

Legal Rights Protection of Artificial Intelligence Generated Works from the Perspective of Copyright

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Abstract: *With the rapid development of artificial intelligence (AI) technology, the legal rights issues surrounding AI-generated works are becoming increasingly prominent from the perspective of copyright law. This paper begins by defining the core concepts of artificial intelligence and its generated works. It then analyzes the standards for assessing AI-generated works from the standpoint of copyright, including elements such as originality and creativity. Subsequently, it discusses the major protection challenges faced by AI-generated works within the existing copyright law framework, such as ownership, protection scope, and degree. Finally, the paper proposes recommendations for the copyright protection of AI-generated works, including clarifying object types, specifying ownership rights, and defining protection modes. This research not only contributes to understanding the legal impact of AI technology in the creative domain but also provides theoretical references for formulating relevant legal policies.*

Keywords: *Artificial Intelligence; AI-generated works; Copyright; Legal protection; Ownership rights*

1. Introduction

In the wave of digitization and informatization, the rapid development of artificial intelligence technology is reshaping the fields of creation and intellectual property. Artificial intelligence is not only playing a role in data analysis, automated processes, and intelligent decision-making but is also beginning to demonstrate its unique creative abilities in industries such as literature, music, and art. The primary challenge posed by this emerging technology to traditional copyright law is reflected in the legal status and rights protection of AI-generated works. As AI programs independently create music, literary works, and artistic compositions, there is an urgent need to examine and address the legal issues surrounding these works within the framework of copyright law. The purpose of this study is to explore the legal rights protection issues of AI-generated works under copyright law, aiming to provide recommendations for legal scholars, practitioners, and policymakers, assisting them in understanding and addressing the new challenges posed by AI technology in the field of copyright. This is crucial not only for safeguarding the interests of traditional creators but also for promoting the healthy development and application of AI technology in creative industries.

2. Core Concepts

2.1. Artificial Intelligence

Artificial Intelligence is a technology that simulates human intelligence processes, encompassing functions such as learning, reasoning, adaptability, perception, and interaction. At its core, AI enables machines to perform tasks that typically require human intelligence, evolving from initially rule-driven logical systems to modern deep learning and neural networks. Throughout this progression, AI capabilities have continually enhanced, allowing machines not only to handle complex data and execute intricate tasks but also to achieve or surpass human performance in certain domains.^[1] Today, AI technology finds widespread applications in areas such as image recognition, natural language processing, data analysis, robotics, and is gradually penetrating more complex fields like artistic creation and decision support systems. With the increasing computational power and availability of big data, AI's development is accelerating, revealing its potential to mimic, enhance, or even surpass human intelligence. This development not only fosters innovation in the technological realm but also has profound implications for society, economy, and law. Notably, in the realm of creative output, AI's role

is becoming increasingly prominent, sparking widespread discussions about the legal status and ownership of its works.

2.2. AI-Generated Works

AI-generated works refer to creations independently produced by AI systems or generated under the guidance of human creators. These works encompass a wide range, including literary works, music, art, and even programming code. What sets AI-generated works apart from traditionally human-created works is their heavy reliance on machine learning algorithms and big data analysis in the creative process.^[2] These algorithms can learn specific patterns from extensive data samples, creating new content. For example, AI programs can compose new music by analyzing thousands of existing compositions or produce unique visual artworks by learning from a vast dataset of paintings.

A core characteristic of AI-generated works is the autonomy in their creative process. While human programmers can set algorithm frameworks and parameters, the specific decisions made by AI during the creative process often go beyond direct human control. This autonomy implies that the works generated by AI reflect, to some extent, the machine's "creativity." This raises new legal questions regarding authorship and copyright protection. Additionally, AI-generated works often rely on existing datasets, raising questions about originality and potential copyright infringement. For instance, if an AI program creates a song, the extent to which the song is based on existing songs in its training dataset becomes a crucial consideration, involving issues of dependence on the original data source and the independence of creation. Therefore, the legal status and rights protection of AI-generated works pose new challenges to current copyright law.

3. Criteria for Assessing AI-Generated Works from a Copyright Perspective

When assessing AI-generated works from a copyright perspective, the focus is primarily on two core elements: originality and creativity.

3.1. Originality

Originality refers to whether a work exhibits sufficient novelty and uniqueness. For AI-generated works, originality is complex since they often result from pattern learning and innovative combinations based on extensive existing data. The key is to determine whether AI works go beyond simple data replication or recombination, reaching a certain level of creativity. For example, an artwork created by AI technology may be considered original if its style and elements differ to some degree from existing works.

3.2. Creativity

Creativity presents a more intricate challenge. Copyright law typically requires works to be created through human intellectual efforts. However, as AI is a non-human entity, whether the creativity of its generated works can be legally recognized becomes a point of contention. One viewpoint suggests that if AI's work is significantly designed and guided by humans, its creativity can be acknowledged. Applying these criteria provides a preliminary assessment of whether AI-generated works meet the requirements for copyright protection.^[3] Nevertheless, the applicability of these standards may vary across different legal jurisdictions and specific cases, necessitating further legal practice and theoretical research for clear delineation. The diversity in the development and application scenarios of AI technology makes legal issues in this field particularly complex, demanding ongoing attention and timely legal adjustments.

4. Challenges in the Legal Protection of AI-Generated Works from a Copyright Perspective

The protection of legal rights for AI-generated works under the lens of copyright faces several challenges. Firstly, the issue of ownership poses a significant hurdle. Traditional copyright laws are established to protect the intellectual labor of human creators, making the attribution of works generated by artificial intelligence ambiguous within this legal framework. Current copyright laws often struggle to directly apply to works without a clear "human" creator. For instance, if a song is entirely composed by artificial intelligence, determining the copyright ownership of such a song

becomes challenging within the existing legal system.

Another challenge is the assessment of originality. AI-generated works heavily rely on existing data during the creative process, raising concerns about their lack of necessary originality. Legal professionals need to conduct meticulous analyses in each specific case to determine whether AI works possess sufficient novelty and creativity to meet the standards for copyright protection.

Additionally, the issue of copyright protection duration for AI-generated works is complex. Unlike works created by human authors, the "lifespan" of AI works may far exceed the protection periods specified by traditional copyright laws. Balancing the protection of innovation and public interests becomes a major challenge for lawmakers. Lastly, AI-generated works may involve copyright infringement issues, especially when AI uses copyrighted materials during the creation process. This raises questions about the copyright of the data and materials used by AI in the creative process and how to define the relationship between AI-generated creations and the original materials.

From the perspective of copyright, the legal rights protection of AI-generated works faces numerous challenges, requiring a careful assessment and necessary adjustments to existing legal frameworks by the legal community. Adaptations are needed to accommodate the rapid development and growing application demands in this emerging field.

In addressing copyright issues related to AI-generated works, a crucial consideration is the autonomy and creativity of artificial intelligence. Although AI may lack human consciousness and emotions, it is capable of unique and creative outputs through algorithms and big data. This raises a key question: when AI independently completes creative activities and produces distinct works, should these works be recognized as having independent copyright value? This becomes particularly crucial in AI-generated artistic and literary works, which often demonstrate high levels of innovation and complexity, surpassing simple data processing and pattern recognition. The legal community needs to balance incentives for innovation with public interests while considering the rapidly changing landscape of technological development.

As AI technology continues to advance, its autonomy and creativity in the creative process may be further strengthened, potentially requiring corresponding adaptations and updates to copyright laws. For example, there may be a need to establish new legal categories to recognize and protect the creative achievements of AI or modify existing copyright regulations to include special cases involving artificial intelligence. Therefore, the protection of copyright for AI-generated works not only requires a deep understanding of the nature and operation of AI technology but also demands innovative thinking and adjustments to existing legal frameworks. This process will be an evolving one, necessitating close collaboration and ongoing dialogue between legal experts, technology developers, and policymakers.

5. Recommendations for Legal Rights Protection of AI-Generated Works from a Copyright Perspective

5.1. Clarification of Object Types

Table 1: Classification and Characteristics of AI-Generated Works

AI-Generated Work Type	Characteristics	Example
Music Composition	Automatic generation of rhythm, melody, and harmony	Symphony composed by artificial intelligence
Literary Work	Automatic generation of textual content	Novel or poem written by artificial intelligence
Artistic Work	Automatic creation of visual elements	Painting or design created by artificial intelligence

A crucial step in protecting AI-generated works under copyright law is to clearly define their object types. Object types refer to the categories of works that need to be granted copyright protection, such as literary works, musical compositions, artistic works, etc. The diversity and complexity of AI-generated works require legal distinctions among different types of AI works and their corresponding protection standards. Classifying AI-generated works based on factors such as content, purpose, and creative process can be effective. Table 1 below illustrates possible classifications of AI-generated works and their characteristics. In each category, the standards for copyright protection may need to consider the

role of AI in the creative process and differences from traditional methods.

5.2. Clear Attribution of Rights

In the protection of copyright for AI-generated works, clear attribution of rights is a core issue. The complex human-machine interaction involved in the creation process of AI works makes the issue of attribution more intricate than traditional copyright. Innovative consideration of the role and contribution of AI within the framework of copyright law is required.^[4] Currently, most legal systems only recognize copyright for human creators. If AI independently creates a work, the ownership of copyright may become a gray area. One feasible solution is to treat AI as a tool, attributing copyright to the developer or user of the AI. For example, if a company uses an AI program to compose a song, the copyright for that song could be attributed to the company.

When AI collaborates with humans in creating works, determining the lead author and the contributions of each party become crucial. This may involve assessing the degree of interaction and contributions of human creators and AI in the creative process. In such cases, the copyright for collaboratively created works may need to be allocated based on the proportion of contributions. For works independently created by AI, a viable solution may be to establish a new legal category or attribution mechanism, such as a "Rights Protection" category specifically for AI-created works. This aims to protect the uniqueness and value of AI creations while considering public interests and incentives for innovation. The issue of copyright attribution for AI-generated works requires finding a balance between protecting innovation and public interests, considering the specificity of AI technology and traditional principles of copyright law. Legal developments and practices in this field should continually adapt to technological advancements and societal changes to ensure the timeliness and effectiveness of legal solutions.

5.3. Clear Protection Models

For the copyright protection models of AI-generated works, the unique aspects compared to traditional works must be considered.^[5] Setting protection models should safeguard the legitimate rights of creators and users while promoting technological innovation and knowledge sharing. In this context, a flexible and forward-looking legal framework is recommended. One feasible protection model is to implement a tiered protection mechanism. For works independently created by AI, limited protection periods may be considered to balance the interests of innovators and public benefits. For example, AI-generated artistic works may receive shorter copyright protection periods to encourage broader social use and subsequent innovation. For works collaboratively created by humans and AI, copyright protection can be more aligned with traditional standards but must clarify the proportion of contributions by humans and AI to ensure fair distribution of rights. Additionally, special licensing and usage mechanisms can be considered, especially for the commercialization and widespread application of AI-generated works. This may include flexible licensing agreements, expanded application of fair use principles, and setting reasonable usage fee standards for AI-generated works. When formulating protection models, international coordination and cooperation should be considered due to the transnational nature of AI-generated works. Different legal systems across countries and regions need effective alignment and collaboration. Through such approaches, reasonable, effective, and balanced copyright protection can be provided for AI-generated works, promoting innovation in technology and the arts while safeguarding public interests.

6. Conclusion

Faced with the evolving legal challenges posed by the continuous advancement of artificial intelligence, concerted efforts are required from legal scholars, practitioners, and policymakers. Innovative legal theories and practices must be developed to ensure that copyright law not only safeguards the legitimate rights of creators but also fosters a balanced development between technological innovation and societal public interests. In the future, as technology further progresses and the scope of application expands, the copyright protection of AI-generated works will remain a dynamically evolving field. Continuous observation, analysis, and adaptation will be necessary to navigate this complex landscape effectively.

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