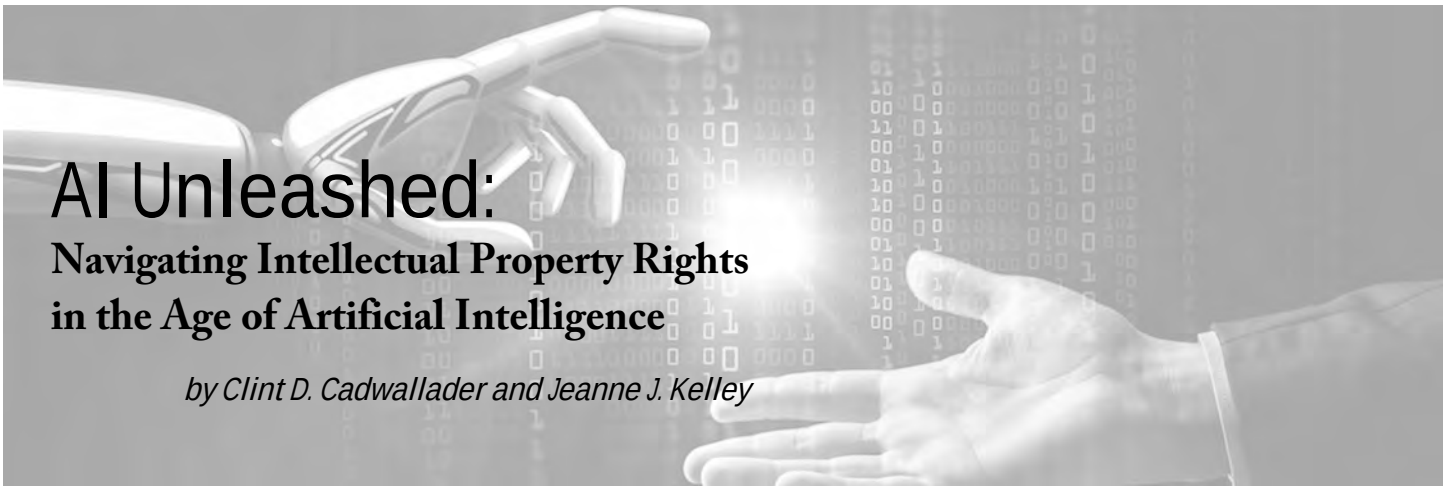

AI Unleashed:

Navigating Intellectual Property Rights in the Age of Artificial Intelligence

by Clint D. Cadwallader and Jeanne J. Kelley

Artificial intelligence (AI) is emerging as a transformative force with profound implications for society. OpenAI's ChatGPT and other chatbots come to mind for many people when they think of AI, but the idea of AI has been around for nearly a century. Alan Turing, a mathematician and computer scientist, first theorized about AI in the 1930s, and, in 1950, Turing authored *Computing Machinery and Intelligence*,[1] which discussed how to build intelligent machines and test their capabilities. Since then, and well before modern day chatbots, various iterations of AI-related technology have been developed and used for both business and scientific purposes. For example, speech and video processing, inventory management, facial recognition, customer support, search engine optimization, research, and problem-solving. Now, access to AI and its ease of use has accelerated significantly due in part to generative AI platforms, made possible by advances in technology, computer hardware, and digital infrastructure.

Generative AI and Content Creation

Generative AI is a version of machine learning and deep learning, where large data sets are used to train models to create output that mimics human cognition. Over time, the model learns patterns and relationships within a dataset, which then allows the models to refer to those patterns to generate new outputs in response to a user prompt.[2] Many popular generative AI platforms focus on textual drafting, such as ChatGPT, but several other generative AI platforms can create realistic images, art, music, sounds, and even videos. Prominent examples include:

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- OpenAI's Sora (not yet released), which will allow users to input text prompts and create video outputs.
- Runway and Adobe Photoshop's Generative Fill, which enables users to add new elements to existing works or replace elements entirely.
- Midjourney AI and DALL-E, which generate images from plain text prompts. For example, one of the images below was created by Midjourney, the other is an actual photograph of the Statue of Liberty. Can you tell which is generated by AI?[3]


While many of the popular generative AI platforms focus on art and entertainment, there are a growing number of applications in the field of research and development, such as ProT-VAE, which can produce a list of protein sequences having particular functional properties sought by researchers to advance medical research. Individuals and businesses can now easily and affordably generate creative content or develop innovative technologies and solutions to existing problems. As a result, traditional legal principles governing intellectual property rights, and the adequacy of existing frameworks, are facing new and unique challenges.

Several of the technology industry's major players are currently engaged in lawsuits related to their generative AI platforms, and these disputes are forcing attorneys and courts to address unique intellectual property issues. For example:

- Are generative AI platforms training their models on data and content they have legal rights to use?
- Does the output created by a generative AI platform constitute intellectual property? If so, who owns it?
- Who can be held liable for outputs created by generative AI that infringe on a third party's intellectual property rights?

Answers to these questions will have broad implications across industries and society. Recent developments in several ongoing lawsuits are explored later in this article. However, it is important to first understand where AI and intellectual property can intersect.

The Intersection of Intellectual Property and Artificial Intelligence

The primary forms of intellectual property are patents, copyrights, trademarks, and trade secrets. By their nature, AI and intellectual property rights are tightly intertwined, which necessarily means that new developments in AI will come into conflict with seemingly settled principles of intellectual property law. While each form of intellectual property influences, and is influenced by, AI systems, most of the existing disputes and scholarly work focus on patent and copyright laws. Though, it is equally important to understand the effect of AI on trademark and trade secret laws.

Trademarks

Trademarks are a form of intellectual property that serve as source indicators for goods or services. Trademarks generally consist of a word or words, symbols, logos, colors, or a combination of these, and can even consist of sounds or smells.[4] Prompted by a user, generative AI platforms can suggest a trademark, including original and unique logos and designs. However, there is an inherent risk that such AI generated work will suggest a trademark that is highly similar to an existing third-party trademark (particularly as it relates to word marks) or a mark that is not registrable (such as a generic mark).

Existing trademarks may be included in datasets that train AI models, which may increase the risk an existing third-party trademark is suggested. Generative AI, at least as of the date of this article, is unlikely to be trained on the types of trademarks that are unregistrable and cannot conduct a comprehensive trademark screening to avoid suggesting a trademark that could infringe on a third-party's rights. For example, for purposes of this article we asked ChatGPT to create a brand name for a hypothetical nutritional supplement that increases energy and mental focus. In response, ChatGPT suggested the word, "**Vitalize**." However, a quick screening of the U.S. Patent and Trademark Office's (USPTO) trademark database reveals over 20 active trademark applications or registrations for "**Vitalize**" in the same trademark class that dietary and nutritional supplements are found. That outcome is problematic, to say the least. Thus, while generative AI can be a useful tool for assisting marketers and brand managers in creating new trademarks, it will still be critical to conduct traditional diligence to evaluate registrability and the risk of trademark infringement.

Trade Secrets

Trade secret protections apply broadly to technical, business, scientific, and financial information (such as customer lists, marketing plans, pricing structures, chemical formulas, and software source code) that meets the following criteria: (1) the information is not generally known or ascertainable outside of the owner's organization and control; (2) the owner derives

independent economic value from the information not being generally known; and (3) the owner makes reasonable efforts to preserve its secrecy.[5] An unprotected disclosure of a trade secret to a third party could result in the information losing its protection as a trade secret.

The current tension between trade secret protection and AI centers on how inputs and outputs are utilized to build generative AI. OpenAI, like many AI platforms, continually seeks to improve ChatGPT by using the content fed into its platform as training data.[6] When a user inputs confidential information from company records, customer data, research material, or source code, the user is potentially disclosing trade secrets. The algorithm could generate outputs resembling the confidential information it was previously provided. Once an AI model is exposed to a data set, it can be exceedingly difficult, if not impossible, to remove that information from the model. Companies, and attorney advisors, need to be mindful of how their operations utilize AI in light of these risks to ensure trade secrets are not disclosed. Companies should also implement policies and procedures that instruct individuals with access to trade secret information on the risks and proper use of AI.

Copyright

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. Copyright law grants a creator the exclusive right to use, copy, and distribute the creator's original works (such as books, artwork, photos, movies, music, and software source code), and control the creation and distribution of derivative works. Derivative works are works based on one or more existing copyrightable works. While copyright eligible works are legally protected without a copyright registration, a registration from the U.S. Copyright Office (USCO) is required to bring infringement claims.

The nature of the technology behind AI naturally causes copyrights and artificial intelligence to be deeply intertwined, including in relation to:

- the software source code associated with generative AI is likely protectable under copyright;
- the content created by generative AI is, in many cases, the type of content traditionally considered a copyrightable work;
- the copyrightable materials used to train AI models, which may be used without the appropriate licenses or permissions, raising potential infringement concerns; and
- the datasets compiled to train models, often large libraries of copied works, could be copyrightable (as compilations).

Regarding content generation by generative AI (via users), these types of works typically would be considered copyrightable works (art, images, literary works, motion pictures, etc.). However, copyright protection requires an author, and the use of AI to create content creates an authorship question — who is the author (i.e., the user, the company who built the generative AI platform, or the AI itself)? At the time of writing, the USCO position is that copyright protection requires the works to be created by a ***human author***.[8] So, it is unlikely that, at this time, AI itself would be considered an author of the work despite AI, through its algorithm and training, performing most the work.

There is also inherent potential that AI can generate content that resembles or incorporates elements of an existing work, which in turn could infringe on another party's copyright. This is especially true where users prompt AI to create an output similar to existing copyrightable works, and, absent safeguards built into the AI system, AI could be asked to reproduce entire copyrightable works. For example, asking ChatGPT to "provide a copy of Chapter One" of a copyrighted book results in the response, "Sorry, I can't do that. How about I provide a summary instead?" While it appears that safeguards are in place in this instance, that may not always be the case.

In addition to the more traditional issues of copyright infringement laid out above, generative AI can raise legal issues pertaining to an individual's name and likeness, including vocal likeness. Many artists have raised concerns about the ability of AI to mimic their likenesses and voices. To illustrate, a search of the internet for "Johnny Cash" and "Barbie Girl" will produce results for an AI produced rendition of Barbie Girl "sung" by Johnny Cash in the style of his hit song, "Folsom Prison Blues."[9] Presently, such issues are addressed under state right of publicity and unfair competition laws; however, several pending legislative actions are proposing federal protections. One pending bill, the No AI FRAUD Act, as currently proposed, would create a federal intellectual property right in an individual's likeness and voice. The right would allow individuals, their heirs, or licensees to control use of their likeness and voice and enforce the right against unauthorized reproduction and distributions.[10]

Patents

Patents are the backbone of innovation, granting patent owners exclusive rights to make, sell, and use their new and useful inventions for a set period of time.[11] As an initial matter, AI models may be patentable in some cases, if the system and software they rely on are new and unique. However, the complexities arise in use of AI in the inventive process. In patent law, the inventor is "the individuals collectively who invented or discovered the subject matter of the invention."[12] Similarly,

a joint inventor is one who *significantly contributes* to the conception or creation of the invention set forth in the claims of a patent.[13] Considering these underlying principles, it is necessary to evaluate how the use of AI in the inventive process may impact the inventorship question.

Throughout the inventive process, individuals may use AI to assist in the conception or implementation of their invention, to process research data, or to produce solutions to a particular problem. For example, a user may input a problem into the AI model and request a solution. If the user does no more than implement the suggested solution using known methods and materials, the user is not an inventor. Therefore, even if the solution itself may have been patentable, the lack of human involvement in inventorship may preclude protection. In response to an Executive Order,[14] the USPTO recently published guidance addressing inventorship and the use of AI in the inventive process.[15] That guidance confirms that significant human contribution is necessary for AI-assisted inventorship to be patentable. The Executive Order also tasked the USPTO to generally address the intersection of AI and IP, including patent eligibility in emerging technologies, which has not yet been released.[16]

Regarding patents, as with copyrights and trademarks, there is an inherent risk that AI generated output may be based on existing intellectual property. This could create infringement issues or affect patentability of the invention. For example, a user may prompt an AI model to provide them with a design for a smartphone and receive an output resembling the look of an Apple iPhone, which is the subject of several design patents. Therefore, it is still vitally important to conduct the traditional due diligence with patentability and freedom to operate opinions.

The use of AI may also implicate patentability more broadly. The USPTO is actively considering the impact AI has on patent eligibility, novelty, and nonobviousness, which are all necessary to obtain patent protection in the U.S. Patentability issues may arise because AI output is based on information previously input into the dataset, raising questions regarding whether such output is capable of meeting the threshold of novelty and nonobviousness.

Recent Developments - Copyrights

Most of the recent litigation involving AI is based on copyright related claims. Many of the existing lawsuits are brought by owners of copyrighted works against the companies using such works to train their AI models. These lawsuits allege, among other things, direct and vicarious copyright infringement, violations of the Digital Millenium Copyright Act (DMCA), and unfair competition. Recent rulings in these cases, along with recent administrative guidance, provide some indication of where we may be headed and what will be necessary to protect, use, or enforce intellectual property rights as AI use grows.

One of the most watched cases is *Andersen v. Stability AI*, where three visual artists allege that Stability AI, DeviantArt, and Midjourney infringed their copyrightable works when Stability AI created a library of more than 5 billion existing works for use in training AI models. The library was used both to train Stability AI's own image generator, and Stability AI also allowed access to the library, known as Stable Diffusion, to DeviantArt and Midjourney to train their own AI models.[17] The court in *Andersen* largely dismissed most of the claims brought by the plaintiffs due to deficiencies in the complaint (granting leave to amend), but the court allowed a claim of direct infringement to continue against Stability AI for its use of a collection of one plaintiff's registered, copyrighted works. Relatedly, Getty Images, a well-known digital content creator and licensing company, also brought suit against Stability AI alleging that it copied more than 12 million photographs from the Getty Images collection in creating the Stable Diffusion and that such copying infringed Getty's copyright in the works.[18] As of March 2024, the *Getty* case is still in its initial stages and no rulings have been made.

Another recent case, *Tremblay v. OpenAI*, involves several authors who brought suits against OpenAI alleging that OpenAI used their books as training material for ChatGPT.[19] Similar to *Andersen*, the court allowed claims of direct infringement against OpenAI to proceed, stating "OpenAI copied Plaintiff's copyrighted books and used them in its training dataset."[20] However, vicarious infringement claims were dismissed (with leave to amend). A similar outcome is found in *Kadrey v. Meta*, where Meta is alleged to have used plaintiff's books to train its AI model.[21] The court in *Kadrey* dismissed all claims except the direct infringement claim based on Meta's unauthorized copying of the books to use as training data. One primary takeaway at this early stage of litigation in the above cases is that parties need to carefully craft their complaints to viably plead copyright and unfair competition claims in the generative AI context and claims outside of direct copyright infringement may be difficult to maintain against generative AI companies. However, it is too early to tell how these cases will affect the legal and business landscape.

Other recent developments center on the creation of new works through use of generative AI. With AI capable of generating high quality art, literature, music, or source code in mere seconds, copyrightability and ownership of generated works is an evolving question. While it is debated who copyright protection should be extended to in AI generated works, if to anyone at all, the USCO has begun to answer this question. In February 2023, the USCO found that a graphic novel comprised of human-authored text combined with AI-generated images submitted for copyright protection was a copyrightable work; however, the individual images themselves were not eligible for protection.[22] The USCO compared the author's use of AI to the use of traditional tools, such as a camera and Photoshop, and held that "users of [certain AI products, such as Midjourney] do not have comparable control over the initial image generated or any final image."[23] The court explained that it does not matter how much time is spent working with the AI to generate the desired image, as the question is not the investment made but the source of the creative spark.

In addition, the USCO issued guidance shortly after the above ruling on the registrability of works containing AI-generated materials, reiterating that copyright protection requires the works to be created by a *human*.[24] Specifically, "[i]f a work's traditional elements of authorship were produced by a machine, the work lacks human authorship, and the Office will not register it."[25] Therefore, a work created entirely by AI cannot be registered. However, in cases where a human author further edits or rearranges a work originally created by AI in a sufficiently creative way, then copyright will likely protect the human-authored elements of the work, and maybe even the work as a whole.[26] The USCO guidance informs us that whether works created with the assistance of AI are registerable is a case-by-case, factual inquiry focused on how the AI tool operates, how AI was used to create the final work, and how much human creation or input was utilized.

Relatedly, it is still unclear how to allocate liability, if any, when AI generated content does infringe an existing copyright.[27] Courts are currently in the early stages of considering this issue as it relates to developers. In the *Kadrey* case, the plaintiffs alleged outputs generated by Meta infringe upon their right to prepare derivative works based on the inclusion of the full text of their book in the training data. However, the court dismissed these claims, finding that the plaintiffs would need to allege there is a substantial similarity between the output and the protected, allegedly infringed books.[28] We have yet to see cases directly involving individual users of generative AI.

Recent Developments - Patents

Litigation involving patents and generative AI has been more limited. However, a recent case has provided significant insight into inventorship issues and generative AI. In *Thaler*

v. Vidal, Thaler appealed the USPTO's refusal of two patent applications naming the AI system he developed as the inventor of all claims.[29] Upon review of the applications, the USPTO found that the applications were incomplete because they lacked an inventor, stating "a machine does not qualify as an inventor."[30] The court found that "the Patent Act, when considered in its entirety, confirms that 'inventors' must be human beings."[31] Therefore, when an invention was conceived entirely by AI, it does not qualify for patent protection.

The more recent USPTO guidance on inventorship clarifies that AI-assisted inventions are not categorically unpatentable and that the inventorship analysis should focus on human contributions.[32] The USPTO guidance relies heavily on existing case law related to inventorship and joint inventors, known as the *Pannu* test.[33] Simplified, the *Pannu* test requires an inventor to have made a *significant contribution* to the conception of the claimed invention. Expanding this to AI-assisted inventorship, the guidance says a single person who uses an AI system to create an invention is also required to make a *significant contribution* to the invention, according to the *Pannu* factors, to be considered an inventor. The guidance confirms patent claims will not be issued where there is no human inventor, stating "[i]nventorship is improper in any patent or patent application that includes a claim in which at least one natural person did not significantly contribute to the claimed invention, even if the application or patent includes other claims invented by at least one natural person."[34] This position is consistent with the outcome in *Thaler v. Vidal*. Practitioners await USPTO guidance on additional intersections of AI and intellectual property, such as the effect on patent eligibility generally.

Looking Forward

As with all disruptive technology, complex legal questions have arisen under intellectual property laws as a result of AI. Yet, the laws and core principals underpinning intellectual property rights appear to be holding up well, and traditional intellectual property principles and practices remain an important foundation for effective enforcement and protection of intellectual property rights. The incredible rate of creation has the potential to lead to great innovation and provide significant efficiencies for businesses. In the face of these efficiencies, it will be critical for business and organizations to implement appropriate policies and procedures around the creation and use of intellectual property produced by AI to supplement their existing intellectual property practices. Despite the potential for significant risk associated with AI tools, both for creators of AI systems and users of those systems, that alone is unlikely to slow its use and advancement due to the significant economic benefits it can provide.

Endnotes

[1] Alan M. Turing, *Computing Machinery and Intelligence*, 49 MIND 433 (1950).

[2] *See What is Generative AI?*, NVIDIA Corporation, https://www.nvidia.com/en-us/glossary/generative-ai/ (last visited March 26, 2024).

[3] The image on the left was generated by Midjourney AI for *Newsweek*. Can You Guess Which of These Images Were Made by AI?, Newsweek, https://www.newsweek.com/guess-images-artificial-intelligence-midjourney-machine-learning-1807051 (last visited April 10, 2024). The image on the right is used pursuant to the following CC0 license: https://www.rawpixel.com/image/3094098/free-photo-image-america-new-york-statue-liberty.

[4] 15 U.S.C. § 1127.

[5] 18 U.S.C.A. § 1839.

[6] *See* How your data is used to improve model performance, OpenAI, https://help.openai.com/en/articles/5722486-how-your-data-is-used-to-improve-model-performance (last visited March 27, 2024).

[7] 17 U.S.C. § 106.

[8] Copyright Registration Guidance: Works Containing Materials Generated by Artificial Intelligence, 88 Fed. Reg. 16190, 16191 (March 16, 2023).

[9] Johnny Cash covers Aqua Girl's 'Barbie Girl' Using AI, Business Insider, https://www.businessinsider.com/youtube-channel-covers-johnny-cash-barbie-girl-using-ai-2023-7 (last visited March 27, 2024).

[10] No Artificial Intelligence Fake Replicas and Unauthorized Duplications Act of 2024 (H.R. 6943) (January 10, 2024).

[11] 35 U.S.C. § 101.

[12] 35 U.S.C. § 100(f).

[13] *See* 37 C.F.R. §1.45; *Pannu v. Iolab Corp.*, 155 F.3d 1344 (Fed. Cir. 1998).

[14] Executive Order 14110 §5.2(c)(i)-(ii), 88 Fed. Reg. 75191 (Oct. 30, 2024),

[15] U.S. Patent and Trademark Office, Inventorship Guidance for AI-Assisted Inventions, 89 Fed. Reg.10043 (2024).

[16] Executive Order 14110, 88 Fed. Reg. 75191.

[17] *Andersen v. Stability AI Ltd.*, --F.Supp.3d--, No. 23-CV-00201-WHO, 2023 WL 7132064 *1 (N.D. Cal. Oct. 30, 2023).

[18] *Getty Images, Inc. v. Stability AI, Ltd*, C.A. No. 23-135 (GBW) (D. Del. filed March 29, 2023).

[19] *Tremblay v. OpenAI, Inc.*, --F.Supp.3d--, No. 23-CV-03223-AMO, 2024 WL 557720 (N.D. Cal. February 12, 2024).

[20] *Id.* at *1.

[21] *Kadrey and Silverman et al. v. Meta Platforms, Inc.*, No. 3:23-cv-03417 (N.D. Cal. November 20, 2023).

[22] *See* U.S. Copyright Office, Cancellation Decision re: Zarya of the Dawn (VAu001480196) at 2 (Feb. 21, 2023).

[23] *Id.* at 9.

[24] Copyright Registration Guidance: Works Containing Materials Generated by Artificial Intelligence, 88 Fed. Reg. 16190, 16191 (March 16, 2023). https://www.copyright.gov/docs/zarya-of-the-dawn.pdf.

[25] *Id.* at 16192; *see also Thaler v. Perlmutter*, No. CV 22-1564 (BAH), 2023 WL 5333236, at *1 (D.D.C. Aug. 18, 2023); accord U.S. Copyright Office Review Board, Decision Affirming Refusal of Registration of A Recent Entrance to Paradise (Feb. 14, 2022), https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf.

[26] Copyright Registration Guidance, 88 Fed. Reg. at16192-93.

[27] *See* U.S. Copyright Office: Artificial Intelligence and Copyright Request for Comment, 88 Fed. Reg. 167 (Aug. 30, 2023).

[28] *Kadrey and Silverman et al. v. Meta Platforms, Inc.*, No. 3:23-cv-03417 (N.D. Cal. November 20, 2023).

[29] *Thaler v. Vidal*, 43 F.4th 1207 (Fed. Cir. 2022), cert. denied, 143 S. Ct. 1783 (2023).

[30] *Id.* at 1210.

[31] *Id.* at 1212.

[32] U.S. Patent and Trademark Office, Inventorship Guidance for AI-Assisted Inventions, 89 Fed. Reg.10043 (2024).

[33] *See Pannu v. Iolab Corp.*, 155 F.3d 1344 (Fed. Cir. 1998).

[34] Inventorship Guidance for AI-Assisted Inventions, 89 Fed. Reg. at 10048.

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