

# Research on Copyrightability of Artificial Intelligence Generators

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**Abstract.** In recent years, the continuous development of artificial intelligence has brought convenience to people's lives but has also given rise to a series of problems. Among these, the gaps in laws related to artificial intelligence has sparked significant controversy, particularly with regard to copyright protection of artificial intelligence products, which has become a focal point of debate in theoretical and practical circles. Some scholars advocate for the protection of artificial intelligence products through copyright, while others argue against it. Based on this, the typical cases have been sorted out and analyzed, relevant provisions of copyright law have been studied, and the issue of the copyright for artificial intelligence products has been explored from both practical and theoretical perspectives. Additionally, in combined with scholars' viewpoints, the copyrightability of artificial intelligence-generated material is examined from the aspects of originality and intellectual achievement. The purpose of establishing the copyrightability of such material is to align with the development trend of the times and, simultaneously, to promote the enhancement of China's copyright legal system in order to foster cultural prosperity and development.

**Keywords:** Artificial Intelligence Generators, copyright, intellectual activity.

## 1. Introduction

With the development of science and technology, controversies surrounding the widespread application of artificial intelligence are constantly emerging. For example, the cases of *Filin v. Baidu* [1] and *Tencent v. Yingxun* [2] have made the issue of whether artificial intelligence products are copyrightable a hot topic of concern across all sectors of society. In the case of *Filin v. Baidu*, the Court held that the subject of "intellectual activity" cannot be an animal or a machine but must be a human being. Although a natural person was involved in both the development and application, the generated report did not fully convey the thoughts and emotional expressions of the developer or the user. Therefore, neither the developer nor the user of the software was considered the author. In the *Tencent v. Yingxun* case, the court also upheld the requirement of human creative subject. By extending the time and process of creation forward and including the preliminary research and development in the entire process of "intellectual activity", reflecting the personalized choice of the researcher, the court ruled that the article belonged to the category of authorship [3]. It is evident from the aforementioned cases that the recognition of originality and human intelligence achievements plays a significance role in determining the copyrightability of artificial intelligence products. Building upon this, this paper will delve into the copyright issues surrounding artificial intelligence-generated products through methods such as case analysis and comparative studies to offer valuable insights for the protection of artificial intelligence products.

## 2. The Controversy over the Copyrights of Artificial Intelligence Products

Currently, the theoretical circle has formed two main views on the copyright of artificial intelligence products, namely, the "opposing view" and the "supporting view". Among them, scholars who hold the opposing view believe that the subject of creating artificial intelligence products is artificial intelligence rather than humans. For example, Professor Wang Qian believes that artificial intelligence products are the result of the application of algorithms, rules and templates, and do not belong to the creation, cannot reflect the unique personality of the creator, and cannot be identified

as a work [4]. In other words, the central point of the objection is that the subject of the creation of the work must be human, not other beings or intelligent tools. For example, in the macaque selfie case [5], the United States Federal District Court of California held that under the current legal framework of the United States, only works created by people can enjoy copyright, that the United States Copyright Act does not provide for animals to be authors, and the term "person" is also used in the analysis of the author's identity in previous cases. Similarly, Article 2 of China's Copyright Law provides that "Chinese citizens, legal persons or other organizations shall enjoy copyright in their works, whether published or unpublished, in accordance with this Law". Here "citizens, legal persons or other organizations" also does not include animals or intelligent tools [6]. For example, the point of contention in the aforementioned case centred not on originality, but on the involvement of a "person".

However, scholars who support this view believe that content generated by artificial intelligence, as long as it is independently completed by robots, constitutes a copyrighted work [7]. Therefore, some scholars argue that artificial intelligence is not only a mandatory output based on established algorithms and programs, but can enable it to create through active learning without prior algorithms or rule Settings [8]. Some scholars also believe that intellectual property protection for artificial intelligence products is established as a form of legal personality in a virtual sense, from the perspective of recognizing the subject of copyright law [9]. Through legal mimicry, artificial intelligence is simulated as a legal person, so that it has legal personality [10]. That is, according to the historical logic that legal persons are regarded as authors, the "proposed authorship theory" suggests considering AI as authors or considering AI investors, developers, and managers, among others, as legal authors of AI works [11]. In addition, some scholars advocate that granting copyright protection to artificial intelligence products is essential. They argue that such protection ensure that costs of resource inputs by relevant parties are appropriately rewarded, thereby stimulate their enthusiasm for further development of artificial intelligence and its products. Ultimately, this promotes the sustainable and healthy development of society as a whole [12]. Similarly, judicial practice has gradually accepted the supportive view, for example, in the first case of the copyright of the AI Wen Sheng Tu [13]. In the case, the Beijing Internet Court believes that, from the conception of the picture in question to the overall process of finally selecting the picture in question, the plaintiff made certain intellectual inputs, such as the presentation of the design task, the selection of prompt words, the adjustment of the order of prompt words, the setting of relevant picture parameters, and the final selection of the target photo all reflect the intellectual input of the plaintiff. Therefore, the photographs involved in the case had the element of intellectual achievement, and a final judgement was rendered that the copyright in the AI drawings belonged to the plaintiff.

It is worth noting that at present, there are scholars hold a neutral attitude. For example, some scholars believe that the products of artificial intelligence cannot be recognized as works protected by copyright at present, but with the maturity of the artificial intelligence technology to a certain stage, copyright protection will be given based on the specific situation of artificial intelligence products [14].

This paper argues that the copyright of artificial intelligence products should be recognized, because on the one hand, it helps to promote literary creation and cultural prosperity, facilitates the dissemination and creation of artificial intelligence products, and inject new vitality and impetus into traditional culture. On the other hand, it can help to strengthen cooperation and exchange between countries, and jointly explore ways to deal with the challenges posed by artificial intelligence. At the same time, it can also perfect the copyright legal system of our country. In addition, "from a business perspective, AI intelligence companies have spent a lot of money and technical capital to build highly intelligent AI programs, and it is also against fairness to completely fail to protect the 'works' derived from that programme [15]." Denying the status of the content generated by artificial intelligence under copyright law will result in the economic value of such products not being realized. This, in turn, means that investors behind artificial intelligence may not receive returns, ultimately impeding the development of the artificial intelligence industry and undermining investor confidence [16]."

### **3. The Theoretical Basis of Copyability of Artificial Intelligence Products**

According to Article 3 of the Copyright Law, it is not difficult to see that a work in the sense of the Copyright Law should satisfy the following four constituent elements: Firstly, it is original. Secondly, it is limited to the field of literature, art and science. Thirdly, it belongs to the category of human intellectual achievements. Fourthly, it is capable of being expressed in a certain form. The key to determining whether the content generated by ChatGPT qualifies as a work is to assess its originality and whether it falls within the realm of human intellectual achievements.

#### **3.1. Artificial Intelligence Products Satisfy the Requirement of Originality**

"Uniqueness" in "originality" refers to independent creation-originated from oneself, either as an independent creation from scratch or as a work based on the creations of others. The differences between original works and those based on existing works should not be too subtle and should be easily recognized by others. Initially, common law and civil law countries had different requirements for "creation". Under the common law system, the "sweat of the brow" rule prevailed, whereby independent hard labour on the part of the "creator", even without intellectual creation, sufficed for protection. A problem arises when a person arranges the telephone numbers of an entire community according to his habits and integrates them into a telephone directory, which can also be a work protected by copyright law under the "sweat on the forehead" rule. This will lead to an ever-expanding range of AI protected by copyright law, defeating the original purpose of making artificial intelligence subject to copyright law.

The "creation" in the civil law system means that there is a certain level of intellectual creation, but also from their own or completed in the same work of others, there are differences that can be objectively identified [17]. Originality should be understood not only as a distinction in the form of expression from existing works but also as a divergence in the expression of unique ideas by creators. While ideas themselves are not protected by copyright law, the creative expression of those ideas falls under copyright protection. Thus, originality lies in the varied expression of creator's ideas. For example, in the first case of AI text-generated graphic copyright [13]. In the specific case mentioned, the Beijing Internet Court determined that the plaintiff's intellectual judgement and aesthetic choices were evident in the ongoing adjustment and amendment, indicating originality in the AI-generated work. This work exhibited a certain level of intellectual creation, encompassing the essential elements of originality, and has originality. Another illustrative case is the "Uncle Sam" case [18], where a subsequent sculpture produced, while displaying some alterations from its predecessor, contained certain creative ideas that marginally met the criterion of "uniqueness" within originality. Nevertheless, due to the minimal disparities between the two sculptures, failing to exhibit a significant level of intellectual creativity on the part of the creator, they did not fulfill the standard of "creation" necessary for originality and thus could not be considered as distinct works.

#### **3.2. Requirement of Intellectual Output to be met from the Point of View of the Objectivist Criterion**

Currently, there are varying views and attitudes within the academic community regarding whether the outcomes generated by artificial intelligence can be deemed as "intellectual achievements" under copyright law. In jurisdictions that adhere to the principle of "deemed authorship" artificial intelligence can be designated as the "legal author" or "de facto author" of the intellectual outputs it generates [19]. However, according to Article 3, paragraph 1, of the Regulations for the Enforcement of the Copyright Law, the term "creation" in the Copyright Law refers to the intellectual activity directly yielding literary, artistic, and scientific works. This provision does not explicitly mandate that such intellectual activity must be carried out by a natural person. Hence, it implies that a "work" need not necessarily be created by a human being.

At the current stage of artificial intelligence development, most of the artificial intelligence can be considered as being "created". However, this form of "creation" primarily involves mechanical

processes within specific database where individuals organize information to generate output. Such "creation" typically requires human intervention to curate the data, positioning artificial intelligence as a tool assisting natural persons in achieving intellectual outcomes. In this context, humans are seen as the creators, aligning with the essential elements of intellectual achievements. Additionally, there exists a smaller subset of artificial intelligence capable of simulating human cognitive functions, accessing databases to perform "analysis and synthesis," and engaging in active learning to autonomously generate works. This advanced form of AI learning represents a departure from merely assisting human creators, showcasing its capacity for originality and independent creative output [8].

For the content created by artificial intelligence, the mutual integration of the two is actually difficult to distinguish the proportion of human and machine creation, and it is inappropriate to judge the copyability of intellectual achievements only by whether artificial intelligence has "person" participation. Some scholars believe that if artificial intelligence is treated as a tool, the works created by artificial intelligence are, in fact, the "intellectual achievements" of the people behind it, and the copyright is not owned by the artificial intelligence, but by the individual responsible for its development [19]. Some scholars also believe that in the absence of a clear indication of the source of the artificial intelligence creations and the works of natural persons can no longer be distinguished, so do not use natural persons to identify the minimum creativity [8]. If in the field of artificial intelligence, too much emphasis is placed on the need for intellectual achievements to be completed by natural persons, and the copyright of artificial intelligence products is judged by natural persons, it is not conducive to the protection of artificial intelligence products. Therefore, to judge the copyability of artificial intelligence products [8], we should establish a subjective criterion for judging the originality of a work by focusing on the work itself, that is, the result of the creation act, without considering the creation subject and the creation process [20].

#### 4. Conclusion

At present, whether it is "Microsoft Xiaobing" autonomously composing poetry, Alpha Dog defeating the Go World Champion, or Alpha Zero defeating Alpha Dog with a full victory without input from human programs, every advancement of AI has brought great significance and impact to mankind and society. However, there is not yet a clear and unified conclusion on whether artificial intelligence is protected by copyright. Artificial intelligence has become an indispensable part of social development and progress, and with the continuous development of artificial intelligence, weak artificial intelligence will eventually be replaced by strong artificial intelligence. However, the law on artificial intelligence is still in the blank, if it does not make the corresponding legal norms for a long time, it will not be conducive to the development of artificial intelligence is also not conducive to the development and progress of society. It can be seen that the copyright issue of artificial intelligence can be urgently solved.

This paper argues that artificial intelligence products are the constituent elements of works in the sense of our China's Copyright Law, and deserves to be protected by the Copyright Law. Through the analysis and research of judicial cases, laws and regulations, and academic viewpoints, this paper finds that whether artificial intelligence products can be protected by copyright has a very strict definition in terms of whether they conform to originality and human intelligence achievements. However, the copyright law should be constantly amended like other laws, following the footsteps of the development of the times, and constantly improved with the times. Clarifying the Copyrights of artificial intelligence products will help create a favourable creative atmosphere, maintain the order of social culture, and promote the flourishing development of artificial intelligence. Moreover, if China's judicial practice holds a positive position on the copyright protection of artificial intelligence products, it will help the progress and development of artificial intelligence technology to a certain extent, so that copyright law can burst out strong vitality and vitality in the new era of artificial intelligence.

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