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The Implication of Generative Artificial Intelligence towards Intellectual Property Rights (Examining the Multifaceted Implications of Generative Artificial Intelligence on Intellectual Property Rights)

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ABSTRACT

Generative Artificial Intelligence (Generative AI) is transforming content creation, enabling faster and cheaper production of text, images, and more. However, it raises complex issues regarding intellectual property rights and ownership. This article explores the evolving landscape of AI-generated content, focusing on its alignment with existing intellectual property regulations. It delves into legal disputes exemplified by cases like Getty Images, INC. v. Stability AI, INC, and Doe v. Github, INC, which highlight the challenges of AI-generated content regarding intellectual property. The article also discusses the impact on the creative sector and offers recommendations, including the need for ethical guidelines, education, hybrid collaboration, public involvement, and international cooperation. Addressing these challenges is crucial to harmonize intellectual property rights and maximize the benefits of AI in content creation.

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1. INTRODUCTION

Working is not a difficult thing and takes a long time nowadays, especially for white-collar workers. With digital developments, humans can do their work more efficiently. Imagine that work that is transferred to workers who work 8 hours a day can be done in 6 hours or even less. This can happen due to digital innovation, which is artificial intelligence. Employees who use generative artificial intelligence (AI) in the workplace save an average of 1.75 hours a day. [15] Nowadays, generative AI tools increase business users' throughput by 66% when performing realistic tasks. [11]

Generative AI is a powerful tool that utilizes deep understanding and networking to create content that is distinctive from human-generated work. With generative AI, people may create a wide range of material in response to a user prompt, including text, graphics, code, videos, and more. Because of this sort of assistance, humans now rely on AI for their jobs. This is corroborated by 2022 US research that found 27% of Americans engage with AI at least multiple times a day, and another 28% believe they do so once a day or multiple times a week. [9] Additionally, in 2022, 77% of companies are either utilizing or investigating artificial intelligence (AI), 35% of businesses are now using AI, and 42% of businesses are investigating AI for potential future adoption. [14]

However, the capability of AI to amalgamate, mimic, or even potentially infringe upon patented content has created a complex landscape of IPR concerns. The emergence of AI technology makes intellectual property, which is the basis of innovation and creativity, has experienced a transformative phase. To understand the seriousness of this issue, it is important to explore the complex web of IPRs in the context of AI-generated content.

The primary issue at hand pertains to whether AI-generated content, which often relies on, draws inspiration from, or emulates patented materials, can be considered compliant with existing IPR regulations. This challenge necessitates a thorough examination of the legal and ethical dimensions of AI's creative capabilities. It requires a reevaluation of traditional definitions of ownership, originality, and authorship in a digital landscape where human and machine collaboration blur the lines of creation.

In this article, we delve into the profound implications of AI-generated content derived from patented sources and its alignment with IPR principles. This introduction elucidates the background, problem statement, relevant literature, our proposed approach, and the innovative value of this research.

2. LITERATURE REVIEW

In the last decades, we have seen exponential growth of interest in the field of Generative Artificial Intelligence (Generative AI) in both implementation and research progress (GDL; Brown et al., 2020). Generative AI is a subfield of deep learning focusing on generating output responding to user’s prompts or inputs in the form of commands (Goodfellow et al., 2016). With Generative AI someone with no experience with a paintbrush can generate a portrait in the style of Vincent Van Gogh using simple text prompts. Now a scientific paper can be generated through multiple prompts. These capabilities are provided to at least two technologies as its foundation which are large language models (LLMs) and deep learning.

The release of OpenAI's ChatGPT has become one of the notable breakthroughs of Generative AI which is then followed by Stability AI which focus on text-to-image, and even text-to-sound with the ability to generate melody and songs. These platforms are each enabled by millions of human works as its dataset which are included in the training set, often without consent or permission (Lemley et al., 2021).

The world consists of various objects, and legal systems have developed over time to establish a framework for ownership. People claim ownership of both land and movable property, and any infringement upon this ownership can be addressed through legal means. Additionally, legal frameworks have adapted to acknowledge intellectual property rights for products resulting from human creativity and innovation. In the ongoing discussion about General Artificial Intelligence (Generative AI), copyright law, particularly in the United States, is particularly relevant.

Under the law of the United States, copyright protection can be applied to "original works of authorship that are recorded in a tangible form of expression" (U.S.C., 2020) These works of authorship encompass a wide range, including literary creations, music, visual arts, and architectural designs, among others. It's essential to understand that copyright protects the specific expressions of ideas but does not extend to the ideas themselves (U.S.C., 2020). This principle is referred to as the idea-expression dichotomy.

Authors have six exclusive rights, four of which include the right to reproduce their work, create adaptations or derivatives, distribute copies, and publicly perform their creations (U.S.C., 2020). Copyright holders can also grant licenses to others, allowing them to exercise these rights. Unauthorized use of the work that goes against Section 106 is considered copyright infringement, but fair use, as discussed in Section II.b, can provide a defense against such claims. Moreover, visual artists have rights related to attribution and integrity. They can claim authorship of their works, prevent false attribution, and prohibit certain forms of alteration or distortion of their art.

2.1 Philosophical Justifications

Lockean labor theory serves as an important philosophical underpinning for the allocation of tangible property. According to this theory, individuals can lay claim to unowned property by investing their labor and, in the process, adding value to it. Lockean labor theory, when applied to intellectual property, often justifies an individual's ownership of their creative works. This justification is rooted in the idea that ownership rights are earned through the author's labor.

Additionally, the system of copyright is also supported by a personality-based rationale, drawing from Hegel's approach to property. The 1903 Supreme Court case of Bleistein v. Donaldson Lithographing Co. emphasized that even works of "modest grade of art" possess a unique, irreducible quality that belongs to the creator. This standard recognizes the subjective nature of creativity and the connection between a person's creation and essential elements of their personality.

In the United States, the legal framework for intellectual property takes a fundamentally utilitarian approach. This approach is enshrined in the Constitution in Article I, Section 8, Clause 8, which grants Congress the power to "promote the Progress of Science and useful Arts by securing for limited times to Authors and Inventors the

exclusive Right to their respective Writings and Discoveries." This constitutional provision reflects the consideration of the value of providing incentives for creative and inventive endeavors to advance society and culture. It's important to note that these exclusive rights are not perpetual, and the constitutional language implies that new creations will eventually become part of the public domain.

2.2 Requirements for Copyright Protection

For a creation to be eligible for copyright protection, it must be an original work of authorship that exists in a fixed form. The definition of "original" has been a subject of debate and legal scrutiny over time. In the 1903 case of Bleistein v. Donaldson Lithographing Co., the Supreme Court articulated that even a work of "modest grade of art" possesses a unique, unalterable quality that belongs to the individual creator. This standard acknowledges the subjective nature of creativity and the link between a person's creation and essential aspects of their personality.

Likewise, the criteria for considering a work as "fixed" are quite flexible. Even a poem hastily jotted down on a napkin qualifies for copyright protection because it is embodied in a tangible medium. However, it's crucial to note that a copyright infringement claim is generally not viable unless the work has been registered with the Copyright Office.

Concerns about authorship can sometimes lead to contentious debates. A well-known recent legal dispute in the United States regarding the requirement for human authorship involved the Ninth Circuit case of Naruto v. Slater. In this case, David Slater, a wildlife photographer, attempted to capture images of an elusive and endangered monkey species known as the Celebes crested macaque. Slater set up camera equipment in hopes of encouraging the monkeys to interact with the device and generate photographs.

2.3 Copyright Issues on Generative AI

The increasing prominence of ChatGPT and Stable Diffusion in popular culture has sparked significant debate regarding intellectual property rights related to training sets. Hughes points out that new technology has removed barriers to copyright infringement, with the rise of AI models being a clear example of this phenomenon. As General Artificial Intelligence (Generative AI) models become more widespread and powerful, the associated copyright concerns continue to generate controversy. A key question in federal copyright law revolves around whether the use of unlicensed copyrighted material in training sets qualifies as fair use under Section 107. There is no evidence that innovators like Stability AI and OpenAI attempted to obtain licenses for the materials in their training data before making their Generative AI models available to the public.

Machine learning is often described as a "black box" because it's challenging to explain why a specific result occurs. However, this oversimplification overlooks the deterministic nature of machine learning, driven by calculations of differential equations. While training set data can be extensive, it's not limitless. For instance, ChatGPT operates without internet connectivity and is bound by the knowledge available up to the time of its 2021 training data compilation. Even the most advanced language models in late 2022 were based on training data that was a year old. This finite nature of training data supports the argument that licensing issues should be addressed early on.

In some respects, Generative AI mimics the traditional human creative process but on a much larger scale. One could argue that all human creativity stems from a shared pool of ideas, akin to the concept of the collective unconscious proposed by Carl Jung. John Locke's theory of property suggests that everything is initially held in common, and theories of intellectual property extend this analogy, leaving room for a non-rivalrous common pool of ideas. A substantial training set can be seen as a digital representation of this shared pool. While individual creators may not have the capacity to consider the entire universe of past creations when shaping their next project, an artificial intelligence system does. The implications of a training set acting like a digital collective unconscious warrant further exploration in future research.

3. METHODS

The research method employed in this study is qualitative, with a normative juridical approach focusing on legal doctrines and principles. It follows an analytical-descriptive framework, involving the examination of statutory regulations within legal theory, offering insights into current issues based on factual circumstances. Secondary data sources are primarily used, encompassing primary legal materials (e.g., the United States Code and related regulations), secondary legal materials (such as relevant books and scholarly writings), and tertiary legal materials (including electronic newspapers and magazines). The research predominantly relies on library research for data collection, and the data analysis process entails a thorough review and description of applicable legal provisions, leading to objective conclusions aimed at addressing the research questions posed in this study.

4. RESULTS AND DISCUSSION

4.1 Policy questions related to the use of AI in content creation

Generative AI refers to the use of algorithms and machine learning to create new content, such as images, videos, and text. While this technology has the potential to revolutionize the creative sector by enabling faster and cheaper content creation, it also raises concerns about the impact on human creativity and the potential for AI-generated content to dilute the value of human-authored works [1].

An ongoing and notable legal dispute that exemplifies the intricate challenges arising from the intersection of generative artificial intelligence and intellectual property rights is the case of Getty Images, INC. v. Stability AI, INC [2]. In this legal battle, Getty Images has brought a lawsuit against Stability AI, the company responsible for developing the widely-used image generation model known as Stable Diffusion.

Getty Images primary allegation centers on the unauthorized use of their intellectual property. They assert that Stability AI, in the process of creating their image generation model, incorporated over 12 million images along with associated metadata without seeking permission from Getty Images or providing any form of compensation. As a consequence of this, Getty Images contends that Stability AI has now emerged as a direct competitor in the realm of creative imagery.

Moreover, Getty Images has raised concerns regarding the generated images themselves. They have pointed out that these AI-generated images often contain a modified version of the Getty Images watermark, which sometimes appears on images with unconventional or even grotesque content. This has had the detrimental effect of

tarnishing Getty Images' reputation, which they regard as a significant issue [2].

A particularly intriguing aspect of this case is that it does not readily fit into the traditional legal framework of "substantial similarity." Instead, it primarily revolves around the potential violation of Getty Images' trademark logo due to the unauthorized use of their watermark. The complexity of this matter underscores the evolving challenges posed by generative AI in the context of intellectual property rights [2].

The financial implications of this dispute are substantial, as Getty Images is seeking a staggering $1.8 trillion in damages from Stability AI. This litigation signifies a pivotal moment in the ongoing discussion surrounding AI-generated content, intellectual property, and the legal repercussions of such developments. As shown in the illustrative image below, the left side displays the original Getty image, while the right side exhibits the AI-generated version, which sometimes distorts the content, including the Getty Images watermark, adding a layer of complexity to the case.

Another prominent legal dispute involving the implications of artificial intelligence on intellectual property rights is the case of Doe v. Github, INC. In this case, a group of anonymous programmers has initiated a class action lawsuit against major technology entities, including Microsoft, Github, and OpenAI. The crux of their complaint is centered around an alleged violation of Section 1202 of the Digital Millennium Copyright Act (DMCA), specifically accusing these companies of the unauthorized utilization of code in the development of AI systems, Codex and Copilot. The programmers argue that these technology giants have failed to adhere to open-source licensing terms, thus infringing upon their intellectual property rights [2].

In response, Microsoft and OpenAI have mounted a defense by contending that the plaintiffs have not substantiated their claims with specific instances of harm or the infringement of copyrighted works. This brings an interesting dimension to the case, as the legal arguments revolve around the question of whether the programmers' rights have indeed been violated.

An intriguing twist in this legal battle emerged in November when GitHub announced a proactive measure to credit the code produced by Copilot. This step was taken as a potential way to mitigate some of the legal challenges surrounding this AI technology. This development introduces a possible avenue for addressing issues related to intellectual property in the context of AI-generated content.

One of the underlying concerns raised by the plaintiff's legal team is the potential chilling effect that these lawsuits could have on the open-source community. They fear that if major technology companies like Microsoft, Github, and OpenAI continue to use open-source code without adhering to its licensing terms, it could undermine the fundamental principles of open-source development. The programmers argue that, no matter how remarkable AI technology is, the training data should be obtained legally, ensuring that all contributors have the opportunity to benefit from their contributions.

This legal dispute exemplifies the evolving and multifaceted challenges that arise when cutting-edge AI technologies intersect with intellectual property rights and open source principles. The outcome of this case may have significant implications for the future of open source development and the

responsible use of AI in the tech industry. It underscores the importance of striking a balance between innovation and intellectual property protection in the age of AI.

4.2 Intellectual property rights

The use of generative AI raises questions about who owns the output generated by AI and whether the creators or owners of the data used to train AI models should be compensated for their use. Intellectual property laws were designed to incentivize and reward human creativity and innovation, but they may not be well-suited to address the unique challenges posed by AI-generated content.

One of the pivotal issues arising from the use of generative AI is the determination of ownership. When AI autonomously generates content, it blurs the lines of authorship, making it challenging to attribute creation to a human creator. This poses a unique challenge as intellectual property laws typically hinge on identifying a human creator or author. Consequently, there's a pressing need to revisit and adapt these laws to provide clarity on who holds the rights to AI-generated works and what, if any, rights are retained by the developers of AI models.

Moreover, the question of compensation looms large. Should the individuals or entities who contributed data to train AI models be entitled to compensation when their data indirectly contributes to AI-generated content? This issue not only involves fairness but also has practical implications for a wide range of industries that rely on AI-generated content. Finding an equitable solution is a key consideration in striking a balance between the interests of creators and data providers.

As generative AI technology advances, it's crucial to reassess how intellectual property rights are applied and enforced. Addressing these challenges is imperative to ensure that intellectual property laws remain relevant and effective in the rapidly evolving landscape of AI, where the boundary between human and machine creativity is increasingly blurred. The implications of these legal and ethical considerations will have a profound impact on content creation, innovation, and the recognition of creative contributions in the age of AI.

4.3 Impact of generative AI on the creative sector and recommendations

Generative AI refers to the use of algorithms and machine learning to create new content, such as images, videos, and text. While this technology has the potential to revolutionize the creative sector by enabling faster and cheaper content creation, it also raises concerns about the impact on human creativity and the potential for AI-generated content to dilute the value of human-authored works.

In addressing the multifaceted implications of generative artificial intelligence on intellectual property rights in the digital age, a holistic approach is paramount. First and foremost, there's a pressing need to establish comprehensive ethical guidelines and industry standards aimed at governing the conscientious use of generative AI within the creative sectors. These guidelines must offer clarity on acceptable use cases, rules of attribution, and the intricacies of intellectual property rights. Complying with these standards is instrumental in achieving equilibrium between AI-generated content and the creative ingenuity of human creators.

Moreover, a two-pronged strategy is vital. Promoting awareness and fostering education among creative professionals is pivotal. By offering training programs and

conducting workshops, we can empower creators to gain a profound understanding of both the capabilities and limitations of AI. This knowledge equips them to seamlessly integrate AI tools into their creative processes, harnessing the technology's potential effectively.

To further steer the course of AI in creative endeavors, it's imperative to advocate for hybrid collaboration models. This approach acknowledges AI as a creative tool designed to enhance, rather than supplant, human creativity. Encouraging the use of AI as an auxiliary resource in content creation leads to synergistic outcomes, harnessing the unique strengths of both AI and human imagination.

Engagement with the broader public and relevant stakeholders is equally indispensable. By involving diverse voices in dialogues about AI-generated content, we can ensure that the development and application of generative AI align with societal values and preferences. Public feedback becomes a cornerstone in sculpting an AI ecosystem that resonates with the collective ethos.

Lastly, to navigate the international landscape of AI-generated content, fostering global collaboration is paramount. By cultivating cooperation between nations, we can forge unified standards and agreements. This international synergy harmonizes legal frameworks, ensuring consistent protection of intellectual property rights across borders. In this comprehensive approach, the multifaceted implications of generative AI on intellectual property rights can be effectively managed, fostering innovation while preserving the integrity of creative contributions.

5. CONCLUSION

The emergence of Generative Artificial Intelligence (Generative AI) has ushered in a transformative era in content creation, offering remarkable efficiency and innovation. However, it has brought forth a complex web of legal and ethical dilemmas, particularly concerning intellectual property rights. The policy questions surrounding AI's role in content creation underline concerns about its impact on human creativity and the potential devaluation of human-authored works, as exemplified by recent legal disputes like Getty Images, INC. v. Stability AI, INC. and Doe v. Github, INC. These cases underscore the need to adapt existing legal frameworks to accommodate the distinctive challenges posed by AI-generated content.

Intellectual property rights are central to this discourse, with issues of ownership and compensation becoming increasingly intricate as AI autonomously generates content. The imperative to clarify authorship in AI-generated works and establish fair compensation for data contributors is evident. Balancing the interests of creators and data providers is a critical challenge. In conclusion, the future of AI-generated content and its alignment with intellectual property rights necessitates a collaborative effort from policymakers, industry leaders, creators, and the public. Establishing clear ethical guidelines, promoting education and awareness, fostering hybrid collaboration models, and encouraging international cooperation are all crucial to ensure that the promise of Generative AI is fulfilled while upholding principles of innovation, creativity, and intellectual property protection in the age of AI.

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