Research on Copyright Ownership Based on Template Writing Works

Rumin Wen¹, Yingbo Zhai¹, Jizhe Cui²*

¹School of Technical Economy and Management, Yanbian University, Yanji, China
²School of Information Management and Information Systems, Yanbian University, Yanji, China
Email: *cuijizhe@foxmail.com

Abstract

With the rapid development of artificial intelligence technology, natural language processing and machine learning technology have been improved. The quality and quantity of artificial intelligence writing works have been greatly improved by using deep learning algorithms and big data analysis. Some artificial intelligence writing tools can generate text content comparable to or even beyond human writing. Especially template artificial intelligence writing, with its efficient output rate and low cost, provides convenience for many industries. However, the development of artificial intelligence has also had a great impact on the traditional copyright law, and the ownership of copyright has aroused widespread concern. This paper will study and analyze the three viewpoints of copyright ownership put forward by scholars at present, namely, public domain theory, legal simulation theory and personal theory, and put forward reasonable suggestions for copyright ownership of template artificial intelligence writing works from three angles of public domain theory, legal simulation theory and personal theory.

Subject Areas

Copyright

Keywords

Template Type, Artificial Intelligence Writing, Copyright Management, Copyright Ownership

1. Introduction

At present, template writing, as a mature way of intelligent artificial intelligence writing, is widely used in literature, news and business fields with its powerful and diverse template library and information retrieval capabilities. However, at

the same time, the copyright system is facing many new situations and problems, and the copyright ownership of template artificial intelligence writing works has become increasingly prominent. There is no doubt that the development and application of artificial intelligence has had a certain impact on copyright law. Under the current legal system, there is no clear regulation on the copyright ownership of template artificial intelligence writing works, and the traditional copyright legal framework is often difficult to meet the needs of this new field, which also leads to many disputes and legal dilemmas. If it cannot be solved in time, it will bury greater hidden dangers for the future.

In terms of law, there is a lot of controversy about the copyright ownership of artificial intelligence writing works in academic circles. The current intellectual property system can not adapt to the challenges brought by the rapid development of artificial intelligence and related industries, which will hinder the development of science and technology and culture. Therefore, it is of great significance to study the copyright ownership of template artificial intelligence writing works.

In the social aspect, template artificial intelligence writing technology can easily generate a large number of articles and contents, but its authenticity and accuracy cannot be guaranteed. Some malicious users can use AI writing to spread false information, rumors and fake news, which will have a negative impact on society. This makes the society question the credibility and authenticity of information, and increases the difficulty of distinguishing true and false information. More importantly, template artificial intelligence writing needs a lot of data to learn and generate content, and personal privacy information may be collected and used, which leads to the violation of personal rights and the risk of data leakage. In a word, it is necessary to study the copyright ownership of template artificial intelligence writing works, and we need to take corresponding measures to solve and avoid these problems.

At present, in order to deal with the problem of copyright ownership, scholars at home and abroad have made arrangements for the ownership of rights in different ways, mainly as follows.

1) Arrange the necessary people to determine the ownership of the copyright of the work. British law holds that the copyright of works independently generated by artificial intelligence does not belong to artificial intelligence itself. Therefore, in the British Works, Design and Patents Act, an open clause is set up, and in the third paragraph of Article 9, the stipulation that "the person who makes necessary arrangements for the creation of works is regarded as the author" is put forward, that is, the producer is regarded as the author of artificial intelligence products. Sun Jianli (2018) believes that the third paragraph of Article 9 of the British Works, Design and Patents Act provides a very good idea for the ownership of copyright of artificial intelligence products, which can also be used for reference by China, and the person who contributes the most to the necessary arrangements is regarded as the author [1].

2) Set up neighboring rights to determine the ownership of copyright of works. China's Copyright Law calls neighboring rights "rights related to copyright". Tao Gan (2018) thinks that artificial intelligence works are not copyrighted, but because the market value brought by them is worth protecting, it is similar to the neighboring right system [2]. Ken Wang (2016) believes that the layout design and database regulations can be used for reference, and a ten-year protection period can be set up in the form of neighboring rights, and the power belongs to the users of artificial intelligence [3].

3) Learn from the system of legal person works to confirm ownership. Xiong Qi (2017) believes that the copyright ownership of artificial intelligence should learn from the mature and perfect legal person works system, and the power belongs to the owner of artificial intelligence [4].

This paper discusses the copyright ownership of works based on template writing, and tries to solve this complex problem by putting forward a series of solutions through in-depth analysis of different viewpoints and theories in the field of copyright theory. In order to better understand and handle copyright disputes in artificial intelligence works, this article provides new suggestions on the ownership of template-based artificial intelligence writing from three fields, providing new ideas and new ideas for later scholars.

2. Copyright Ownership of Template Artificial Intelligence Writing

2.1. Ownership of Copyright

Generally, the legal judgment process of determining the ownership of copyright needs to consider many aspects (Figure 1). If the work is created by two or more people, these co-authors share the copyright. In this case, each author has the right to use and distribute the work. If the cooperative work can be divided and used independently, each author enjoys independent copyright in the part of his own creation; If the work is created by a legal person or other organization, the legal person or other organization shall be regarded as the author and enjoy the copyright of the work [5]. This means that any person or organization who wants to use the work needs the permission of this legal person or organization; If the work is created by entrustment, the ownership of its copyright is determined by the contract between the principal and the principal. If it is not clearly stipulated in the contract, the copyright belongs to the principal by default. However, if the contract clearly specifies the ownership of copyright, it must be carried out as stipulated in the contract. If the creation is an audio-visual work, the copyright of such works usually belongs to the producer or production unit. However, the creative contributions of screenwriters, directors and composers are also protected by law, and they enjoy copyright in their own creative parts.

However, for the copyright ownership of artificial intelligence creations, many factors need to be considered, including creator's identity, cooperative relationship and legal principles, etc. These problems make the copyright ownership of
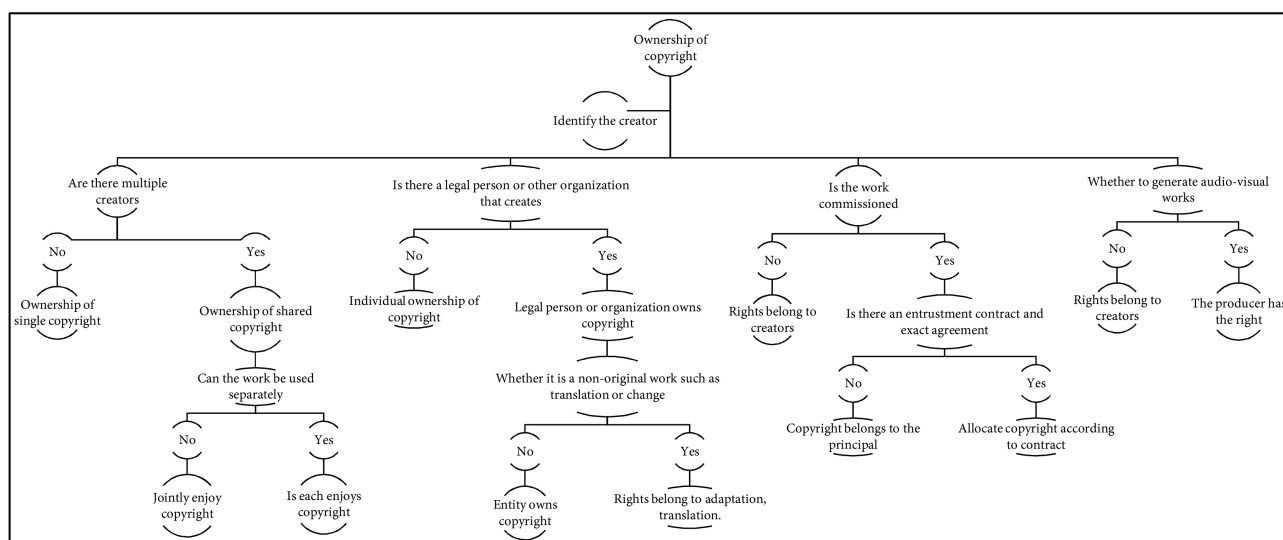
Figure 1. Legal judgment process framework of copyright ownership. Source: Refer to the "Copyright Law of the People's Republic of China".

artificial intelligence a complex and challenging field.

2.2. Overview of Template Artificial Intelligence Writing

Template writing is a mature form of artificial intelligence writing at present. The specific process involves template library and information retrieval, screening templates through algorithms, determining final templates according to big data and algorithms, and finally generating articles according to templates. In the aspect of content data filtering and writing skills selection generated by articles, programmers also add machine self-learning ability, which can evaluate which template-based writing method is more popular according to page views, comments, likes and other indicators. This allows optimization of template selection, and combining and modifying the collected information is the fastest method at present.

2.2.1. Public Domain Theory

According to the public domain, making the copyright of artificial intelligence works public, that is, the copyright belongs to the public domain, is the common wealth of all people, and everyone has the right to enjoy it [6]. From the perspective of intellectual property rights, template artificial intelligence writing works can realize the prosperity and development of scientific and cultural industries in the public domain, and artificial intelligence, as the "author" itself, does not need incentives, so the public domain system can save incentive costs. Therefore, this is also the reason why the public domain theory is advocated by scholars. It not only solves the problem of copyright ownership, but also develops scientific and cultural industries and reduces costs.

However, the public domain theory seems to define the ownership of copyright very clearly, but in fact there are many potential drawbacks. On the one

hand, combined with the works generated by artificial intelligence and the databases on which they depend, the public domain theory may lead to the illegal use of original works. Specifically, the works generated by artificial intelligence may infringe the copyright of the original author to some extent. Templates in the template library used for template artificial intelligence writing may come from multiple authors, and the original works of these authors may be integrated into the template library for artificial intelligence to use. Especially in this public domain, the template formed by these original works has become the common wealth of the public. Therefore, the articles generated by using these templates obviously infringe the copyright of the original authors, which will lead to many social disputes and legal disputes; On the other hand, artificial intelligence may replace human creation in market competition without incentives. This situation may lead people to rely too much on artificial intelligence writing, and then weaken human creative power. Template-based artificial intelligence writing can complete an article as long as the desired template is selected. Moreover, in the public domain, artificial intelligence does not need incentives. Therefore, this artificial intelligence writing method with high output efficiency and low cost will completely beat human writing works under the law of market competition, which will greatly reduce human writing enthusiasm, lead to human over-reliance on artificial intelligence writing, and human writing ability will stagnate. Therefore, at the present stage, the public domain theory cannot fundamentally solve the copyright ownership problem of template artificial intelligence writing works.

2.2.2. Public Domain Theory

The theory of legal fiction is to make artificial intelligence as the legal subject directly through law, which is mainly supported by foreign scholars. This view is similar to the Western theory of "virtual human author". First, artificial intelligence is drafted as "virtual human author". When the originality of artificial intelligence works conforms to the law and is recognized as works, the judge will distribute the rights and interests to the owners, designers, users and other related subjects of the artificial intelligence according to the actual situation of the creation process [7]. Whether it is the theory of legal fiction or the theory of "virtual human author", the copyright of artificial intelligence works belongs to the legal subject, but the final rights and interests will still be distributed to human beings. Therefore, both the determination of ownership and the responsibility of artificial intelligence will be borne by the owner or maintainer of artificial intelligence.

Table 1 describes the ownership of artificial intelligence creations from the perspective of legal fiction from three perspectives: "artificial intelligence's identity", "ownership determination" and "protection and exercise of rights". First of all, in terms of identity, the legal fiction theory believes that artificial intelligence is an independent legal subject with certain legal rights and obligations, including the copyright of creation; secondly, in terms of the determination of ownership

Table 1. The attribution of artificial intelligence creations from the perspective of legal fiction.

Angle	Describe
Identity of artificial intelligence	An independent legal body with certain legal rights and obligations, including the copyright of creation.
Judgment of ownership right	Responsibilities and rights (including copyrights) belong to artificial intelligence owners or defenders.
Protection and exercise of rights	Make new laws and regulations, or amend the existing legal system.
The responsibility of artificial intelligence	The owner or maintainer of artificial intelligence bears it on his behalf.

rights, the legal fiction theory believes that artificial intelligence creations The rights and interests enjoyed and the responsibilities that need to be borne belong to the owners or maintainers of artificial intelligence; finally, in terms of the protection and exercise of rights, the legal fiction theory believes that new laws and regulations should be formulated or the existing legal system should be modified to protect The rights to artificial intelligence creations [8].

This view of artificial intelligence as the subject of law seems reliable, but in fact there are obvious problems. On the one hand, the purpose of making artificial intelligence as a legal subject is to ensure the interests of all parties in law. However, as a technology, AI can't bear legal responsibility at present, and artificial intelligence does not have enough intelligence and consciousness to bear legal responsibility. In addition to the selection of templates, the big data and algorithms used in the writing process will also have an impact on copyright. Big data may contain a large number of original works or information from other sources, and the algorithms generate the final articles by screening, selecting and modifying these information. This means that some of the data and even the works created by human beings with template artificial intelligence may involve infringement of other authors' original works, while artificial intelligence, as a legal subject, cannot bear legal responsibility for its own actions. In addition, artificial intelligence works are very similar to human works, so it is difficult to distinguish the differences between them in appearance and content [9]. Therefore, the ultimate stakeholders who use artificial intelligence to create works are likely to infringe the copyright of others without knowing it, and bear the legal responsibility committed by artificial intelligence. On the other hand, it is still unknown whether artificial intelligence can correctly judge and follow ethical and moral principles and avoid improper behavior or decision-making. Therefore, it is unrealistic to make artificial intelligence as a legal subject, which does not solve the copyright ownership problem of template artificial intelligence works, but increases the complexity of copyright ownership procedures and brings great risks to human beings.

2.2.3. Personal Doctrine

Personal theory is a general term for the viewpoint that the copyright of artificial intelligence products directly belongs to people. Scholars hold different views on confirming the ownership of rights, but they mainly include the following points: Some scholars believe that artificial intelligence is created on behalf of the owner's will [10]. Therefore, the owner should become the copyright owner; Some scholars interpret artificial intelligence as employees or employees, and attribute copyright to their subordinate units or employers [11]; Other scholars quote the law, Article 9, paragraph 3, of the Works, Designs and Patents Act, and attribute the copyright of artificial intelligence products to the "necessary arrangers" in the creative process [12]. Some scholars want to solve the problem of right attribution by setting up new neighboring rights, but they have not formed a consensus on the subject of neighboring rights attribution. These are many solutions provided by scholars for the attribution of artificial intelligence works, but not all of them are applicable.

3. Suggestions on Copyright Ownership of Template Artificial Intelligence Writing Works

3.1. Public Domain Theory

In view of the shortcomings of the public domain theory, two methods are put forward here: First, introduce a mixed copyright ownership system. In this way, the copyright of template writing works belongs to the corresponding human authors and AI developers, that is, users and developers; Two, the use of open source license to rationally distribute the copyright of artificial intelligence works. This way is to ensure that the copyright of the original author is not infringed, and the copyright of template writing works belongs to the corresponding human author, that is, the user. From the perspective of perfecting the public domain theory, these two methods not only protect the rights and interests of the original author to a great extent, but also encourage artificial intelligence and human cooperation.

3.1.1. Mixed Copyright Ownership System

Mixed copyright ownership system means that the copyright of works generated by artificial intelligence belongs to corresponding human authors and AI developers. The introduction of this system can ensure the protection of the rights and interests of the original authors, and encourage artificial intelligence and human cooperation. This system tries to solve the problem that when AI contributes to the creative process, the rights and interests of the original author may be damaged.

The main advantage of mixed copyright ownership system lies in balancing the rights and interests of original authors and stimulating artificial intelligence technology. The following are some key points that should be paid attention to in the ownership system of mixed copyright: First, ensure the rights and interests of original authors. When template writing works have certain originality

and inventiveness, in this case, attributing part of copyright to the original author can ensure that his efforts in the creative process are recognized and protected; Second, stimulate the development of AI technology and application. By allowing AI developers to share copyright benefits, enterprises and institutions can be encouraged to invest in AI technology research and development. In this way, in the public domain, AI creation achievements will continue to improve, and artificial intelligence will continue to exert influence in the fields of culture, education and science and technology; Third, standardize the implementation of standards. For works generated by artificial intelligence in different fields, the ownership system of mixed copyright should clearly stipulate the corresponding distribution ratio of rights and interests. For example, in the field of visual arts, the corresponding copyright share can be determined according to the role played by AI technology in the process of work creation; IV. Legal and policy guarantees. Countries should formulate clear laws and regulations to clarify the copyright ownership of works generated by artificial intelligence. At the same time, strengthen relevant law enforcement to curb the infringement of the rights and interests of the original authors.

3.1.2. Open Source Licensing

From the perspective of perfecting the public domain theory, the copyright of artificial intelligence works can be distributed by means of open source license. Open source license is a method to rationally distribute the copyright of works generated by artificial intelligence, that is, to share, modify and republish works free of charge, which can not only meet the needs of free dissemination of artificial intelligence works, but also protect the rights and interests of original authors. This way can promote the prosperity and development of science and culture industry on the premise of protecting copyright. Here are some key points to pay attention to in open source licensing: First, promote the dissemination and innovation of works. Open source licenses allow people to freely modify and republish original works. In the public domain, this will promote the dissemination of works and stimulate their improvement and development in different ways; Two, protect the rights and interests of original authors. An open source license is required to retain the authorship of the original author under the premise of free sharing, modification and redistribution. Template writing works will also indicate the data source in the process of template selection, leaving the authorship of the original author. This will ensure that the efforts made by the original author in the creative process are recognized and respected; Third, encourage technological innovation. By allowing the source code of template writing works to be shared, open source licenses can promote the development of AI technology and promote technology support for innovation more widely in the public domain; Fourth, establish an open and cooperative ecology. Open source licensing encourages different stakeholders to participate and form a diversified creative ecology. This will accumulate more knowledge in the public domain and provide richer resources for initial creation.

3.2. Legal Fictitious Theory

In the legal field, the copyright ownership of artificial intelligence writing works should be clearly defined. Obviously, artificial intelligence does not have the sense and ability to bear legal and moral responsibilities. Artificial intelligence can't have moral judgment and ethical awareness, and it is difficult to be responsible for its own actions, which may lead to improper or harmful decisions and behaviors. However, taking artificial intelligence as a legal subject may involve the infringement of personal privacy and the risk of data abuse, which leads to concerns about data protection and information security. If artificial intelligence is directly drafted as the legal subject through law according to the theory of legal fiction, two methods are put forward here: first, ensure the transparency of the algorithm; Second, the collaborative improvement of traditional laws. These two methods are aimed at perfecting the theory of legal fiction and ensuring the legal status of artificial intelligence virtual authors from both algorithms and laws.

3.2.1. Ensuring Algorithm Transparency

From the perspective of perfecting the theory of legal fiction, if we want artificial intelligence to play a fair and reliable role among virtual human authors with legal status, we must first improve the transparency of algorithms and ensure that there is no prejudice. The following are several key points to ensure the transparency of the algorithm: First, the explanatory principle. According to the research progress in AI field, developers are encouraged to design interpretable algorithms. In the process of compliance review, transparency and understandability should be regarded as the core elements of the algorithm. At the same time, developers and users should be able to understand and explain how the algorithm produces results. This will help strengthen the credibility and trust of the algorithm; Second, algorithm review and supervision. An independent institution or organization should be established to supervise and review the algorithm to ensure that the algorithm decision-making is fair, objective and nondiscriminatory. This institution needs to work closely with technology companies, the government and other non-governmental organizations to jointly formulate strict auditing standards and punish non-compliant algorithms. This is not only used in legal disputes of template writing works, but also applied to many legal disputes caused by artificial intelligence; Third, the ethical framework of artificial intelligence. Develop AI ethical framework to provide developers and users with guidelines on algorithm transparency and fairness. On the basis of soliciting public opinions, formulate a set of fair, transparent and reliable AI guidelines, and support these principles through legislation. This is also a necessary prerequisite for taking artificial intelligence as the legal subject.

3.2.2. Synergistic Improvement of Traditional Laws

With the continuous development and application of AI technology, the traditional legal system is facing many challenges and pressures. Although the theory

of legal fiction and the theory of virtual human author try to give AI the status of legal subject, the current laws and regulations are not fully prepared for the wide application of AI technology. Therefore, from the perspective of perfecting the theory of legal fiction, if artificial intelligence is used as the author of virtual human, another step is to improve the traditional law. Further improve and supplement relevant laws and regulations to ensure that the traditional legal system can adapt to the new technological development background and avoid legal gaps. This may involve the revision of copyright law, contract law, tort law and other aspects. The following are several key points that should be paid attention to in improving the traditional law: In copyright law, special clauses for AI creation can be added to the copyright law to clearly stipulate the copyright ownership of AI-generated works, such as giving AI developers or operators certain rights and interests, and making corresponding provisions on the distribution of rights and interests of shared works. In addition, the principle of fair use should be fully considered to protect the rights and interests of data sources and promote the development of AI technology; In contract law, with the wide application of AI technology, AI technology may also be involved in the signing and performance of contracts. In view of this situation, the Contract Law needs to revise relevant regulations, clarify the legal status and responsibility of AI technology in the process of contract signing, performance, change and dissolution, and take measures to ensure the authenticity and legality of contracts involving AI; In tort law, AI technology brings new challenges to the identification of tort and the division of responsibilities. For example, when AI technology involves privacy infringement, reputation infringement and other issues, how to identify infringement and divide responsibilities. In tort law, we can explore the establishment of infringement identification standards and division of responsibilities specifically for AI technology, so as to safeguard the rights and interests of the public and their legal rights.

3.3. Personal Theory

Personal theory is a general term for the viewpoint that the copyright of artificial intelligence products directly belongs to people. However, the personal theory does not consider the adaptability of the legal system in the copyright ownership of artificial intelligence works, and it has limitations when considering China's national conditions and legal system. China's legal system is different from other countries, so it is necessary to carefully consider its applicability and impact on China's legal system. Here, a method is proposed, that is, to share copyright by establishing cooperative partnership.

3.4. Partnerships

In the works created by artificial intelligence and human beings, copyright can be shared by establishing cooperative partnership. This arrangement can not only guarantee the rights and interests of human creators, but also encourage the

developers of artificial intelligence to continue to promote technological innovation. The following are several key points that should be paid attention to in partnership: First, clarify the proportion and responsibility of copyright sharing. When establishing the partnership between artificial intelligence and human beings to create works together, an important issue is how to define the appropriate copyright sharing ratio among all parties involved. This requires a rational distribution of copyright ownership and benefits on the basis of evaluating the contribution of artificial intelligence systems and human creators in the whole creative process. At the same time, we should ensure that all parties bear appropriate responsibilities in the process of creation, use and rights protection of works; Second, encourage and protect the innovation ability of all parties involved. The establishment of partnership should actively encourage and protect the innovation ability of all parties involved, including artificial intelligence developers and human creators. This means that when formulating the copyright sharing scheme, we should fully consider the contributions and contributions of all parties in the whole innovation process, and adopt different incentive measures according to different situations. For example, we can provide an innovation platform for all parties involved by setting up innovation funds, setting up special awards and providing technical support, so as to improve the quality of works and market competitiveness. Third, establish a flexible agreement and contract mechanism. In order to realize the partnership between artificial intelligence and human beings, it is necessary to establish an effective agreement and contract mechanism. This includes not only establishing a cooperation framework at the beginning of the project, but also ensuring that the agreements and contracts are flexible enough to adapt to the evolving technical background and market environment. It is suggested that all parties involved in the cooperation should be fully communicated to reach a consensus, and the agreements on copyright ownership, income distribution and responsibility should be clearly defined in the agreement to ensure the stability and durability of the cooperative relationship.

4. Conclusion and Outlook

4.1. Conclusion

With the rapid development of artificial intelligence, the copyright ownership of template artificial intelligence writing works is controversial. At present, the existing viewpoints include the public domain theory, the legal fiction theory and the personal theory. The public domain theory holds that the copyright of works belongs to the public domain, but it may infringe the rights and interests of original authors and limit human creative ability; The theory of legal fiction fictionalizes artificial intelligence as the subject of law, but there are problems of legal responsibility and compliance with ethical standards; The theory of personal ownership directly belongs to people, but the specific ownership is still controversial. Considering comprehensively, template artificial intelligence

writing can only be used as an auxiliary tool for human beings at present, and artificial intelligence can only be regarded as a cooperative tool for creation, because artificial intelligence is still only a tool in essence and lacks independent creativity [13]. Although the actual contribution of artificial intelligence will account for a large proportion, whether it is template screening or information retrieval, everything comes from users' ideas. Therefore, under legal circumstances, the copyright of template artificial intelligence writing works should belong to the users of this tool.

In a word, when discussing the copyright ownership of artificial intelligence products, whether it is public domain theory, legal fiction theory or personal theory, attention should be paid to clarifying the actual contribution of artificial intelligence in the creative process and protecting the creative labor achievements of artificial intelligence. In this way, we can respect the creative contribution of artificial intelligence and protect the copyright interests of artificial intelligence users. Moreover, it is necessary to comprehensively consider many factors such as technological development, legal system and business model. On the basis of protecting the rights and interests of all parties, we constantly try and practice diversified solutions to meet the increasingly complex practical challenges.

4.2. Outlook

Although this study has put forward suggestions for reference, there are still many shortcomings that need to be improved in future research work: First, the conclusions of this study are only for the current stage of artificial intelligence. With the continuous development of artificial intelligence technology, there will surely be more advanced models that have demonstrated outstanding creativity and independent learning capabilities. At that time, artificial intelligence may not be simply regarded as an auxiliary tool. In the future, the actual contribution and potential creativity of artificial intelligence will need to be examined in more detail. Second, although this study mentioned considering the legal system, it only took the Chinese legal system as an example and did not explore in detail the regulations and positions of different countries on the copyright ownership of artificial intelligence creations. Due to the differences in legal systems in different countries, more in-depth research is needed to ensure the feasibility of the proposed solutions on a global scale.

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Sun, J.L. (2018) Copyright Research on the Protection of Artistic Intelligence Products. *Electronics Intelligent Property*, **322**, 22-29.

[2] Tao, Q. (2018) Review on Protection of Copyright Law to Build Outputs of Artistic Intelligence—Justifying the Right of Data Processor as Neighboring Right. *Law*

Science, **437**, 3-15.

[3] Jiang, S.F. (2021) Research on Copyright of Artistic Intelligence Products. Master's Thesis, Yunnan University of Finance and Economics, Kunming.

[4] Xiong, Q. (2017) Is Artistic Intelligence Generated Content Copyright. *Intelligent Property*, **193**, 3-8.

[5] Liu, N. (2019) On the Right Ownership of Artistic Intelligence Creation. Chinese Master's Thesis, Gansu University of Political Science and Law, Lanzhou.

[6] Glasser, D. (2001) Copyrights in Computer-Generated Works: Whom, if Anyone, Do We Reward? *Duke Law and Technology Review*, No. 1, 24-41.

[7] Butler, T.L. (1982) Can a Computer Be an Author: Copyright Aspects of Artistic Intelligence. *Comment L.S*, No. 4, 707-747.

[8] Jiang, S.F. (2021) Research on Copyright of Artistic Intelligence Products. Master's Thesis, Yunnan University of Finance and Economics, Kunming.

[9] Mao, Z.W. (2022) Research on the Legitimacy of the Copyright of AI "Generated Resultant". Master's Thesis, Northwest Minzu University, Lanzhou.

[10] Cui, Z.X. (2019) Research on Copyright Issue of Content Generated by Artistic Intelligence. Master's Thesis, East China University of Political Science and Law, Shanghai.

[11] Yi, J.M. (2017) Is Creation Generated by Artificial Intelligence Work? Science of Law. *Journal of Northwest University of Political Science and Law*, **35**, 137-147.

[12] Paquette, L. (2021) Artificial Life Imitating Art Imitating Life: Copyright Ownership in AI-Generated Works. *Intellectual Property Journal*, **33**, 183-215.

[13] Cheng, H.T. (2019) Research on Copyright Protection of Artistic Intelligence Creation. Master's Thesis, Anhui University, Hefei.