Warhol created rather than the photograph, then that print had violated Goldsmith's commercial rights under the copyright law. The case highlights how evaluating a derivative work's transformative nature is on a case-by-case basis. The Marilyn Monroe prints were considered transformative enough to be passed as fair use. So even if the argument is made that AI cannot be creative because of its fixed library of information, the resulting work would still need to be evaluated to see if it meets the threshold of originality. This means that all AI work has the potential to be "modestly" creative when looking at the resulting work objectively. In the following sections, we will briefly overview the general theories on authorship and ownership of AI works and develop an idea of which will fit with the U.S. Copyright system.

2.5 Proposed Models on the Application of Authorship and Ownership to AI

One of the proposed models prioritizes fairness over return on investment, treating AI as the primary author and the programmer as a secondary legal author. This means that all generated works would leave the AI as the author, but the secondary author, the programmer of the AI, would be the one to exercise the legal rights afforded by Copyright Law (Jung, 2020). Users who create prompts or use the AI would have no right over the materials created and would have to abide by any legal restrictions enforced by the programmer. While this is a simple

solution, it would mean any individual interested in using AI as a part of their creative process would need to either create their own AI, or request usage rights under the Fair Use guidelines for any commercial ventures. Having to request permission every time you use AI in any commercial capacity would end up restricting both the creative process and the commercial interest of AI on an international level.

The next proposed model argues that all works created by AI should remain in the public domain, and AI would hold no legal rights over the works that it has created. A Honk Kong University professor of law, Sun, believes that because AI derives its works often from the public domain, and because of the current legislative landscape, it makes sense that the result from a non-human would be accessible for all people to use freely (2022). By being accessible for anyone to use commercially, AI works would bolster public knowledge and enrich humanity. This is an optimistic theory, but it does not consider that new emerging technology like AI requires companies to be commercially incentivized to develop it. If AI as a product has no scarcity or financial value, then the likelihood of long-term investment would be slim. Furthermore, by not attributing any copyright protection to AI works, there is no legal landscape for AI companies to protect their own product.

Zurth's (2021) model, included in *UCLA's Journal of Law and Technology*, however, claims that because AI models must be trained from a database, the resulting product cannot satisfy the requirement of being "modestly" creative, and as such AI works would not be protected under copyright law. The idea that AI, although with its limited autonomy, cannot be creative is not an extreme statement. But as we explained before, the threshold for originality depends on whether the work is transformative, not whether the work is completely original. There is the possibility that some AI works with highly specific prompting, and small knowledge

libraries, would not reach this threshold, but a generalized model like this one would be inaccurate to the current legal precedent we have. All works, including those created by humans, can be sourced back to a previous idea or some intellectual property as well. To judge AI works on a different standard simply because of the tool that was used would be an inaccurate perception of how the AI generation process works.

The last model I will cover is the simplest. In truth, it is not a model, but a defense against the change of the current system to a new model. The current copyright system is well-equipped to handle AI-generated works, so the copyright of the work should be attributed to the user who gains the most from those rights (Samuelson, 2023). This argument has become a popular ‘model’ that many scholars bolster, due to one reason which is elaborated well by Fenwick and Jurcys (2023). They affirm that “The Creative Process in an Age of Generative AI” heavily involves the user that creates the prompt for the AI. Users will fine-tune their work in personal ways outside of the scope of the generated AI. Moreover, it is unlikely that the product will be what they want it to be in the pilot stages. In this model, the AI is treated as a tool, like any other software program that assists the creator but does not decide the final product. Like using Microsoft Excel, the system will only do as well as the user who is controlling it. It has the capability of doing work that would take a tremendous amount of time manually, but only under the guidance of someone who knows what the correct result should be and can use their expertise to push the program to its limits.

At this current point with AI technology, humans are still an imperative part of the generative process, meaning that all conditions under the Copyright Law are satisfied. The matter of attribution does not include AI since it is a tool and not an author or owner. When it comes to proper attribution, the existing process would be used among the relevant parties. This

model makes the most sense with how most AI work is created today, which is why the current system needs not be changed.

2.6 Why AI Doesn't Need Authorship or Ownership, but its Users Do

The purpose of copyright protection is to guarantee the owner certain rights on how and where their work is used. AI, at this point, cannot make autonomous decisions about how its work should be used. Fundamentally, to attribute authorship or ownership to AI would be equivalent to keeping it in the public domain. An AI cannot independently apply for or exercise copyright protections. Even if AI could exercise these protections, or if it were affirmed that the software programmers were considered the owners of all works produced by AI, it would not make sense to do so. The current process that most clients employ would not leave AI as the sole author since the user is still doing most of the creative work, so they could decide who is granted ownership and not the other way around.

Most users who use AI generation are not just entering prompts, rather they are active participants in the generative process, and even transform the work further after the output is given by the AI (Fenwick and Jurcys, 2023). In the field today, humans still have a considerable amount of influence in the final products of "AI-works." Whether that is through a prompt or further refinement down the line, there is no solely automated work being sent to be copyrighted. AI, just like any other piece of technology, is a tool that can only produce an output as unique as the prompter's creativity. AI works fall under the branch of a derivative work, and when working with a tool that is using a large library, resulting work could be less infringing than an original work from a human author. Because AI works can be proven to be modestly creative, it comes down to who should be attributed ownership of the copyright license.

While an all-encompassing answer would be preferred, it is truly on a case-to-case basis.

It would be the sole ownership of either the client or the producer of the work, depending on who has the most use for copyright protection. Copyright protection is a commercial field, oftentimes like in the case between Andy Warhol and Goldsmith where the deciding factor of a copyright violation pertains to the commercial use without the permission of the owner. Groups who have the larger incentive to protect the derived work would be the ones to be bestowed the license, and if someone wouldn't care about what happens to the product, they have no practical use for a copyright license.

3. Conclusion

3.1 Why Change the Running System?

In conclusion, the debate over legal ownership and authorship of creative materials involving AI is complex and ongoing. The U.S. Copyright Office's current position, which rejects applications that heavily credit AI as the sole creator, is based on existing legal precedents and is unlikely to be overturned. Therefore, it is essential to consider alternative models for AI authorship and ownership.

Proposed models range from considering AI as the primary author and the programmer as a secondary legal author, to placing all AI-generated works in the public domain. However, the most suitable model attributes copyright to the user who gains the most from those rights. This model recognizes the essential role of a human prompter and acknowledges that AI is a tool used in the creative process, and not the primary author. It is crucial to understand that AI cannot independently exercise copyright protections or make autonomous decisions about its work's usage. Users actively participate in the generation process, often transforming AI-generated prompts, making them the primary candidates for copyright ownership.

Ultimately, the attribution of authorship and ownership for AI-generated works should be

determined on a case-by-case basis, taking into account creativity and commercial interests. The existing copyright system can effectively manage AI-generated works, requiring no significant alterations. As technology continues to advance, there may be one day when the legal system can no longer accurately represent the interests of those using generative AI. With AI becoming increasingly autonomous there may be an increase in cases where there is no human involvement at all. However, it would be short-sighted to begin making changes to a system that hasn't begun to experience these constraints.

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