



Definition of Liability for Infringement of Works Generated Using Artificial Intelligence

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Abstract. With the popularity of artificial intelligence, big data algorithms have penetrated into all aspects of life, the traditional concept of the output form of works generated by artificial intelligence alone, has been transformed into an independent consciousness of the actors to guide the algorithm to generate creations, the user's deep involvement and even intentional artificial training AI, so that more and more generators are attached to the expression of the consciousness of originality, based on which, the identification of its copyright, and the On this basis, the determination of its copyright and the definition of infringement liability for works generated using AI have become an urgent issue. Distinguished from the pre-algorithmic era, the individual user-led, AI-involved generation of works, the copyright is automatically obtained without permission, but shall not be exempted from the infringement liability of the former copyright holder. And in the user unilaterally to the information source cognitive limitations of the objective facts, its or a special commissioned works, network service providers urgently need to assume indirect infringement liability, and by individual users engaged in business activities to give economic compensation, but also to avoid too much focus on the protection of the rights and interests of the victim, ignoring the balance of interests of all parties.

Keywords: copyright, artificial intelligence, commissioned works, infringement

1 Introduction

From Section 9 of the UK Copyright, Designs and Patents Act 1988, which explicitly refers to "computer-generated literary, dramatic, musical or artistic works" [1] and makes special provision for the attribution of copyright and the duration of protection, to the Irish Copyright and Related Rights Act 2000, which extends the object of copyright protection to cover computer-generated works, a completely new type of work, and defines computer-generated works as "works generated by a computer and the author of which is not an individual", the Copyright and Related Rights Act 2000, which provides for the protection of computer-generated works. In 2000, the Irish Copyright and Related Rights Act expanded the objects of copyright protection to cover computer-

generated works, a new type of work, and defined computer-generated works as "computer-generated works where the author of the work is not an individual". The EU Report on Intellectual Property Rights Legislation on Artificial Intelligence, published in 2020, also deals with the intellectual property rights of the development of AI and the copyright protection of AI-generated works, and the European Union Legal Affairs Committee recognised the status of AI as an "independent intellectual creation" for the purpose of determining the ownership of its copyright. With the popularisation of AI, big data algorithms have permeated every aspect of life, and the traditional concept of AI-generated works has been transformed into a form of output in which the algorithms are guided by an independently conscious actor to generate creations, and users are deeply involved in and even intentionally trained by the AI. With the iterative nature of the technology, the user can refine the instructions to generate a work that better meets his or her own expectations, which has led to an increasing number of creations being accompanied by an "independent intellectual creation", which is a form of copyright protection. This has led to more and more creations being accompanied by original expressions of consciousness, on the basis of which the determination of copyright and the definition of liability for infringement of copyright in works generated using AI has become a pressing issue.

The generated work discussed in this paper is precisely different from the pre-algorithmic era, in which individual users led the generation of works with the participation of artificial intelligence. This paper investigates this generated work or a special commissioned work, in its infringement of the original author's copyright, by the network service provider should bear the responsibility of indirect infringement, engaged in business activities of individual users to give economic compensation, and proposed in the protection of the rights and interests of the victim at the same time, but also need to pay attention to the balance of interests of all parties.

2 Deep Exploitation of Copyright in AI Generators

2.1 Creative Subjects That are Different from Mere "Algorithmic Creation"

In order to discuss the determination of the copyright of generated works, it is indispensable to discuss whether artificial intelligence has the status of a subject. Unlike a mere "algorithmic creation" of the creative subject, due to the deep involvement of the user, the work carries a unique expression belonging to the user, and the AI plays the role of a trustee.

Most of the civil law copyright law countries insist on the theory that "the natural person who creates the work is the author of the work"[2], which absolutely excludes subjects other than natural persons from being the author of the work. However, with the development of science and technology, this theory has been impacted by social reality, and countries have gradually accepted the theory of expanding the subject of copyright, and legal persons or other subjects can become the authors of works. At the beginning of the formulation of the Copyright Law of the People's Republic of China (hereinafter referred to as the Copyright Law)[3], it was not clear whether a legal person could be the author of a work or not, but eventually the Copyright Law stipulated that

a legal person could create a work just like a natural person, and would enjoy the moral and other rights of a work just like a human being. It is clear that the view that "intellectual work" and "natural person" are necessarily linked cannot be established.

Some scholars, such as Yuan Zeng in "Review of the Limited Legal Personality of Artificial Intelligence"[4], believe that artificial intelligence has limited personality, while others, such as Zhang Yujie in "On the Rights of Robots in the Era of Artificial Intelligence and its Risk Regulation"[5], believe that the subject of the rights is no longer limited to the biological sense of the "human", and that the difference in species is no longer regarded as a legal obstacle to the acquisition of the rights. The legal obstacles to the status of the subject, artificial intelligence enjoys the rights. The author believes that artificial intelligence has independent and autonomous behavioural capacity, is qualified to enjoy legal rights and bear responsibility obligations, artificial intelligence should have legal personality, as a fiduciary.

2.2 Properties of Works of Artefacts Generated by AI

Determination of the Attributes of Intellectual Property and Judgement of Originality. The question of whether AI-generated objects have the attributes of works directly determines whether they can be labelled as works and whether they will be protected by intellectual property law in the broad sense. The affirmative view, as discussed by scholars Qiu Rungan and Cao Yuqing in "On the Copyright Protection of Artificial Intelligence "Creations",[6] is that "Artificial Intelligence creations that satisfy the minimum degree of creativity requirement in terms of their external manifestation can constitute a work in the sense of the copyright law." On the other hand, the opposite negative viewpoint is that the AI generation is not enough to be called a work, such as Wang Qian [7]and other scholars argued the non-work attribute of AI generation from different angles[8]: first, from the perspective of the creative subject, claiming that the creation of natural person is the prerequisite and foundation of the establishment of a work, and AI is not a natural person, so the AI generation can't be recognised as a work; secondly, the process of the generation of AI generation as the starting point for analysis, and the process of AI generation as the starting point for the analysis. [9]The second is to analyse the process of generating artificial intelligence as a starting point, arguing that artificial intelligence generators are the results of the application of algorithms, rules and templates, which are highly homogeneous, leaving no room for creation, reflecting no individuality of the creators, and therefore cannot meet the requirement of originality of the works;[10] the third is to question the ideological value and emotional significance of the artificial intelligence generators as a work, and to argue that it does not help to achieve the basic goal of the copyright system, and there is no empowering way to make the work a work. Third, it questions the intellectual value and emotional significance of AI-generated works as works, arguing that they do not contribute to achieving the basic objectives of the copyright system, and that there is no reason to encourage them by granting rights.[11]

The author is more inclined to affirm that AI generated works, especially the AI generated works with the deep participation of the users specifically referred to in this article, fully reflect the intellectual achievements of the natural person in the form of

external expression due to the multiple input of instructions by human beings, and even carry out a large number of modifications at a later stage, and obviously satisfy the requirement of minimum degree of creativity, and naturally constitute works in the sense of the copyright law.

Proximity and Differences to Commissioned Works. Artificial intelligence-generated works are somewhat similar to commissioned works in that both involve certain instructions issued by one party, while the commissioned party completes the work. Therefore, AI-generated works can draw on Article 17 of the Copyright Law, which states that "For commissioned works, the attribution of copyright shall be agreed upon by the commissioner and the trustee through a contract. If the contract is not explicitly agreed upon or no contract is concluded, the copyright belongs to the trustee." However, the difference is that the attribution of copyright of works commissioned by AI cannot be agreed by the commissioner (i.e., the user) and the trustee (i.e., the AI) through a contract, but rather, it is formulated in the user agreement of the web portal or the application software, and the user clicking on the confirmation means that he/she recognises the terms and conditions of the copyright attribution that may be included in the agreement. However, in the absence of an explicit agreement in the contract or in the absence of a contract, the copyright of the commissioned work belongs to the trustee, whereas the copyright of the work generated by the AI should not belong to the trustee, and, from a practical point of view, it should be handed over to the user for the purpose of second creation, dissemination and even commercial activities, in order to give full play to the value of the work.

2.3 No Exemption from Tort Liability

Artificial intelligence generators cannot be created without the research and development programme's access to and exploitation of database content. With a series of uploading data on the Internet such as the publication of personal works by other creators on social media, it is highly likely that the works of these original authors will be inadvertently included in the database, which is a function of continuous learning that was given to the programme by the research and development staff at the time of the creation of the AI, and at the stage of subsequent application, the In the subsequent application phase, the AI will continue to retrieve content from the database that is not prohibited by the programme, so that it can use the original authors' works to fulfil the user's instructions and generate works that infringe the copyright of the original authors. The person to whom the copyright of the generated work is granted will have a direct bearing on who bears the responsibility for the infringement and whether the interests of the originator can be effectively safeguarded.

On the issue of copyright attribution, taking into account the reasonableness of the allocation of rights, some scholars have argued that the owners of intelligent robots should be the core of the corresponding rights structure, and ultimately promote the development of artificial intelligence technology.[11] [12] [13]This is in accordance with the traditional principle of "copyright belongs to the author" as the arrangement of

copyright attribution. As far as the legal concept of "author" is concerned, the natural person who creates a work is the author.

However, as section 9(3) of the UK Copyright, Designs and Patents Act provides "the author of a computer-generated work shall be the person who made the necessary arrangements for the creation of the work". It is not difficult to conclude that, in contrast, it is more advantageous to grant copyright in AI-generated works to the user. First of all, from the artificial intelligence aspect, the programme will be automatically executed since it is set up, itself is only the code activity, and on the other hand, the programmer machine company only plays the operation and regular maintenance work of overhauling and repairing the loopholes, and does not take part in the subsequent generation of the act, therefore, it is obviously more reasonable to give the copyright to the user of the actual generation of the work, that is to say, the user. It should be noted, however, that this kind of copyright obtained automatically without permission shall not exempt the former copyright owner from infringement liability. This act of granting copyright to the user of the AI-generated work not only gives better play to the use value of the work, but also protects the right of the original creator to pursue infringement liability.

3 Apportionment of Liability for Infringement of Works Generated by Artificial Intelligence

3.1 Liability of Network Service Providers for Indirect Torts

In terms of technological path, contemporary AI technology is mainly composed of three core parts: data modelling, machine learning, and human-machine loopback, of which machine learning is in turn based on algorithm design, prompting AI's in-depth learning, self-learning and autonomous evolution with the support of big data. [14]Accordingly, when observing the algorithmic creation activities of AI, its operation mechanism is manifested as follows: through the association, clustering, linking and other data collection methods of big data, AI analyses the collected data, automatically identifies, classifies and processes the tasks, and achieves batch and scale content generation and dissemination applications.

Therefore, network service providers, including program designers, operators, etc., have designed or adopted the operating procedures of artificial intelligence, and as the artificial intelligence continues to use the database to learn and produce works, the user, although according to the acquisition of the work and its copyright, but it is difficult to recognise that the artificial intelligence borrows from the works of others, while the opposite network service providers are clear about the operating mechanism of the artificial intelligence, and also naturally Indirectly bear the responsibility for the infringement of artificial intelligence.

3.2 Financial Compensation for Individual Users Engaged in Business Activities

The first thing that needs to be made clear is that copyright law aims to protect the legitimate rights and interests of the original author of the work he or she has created. Whether generated by traditional means or artificial intelligence, as long as the works are original and ingenious, they should be protected by copyright. Therefore, when individual users use AI-generated works to engage in business activities, these users should financially compensate the original authors if these works infringe the copyright of the original authors.

The pursuit of commercial interests often accompanies the pursuit behind operational activities. Individual users often obtain certain economic benefits by utilising AI-generated works for their business activities. However, the acquisition of such economic benefits should be based on lawfulness and legitimacy rather than infringement of others' copyrights. Therefore, for individual users who use AI-generated works to engage in business activities, financial compensation to the original author is not only a legal responsibility, but also a respect and protection of the rights and interests of the creator, which helps to maintain a good cultural ecology and creative environment.

3.3 Tort Liability Rules Should Balance the Interests of All Parties

In terms of the specific content of the rules on the tort liability of ISPs, the rules place too much emphasis on the protection of the rights and interests of the victim and neglect the balance of interests between the victim and the ISP. Article 36 of the Tort Liability Law focuses on the indirect tort liability of ISPs, i.e. the determination of the constituent elements of joint and several liability of ISPs as stipulated in paragraphs 2 and 3. Therefore, the legislative purpose of this article is to stipulate the tort liability of network service providers in order to protect civil rights and interests. As it is considered difficult to find the direct perpetrator in network infringement, in order to fill the damage of the victim, the rules are formulated in such a way as to stipulate that the network service provider is jointly and severally liable in the case of indirect infringement. Other scholars,[15][16] see Zhang Xinbao and Ren Hongyan, generally believe that the provisions of this article is too heavy for network service providers, resulting in an imbalance of interests. Therefore, tort liability rules should be formulated in such a way as to balance the interests of all parties.

4 Summary

In today's digital era, the rapid development of AI technology has given rise to a series of new legal and ethical challenges. This paper aims to explore the urgent need for network service providers to bear indirect infringement liability when the use of AI-generated works infringes on the copyright of the original author, and for individual users engaging in business activities to be financially compensated, and proposes that, while protecting the rights and interests of the victims, the interests of all parties need

to be taken into account in striking a balance. Over-emphasis on the protection of victims' rights and interests may lead to restrictions on the creative use of AI-generated works by individual users, thereby inhibiting innovation and cultural development. At the same time, neglecting the protection of the rights and interests of original authors is not conducive to the healthy development of the cultural industry, and may lead to a lack of incentive for original creators to engage in creative endeavours, affecting the balance of the entire cultural ecosystem. Therefore, the law and society should protect the rights and interests of original authors while allowing individual users to use AI to generate works within a reasonable range by establishing a sound copyright legal framework and regulatory mechanism to avoid overly restricting the creative use of individual users, and at the same time, ensure that the rights and interests of original authors are effectively protected, so as to promote cultural innovation and artistic exchanges.

In the author's opinion, regarding the copyright attribution of the intellectual achievements of artificial intelligence[17], we can draw reference from the protection of commissioned works, boldly try to adopt the legal mimicry technology, with reference to the U.S. copyright law, "regarded as the author of the" principle ("work for hire" principle) to the artificial intelligence itself. The principle of "deemed author" ("work for hire") of the U.S. copyright law is to regard the AI itself as the legal author of the AI work, and the copyright belongs to the user. The U.S. Copyright Act of 1909 created the "deemed author" principle, also known as the "work for hire" principle, and the Copyright Act of 1976 redefined the "deemed author" principle. The 1976 Copyright Act redefined the "deemed author" doctrine. The 1976 Copyright Act redefined the "deemed author" doctrine, drawing on the protection model for commissioned works, and using "legal fiction" technology to resolve the mismatch between the de facto author of a work and the owner of the right to the work, and to enforce liability for infringement.

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