

The Boundaries of Infringement Liability for Generative AI Users: Theoretical Reconstruction and Pathway Optimisation

Qiuyu Wang

*Kenneth Wang School of Law, Soochow University, Suzhou, China
3265571581@qq.com*

Abstract. As the development of generative Artificial Intelligence Technology continues to advance, problems related to Copyright Infringement caused by AI-generated Works are rising more frequently; In particular, User Liability due to Use of such Technologies is also On-the-rise. Systematically analyse the liability determination pathways of direct infringement, contributory infringement and fair use defences triggered by artificial intelligence-generated content in relation to substantial similarity under the specific circumstances of AI. Further demonstrate the difficulties of adapting to traditional safe harbours for AI governance. According to this, the paper presents a phased-separated and subject-based liability-sharing mechanism. Considering both types of criteria that belong to the "controls" and "Contextualisation", so as to find an appropriate way between technological innovation and copyright protection. This offers viable theoretical reference for optimising copyright systems in the AI era.

Keywords: Generative AI, Infringement liability, Copyright, Fair use, Safe harbour

1. Introduction

As fast as it advances and spreads widely, generative artificial intelligence technology is gradually coming to everyone's attention and becoming part of our lives. Recent developments for AI have been remarkable progress recently. GPT-3, a typical example, can accumulate an enormous amount of information through self-supervised learning over numerous kinds of texts, such as books, Internet resources and encyclopaedic materials. In the prediction stage, when new tasks or some example data are inputted via text dialogue to update and create results without calculating gradients [1].

But as artificial intelligence advances and its creations bring about new issues in terms of copyright protection. The output has a risk of infringing on others' copyrights: because AI generates content through training based on old data, it directly transforms these original materials into probabilities in distribution; Additionally, the generated work may be closely related to some particular existing creative works [2].

The main controversy at issue is how to divide liability between AI user(s), AI Service Provider(s) and Data Provider(s) when an artificial intelligence (AI) output shows "substantial similarity" to another's creation or work. At the same time, they are also the direct executors of the operation and thus bear primary responsibility.

Research on these AI-related disputes can help clarify responsibilities and balances in innovation between technological advancement and copyright protection; Promote the Innovative Development of Artificial Intelligence Technology ; Protect the Healthy Development of Creative Ecosystem . First, this paper analyses the specific features of "substantial similarity" under an AI environment; Secondly, systematically identify responsible entities involved in infringement cases related to AI-created works. Innovative introduction of a dual-standard system of "control" and "contextualisation", with the aim of providing some references on how to solve problems in liability determination.

2. The specific nature of "substantial similarity" in the AI context

The significant similarity in Copyright Law is shown by its high degree of similarity in the form of expression among infringing works and original works; Specifically, this refers to substantial similarity between creators' unique components and original works' basic parts. In terms of judicial application, it is necessary for a court to meet both conditions: the defendant needs to have had sufficient opportunity to obtain access to the original work; And the two works should be found sufficiently similar based on this basis. At the same time, copyright law protects only an individual's expression and not ideas; when determining substantial similarities substantially them comparison should be limited to examine only original expressions, like plot structure etc.

In the context of AI, "substantial similarity" continues to safeguard only the expressions of works. Users generally do not have an intention to recreate a particular work directly; instead, when using the service, they are usually seeking AI-created works within a certain style or field. Given that it is a matter of probability and statistics that AI algorithmic generations often resemble other works. Accidental similarities are more frequent among artificial intelligence-produced works such as art, music and writing; Expressive features tend to have high commonalities and certain universality. Although this type of similarity meets the requirements for passing the "access + substantial similarity" test, establishing it as a standard would be inappropriate.

In the case of *Litchfield v. Spielberg* [3]. While lacking direct ties with AI-generated works, it illustrates through which process the extensive similarity rule assesses non-direct infringements. In short, although some aspects of two works may be similar due to the shared characteristics among them or other factors; when determining whether they infringe on copyright law based solely on this, it will violate Article 47(3) of the Copyright Law for no reason at all. In short, it can still be used under the scenario of using AI technology. If there is a certain degree of similarity in AI-generated contents that results from its learning based on many similar cases, rather than direct imitation, then it cannot constitute copyright infringement.

In addition, policies have also been introduced focusing on balancing the technology-innovation motivation for creators with respect to copyright protection. Giving the user of generative programmes or users of generated works a certain copyright protection could motivate them to bring AI-generated contents into use; therefore, it helps promote the spread of knowledge and stimulate innovation [4].

3. Determining liability for infringement in AI-generated content

When AI-generated content displays a "substantial" degree of likeness compared with others' works, the users' possible liabilities primarily arise from three paths: direct infringer liability, contributory infringer liability and exempting through fair-use defence. Retest which fields of the AI field are applicable to each route.

3.1. Direct infringement liability

According to Article 10 of the Copyright Law of the People's Republic of China, in terms of primary responsibilities for direct infringement based on copyright law, it primarily covers reproduction rights and adaptations under economic rights, as well as the right of authorship under moral rights. Based on whether the users have committed illegal acts under copyright laws prohibiting such activities: reproduction, adaptation and public dissemination.

The core dispute in attributing to which party direct liability falls is related to legal agency issues. Many times, an artificial intelligence work is solely determined by the inputted prompt; then, through this function, it generates some type of output or results. Although legal agency refers to an agent exercising authority on behalf of the principal; in this case, it is still the person who directly submits the words that are reproduced. Mainly, there are the two schools of thought called "tool theory" and "collaborative theory".

Most scholars still adhere to the tool theory [5]. Content produced by artificial intelligence falls into the category of application results based on algorithms, rules, and template expressions; in contrast, creating works protected by copyright does not require this strict adherence process; According to the "tool theory", although AI can be likened to a paintbrush or word processor, its users retain full control over the final product and are thus responsible for it. For example, when a user enters "Generate an oil painting that matches the composition and colour of Monet's Water Lilies", based on their own intention and action, it will directly lead to infringed reproductions. However, in terms of direct liability, when considering the possibility of non-deterministic creation in computer-generated works, that is, the same program may generate different results with identical input data. It is as if throwing dice in the same way, but cannot determine where the die falls or what number it shows; thus, there are difficulties distinguishing among multiple liabilities due to their untraceable outcomes from various inputs. Barring all users from bearing any responsibility would also be excessively stringent in this case [6].

Courts may determine whether direct infringement has occurred by evaluating how much control users have over the generation result in practical applications. Broadly speaking, this type of management belongs to a high, medium, or low degree. If a user enters clear requirements for a particular work, such as writing Chapter VIII in Harry Potter by J.K Rowling; Rowling's Style", or specify some specific works, would constitute high control, possibly establishing direct infringements. If users request imitation of artists' styles but do not specify which works to replicate in advance; whether this constitutes medium control requires further examination according to cases-by-cases. Infringement occurs when the AI creates generic prompts like "a science fiction story" during generation of infringed works; therefore, under low-control conditions, there would be no liability. In Andersen v. The three-artists as defendants asserted that they had developed stable AI systems capable of producing similar artwork to theirs without consent. The court determined that if users input general prompts, such as "create a surrealist landscape", then generating similarly themed works would not constitute direct infringement. If there is any explicit instruction directing the generation of stars and vortices based on Andersen's style in the plaintiff's work, or if the AI has been directly trained on registered works, then the user may bear responsibility [7].

3.2. Contributory infringement liability

According to Article 1197 of the Civil Code of the People's Republic of China: If a network service provider knows or should have known that a network user has infringed on others' civil rights and interests by using its own network functions but did not take any remedial actions in time, then it

shall be held jointly and severally liable together with the aforementioned network user. Network service providers in the AI scenario are those providing AI functions or applications. In terms of concept, there is no strict difference between AI providers and users; they can be integrated at times. AI Service Providers utilise the AI technology they have to enhance internal operation in order to optimise. Additionally, there are various participants in the AI industry chain that can change roles; therefore, it is possible for them to switch places with each other arbitrarily.

3.2.1. Elements of contributory infringement

The conditions for an AI service provider to bear the responsibility of joint and several compensation include: 1. Direct infringement refers to acts of violation directly caused by AI-generated content; 2. The service provider intentionally or should have been aware that there was an infringement; 3. The service provider provided "a substantial aid" to the direct infringement.

The "knew or ought to have known" clause needs to follow the "red flag test". That is, when there are obvious factors such as bright colours of flags waving prominently before the network service provider, a reasonable person in their place would be able to notice that they were engaged in an infringing act. If the network service provider adopts an ostrich attitude and hides its head under the sand pretending not to see any issues when there are clearly obvious violations, it will also be regarded as the provision should have known about them. In terms of artificial intelligence services, once many users complain that their content has been infringed upon due to being generated using AI technology, or if such infringing information quickly becomes widespread across the platform and gains social recognition, but still fails to take action to investigate or halt it, then this situation can be considered as the provider "should know" [8].

The substantive assistance provided by the AI service entity involves actualising or escalating infringements under the facilitation of these services. That is, provide a channel for disseminating infringing works, offer technical support services and other ways to create facilitation conditions. If a designated AI service provider knowingly allows its AI system to produce infringing contents through improper means such as failing to set up appropriate filters, lack of supervision measures, not providing updates on upgrades to improve models, etc., they would thus fall under the category of substantial aid. *Perfect 10 v. PayPal*. Visa International claimed that the credit card company actually assisted in material copyright infringement by processing payment transactions for infringing Websites. The Court found that although the credit card company's payment processing was objective utilisation of it; the Service in question was not intentional. It did not constitute a substantial contribution to the infringing websites, nor did it induce or facilitate the infringing acts, thus not amounting to contributory infringement. A significant contribution can be given if a defendant's service is aimed at causing harm by means, and/or it involves knowledge that enables an expanded scope of infringement; although there may not be a clear parallel in the application context involving artificial intelligence (AI), similar factual circumstances have been observed. This view is frequently invoked in many cases related to artificial intelligence this year [9].

AI service providers can become AI users in some cases, but usually they continue to be individual AI consumers. As AI penetrates deeper into various areas of life and work increasingly actively becomes an agent for participation among users, instead becoming a recipient who receives less. In the generative AI field, users will no longer merely be subjects of direct infringement caused by specific instructions; even in some situations where they have exceeded the scope of ordinary consumer status and become a kind of "secondary service provider", they may also need to bear corresponding responsibilities for contributory infringement.

In some cases, users' statuses will change and they will be considered as secondary service providers. Most of the users create AI-generated works purely for themselves; thus, they have primary liabilities limited to direct infringement as stipulated by law. However, when user conduct exceeds the bounds of personal use, they may incur contributory infringement liability. For instance, distributing the artificial intelligence generated contents over many platform and application; Or using API technology to integrate deep-embedding of AI models capability in third-party service or applications, thus delivering AI-generated content via these Services. Under such circumstances, the user assumes the role of a "secondary service provider", passing on information, and may thus be determined as having significantly assisted in direct infringement.

For individual users, the objective requirement that they know or should have known does not apply identically to AI service providers. Ordinary users do not have the ability or responsibility to supervise whether their produced resources infringe upon others' rights; thus, directly applying the "red-flag standard" is unreasonable. Under this subjective requirement for users, the following Conditions must be satisfied: The user was aware that they were using AI technology to create infringing works; Or, after receiving a clear and understandable notice of infringement by rights holders, the user did not promptly or appropriately respond. But once consumers become "second-order services providers", they are considered secondary service providers, and thus the "red flag standard" might be applicable to them. Judgement should still be based on the specific capabilities, business scale of the user, etc., and higher standards than that for professional large-scale platforms are usually set.

3.2.2. The dilemma of the safe harbour model

The "safe harbours" mentioned above originate from the US's 1998 Digital Millennium Copyright Act. The legislative intent recognises that, owing to their lack of resources, ISsPs cannot timely review online contents efficiently. Therefore, in order to clarify that creation grants copyright and also establish an "innocent party defence" for internet service providers. That is, when only providing host service without generating the website itself, it needs to promptly reply with a notification that objects the infringement; If one does not respond within this period, they are presumed guilty. Conversely, if the infringing content has not been uploaded to the ISP's server nor was the ISP informed thereof, then no liability should attach. Although generative AI service providers have distinct attributes from traditional Internet Service Providers; in terms of the core principle of safe harbours stipulated by international law, they should also be regulated as new forms of technology [10].

Nevertheless, many differences among generative-ai-service-provider vendors and traditional Internet Service Providers, such as their various functions and an unpredictable nature of algorithms, create several issues that limit safe harbours being applied to the generative-AI domain.

3.2.2.1. Massive scale and recognition lag

Under the safe harbour regime, the traditional manual "notice-and-takedown" mechanism has proven ineffective against large-scale automated abusive behaviour. The amount of AI-created content produced is huge, potentially reaching in the tens or hundreds of millions each day; thus, rights holders and regulators cannot grasp its entirety in time. After finding it, all steps such as collecting evidence, issuing valid notice, Platform response and removing need a long time. At that time, due to an infringement of rights, it will soon grow worse quickly. Under the huge volume of contents generated and disseminated by Generative AI, rights holders or regulators are not able to

cope with the increase in infringement cases; once a few have been discovered. It cannot function normally because of this [11].

3.2.2.2. Difficulties in applying subjective requirements

For an ISP to be deemed eligible under the safe-harbour provisions, it must have lacked subjective fault; i.e., there was either lack of knowledge or fail in reasonableness in knowing about any infringements taking place [12]. If an ISP is proven to have "known or should have known" of the infringement, it generally cannot invoke the "safe harbour" principle for exemption. However, because generative AI service providers have the characteristics of both content producers and platform administrators at the same time, determining whether there was "actual or apparent knowledge" becomes more difficult; On one hand, they generate new contents independently, and On the other hand, as platform administrators, they cannot fully control all generated content. Simultaneously, generative AI has high interactivity and can make individuals bypass Service Provider's verification by secretly giving commands or guiding step-by-step. The difficulty in establishing the subjective elements required for AI service providers is due to this degree of complexity in infringing conduct. Finally, the output of generative AI has considerable unpredictability. The service provider itself cannot predict the results of AI; thus, they are unable to review or supervise produced content. Thus, determining whether someone "should have known or ought to have known" of the infringement is difficult in reality.

3.2.2.3. Challenges to technological neutrality

Under the technology-neutral policy orientation, the safe-harbour doctrine emerged subsequently. According to this viewpoint, Technologies that possess no attribute or value bias on their own are not subject to the restrictions of the law. However, technology-neutral indicates that services cannot generate or disseminate content proactively through their own activities. The function of the generation of generative AI service providers is now shifting from passive transmission to active involvement. The traditional Internet service providers usually do not want to intervene in or indirectly cause created-generated content. However, generative AI service providers deeply control or entirely decide the content generation process by designing model architectures, selecting training data, setting algorithmic parameters and optimising prompt-response logic. Technology itself exists objectively as a neutral method. However, if the technical provider introduces significant subjective elements during its own research and development or application during the operation process, it may not be able to cite neutralization as an excuse for avoidance of responsibility. For generative AI service providers, by introducing directional generation mechanisms that cause the AI system's behavior to conform to a specific logic path under certain circumstances, this constitutes active, targeted interference. Thus, technology-neutral reasons for excluding liability under safe-harbour provisions are rendered inadmissible [13].

3.3. Fair use defence

Article 24 of the Copyright Law of the People's Republic of China introduces the concept of fair usage to establish the main path for user exemptions. However, under the framework of AI, concerns about fair use arise more specifically: Does AI training qualify as such?

Generative artificial intelligence is constructed through training algorithms, computing resources, and Data; hence it needs an intensive amount of training data to function. If training models using

copyright-protected works without permission causes infringement disputes. Based on an examination of existing literature at home and abroad, we believe that under certain circumstances, artificial intelligence teaching qualifies as fair usage.

Firstly, the application of fair use should only extend to the input stage. Training data serves as the basis and prerequisites for generating new content by generative AI. Despite its difficulty and the use of approximately erroneous input to produce an artificial output. Every time we need to ask for permission, transaction costs will increase dramatically and hinder the progress of AI technology. For example, developing a massive scale-of-AI requires accessing hundreds of thousands of works. Negotiate with each rights holder to reach an agreement in terms of cost and efficiency that is difficult or impossible to achieve. Applying copyright law elsewhere would not cause heavy costs and disruptions to the development of artificial intelligence significantly [14].

Secondly, its application must serve the purpose of balancing interests. Copyrights aim to maintain this balance between different interests groups in society. To be considered as fair use defence in artificial intelligence learning, it needs to pursue the balance between interest promotion and technological progress simultaneously. Medical applications of artificial intelligence may include learning from large amounts of medical information to help doctors select treatments; Or use machine vision technology for diagnosis or prediction, etc. Excessive copyright protection that restricts the development of this field by limiting AI learning harm others, should therefore not be considered as protecting rights appropriately.

Thirdly, its application range is limited to situations where reproducing the original work at the input stage does not affect its market performance; otherwise, there would be a situation of direct replacement of the economic benefits of copyright holders due to technology [15]. Taking painting as an example, if an AI simply imitates through learning from many paintings with different styles and content without significantly impacting these changes on market Sales Performance, artistic Value, etc., this type of learning may be considered fair Use . In contrast, if the generated work by artificial intelligence has been too similar to the original and thus affected its market sales or decreased in artistry, then it would be challenging to categorise such learning behaviour as fair use.

Although there are instances where platforms have used unauthorized copyrighted data to train models under the guise of training models, Getty Images v. Stability-aided AI. AI Learning's Fair Use Status Globally Is Still Unresolved, And Active Debates Are Needed.

4. Resolving the liability allocation dilemma and optimising institutional pathways

Generative AI technology's swift progression in recent years has led to widespread applications of its works, thereby increasing the difficulty in determining liability for copyright infringement. Traditional Frameworks, including the "safe Harbour" Principle, are found to be insufficient in the Context of Artificial Intelligence. An urgent need exists to improve the system to solve the problem of liability distribution. Based on previous studies' findings, this paper proposes the following paths for institutional improvement.

4.1. Establishing a phased, entity-specific liability allocation framework

Generative AI platform overall operation includes three links: Data input, content generation and output; This situation makes it very complicated to determine which entity bears responsibility for copyright infringement. Therefore, different responsibility attribution rules need to be set according to the different stages.

4.1.1. Data input stage

According to China's present-day Copyright Law, there is a statutory licensing system whereby works can be used without prior permission from the copyright owner in certain situations as long as compensation has been paid; meanwhile, it requires that other rights of the original work remain intact and not affected by infringement. But it is not listed in the Copyright Law that massive data inputs are covered by this statutory licence system. The author believes that the data input phase should fall under the category of legally authorised use. Extend the scope of statutory licensing to include the training phase of artificial intelligence that uses copyrighted works to address problems such as low efficiency in negotiation when dealing with large amounts of data and insufficient motivational functions for innovative activities; At the same time, this measure also helps maintain a certain degree of fairness in the distribution among copyright owners and other participants in the development process of AI technology applications. At the same time, introduce block chain technology and collective management systems simultaneously. Blockchain technology has attributes such as decentralisation, anonymity, independence and trustworthiness; when there is a large number of other copyright holder's works in the initial stage, blockchain technology can be used to record it, then collective management organizations will collect fees [16,17]

4.1.2. Model training and generation stage

Closed-API generative-AI for application purposes requires that the degree to which models participate in content creation be strengthened in managing and assuming responsibility for such content [18]. As providers of AI service, they need to intervene actively in the generated content and take appropriate measures for preemptive infringement identification. As mentioned above, some applications may have features that allow them to generate works with certain characteristics or styles (such as paintings), etc. In these cases, because it's not feasible to apply the technical-neutrality principle, as mentioned earlier. Integrate the Copyright Filter into the Model training and generation procedure on the platform; Before publication, filter generated contents to prevent obvious infringements of copyrights from appearing.

4.1.3. Content output and dissemination stages

During these stages of inputting data or generating contents through an AI system, it would not be in compliance with the full applicability of the "safe harbour" rule as previously explained. Although it can be applied to the safety harbor in content production and release stages. At present, the role of AI service providers is quite similar to that of traditional Internet Service Providers; They act as technical intermediaries in an intermediate or platform role to receive users' requests (Search Queries/Questions/Prompts), obtain required information through technological methods (Retrieval Algorithms/Generative Algorithms). Macroscopically, users request and obtain "content" from a "service". Apply the safe-harbour principle at this point to avoid the problems mentioned above. Artificial intelligence service providers shall fulfill their duty to notify and remove, or fail to do so that they will be liable for contributory fault.

4.2. Introducing the "control" and "contextualisation" standards

Users' responsibility in infringing upon others under generative AI arises from whether copyright law characterises this as direct infringement; it is more challenging to determine when both people and a machine cooperate collaboratively. Users are not ordinary "plagiarists"; they input prompts

casually or make some minor parameters changes; The degree of "contributions" and "controls" varies significantly in reality after generating specific works. Therefore, treating all users as either infringers or non-infringers unfairly and blocking technology advancement. Therefore, an improved and loose-liability assessment system should be introduced to replace the original two standards of "control" and "contextuality".

4.2.1. Control standard

Control, as mentioned in Chapter 4 on direct infringement, is how much a person interfered or affected the course of making an AI image generation process. As the fundamental standard to determine if such individuals are responsible directly in an infringement case. Inside the definition is a series of liabilities that range from "low control" to "high control".

Broad, non-directional instruction: Such actions are typically classified as having low level of control. prompts such as writing a love poem or painting a snow scene allow the AI some degree of freedom in creating works; thus, these creations are often considered somewhat random and lacking structure. Under such circumstances, the AI User only initiates, while it generates the output results by itself. There is neither an objectively foreseeable nor controllable basis for such substantial imitation of other's work compared with the defendant's. Thus, users generally should not bear the responsibility of direct infringement - as someone purchasing paper and pens cannot be held responsible for infringing on another person's substantial resemblance to a painting by that artist.

If Users ask the AI to mimic a particular artist, writer, or existing Style, such content can be considered moderately-controlled by default. Such as requiring students to paint gardens in monochrome style of Impressionism and add brief thoughts through Hemingway's technique. Moderate Control is an indeterminate situation regarding Liability. Although the users' instructions do not explicitly point to a particular piece of art; by narrowing down the creativity area, it is prone to high similarity with protected works. The user thus has some degree of voluntary attitude towards the AI's output. The cases cannot be applied equally to all, and each situation needs individual assessment. Considering the following points are needed: Whether the style has reached a level of being highly distinctive and unique, making imitation inevitably lead to significant copy-cats with specific works; The user's intention is to know if he intended to reproduce others' creations while creating his own work; And whether there is considerable similarity in both style and expression besides just reproducing the general idea when generating output. Based on the above-andersen v. In terms of stability ai case, during the trial process, it will have a greater likelihood of being deemed an infringement and require users to provide sufficient evidence.

When users provide extremely detailed and specific instructions, as well as explicit directions for the AI to reproduce or modify another work, these actions can be classified as high-control behaviour. For instance, it can produce an imitation of a copyrighted oil painting or write new parts of a well-known work. Under these circumstances, the user will have used the AI as a kind of "high-efficiency tool" for their infringement intentions. The user has had sufficient foresight and control over the AI-generated content; therefore, there is no longer an issue of infringement due to an agent's intention. If the user has violated directly as if it were "reproduction" or "adaptation", they can be regarded as having infringed.

4.2.2. Contextualised standard

The context-based one is an extension of the single label: user Identity. Based on evaluating the situation, purpose and scope of use, classify users into ordinary users or secondary service

providers; Then determine which category requires higher level of duty of care by a platform-like nature.

When users utilise AI-generated contents in their own study, Research, and leisure outside of public display or commercial applications, it is generally considered non-commercial personal use. Under these circumstances, the users can generally be regarded as purely end-users; They have no duty of care obligations towards others other than exercising control over their own actions. However, once the user generates potential infringement under strict control, lawful intervention should still be restrained. Due to this reason, it remains private and cannot be included in the public area; therefore, there will be little impact on any of the copyright holders.

When commercial use or the second-career users are concerned, AI users will generally be enterprises and professionals respectively. Users use AI-generated contents in a commercial context. For example, mass-distribute the generated contents on its own platform or social networks to attract more visitors; Or deep integrate the AI model through an API interface and offer generating service for users of other products or services. Under these circumstances, the user's Identity has transformed qualitatively into that of "secondary Service Provider" in terms of role. Their behaviours have exhibited features of public dissemination, commercialisation and size. Therefore, they have a greater responsibility than ordinary people and will not receive special treatment anymore. Establish content filtering functions and infringement complaint handling institutions in line with the size of its business scale. Moreover, one could adopt the above-mentioned "red-flag standard" in their consideration of them as well. Otherwise, these users will bear the liability of contributory infringement due to infringements they allow on their platforms.

4.2.3. Synergistic application of both standards

As shown in the above discussion, standards for controlling and contexts do not have to be incompatible; rather, they can work together. The control standards at the root are liability assessment; Is there a causal relationship between such infringement and individual behavior based on evidence? It also covers aspects of subjective fault. Context-based standards set the boundary for responsibility too high. It addresses which level of duty of care and responsibility applies when infringement has been proven under different circumstances of users' behaviour Patterns or identities: either responsible only for their own acts or jointly liable for others' damages arising from their platforms. By establishing two kinds of Standards for Control and Contextualisation, the Courts can clearly define Liability Boundaries in Complex Applications of Artificial Intelligence. Thus, in this way of treating it is more balanced: combating the evil infringing acts at one hand does not limit legitimate technological innovators on the other. Therefore, it achieves the two-leg goals of protection listed in China's current Copyright Law for authors and ensuring reasonable use to facilitate wide application.

5. Conclusion

The high-speed development of artificial intelligence technology brings many new problems in copyright protection and the attribution of liability for infringement among works created by generative AI. The traditional legal system has difficulty comprehensively integrating the characteristics of AI technology's complexity and uncertainty. The article will examine the unique characteristics of "substantial similarity" in an artificial intelligence environment, explore users' liability for infringement and contribution, identify cases where fair use can apply during AI training periods, etc. Building on this, the author suggests constructing a tiered-liability system across three

stages: data entry, model building and content generation, while also proposing two standards for determining user's responsibility boundary: control and context. Given that as artificial intelligence advances, the existing theoretical foundation may one day be invalidated; therefore, legislative revisions must occur regularly accordingly. The proposed tiered liability framework and dual standards can be used as a basis for updating the Chinese Copyright Law. As technology advances, new types of AI will emerge, presenting fresh challenges. Different forms of AI should have varying degrees of protection over copyright; thereby fostering a favourable legal framework for innovations in and Applications of artificial intelligence technology. To maintain a stable balance of technological progress with copyright protection in the end.

References

- [1] Brown, T.B., et al. Language Models are Few-Shot Learners. *Advances in Neural Information Processing Systems (NeurIPS)*, 2020, 33.
- [2] Xu Mingyan, Yao Yu: "On the Liability for Copyright Infringement by Generative Artificial Intelligence", published in *China Brand and Anti-Counterfeiting*, Issue 8, 2025.
- [3] Lisa LITCHFIELD, Plaintiff-Appellant, v. Steven SPIELBERG; MCA Inc.; Universal City Studios, Inc.; Extra-Terrestrial Productions; Kathleen Kennedy; Ned Tanen; and Melissa Mathison, Defendants-Appellees. 736 F.2d 1352.
- [4] Pamela Samuelson. (1986). Allocating Ownership Rights in Computer-Generated Works. 47 U. Pitt. L. Rev. 1202-1204.
- [5] Wang Qian, "On the Classification of AI-Generated Content under Copyright Law, " published in *Legal Science (Journal of Northwest University of Political Science and Law)*, Issue 5, 2017.
- [6] Grimmelmann, J. (2016). There's no such thing as a computer-authored work--and it's a good thing, too. *Columbia Journal of Law & the Arts*, 39, 403-416.
- [7] Andersen, S., et al. v. Stability AI Ltd., et al. (2023). 700 F.Supp.3d 853. United States District Court, N.D. California. Retrieved from WESTLAW CLASSIC.
- [8] Liu Kaiguo, "The Application of the Red Flag Standard in Determining the Liability of Internet Service Providers for Infringement", published in *New Century Library*, Issue 5, 2007.
- [9] Perfect 10, Inc. v. Visa International Service Association. (2007). 494 F.3d 788 (United States Court of Appeals, Ninth Circuit). Retrieved from WESTLAW CLASSIC.
- [10] Wang Guo and Yuan Aimiao, "Collaborative Governance: Adjusting the Applicability of Safe Harbour Rules in the Context of Generative Artificial Intelligence, " published in *Journal of Kunming University of Science and Technology*, No. 4, 2025.
- [11] Xu Xiaoben, Xue Shaoxiong, "The Legal Framework of Copyright Due Diligence Obligations for Generative AI Service Providers, " published in *Science and Publishing*, Issue 7, 2024.
- [12] Yang Xianbin, "Liability Assumption and Limitations Among Generative AI Service Providers for Infringement", published in *Journal of Jurists*, No. 3, 2024.
- [13] Feng Xiaoqing, Shen Yun, "Determining Copyright Infringement Liability of Generative AI Service Providers, " published in *Rule of Law Research*, Issue 1, 2025.
- [14] Lin Xiuqin, "Reforming the Fair Use System for Copyright in the Era of Artificial Intelligence, " published in *Legal Studies*, Issue 6, 2021.
- [15] Zhi Xueting, "An Analysis of the Application of Fair Use to Generative AI Training Data, " published in *Communication and Copyright*, Issue 4, 2025.
- [16] Zhao Hongwei, Rukya Hoca, "Forms of Copyright Infringement and Risk Governance in the Context of Generative AI, " published in *Cybersecurity and Data Governance*, Issue 9, 2023.
- [17] Zhang Hongbo, Fu Lixia, "A Review of Academic Perspectives in China's Copyright Field Since the 19th CPC National Congress, " published in *Editor's Friend*, Issue 4, 2022.
- [18] Feng Xiaoqing, Guo Chang, "Copyright Infringement Liability and Tiered Governance of Generative AI Platforms: Reflections Based on the Hangzhou Altman Case, " published in *Digital Rule of Law*, No. 2, 2025.