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Beyond Canvas: Unravelling the Legal Tapestry of AI-Infused Artistic Creation

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ABSTRACT

In the epoch of Artificial Intelligence (AI), a paradigm shift is witnessed in the landscape of artistic creation, challenging conventional perceptions and giving rise to novel forms of expression. This research explores the rich tapestry of AI art, tracing its historical roots, from pioneering generative art to the resurgence driven by neural networks. Delving into the nuances of copyright law, the paper navigates the intricate terrain of authorship and ownership, particularly when AI plays a significant role in content generation. A comparative analysis of international approaches provides insights into diverse legal frameworks, cultural nuances, and technological considerations governing AI-generated art. Emphasizing the urgency for global copyright standards, the study addresses the complexities of cross-border collaboration, legal consistency, authorship attribution, cultural heritage protection, and equitable compensation. The research envisions a future where harmonized copyright standards foster an ethical and sustainable environment for the coexistence of AI and human creativity, shaping the trajectory of art in the digital era.

Keywords: AI-generated art, Copyright law, Ethical implications, Generative AI, Legal frameworks, Harmonized standards.

I. INTRODUCTION

Art and creativity have long been considered uniquely human endeavours, expressions of our emotions, imagination, and cultural identity. However, the advent of Artificial Intelligence (AI) has pushed the boundaries of creativity by introducing new dimensions of collaboration between humans and machines.

AI art is any kind of image, text, video, audio or other kind of digital artwork produced by generative AI tools. These tools are fed millions of written, visual or aural samples of content that they can reference when creating AI-generated art.² Notable instances encompass Google's DeepDream, OpenAI's DALL-E, and Janelle Shane's experiments with generative adversarial networks (GANs). These systems draw upon extensive datasets, training their models to

¹ Author is a student at Government Law College, Thiruvananthapuram, Kerala, India.

² How Does AI-Generated Art Work? | Built In, <https://builtin.com/artificial-intelligence/how-does-ai-generated-art-work> (last visited Dec 23, 2023).

produce innovative content by discerning and emulating established patterns and artistic styles.³

II. HISTORICAL CONTEXT

The origins of AI art date back to the latter part of the 20th century, undergoing numerous advancements and transformations to assume its current manifestation.

1. Pioneering Generative Art (1960s-1970s):

During the 1960s and 1970s, a pioneering era unfolded as artists and computer scientists delved into generative art. Early computers were harnessed to craft geometric designs and patterns, laying the groundwork for AI's role in artistic creation.

2. AARON: Autonomous Artistic Creation (1973):

Harold Cohen's AARON emerged as a groundbreaking AI program in 1973, achieving autonomy in generating drawings and paintings. AARON marked a significant leap, establishing itself as one of the earliest AI systems capable of independent artistic expression.

3. Expert Systems in Art (1980s):

The 1980s witnessed the application of expert systems and rule-based AI to artistic endeavors. This era saw the inception of systems mimicking the decision-making processes inherent to human artists, contributing to the evolution of AI-generated art.

4. Resurgence with Neural Networks and Deep Learning (21st Century):

- The 21st century ushered in a resurgence of AI in art, fueled by the rise of neural networks and deep learning. This technological wave laid the foundation for more intricate and nuanced AI-generated art, steering the collaborative journey between humans and machines to new heights.

III. VARIETIES OF AI IN THE REALM OF ART AND CREATIVITY

Generative AI stands as a beacon of creativity, with Generative Adversarial Networks (GANs) leading the charge, enabling AI to craft diverse content, from images to music. Style Transfer adds another layer, allowing AI to infuse novel creations with the essence of existing artworks.

Assistive AI plays a vital role, offering support by suggesting ideas, enhancing workflows in tasks like image editing and 3D modeling, and even generating initial drafts for artists to refine.

Analytical AI contributes to art interpretation and critique, analyzing compositions, color theory, and emotional impact, while aiding in art classification and recognition for efficient

³ Chawinthorn Watiktinnakorn, Jirawat Seesai & Chutisant Kerdvibulvech, *Blurring the Lines: How AI Is Redefining Artistic Ownership and Copyright*, 3 DISCOVER ARTIFICIAL INTELLIGENCE 37 (2023).

collection management.

Hybrid approaches embrace co-creation, where artists collaborate with AI to produce joint works, seamlessly integrating human creativity with elements generated by AI.

IV. COPYRIGHT LAW AND AI ART

Copyright law constitutes a legal framework meticulously crafted to safeguard the rights of individuals who generate original works without replication from existing sources. Works crafted in this manner garner protection in accordance with the specific categories delineated by copyright law.^{4,5,6} Copyright law constitutes a meticulously crafted legal structure designed to safeguard the original works of individuals from direct replication. Within this framework, distinct categories are outlined to govern the protection of such creations. However, the emergence of AI-generated content introduces novel challenges to copyright law. The intricacies surrounding authorship and ownership become notably intricate when AI significantly contributes to the creative process. This complexity demands a thorough examination of copyright law, particularly in cases where AI plays a substantial role in content generation. This discussion delves into the implications of AI's growing involvement in artistic and literary creation, contemplating the potential adaptations required in copyright law to navigate this evolving landscape.

Currently, copyright law explicitly pertains to works authored by human beings. Despite AI's cognitive capabilities and human-like learning processes, its operation involves assimilating extensive datasets and iteratively improving through error recognition (programming). This distinction prompts essential questions about whether creations generated by AI can be considered the artistic output of individuals. Uncertainty arises from the AI's operational methodology, which may involve organizing or randomizing patterns that deviate from the envisioned creativity of the human creator, thus posing considerations about their legitimacy within existing frameworks.

V. AI ASSISTED ART AND AI GENERATED ART

AI-assisted art and AI-generated art represent two distinct paradigms within the intersection of artificial intelligence and the creative process. In AI-assisted art, human artists take the lead, leveraging AI as a collaborator or tool to enhance their creative endeavors. This collaborative

⁴ Gerald Spindler, *Copyright Law and Artificial Intelligence*, 50 IIC 1049 (2019).

⁵ Jingyi Cui, *Copyright and AI: Are Extant Laws Adequate?*, in *BIG DATA – BIGDATA 2022* 80 (Bo Hu et al. eds., 2022).

⁶ Yangzi Li, *AI Restoration Brings 'Dying' Masterpieces Back to Life, but Tricks Copyright?*, 30 *INTERNATIONAL JOURNAL OF LAW AND INFORMATION TECHNOLOGY* 368 (2022).

approach allows artists to benefit from AI suggestions, modifications, or augmentations without relinquishing control over the overall artistic vision.

On the other hand, AI-generated art places the emphasis on artificial intelligence as the primary creator, with minimal or no direct input from human artists. In this scenario, AI algorithms take center stage in generating, composing, or designing the artistic content. These two approaches reflect the spectrum of interactions between human creativity and AI capabilities, sparking discussions about the evolving roles of artists and technology in the realm of artistic expression.

VI. WORKING OF GENERATIVE AI SYSTEMS

Training advanced systems like ChatGPT necessitates vast datasets comprising texts, images, and parameters. This training involves the discernment of patterns by AI platforms to establish rules, make judgments, and predictions, facilitating effective responses to user prompts. However, this process introduces the potential for intellectual property (IP) infringement⁷, often through web-scraped data that may include copyrighted content. This also opens up a debate on whether AI training on copyrighted content falls under the fair use doctrine.

Recent legal actions, exemplified by cases involving Getty Images⁸ and artists suing AI art generators like Stability AI, underscore the IP challenges associated with AI. For instance, Getty Images accuses Stability AI of unauthorized copying of over 12 million images, potentially leading to trademark infringement claims.

The unresolved IP questions extend beyond training data to encompass the creative outputs generated by AI platforms. Consideration of copyright, patent, trademark infringement, and ownership of AI-generated content is crucial as generative AI adoption increases among individuals and businesses.

A significant concern arises in copyright, which traditionally requires originality attributed to human authors. Human involvement in the creative process is often deemed essential for copyright protection. Recent instances, such as a German artist⁹ revealing an AI-generated photo after winning a prestigious award, further highlight evolving challenges in attributing authorship.

The absence of legal personhood for AI currently denies it recognition as a holder of intellectual

⁷ Gil Appel, Juliana Neelbauer & David A. Schweidel, *Generative AI Has an Intellectual Property Problem*, HARVARD BUSINESS REVIEW, Apr. 2023, <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem> (last visited Dec 23, 2023).

⁸ Matt Novak, *Getty Images Sues AI Company Over Hideous Frankenphotos*, FORBES, <https://www.forbes.com/sites/mattnovak/2023/02/06/getty-images-sues-ai-company-over-hideous-frankenphotos/> (last visited Dec 23, 2023).

⁹ How Does AI-Generated Art Work?, *supra* note 1.

property rights. If no identifiable inventor or creator emerges, the work may potentially enter the public domain, prompting exploration into alternative solutions for safeguarding AI-generated works under copyright law.

VII. COMPARATIVE ANALYSIS OF INTERNATIONAL APPROACHES TO AI-GENERATED ART AND COPYRIGHT

Let's examine copyright legislation in various countries and analyze how it addresses the role of Artificial Intelligence (A.I.) in content creation. The global perspective on A.I.-generated works can be categorized into three main approaches. Firstly, some nations reject the concept of A.I. as an original author, leading to the denial of copyright protection for the content it produces. Secondly, countries in this group opt for case-by-case evaluations, often involving ongoing discussions, and may recognize A.I. authorship with the stipulation of human co-authorship. Lastly, a specific set of countries has formally acknowledged A.I.-generated works and granted them full copyright protection.

A comparative analysis of international approaches to AI-generated art and copyright reveals a diverse landscape shaped by distinct legal frameworks, cultural perspectives, and technological considerations. This examination navigates the key aspects defining how different jurisdictions address the intersection of AI creativity and copyright protection.

1. United States

In the United States, copyright law traditionally attributes authorship to human creators. AI-generated works may face challenges in meeting the originality requirement for copyright protection. According to the US Copyright Office, AI-generated works are not copyrightable. In the case of *Thaler v. Vidal*¹⁰, the Federal Circuit affirmed that only natural persons (*i.e.*, human beings) can be named inventors on U.S. patents, thereby excluding artificial intelligence from being listed as an inventor per se. In August 2023, A federal judge of U.S. District Court for the District of Columbia rejected an attempt to copyright an artwork generated by artificial intelligence.¹¹ However, according to US Copyright Office (USCO), AI-assisted works may qualify for protection in some cases, provided that there is sufficient human authorship.¹²

2. China

¹⁰ *Thaler v. Vidal*, (2022).

¹¹ Zachary Small, *As Fight Over A.I. Artwork Unfolds, Judge Rejects Copyright Claim*, THE NEW YORK TIMES, Aug. 21, 2023, <https://www.nytimes.com/2023/08/21/arts/design/copyright-ai-artwork.html> (last visited Dec 23, 2023).

¹² AI-Assisted Works Can Be Protected, US Copyright Office Says (1), <https://news.bloomberglaw.com/ip-law/ai-assisted-works-eligible-for-protection-says-copyright-office> (last visited Feb 2, 2024).

China's legal stance on AI-generated art aligns with a human-centric approach, requiring human involvement for copyright protection. The 2019 Beijing court ruling emphasized the prerequisite of human production for copyright, potentially excluding AI as an author. On 25 April 2019, the Beijing Internet Court released the first decision in relation to the copyrightability of the output automatically generated by computer software in China. In this case, the Beijing Internet Court¹³ held that copyrightable works should be created by natural persons, and therefore denied copyright protection for the output intelligently generated by computer software although it possessed originality. But on November 27, 2023 the Beijing Internet Court¹⁴ issued a decision recognizing copyright in AI-generated images. The court determined that the image generated by artificial intelligence satisfied the criteria of "originality," representing a human's unique intellectual effort, and therefore, should be acknowledged as a work eligible for protection under copyright law.

3. European Union

EU countries generally adhere to the principle that copyright protection extends to works created by human authors. In order to have copyright in EU, two conditions must be fulfilled: (i) the creation must be a "work", as defined in the case-law of the Court of Justice of the European Union ("CJEU"), and (ii) one must be the original author of the mentioned work or have obtained the copyright by transfer.

The Court of Justice of the European Union (CJEU) has acknowledged the concept of "work" as an independent and standardized element of EU law, necessitating the fulfillment of two concurrent conditions.¹⁵ Then in September 2020 report titled "Trends and Developments in Artificial Intelligence – Challenges to the Intellectual Property Rights Framework," the European Commission (EC) examined the application of the conditions outlined by the CJEU to AI-assisted output and AI-generated output. This examination led to the formulation of a "four-step test"¹⁶ as a proposal for addressing these issues. This is first of its kind in the world [*CJEU is in no way bound by the EC's report*].

¹³ Yong Wan & Hongxuyang Lu, *Copyright Protection for AI-Generated Outputs: The Experience from China*, 42 COMPUTER LAW & SECURITY REVIEW 105581 (2021).

¹⁴ Beijing AI Generated Images Copyright Law, <https://www.natlawreview.com/article/beijing-internet-court-recognizes-copyright-ai-generated-images> (last visited Dec 23, 2023).

¹⁵ Eleonora Rosati, *Copyright at the CJEU: Back to the Start (of Copyright Protection)*, in DEVELOPMENTS AND DIRECTIONS IN INTELLECTUAL PROPERTY LAW 211 (Hayleigh Boshier & Eleonora Rosati eds., 1 ed. 2023), <https://academic.oup.com/book/46572/chapter/408277243> (last visited Dec 23, 2023).

¹⁶ Pieter De Grauwe and Sacha Gryspeerdt, *Artificial Intelligence (AI): The Qualification of AI Creations as "Works" under EU Copyright Law*, GEVERS (Jun. 21, 2022), <https://www.gevers.eu/blog/artificial-intelligence/artificial-intelligence-ai-the-qualification-of-ai-creations-as-works-under-eu-copyright-law/> (last visited Dec 23, 2023).

4. India

In India, the Copyright Act of 1957 governs the matter of creative works. However, there is a notable gap in inclusivity concerning AI-generated works. According to Section 2(d) of the act, an "author" is defined as the individual or legal entity responsible for causing the creation of the work, explicitly including humans and legal persons. This definition, unfortunately, precludes AI systems from being recognized as authors. In 2020, the Indian Copyright Office rejected an application which sought to list image-generating AI (RAGHAV) as the sole author of an artwork.¹⁷

5. South Africa

In South Africa, copyright law traditionally centers around human authorship. The Copyright Act recognizes works that result from the author's skill, effort, and creativity. In a ground breaking South African case in 2021, Thaler's A.I. system, DABUS, was recognized as an "inventor" for two patents¹⁸. South Africa became the first country to issue a patent designating an artificial intelligence tool as the inventor and the machine's owner as the patent owner. Stephen Thaler encountered rejections for patent applications by his AI system, DABUS, in jurisdictions including Australia, the UK, the US, New Zealand, and the European Patent Office. The denials stemmed from patent laws specifying only a natural person can be named as the inventor in a patent application. South Africa, on the other hand, accepted his application and issued a patent.

VIII. THE IMPERATIVE FOR GLOBAL COPYRIGHT STANDARDS IN THE REALM OF AI ART

The imperative for global copyright standards for AI art arises from the dynamic nature of artificial intelligence and its increasing role in artistic creation.

1. Cross-Border Collaboration: Global copyright standards address the need for seamless collaboration in AI art across borders, ensuring clarity in ownership and protection.
2. Consistency in Legal Frameworks: Disparities in interpreting and applying copyright laws to AI-generated works underscore the necessity for global standards to create a uniform legal landscape.

¹⁷ Rohini Roy, *AI Can Now Make Art, But Can Indian Laws Protect Our Artists?*, THEQUINT (2023), <https://www.thequint.com/news/law/artificial-intelligence-creating-art-how-to-protect-artists> (last visited Dec 25, 2023).

¹⁸ Nitish Arora, *Thaler's Battles: AI-Art Copyright Debates in the US and the South African Inventor Controversy*, MEDIUM (Aug. 23, 2023), <https://medium.com/@nitisharora41/thalers-battles-ai-art-copyright-debates-in-the-us-and-the-south-african-inventor-controversy-38f546be0e6f> (last visited Dec 25, 2023).

3. **Authorship Ambiguity:** AI's impact on traditional authorship necessitates guidelines for attribution, acknowledging contributions from both humans and AI on a global scale.
4. **Protection of Cultural Heritage:** Ethical parameters defined by global standards can safeguard cultural heritage, preventing misappropriation and exploitation in the realm of AI art.
5. **Encouraging Innovation and Fair Compensation:** Global standards create an environment that fosters innovation, attracts investment, and ensures fair compensation, promoting the growth of the AI art ecosystem worldwide.

IX. CONCLUSION

The rapidly advancing landscape of AI technology necessitates a proactive and collaborative approach to establish global copyright standards for AI art. As AI continues to redefine the boundaries of artistic creation, the potential clash between national laws underscores the urgency for a harmonized framework. Without global standards, the diverse interpretations and applications of copyright laws across countries risk impeding cross-border collaboration and hindering the growth of the burgeoning AI art ecosystem.

Moreover, fair compensation for artists whose works serve as the foundation for AI-generated art is a central tenet in this discourse. Establishing global copyright standards ensures that artists are justly rewarded for their contributions, fostering a sustainable and ethical ecosystem for the burgeoning AI art community. As we stand on the cusp of a new era in artistic creation, the implementation of global copyright standards not only addresses immediate challenges but also paves the way for a future where AI and human creativity coalesce harmoniously, shaping the trajectory of art in the digital age.
