



CHALLENGES IN PROTECTING COPYRIGHT FOR AI-GENERATED CONTENT

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Abstract: The rapid advancement of artificial intelligence (AI) technology has revolutionized the field of content creation, giving rise to an era where AI systems generate an increasing amount of digital content from art and music to literature and news articles. While this AI-generated content presents opportunities for innovation and creativity, it also brings to the forefront a host of complex legal and ethical challenges related to copyright protection.

This abstract explains the multifaceted challenges of safeguarding copyright for AI-generated content. AI's ability to autonomously produce original works complicates the traditional understanding of copyright ownership and authorship, leading to questions about who should hold the rights to AI-generated creations. Moreover, the abstract delves into the issue of distinguishing AI-generated content from human-generated content, which becomes increasingly challenging.

The paper highlights the international legal landscape surrounding AI-generated content, discussing the inadequacy of current copyright laws to address this emerging field. It elaborates the need for new legislation and policy frameworks that can balance the protection of intellectual property with the promotion of innovation and the public interest.

Furthermore, the paper addresses the role of technology in protecting copyright, including the use of blockchain and other digital tools to enforce copyright claims. It also discusses emerging practices and standards for clearly labeling AI-generated content, aiding in its differentiation from human-authored works. As AI continues to blur the line between human and machine-generated content, the challenges in protecting copyright for AI-generated content are multifaceted, requiring the collaboration of lawmakers, technologists, and content creators. This abstract provides a comprehensive approach to copyright in the age of AI, one that promotes innovation, safeguards intellectual property, and upholds ethical standards in the digital frontier.

Index Terms– Artificial Intelligence(AI), Copyright, Intellectual Property, Authorship, Legal System

I. INTRODUCTION

In an era of artificial intelligence (AI) the ever-increasing ubiquity of digital content, the concept of creativity and authorship is undergoing a profound transformation. AI systems, armed with sophisticated algorithms and vast datasets are generating a burgeoning array of creative works, spanning music compositions, literary pieces, visual art and even journalistic content. This paradigm shift in content creation has ushered in a new frontier of digital expression where the lines between human and machine-generated content have become increasingly blurred. However, amid this transformative wave, the challenges of

guarding the digital frontier and protecting copyright for AI-generated content have become more complex and intricate than ever before.¹

Traditional copyright frameworks, originally conceived to protect human authorship and creative works, now face the daunting task of adapting to a landscape where the creator may be an algorithm rather than an individual. The issues of authorship and ownership become paramount in the context of AI-generated content, as these works lack the traditional human touch. The question of whether AI itself can be considered an author and, if so, who should hold copyright over AI-generated content is a critical concern.

Furthermore, in addition to the legal complexities, the blurred line between human and AI authorship also creates challenges in distinguishing AI-generated content from its human-generated counterparts. This challenge hinders the ability to enforce copyright claims effectively and may lead to issues related to plagiarism, misattribution, and unauthorized use. These challenges underscore the need for clear markers or methods to differentiate AI-generated content, both to protect the rights of human creators and to ensure consumers are aware of the content's origin. Also the ethical concerns arise in the era of AI-generated content, with the proliferation of deepfakes and the potential for misinformation and manipulation.

This paper delves into the multifaceted challenges of protecting copyright for AI-generated content in this rapidly evolving digital landscape. It explores the legal, technological, and ethical dimensions of the issue emphasizing the need for innovative and comprehensive solutions to safeguard the rights of creators, preserve ethical standards and foster a balance between human ingenuity and artificial intelligence in the digital age.

II. WHAT IS ARTIFICIAL INTELLIGENCE?

The term "Artificial intelligence" was firstly brought by John McCarthy in 1956.³ The World Intellectual Property Organization has categorized AI into three main groups, encompassing expert systems, perception systems, and natural language systems. Artificial intelligence (AI) is a field of computer science that involves creating intelligent systems capable of performing tasks that typically require human intelligence. These systems use advanced algorithms and large datasets to simulate human-like thinking and decision-making processes. AI encompasses various subfields, including machine learning, natural language processing, and computer vision. Machine learning algorithms enable AI systems to learn from data, adapt, and improve their performance over time. AI has numerous applications, from voice assistants like Siri to self-driving cars, healthcare diagnostics, and even financial analysis. As AI technology continues to advance, it holds the promise of revolutionizing industries and reshaping the way we interact with technology. WIPO has classified AI systems into three categories, namely: (i) "expert (or knowledge-base) systems," (ii) "perception systems," and (iii) "natural language systems."⁴

Artificial neural networks possess the ability of self-learning, allowing them to enhance their performance with increasing data availability. Consequently, AI empowers machines to perform tasks independently or with minimal human intervention that would typically demand human intelligence. It's crucial to view AI

not as a singular technology but as a diverse field encompassing various subfields like machine learning, robotics, language processing, and deep learning. Within this framework, "machine learning" and "deep learning" emerge as distinct subsets of AI.⁵ In the realm of machine learning, a computer program incorporates an inherent algorithm that enables it to learn from input data, adapt, and make subsequent decisions autonomously or as directed. Essentially, machine learning algorithms assimilate information from inputs provided by the programmer to create something novel through independent decision-making. Consequently, the programmer establishes the parameters, while the AI autonomously generates the output.⁶ AI, was once a mere concept confined to science fiction and debates on the implications of technology in the modern world, has now seamlessly integrated into our daily lives. It serves as a pivotal component in numerous technical fields and various sectors. Artificial Intelligence has profoundly influenced industries such as manufacturing, healthcare, and supply chains. Its unique capability to perform tasks beyond human capacity has led to a plethora of applications, ultimately enhancing performance and productivity.⁷

III. ARTIFICIAL INTELLIGENCE AND COPYRIGHT PROTECTION

Since the 1970s, computer programs have been extensively employed in producing copyrighted works. Initially, the generated works didn't pose significant challenges regarding copyright ownership. This was because computer programs were viewed as tools supporting creative activities, where human intervention was essential for actual work production. They were akin to stationary items that necessitated human involvement for work creation. However, the landscape has undergone a profound shift. With the integration of AI, computer programs are no longer mere tools; they now possess the capability to independently generate works by autonomously making decisions. AI harbors the capability to generate a substantial volume of work in a brief timeframe with minimal investment. The outputs produced by AI may be eligible for copyright protection across various jurisdictions due to their inherent originality. The criterion of demonstrating "skill and judgment" in establishing originality might be considered fulfilled through the programming and parameters upon which the AI compiles and creates the work.⁸ Nonetheless, in the scenario of AI-generated content, there is no identifiable author. In the case of AI-assisted works, human involvement exists. Consequently, in the latter situation, the individual who facilitated the creation of the work using artificial intelligence may assert authorship. However, this does not hold true when the work is generated solely by AI without any human intervention. The matter of authorship in such instances has posed a challenge globally.

Attributing authorship to AI for AI-generated works could lead to various complications. The output produced by AI may not be flawless and might involve the use of biased or toxic language. This could result in issues such as defamation, obscenity, incitement of violence based on factors like caste, creed, or religion, or other undesirable consequences. Determining civil and criminal liability for the AI becomes challenging, given that AI lacks recognition as a legal entity. In such situations, rectifying the harm caused by the work may prove difficult, with the potential for irreparable damage. Additionally, if an AI-generated work bears

"substantial similarity" to an existing copyrighted work, then the question is how would the AI be held accountable for infringement. Moreover, if AI is designated as the author, it wouldn't have the capacity to transfer ownership of the work due to its lack of personhood.

AI's emergence in content creation, such as music, art, and literature, raises intricate issues in copyright law. The challenge lies in defining authorship, ownership, and originality for works generated by algorithms. Moreover, distinguishing AI-generated content from human creations for copyright enforcement is problematic. The ethical dimension becomes pronounced with concerns like deepfakes. Addressing these issues demands legal adaptation and innovative technological solutions to protect creators' rights while preventing misuse. As AI continues to reshape the creative landscape, the relationship between AI and copyright protection is a complex and evolving domain at the intersection of law, technology, and ethics.

AI-generated content introduces various legal complexities within the realm of copyright law. These intricacies encompass questions of copyright ownership and the eligibility of AI-generated works for copyright protection. Copyright law stipulates that a creative product must exhibit both originality and permanence in a tangible form for protection. This gives rise to concerns related to the originality of content generated entirely by algorithms and the status of the algorithm as a tangible form of expression.⁹

IV. LEGAL STATUS OF ARTIFICIAL INTELLIGENCE AND COPYRIGHT

The copyright protection for AI-generated creations may vary across different legal jurisdictions. The legal frameworks concerning copyright for AI-generated content remain evolving and are not fully established. The realm of AI and its applications continues to expand. Among the pivotal facets of intellectual property rights lies copyright protection, which serves as a shield against unauthorized utilization of an author's unique creation. In India, the primary legislation governing copyright is the Copyright Act of 1957. This legislation grants authors exclusive rights over their original works for the duration of their lifetime and an additional 60 years.

In India, to be eligible for copyright protection under the Copyright Act of 1957, a work must meet two essential criteria: it must be original and must be preserved in a tangible medium. The determination of originality is guided by legal precedents and judicial interpretations, which consider factors such as the application of adequate judgment, skill, and labor in the creation of the work.¹⁰

Section 17 of the Indian Copyright Act of 1957, states that the author or creator of the work and who is the original owner of the copyright work, is first in line to get this automatic copyright protection. The notion of "Modicum of creativity" emerged in the Fiest Publications case, emphasizing the importance of creativity beyond mere skill and labor in copyright assessment. India is a signatory to the Berne Convention, which stipulates that copyright comes into existence as soon as a work is created, and registration is not obligatory. However, it is generally recommended to opt for registration. Because of AI's continuous self-improvement, its results remain unpredictable. However, this unpredictability does not prevent us from specifying AI's intended task or purpose. In simpler terms, the outcome of AI doesn't necessarily align with its intended function. A software engineer constructs an AI framework designed to transform input into desired output.

This foundational framework remains consistent as the AI learns. Consequently, narrow AI can be classified as a computer program according to EU regulations and is consequently protected by copyright. It's essential to note that narrow AI, which currently exists, lacks legal personality.

➤ **Legal status of AI and copyright in India**

Under the Indian Copyright law Section 14 of the Copyright Act of 1957 establishes that the rights exclusively granted to the owner, enabling them to carry out or authorize specific actions like reproduction, publication, adaptation, and translation of a work, are legally denoted as "Copyright." Moreover, Section 17 of the same Act specifies that the creator of the work is initially recognized as the copyright holder. However, if the work is created as a contractual obligation for compensation at the employer's request, in this scenario, the employer assumes ownership of the work.¹¹

One of the factors preventing AI from obtaining copyright protection in India is the provision found in Section 2(d) of The Copyright Act, 1957. This section offers a definition of the term "author." According to this definition, an individual must qualify as an "author" to be recognized as the rightful owner of any copyrighted work.

Section 13 of The Copyright Act, 1957 of the Act which defines "works in which copyright subsists".

Works in which copyright subsists.- (1) Subject to the provisions of this section and the other provisions of this Act, copyright shall subsist throughout India in the following classes of works that is to say,

- (a) Original literary, dramatic, musical and artistic works;
- (b) Cinematograph films; and
- (c) Sound recording¹²

It can be clearly stated that to assert authorship and copyright ownership, AI must produce an original work that is both tangible and fixed in a medium. However, the work generated by AI is merely a compilation lacking any significant elements of creativity, skill, or labor.

➤ **Legal status of AI and copyright internationally**

The legal status of artificial intelligence (AI) and copyright on an international scale is a complex and evolving area of law. Different countries have varying approaches to this issue. For instance, in the United States, the Copyright Office has stated that works created by non-human agents, including AI, are not eligible for copyright protection. In the European Union, the legal framework is more nuanced, recognizing the possibility of copyright when there is human involvement and creative choices in AI-generated works. International discussions are ongoing to adapt copyright laws to the digital age and the increasing role of AI in content creation. It's crucial for legal systems to strike a balance between incentivizing innovation and creativity while ensuring fair compensation for human creators and proper regulation of AI-generated content. Therefore, the legal status of AI and copyright continues to evolve, reflecting the rapidly changing landscape of technology and creative expression on a global scale.

The Berne Convention for the Protection of Literary and Artistic Works is an international agreement that has relevance to copyright law and content generated by AI. This convention includes clauses concerning

copyright ownership, duration, and the enforcement of copyright, establishing baseline criteria for copyright protection in member nations. While the Berne Convention provides a structure for safeguarding the rights of authors and copyright holders, irrespective of the method of creation, it does not explicitly cover AI-generated content.

The World Intellectual Property Organization (WIPO) Copyright Treaty is another global accord with relevance to copyright law and content generated by AI. This treaty encompasses clauses regarding the utilization of technological measures to safeguard copyrighted content and provides enhanced safeguards for digital works. The WIPO Copyright Treaty provides a structure for upholding the rights of authors and copyright holders in the context of the digital era, albeit without explicit coverage of AI-generated content.¹³

Numerous international agreements and principles establish a framework for safeguarding the rights of creators and proprietors of copyrighted materials, regardless of their method of origin. However, it's important to note that copyright law and the challenges presented by AI-generated content are intricate and continually evolving, with variations from one country to another.

V. ROLE OF JUDICIARY IN PROTECTION OF COPYRIGHT FOR AI GENERATED CONTENT

➤ **Burrow Gilles Lithographic Co. v. Sarony¹⁴**

In the case of *Burrow Gilles Lithographic Co. v. Sarony*, the central question revolved around the eligibility of photographs for copyright protection. This case delved into the distinction between creative and mechanized efforts, particularly considering the feasibility of granting copyright protection to products generated by machines. The court concluded that activities solely based on mechanical processes lack inherent creativity, which subsequently limited the extent of their copyright protection. Thus, if a stringent interpretation were applied to AI, it would pose challenges in conferring copyright protection to works produced by artificial intelligence.

➤ **Bleistein v. Donaldson Lithographing Co.¹⁵**

The case of *Bleistein v. Donaldson Lithographing Co.* was continued as the legal inquiry explored in the case of *Burrow Gilles Lithographic Co. v. Sarony*. In this the Court established a definitive contrast between human endeavors and artificial creations. Justice Holmes, representing the majority, emphasized the distinct nature of human personality and asserted that such distinctiveness was a prerequisite for asserting copyright protection. The Court underscored this point by employing the phrase "something irreducible, which is one man's alone," signifying that anything not stemming from human creativity had no standing for copyright protection.

➤ **Eastern Book Company & Ors v. D.B. Modak & Anr. ((2008) 1 SCC 1¹⁶)**

In the case of Eastern Book Company & Ors v. D.B. Modak & Anr. ((2008) 1 SCC 1), it was clarified by the Supreme Court of India that to claim copyright for a compilation, the author must have applied skill and discernment in its creation. This compilation need not necessarily be innovative or novel, but it should go beyond mere effort and resources. The author's derived work should exhibit distinct attributes and features, emphasizing that every compilation or derivative work must manifest skill and judgement.

VI. CONCLUSION

The challenges in protecting copyright for AI-generated content represent a complex and multifaceted issue that demands careful consideration and adaptation within the legal and regulatory frameworks. While the existing copyright laws internationally have successfully protected the intellectual property of creators, they encounter new frontiers and hurdles in the age of artificial intelligence. Several key challenges need to be addressed, along with potential suggestions to navigate this evolving landscape.

One fundamental challenge lies in this is providing a definition of authorship. Copyright laws predominantly cater to works created by human authors, and this poses a significant roadblock when attempting to extend protection to AI-generated content. A potential solution might be revisiting the definition of authorship, distinguishing between human creators and AI systems, and creating a new category for AI-assisted works. Another challenge involves identifying the level of human involvement in the creation process. AI often relies on extensive datasets and training, but it lacks the inherent creativity and decision-making abilities of humans. Thus, the level of human influence and creativity in AI-generated works should be a determining factor in granting copyright.

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