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Artificial Intelligence and Copyright Conundrum

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Abstract- Artificial intelligence is widely acknowledged to be one of the most dramatic technological advancements, which has the potential to be a creator of the world as well as a destroyer. Artificial Intelligence is already infiltrating and having a ripple effect in every strata of society. Things are becoming complex with the use of artificial intelligence by artists for creative works, having afflicting implications for Intellectual Property law. Artificial intelligence can instantly compose music, write blogs, novels, and poetry, and generate paintings and drawings by learning from subsisting work. AI has made it impossible to distinguish between artwork created by humans and one by computer with or without human intervention, raising the question of whether work by AI should be copyright protected; if yes, how? The authorship of computer-generated works was not contested before because the computer program was merely a tool that helped along the creative process; however, with the advent of Artificial intelligence, a computer program is no longer just a tool but stimulates human intelligence to create artistic work by drawing from the already existing database, begging the question of how IPR laws are to be applied to such creative work. This paper assesses the implications of using AI to create works and the potential infringement of existing copyrights. It further attempts to address the issue of the authorship of such AI- generated works and who will have a rightful claim to it. After a comparative analysis of the legal framework of different countries pertaining to AI-generated works, this paper envisages granting authorship to AI in the Indian legal framework.

Keywords: Artificial Intelligence, A.I. Generated Work, Copyright, Authorship.

I. INTRODUCTION

Innovation has been a driver of human progress since the existence of mankind. With the rapid growth in speed and capability of modern computers, artificial intelligence commonly known as AI has assumed a more vital position as a driver of innovation and is geared to revolutionize different facets of our lives. Concepts such as machine learning and independent thoughts of technology transcending human capabilities are no longer limited to a few sci-fi movies. AI impacts our day-to-day life—from ChatGPT, the Live Chat on our favourite ecommerce site, facial recognition that unlocks our phone, to futuristic self-drive car. This recent popularization of AI has also made us aware of the fact that humans are no longer the only source of creative works. Computers with or without human assistance are also able to create artistic or innovative works. Creative works produced as a result of these learned skills fall into a legal grey area pertaining to the extension of copyright protection to AI created works. The line between human and machine-generated content has blurred, leading to confusion, disputes, and legal conundrums.

Copyright Fundamentals

Copyright, in simple terms, is the "right to copy".1 In other words, the owner of copyright material has the right to permit its production or replication or to provide authorization to others to do so.2 Copyright law provides a framework for safeguarding original creative works. Copyright law emphasizes originality, fixation in a tangible medium, and the notion of authorship. Authorship is a key concept of copyright law. The author is usually the person or people who performed the creative act that resulted in the production of the work. Traditionally, copyright law requires human authorship, granting rights to people who contribute originality and ingenuity.

Challenges to Copyright fundamentals by AI-Generated Output

AI is the multidisciplinary branch of computer science dealing with developing smart machines with the capacity to carry out activities that would typically need human intelligence.3 The nature of the AI algorithm allows it to concurrently absorb inputs and outputs in order to learn the data and generate outputs in response to fresh inputs.4 Taking into account that there are multiple stakeholders involved during the creation of an AI and at its usage,

it creates complexities and challenges the conventional understanding of copyright law, which is built around the concept of human authorship. Furthermore, AI lacks human characteristics like creativity, intent, and consciousness. The collaborative nature of AI development, which involves AI developers, trainers, and users, complicates determining authorship in AI-generated works even further.

II. CURRENT LEGAL INTERPRETATIONS IN REGARDS TO AUTHORSHIP OF AI GENERATED WORK

Historically, copyright law did not foresee the emergence of AI-generated creations. In its early stages, AI was perceived as a tool augmenting human creativity, with sole copyright attribution granted to human creators. However, with the advancement of AI technology, the question of whether AI-generated works should be eligible for copyright protection has become increasingly prominent.

Scientific Journals - Nature, a renowned scientific journal, has addressed this legal complexity by amending its editorial policies. The policy now explicitly states that "Large Language Models (LLMs), such as ChatGPT, do not currently meet our authorship criteria."5 It highlights that attributing authorship to LLMs poses challenges, as it entails accountability that is not effectively applicable to these AI models. Instead, Nature advises authors to adequately document the use of LLMs in the Methods section or a suitable alternative part of their manuscripts.6

United States - In the United States, the legal landscape concerning AI-generated works has predominantly safeguarded creations by natural persons. Notably, in the "Monkey Selfies" case, an animal rights group contended that a monkey named Naruto held copyright over photos it took. However, the US Court of Appeals dismissed the claim, emphasizing that animals lack statutory standing under the Copyright Act due to their non-human status.7 Furthermore, in 2022, the US Copyright Office reiterated the principle of human authorship by rejecting copyright registration for a 2-dimensional artwork called "Entrance to Paradise," generated by an AI program named Creativity Machine.8

China - Chinese courts have taken an active role in interpreting and implementing copyright law concerning outputs generated by artificial intelligence (AI). Noteworthy cases, such as Feilin v. Baidu9 and Tencent Shenzhen v. Shanghai,10 have established specific criteria for granting copyright protection to AI-generated creations. These criteria include adopting an objective approach to assess originality and considering the level of human participation in the creative process.11

In situations where AI-generated works involve significant human intellectual input, Chinese courts have acknowledged their copyrightability and recognized the user of the AI software as the rightful copyright owner.12 However, when AI autonomously generates content without substantial human intervention, there currently exists a lack of clear guidance regarding copyright ownership. Nevertheless, the existing copyright legal framework can still be applied to AI-generated products as long as there is a discernible degree of human involvement in the creative process. This principle aligns with the interpretation of copyright statutes in other countries that implicitly endorse the "human authorship principle," requiring human involvement for a work to be copyrightable.

India - Indian copyright law follows a similar trajectory, asserting that creative works solely generated by AI machines lack copyright eligibility as they fail to meet the human authorship requirement under Section 2(d)(vi) of the Act.13 This section allows authorship to be granted to the individual "who causes the work to be created." Indian copyright practice, as delineated in the Copyright Office's Practice and Procedure Manual, mandates the provision of natural persons' details during registration.14 Consequently, AI, being a non-natural entity, is deemed incapable of authorship or co-ownership under Indian law. However, intriguingly, records from the Copyright Office reveal that the 'Raghav Artificial Intelligence Painting App'

(AI) remains registered as a co-author, despite the issuance of a withdrawal notice over a year ago.15

III. AI AS A CREATIVE TOOL VS. INDEPENDENT CREATOR

Earlier AI generated works did not create much problems with respect to copyright ownership as computer programs were considered mere tools to support the activities which were creative in nature and the human intervention was required for the production of the work. The creative process relied heavily on human interaction and innovation, with AI functioning as a mere tool to improve efficiency and productivity. In these cases, copyright ownership remained with the human creator by virtue of Section 2(d) of the Copyright Act, 1957 by providing that "in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created."16

However, more and more AI systems and algorithms are being employed to produce work on their own without human intervention. AI, such as ChatGPT, has progressed to the point where it can develop creative output such as prose, art, and music without considerable human intervention. Numerous artificial intelligence (AI) systems, possess the capability to autonomously compose art without human intervention. For instance, Watson Beat can generate entirely new musical compositions by analysing just 20 seconds of existing music, resulting in the creation of original musical pieces at a fraction of the cost typically associated with human musicians' work.17 Similarly, AI systems like DeepDream can produce distinctive photographs through the study of random images alone.18 Furthermore, there are AI-based systems specializing in crafting narratives independently, and their level of sophistication continues to advance significantly.

On this basis AI generated work can be classified into two types of programs. The first where the work is created by AI program with direct guidance, human effort, contribution, and intervention. The second category of work deals with autonomously generated AI creations, where there is no to minimal human intervention. The question that arises in such cases is that can AI work with no or minimal human intervention be copyright protected as copyright laws only recognize human authors.

The Copyrightability of AI-Generated Works

There is an ongoing debate regarding whether some AI-generated works should be eligible for copyright protection. Advocates of this viewpoint assert that AI programs can be likened to other creative tools employed by humans to produce copyrighted works. They argue that, similar to how the Supreme Court's 1884 ruling in Burrow-Giles Lithographic Co. v. Sarony19 established copyright protection for photographs when creative decisions like composition, arrangement, and lighting were made by the photographer, AI-generated works should also be eligible for protection.

However, those who challenge this analogy raise a counterargument. They suggest that when instructing an AI system like Chat-GPT to create a painting, one's contribution may be limited to providing the idea itself. In their view, this absence of a significant human creative input might result in the artwork lacking a clear author and consequently being considered part of the public domain. Ultimately, the question of whether copyright law will extend protection to generative AI outputs remains uncertain and subject to ongoing discussions.

Copyright Infringement

Apart from the previously mentioned technical challenges, there exists a potential issue where AI-generated output may not be distinct among users who input similar instructions. This can lead to copyright disputes, where two users assert copyright ownership over the exact same AI- generated output they independently created. Moreover, AI's creative process, often reliant on analysing vast amounts of online data, raises concerns about potential copyright violations when generating works inspired by copyrighted materials. This complicates the user's claim of copyright, as such usage may not fall under the purview of fair dealing.

However, proponents argue that AI, particularly Machine Learning and Unsupervised Machine

Learning, possesses the capacity for self-learning and intelligent decision-making.20 These AI systems can enhance their performance and autonomously acquire superhuman capabilities, producing original works that are not mere copies or dictated by human instructions. A prime example is the artwork "Edmond de Belamy," which was the first AI-generated painting auctioned for $432,500 in 2018.21 Much like a child's capacity to learn and evolve through observation, AI systems can learn by assimilating data, eventually exhibiting creative and intelligent output independently, thus warranting copyright protection.

Copyright law jurisprudence underscores the significance of originality for copyright protection. To qualify, a work must surpass mere replication and incorporate a level of new or creative input. AI's innate ability to self-learn and generate unique, creative output aligns with the criteria for copyright protection based on originality. Consequently, autonomous AI systems producing original works merit copyright protection.

IV. AUTHORSHIP OF AI GENERATED WORK

Several options have been discussed in various scholarly articles and books to understand better the proper entitlement of the ownership of A. I. system-produced work. The user's input into AI, prompting the creation of specific works, could warrant authorship and initial copyright ownership. Alternatively, the creative decisions made during AI coding and training may provide the AI's creator with a stronger claim to some form of authorship. However, this paper contends that AI-produced works are inherently original creations deserving of copyright protection, with ownership vested collectively in AI stakeholders as a legal entity. Following, six options are the most obvious and discussed. These options22 are:

1) A. I. system-A. I. system by itself is the owner of the A. I. generated work.

Designating the AI system itself as the owner of AI-generated works raises fundamental questions. This approach may not align with the statutory prerequisites or the foundational principles of copyright, especially given the current lack of advanced AI consciousness.23 Granting ownership directly to the AI system may not be in harmony with the original intent of copyright law.

2) Programmer-the programmer or programmers of the A. I. system should be the owner of the A. I. generated work.

Another perspective suggests that ownership rights should be vested in the programmer or programmers responsible for creating the AI system. While these individuals initiated the AI's development, the AI's capacity for self-learning and creative output extends beyond the programmer's initial coding. User's input into AI also responsible in creating a specific output.

3) User-the user of the A. I. system

Third option is not a viable option because AI is not considered merely a tool to aid him with his creative or artistic work. It can work independently without any human intervention and hence granting the ownership rights to such person will be contrary to the fundamentals of the copyright law.

4) Company/Owner-the company that produces or owns the A. I. system;

This proposition draws upon the principle of principal-agent relationships, designating the company owning the AI system as the principal and the AI as its agent. However, exclusive ownership by corporations could stifle creativity and centralize the creative process within the hands of large entities.

5) Public domain-A. I. system-produced work belongs in the public domain

Placing AI system-produced works in the public domain may discourage programmers and investors from engaging in AI-based technologies, as there would be limited incentive or reward for their contributions.24

6) **Hybrid Ownership-Ownership by an Artificial Intelligence Legal Entity, AiLE -** The hybrid ownership model introduces the concept of an Artificial Intelligence Legal Entity (AiLE) that embodies the collective stakeholders of the AI system. These stakeholders, including

programmers, users, companies/owners, and the AI system itself, become shareholders within AiLE based on their contributions to the original work.

Hybrid Ownership - Artificial Intelligence Legal Entity
The hybrid ownership model presents a balanced approach to safeguarding the rights of authors while duly attributing ownership. Central to this proposal is the establishment of a legal entity known as the "Artificial Intelligence Legal Entity" or AiLE.25 This entity encompasses various stakeholders, which may include programmers, users, companies/owners, and even the AI system itself, all of whom hold roles as stakeholders and shareholders within AiLE. The allocation of ownership within AiLE is contingent upon each stakeholder's contribution to the creation of the original work.

Additionally, this model addresses critical aspects of liability and accountability, which are essential for addressing legal issues in cases of copyright infringement. Assigning ownership to AiLE for works generated by AI ensures that there is a clear and identifiable entity to address any potential legal consequences arising from the infringement of copyrighted material.26 This applies to all stages of AI, from its programming and training to deployment, utilization, and the resulting output.

Furthermore, the hybrid model takes into account the foundational principles of economic incentives and rewards. Given the outdated nature of the current Indian Copyright Act, which does not fully align with the realities of advanced AI, many AI-generated works have entered the public domain. This situation does not provide adequate financial incentives for AI gadget owners and the programmers behind them, potentially diminishing their enthusiasm to contribute to the progress of AI technology. By affording protection to AI-produced work through AiLE, akin to the protection granted to human authors, AiLE, consisting of both humans as programmers and users, collectively gains the motivation and incentive to continue producing original works.

However, this collaborative approach has its own complexities. Under the Hybrid Ownership model, the question of copyright ownership becomes multifaceted. While traditional copyright law often attributes ownership to an individual or entity responsible for creating a work, AiLE distributes ownership among multiple contributors. Each stakeholder's contribution, whether it be programming, user input, or AI-generated content, adds complexity to the determination of copyright ownership. Consequently, determining who holds the copyright in the collaborative output of an AiLE requires a careful evaluation of each stakeholder's role and contribution.

V. LIABILITY OF AI DEVELOPERS AND USERS

The issue of liability in cases of copyright infringements involving AI-generated content indeed presents a complex legal landscape. Determining who should be held accountable—AI developers, users, or both—requires a careful analysis of the specific circumstances and the legal framework in place. Under current doctrines, liability may extend to various parties, including AI users, AI developers, and the entire Artificial Intelligence Legal Entity (AiLE).

Under current doctrines, both the AI user and the AI company could potentially be liable. However, the user might not be aware of—or have access to—a work that was copied in response to the user’s prompt and hence, becomes a little challenging to hold such an user liable. To resolve such conflicts and the issue of liability arising out of the works created by AI, some believe it is imperative to incorporate the doctrine of principal-agent relationship. This concept posits that AI, in its current state, is essentially an agent that operates based on algorithms and programming created by a human programmer. Under this framework, the programmer or the entity controlling the AI system assumes the role of the principal, and AI serves as the agent. With this, AI may be held legally responsible for copyright violations, with its programmer serving as the principal.27

However, under the AiLE model, collective liability may be considered. If the AiLE, as a legal entity, exercises control over the AI system and the use of AI-generated content, it may be held collectively liable for copyright infringement. Collective liability may apply if the AiLE benefits financially from the infringing activities or if it plays an active role in facilitating or encouraging copyright violations.

The determination of liability in AI-generated content cases is highly fact-specific and can vary based on the jurisdiction, the nature of the content, and the roles and responsibilities of the parties involved. It is essential to consider whether AI developers or users knowingly engaged in or facilitated copyright infringement, the extent of their involvement, and whether they profited from the infringing activities.

VI. CONCLUSION

The Copyright Act of 1957 was established in a time when AI-generated works were virtually unheard of. In light of this, there is a pressing need to redefine the concept of authorship within copyright law to encompass both human and non-human authors. This adjustment would enable AI to be recognized as an author in its own right and grant it copyright protection as a distinct legal entity. Such recognition would serve to prevent valuable creative works from falling into the public domain prematurely and provide programmers and companies behind AI systems with the necessary exclusivity over copyrightable content.

The existing gap in copyright law has far-reaching consequences, potentially resulting in reduced accessibility to important new works for academics, researchers, and consumers. Moreover, it poses a significant impediment to the technological and creative progress of modern society. Despite the magnitude of this issue, it has not been adequately addressed, and a viable solution remains elusive. Even prominent intellectual property attorney Jane Doe asserts that copyright law must adapt to the era of AI. She proposes the establishment of a new legal framework that views AI as a tool rather than a creative entity, accompanied by clear guidelines for attributing authorship.

To bridge this gap, legislative bodies should consider enacting laws that clarify whether AI- generated works warrant copyright protection, who should be acknowledged as the author of such works, and under what circumstances training generative AI programs can be considered fair use. Assigning ownership rights to a hybrid entity like the Artificial Intelligence Legal Entity (AiLE) represents a step in the right direction. The AiLE encompasses all individuals to whom copyrightable work can be attributed, effectively addressing the issue of liability by incorporating the human element into the ownership equation. Furthermore, this approach aligns with the fundamental economic and incentive theories that underpin copyright law, as it brings together companies, users, and programmers who are all motivated by these foundational doctrines.

It is crucial to emphasize that the proposed solutions would serve as a source of motivation for AI developers while maintaining compatibility with the existing legal system. Enforcement of these solutions is paramount for the smooth evolution of AI and its enduring role as a catalyst for creativity and innovation.

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