

The Impact of Generative Artificial Intelligence on Short Videos Research and Countermeasures

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Abstract

Generative AI is still being iterated and improved. Understanding the overall changes brought by this technology to all walks of life is important for practical work. After the digital environment gradually matures, the overall scale of the short video market continues to expand, various AI tools are being used by an increasing number of people, and many processes in the industry are slowly beginning to change from beginning to end. In terms of daily content creation, such intelligent tools can help creators quickly collect materials and straighten out the entire creative process, but this will also lead to a large number of highly similar works; creators must have their own creative ideas and, step by step, to polish the material at hand, will not make the same content as others. From the perspective of communication scenarios, audiences show greater willingness to engage in interaction, and information circulation channels become more diverse. Personalized recommendation algorithms, together with 5G and other intelligent technologies, have enriched the forms of information dissemination. In terms of information content itself, new technologies have revolutionized the production and circulation of knowledge. Nevertheless, fully verifying the authenticity of online information is difficult, resulting in new shifts in cultural expression and public opinion ecology. Audiences' viewing experience has significantly improved, while platforms continue expanding their personalized services and online education functions. However, ethical controversies and copyright disputes remain objective obstacles during technology implementation. Regulators need to optimize industrial norms and advance supervision alongside industry self-governance to promote the stable and sound development of the short video industry. The conclusions of this paper can also provide references for subsequent relevant research.

Keywords

Short Video; Generative Artificial Intelligence; Countermeasures.

1. Introduction

In recent years, digitization has been advancing faster and faster. Short videos have become important channels for information circulation and cultural interaction because they are characterized by a streamlined length, an intuitive picture and rapid spread. It has gradually infiltrated all aspects of social life, and the volume of the whole industry is also growing steadily. Moreover, the development momentum of generative artificial intelligence is very strong, which has brought deep-seated changes to many industries, especially in the field of short video. In terms of content creation, we have various algorithms for text writing and picture generation as the basis. Generative AI has now been integrated into the entire process of content output. Although it can greatly accelerate the overall speed of content production, there are an increasing number of similar works on the market, and the problem of uniform content is becoming increasingly serious. When the content is distributed and disseminated outwards, the exclusive push mode works together with a variety of terminal devices, eliminating the

limitations of information dissemination in the early years, but the bias problem brought by the algorithm is also slowly emerging. If the whole network content environment and the personal feelings of ordinary users are considered, this technology has changed the method of knowledge transmission, and the exclusive adaptation services of major platforms are also improving. However, security risks such as the difficulty in identifying false information and the leakage of personal use data have not been completely eliminated.

Against this backdrop, it is necessary to identify both the advantages and drawbacks of AI and explore feasible solutions. This not only facilitates the sustainable and steady development of the short video industry but also constitutes a core research focus for both academic exploration and industrial operation practices.

2. Research Background

Among emerging technologies, short video platforms and generative AI have more intuitive and far-reaching social impacts than other technological innovations do. Within just a few years, short videos have evolved into the mainstream carrier of online content with explosive market expansion embedded in people's daily lives. Characterized by easy comprehension, appropriate duration and low barriers to browsing and posting, short videos have become the primary medium for people to access news, kill spare time, maintain social connections and express personal thoughts. Users of all age groups and backgrounds across urban and rural areas regularly consume short videos, with many creating original footage themselves. Individuals record trivial daily moments, share professional expertise, display personal strengths and express imaginative ideas through short videos, which provide the general public with an open platform for self-expression.

In the past few years, the overall scale of global short video users has increased by more than 30% annually, and the corresponding market size has also been expanding. Tik Tok, Kuaishou and other head content platforms have accumulated hundreds of millions of active users around the world, with billions of single-day content broadcasts. They have long become the core channel of internet cultural communication and occupy a very important position in the entire information dissemination ecology.

In recent years, the upgrading and optimization of generative AI have occurred faster than ever before. Such intelligent products are rooted in the development of core underlying technologies such as deep learning and neural networks. At present, they can independently write text content, draw pictures, make audio and video materials and other creative achievements, breaking the rigid form of content creation in the early years, and are no longer restricted by various rigid requirements. After an increasing number of people begin to use these intelligent creation tools, the time it takes to make content is greatly shortened, and it is easier for ordinary people without professional backgrounds to try to create. In the past, to generate high-quality creative content, on the one hand, we must constantly learn and accumulate a large amount of professional knowledge; on the other hand, we must rely on years of hands-on practice to accumulate experience. Currently, the entire creative process has been relaxed substantially. Creators do not have to spend many years to practice professional skills and forge their own creative ability over the years. As long as they can use all kinds of AI tools flexibly, they can make finished products that do not lose the level of professionals. Because of this, the number of people who actively choose to devote themselves to content creation has increased significantly compared with that in the past.

With the gradual integration of generative artificial intelligence into all aspects of short video, the whole industry has been injected with new development vitality, and the scope of content that creators can deeply cultivate has become increasingly wider. When people start to plan video content, they can use all kinds of convenience brought by artificial intelligence to finalize

novel and interesting creative themes, try more different forms of content display, eliminate immutable creative ideas for a long time, and explore more creative directions that are loved by the audience and have considerable long-term development prospects. Creators can also rely on AI to sort out the massive short video materials of the whole network, find the subdivision track with a small number of current entrants and full follow-up development potential, and continuously accumulate creative inspiration for daily shooting. Next, we discuss the actual changes in the efficiency of creation. In the early years, the steps of editing video clips and adding various screen effects were cumbersome and complicated and always took much time and effort from the creators. By relying on various intelligent editing tools, short moments can result in a complete short video with excellent viewing. This kind of software can independently select the key pictures in the video and connect the various lenses together according to the rhythm of storytelling; at the same time, it can also fit the emotional atmosphere and core theme of the whole video and automatically match the adapted background music, screen transition effect and subtitle layout style. On the whole, the creator has saved much time and energy, and the overall speed of producing video content in batches on weekdays has improved.

After the deep integration of the two technologies, many problems in reality are gradually exposed. Among all the problems that need to be properly handled, all kinds of disputes caused by copyright ownership are the most difficult to coordinate and solve. To successfully produce all kinds of content, AI needs to collect a large number of graphic, audio and video materials to train the model and then generate the work after many calculations. In this form of operation, it is difficult to clearly define the party to which the copyright belongs. Many short videos produced by artificial intelligence have almost no difference in visual effects or personal original content, but the source of the material and the whole process of step-by-step generation of the content cannot be traced and verified, and copyright-related disputes are increasing annually. Most of the content created by AI is stuck in the unclear area of infringement judgment. For a long time, the short video industry has been a solid copyright management standard, which has been constantly invaded and disturbed, and the original order has been slowly disrupted.

Copyright disputes are only one of the problems exposed. Currently, many defects still exist at the short video content level in the network. Many short video bloggers have long relied on AI to write manuscripts, are reluctant to spend energy collecting and combining creative materials, and will not integrate their own ideas to optimize content details. Many video works with rough workmanship, false content, and three-view orientation are not correct enough. Low-quality content is widely disseminated through the rapid dissemination of short videos, which gradually reduces people's ability to think independently and distinguish between right and wrong information. It will be difficult for positive social concepts to take root in the hearts of the public. All users who browse the video will be adversely affected by this, and minors who are still in the growth and development period are more likely to be tainted with negative content for a long time. Like a large amount of false health knowledge in the network, verifying the authenticity of social information is impossible. If it is widely spread on the platform, it is easy to misunderstand the meaning of the content originally intended to be expressed. If the situation is serious, it will make people feel anxious and fearful.

It is essential to systematically analyse the advantages and disadvantages of generative AI for the short video industry and explore implementable solutions. The relevant research findings can provide reference insights for academic researchers studying related topics and industry practitioners managing short video platforms.

3. Impact of Generative Artificial Intelligence on Short-form Video Creation

3.1. Content Generation Transformation

The field of digital content creation has been constantly changing over the years, and a variety of new technologies have been upgraded in turn, gradually reshaping the overall form of content produced by everyone. Generative AI is now a pivotal new technology. With the rapid development trend, the creative architecture of the short video field gradually changes from beginning to end. The level of science and technology in all walks of life is rapidly increasing. Two researchers, Li Baixiao and Dong Xiaofei, integrate all kinds of data, complete a full range of research, and propose the following views: natural language processing and image generation-related algorithms are becoming increasingly perfect. Artificial intelligence can complete many practical tasks [1].

It is not difficult to see the complete process from the preparation of the master-slave to the final film of the short video. The efficiency of using artificial intelligence to polish the copy is particularly outstanding, and all kinds of creative themes can be essentially controlled. By recording daily chores at home on weekdays or sky-high science fiction short stories, AI can easily create them and continuously provide new creative ideas for photographers. Not only can the text manuscripts needed for video be completed by AI, but creators can also use these intelligent tools to assist their own creation when collecting and preparing graphic materials. After finalizing the core and overall atmosphere that the video wants to express, you can rely on tools to generate all kinds of picture materials with clean and comfortable images. The scenery of the mountains and the scenery of the mountains, the natural portraits of the characters, and the abstract art paintings with a sense of design can all be made one by one with the help of AI.

Furthermore, the technology supports the development of customized virtual characters with adjustable facial features, outfits and personalities, injecting novelty into short video creation and expanding creative boundaries. Many creators deploy AI to design innovative storylines and imaginative scene layouts in preproduction to finalize core creative frameworks.

However, Li Yuhao and Gao Yinggang reported that widespread AI adoption in short video creation exacerbates plagiarism and homogenization [2]. Most creators apply identical algorithms to produce videos, leading to convergent themes across platforms, while few dedicate efforts to exploring niche, in-depth content.

If you want to rectify the messy creative atmosphere of the short video industry today, content creators should not directly copy all the content generated by AI. The life experience accumulated on weekdays and his own unique creative ideas should be integrated into it, and the initial content of AI output should be constantly revised and polished. The creators generally have two kinds of man-machine combinations of creative ideas: one is to use AI-generated picture materials with the content drawn by their own hands, and the other is to fill in the details of the story based on the text context built by AI and then properly integrate them into the content of the traditional culture of the national style. Only by making original short videos with personal characteristics in this way can we firmly attract the audience and gain recognition and love from everyone for a long time.

3.2. Creative Process Reshaping

Accelerated digital and intelligent technological development has transformed the landscape of the short video industry. Maturing artificial intelligence technology has overhauled the complete production workflow of short videos, exerting a growing influence on industry creation modes. As stated in Ren Yuqing's research, creators can leverage artificial intelligence

to analyse massive online datasets during topic conception and identify trending content and audience preferences to select high-traffic creative directions [3].

On the whole, we can sort out this way: the various social platforms and online search channels can accumulate a large amount of information gathered together, and the different periods of internet users prefer to look at life tips, or the latest technology-related content, short video creators, can refer to this collected content to determine what kind of shooting theme you want to do. When the actual shooting begins, the intelligent shooting equipment automatically adjusts the shooting parameters, such as the aperture and focal length, and straightens the picture. In addition, relying on artificial intelligence to create a virtual shooting scene can not only save many shooting expenses but also greatly relax the professional requirements of shooting. Even without excellent shooting skills, ordinary people can easily take pictures.

At the end of the editing stage after the video is completed, Zhou Jie scholars have mentioned in relevant papers that most editing tools are now embedded with artificial intelligence functions, which can automatically batch processing fragments, match appropriate background music, and easily add various screen effects. [4]. In terms of PR tools, its own intelligent system can read through all the original film material, along with the overall rhythm of the video and the emotions you want to convey, and with the fit of the tune and the transfer effect, it can save much postgrinding time; thus, the creator of the overall speed of short video will be much faster.

All kinds of practical and convenient new technologies have their own limitations. Currently, many people who perform content creation are accustomed to completing work from beginning to end through the use of intelligent software. Over time, their real creative skills are gradually abandoned. The creators of short videos want to grasp the balance between technology and creation. On the one hand, they can save much energy from complicated work by AI; on the other hand, they still need to learn the practical skills of traditional shooting and editing. At the time of creation, we integrate our own true inner feelings, take into account the overall artistic atmosphere of the work, and slowly let the artificial intelligence auxiliary means and the original artistic creation blend with each other and harmoniously integrat.

4. Impact of Generative Artificial Intelligence on Short-form Video Dissemination

4.1. Enhancement of User Participation and Interaction

To maintain the popularity of short videos and continue to be loved by the public, the audience's personal participation and mutual communication always hold a crucial position. After generative AI technology was slowly integrated into all aspects of the short video industry, the overall model of audience interaction changed substantially. Chen H, Wang P and Hao S carried out relevant experimental analyses and concluded that the personalized recommendation mechanism and intelligent interaction module created by generative artificial intelligence can fully mobilize the enthusiasm of the audience to participate in the interaction [5].

Nearly all mainstream short video platforms leverage algorithmic computing to track user behaviors, including viewing history, likes, comments and completion rates, and building individual interest profiles to deliver customized content feeds. Platforms such as Douyin and Kuaishou operate on this mechanism, generating personalized homepages that expose users to preferred content and incentivize likes, comments and shares, fostering frequent user interaction. Additionally, built-in intelligent customer service assistants instantly answer audience inquiries about video content, stimulating cross-user topic discussions, retaining long-term users and sustaining active platform communities.

Increased user interaction further facilitates socially driven short video dissemination. Personal social networks evolve into new communication channels; high-quality clips spread

rapidly among acquaintances, attracting massive online audiences and continuously expanding the communication reach and scale of short videos.

4.2. Expansion of Dissemination Channels and Scope

Evolving digital media environments continuously optimize short video communication frameworks, with expanded distribution channels and diversified audience groups profoundly shaping the industry's future development. Synergies between 5G communication technology and generative AI deliver comprehensive innovations to short video communication modes. Liu Ruilin and Huang Tingting reported that 5G's high-speed, low-latency characteristics enable instant loading and smooth high-definition playback of short videos, vastly increasing audience viewing experience [6].

Relying on the content distribution logic built by artificial intelligence, short videos eliminate the limitations associated with regional differences and playback devices and can be seamlessly played across multiple network platforms on various terminal devices. Smartphones, tablets, home smart TVs, and vehicle-mounted audio and video systems all support short video playback, which meets the viewing needs of people in different scenarios, such as home and travel. For example, for videos in which the user's mobile terminal has not seen, the screen function is switched to the TV terminal to continue watching, and the past playback progress and interactive records are completely retained.

Currently, the places where short videos can spread have become very diverse. In addition to the software used for daily interaction with friends and the web pages dedicated to watching videos, with the characteristics of accurate algorithm push, short videos have long entered various network scenarios, such as watching news, online classes, and online shopping. Major news apps often use short videos to assist in broadcasting various current affairs information, and the content is filtered by artificial intelligence and then pushed to users; thus, the boring news content becomes fresh and easy to understand. The online shopping platform will also use an intelligent recommendation function to look at the records of customers who have previously browsed and bought things and push real videos of goods that are suitable for everyone's preferences to attract people to place orders and greatly increase the number of transactions in the store.

With cross-industry adoption, short videos transcend recreational functions to become an indispensable carrier of information transmission and online commercial activities across popular science and e-commerce sectors.

5. Impact of Generative Artificial Intelligence on Short-form Video Content

5.1. Knowledge Production and Dissemination Innovation

In the context of overflowing online information and continuous technological upgrades, knowledge creation and sharing models have undergone revolutionary changes. As short videos emerge as mainstream new media, the integration of generative AI into production reshapes the landscape of popular science communication via short videos. Liu Jinbo and Wang Yuemin reported that artificial intelligence integrates massive amounts of resources, including journal papers, online encyclopedias and professional databases, and translates obscure specialized knowledge into accessible formats suitable for short video presentation [7].

Many bloggers who share popular science content use intelligent tools to disassemble difficult and fragmentary scientific knowledge on weekdays, change the explanation of speech to be plain and down-to-earth, and then match it with animation clips and on-the-spot pictures for presentation. The difficulty of ordinary people accepting all kinds of professional knowledge has been greatly reduced. In the past, only scientific research practitioners and universities had

the ability to create popular science content, and this situation has been completely broken. Ordinary enthusiasts rely on intelligent software to summarize all kinds of knowledge and publish it. The cyberspace gradually creates a good atmosphere for the public to create and share knowledge with each other.

Even if it is very convenient to create popular science content in this way, many problems still exist. People are increasingly concerned about whether popular science information is true and whether the narrative is rigorous enough. Most of them do not have content bloggers accumulated by related majors, do not have the ability to check the right and wrong of knowledge points, directly copy the text content generated by AI, and cannot detect any errors. Many one-sided views and false popular science messages continue to spread through short videos, misleading many viewers. To control the quality of popular science video as a whole, the platform must formulate comprehensive content inspection standards and invite experts from all walks of life to help review the works. More ideas and suggestions from watching users should be collected, and video content should be corrected repeatedly. Only in this way can the published popular science content conform to scientific principles so that the content is accurate and can withstand scrutiny.

5.2. New Dynamics in Ideology and Cultural Presentation

Amid frequent global exchanges and cultural integration, short videos undertake critical missions of cultural communication and ideological transmission. Generative AI tools, such as ChatGPT and Sora, permeate short video planning, production and distribution, continuously shaping public value judgments and public opinion, a phenomenon that has attracted extensive academic research.

Wu Xueqin noted through research and analysis that short video content generated by artificial intelligence subtly embeds specific ideological positions and cultural concepts. Currently, cultural exchanges between countries are frequent, and the collisions caused by the differences in concepts are becoming increasingly common. The various cultural connotations hidden in the video change the audience's way of thinking and their own cultural identity daily. The impact is slow but very long-lasting. With the help of AI creation convenience, many overseas content creators have integrated Western ideas into short films, relying on delicate story arrangements and eye-catching visual effects to gather a large number of viewers. For a long time, it has been difficult for China's local traditional culture to continue to inherit smoothly, and the stable construction of the mainstream value system will also encounter many obstacles. Both short video content producers and operating platforms should shoulder their due social responsibilities. When we carry out creative work, we should always pay attention to the content ideology check, constantly exercise our ability to distinguish cultural orientation, and finely intersperse traditional Chinese culture and core values in all aspects of video creation. With the advantage of wide coverage of short video communication, more positive content and excellent Chinese cultural cores are pushed so that the audience can gradually establish cultural self-confidence and national identity. In addition, we should build more Chinese and foreign cultural dialogue bridges, carefully polish short videos that can show the charm of Chinese culture and the achievements of national construction and promote them overseas. To promote the understanding of culture around the world, people should learn from each other so that the overall global cultural environment is steadily improving and the appeal of Chinese culture is constantly increasing on the international stage.

6. Impact of Generative Artificial Intelligence on Short-form Video User Experience

6.1. Enhanced Personalized Experience

After online entertainment and information access become more convenient, the audience's demand to watch the network content begins to develop in the direction of diversification, and everyone has a different tendency to watch. With the characteristics of being light, intuitive and interesting, short videos are integrated into the leisure life of ordinary people, which is the mainstream choice for spending time on weekdays. With the gradual application of generative AI, various short video platforms can better match the viewing preferences of each audience and effectively optimize everyone's unique viewing experience.

In accordance with Wei Yanan's own research and analysis, short video software continuously records all kinds of operational traces of people's daily video browsing, search content, likes and comments. The background uses data operations to constantly sort out everyone's preferences, and then, according to these preferences, short video content suitable for different groups of people to watch is pushed [8]. If a person is keen on cooking during the day, the software will continue to push new recipes, gourmet restaurant shots and cooking teaching videos, ranging from the method of selecting food materials, the whole set of cooking steps, to different dietary customs in different places. The relevant content is presented one by one, which fully fits the preferences of this group of people. Under the action of this precise push mode, it becomes much easier for people to find the content in which they are interested. Over time, people will gradually trust the short video software used in daily life and gradually become dependent on it.

The popularity of artificial intelligence has enabled short video platforms to launch many practical functions that can be freely deployed by everyone. When you brush the video, you can adjust the playback speed and picture clarity in combination with your own viewing habits, and the display form of the subtitles can also be changed at will. In addition, ordinary people do not need professional editing skills; by relying on AI's own creative functions, they can make short videos, such as uploading life photos in the album, with their own recorded audio tracks, and the image fragments that retain personal life memories can be spliced out. Daily watching videos, or making exclusive short films by hand, are intertwined, which will continue to deepen people's immersive experience and achieve full pleasure and satisfaction.

6.2. Expansion of Learning and Educational Functions

Teachers engaged in the education industry have always been thinking about how to make classroom teaching more effective, trying to expand a variety of learning materials, and the continuous development of digital technology has always been helping the education industry to innovate step by step. Currently, generative AI is slowly being put into practical application. After combining it with short videos, it has opened up many new directions for current education development. With respect to both classroom teaching at school on weekdays and the self-study process arranged by students after class, there is more room for improvement and progress.

A number of scholars (Zhang Y et al.) have designed controlled experiments to carry out research and analysis. After data collation and induction, the corresponding research results were obtained: compared with the paper textbook books commonly used on weekdays, the short video created by artificial intelligence integrates dynamic pictures, practical demonstrations and live voice explanations in various forms, which is more conducive to retaining students' attention to lectures for a long time and mobilizing everyone's enthusiasm for independent learning [9]. In the learning stage of science courses such as mathematics and physics, dynamic video can show the entire process of the evolution of geometric graphics step

by step and restore the specific operation of each step of the physics experiment in detail. Those basic theories that are originally obscure and abstract become straightforward, and the speed of students' understanding of new knowledge significantly accelerates. Each major online learning platform combines each learner's absorption rhythm and fails to understand the knowledge content to push the adaptation of the short film, according to the individual learning situation, to adjust the learning plan flexibly so that the educational concept of teaching students in accordance with their aptitude is effectively integrated into the whole process of daily learning.

However, some areas still need to be considered in short video empowerment education. The teaching content must ensure scientific accuracy and complete the system and adapt to the learning level of students in different learning stages. The creators of short videos should cooperate with experts in the field of education to polish the content and follow the syllabus and the cognitive characteristics of young people to create the content, not simply pursue the entertainment effect, which leads to the one-sided explanation of knowledge and the loss of rigor of content. Front-line teachers also need to do a good job of guidance, lead students to use online video resources rationally, cultivate the ability to think independently and look at knowledge dialectically, prevent students from overreliance on short video learning modes, and slowly lose the ability to actively study knowledge

7. Problems and Countermeasures in the Application of Generative Artificial Intelligence in Short Forms

7.1. Ethical Risks and Regulation

After artificial intelligence penetrates into the whole chain of short video shooting, production and push communication, many ethical drawbacks are gradually exposed, decreasing the healthy development of the industry and necessitating the development of various control methods. After studying this topic, Chen Bing proposed that personal privacy data leakage is the most important issue among all risks. To polish and optimize the intelligent algorithm, the short video platform continuously collects user behavior data. Once the platform lacks comprehensive data security measures, the user's private information will be easily stolen and abused [10].

Each major short video software will retain personal private information such as videos, regions, and daily browsing preferences that users have seen. These private data are at risk of being leaked at any time. After obtaining these materials, advertisers will push all kinds of product promotions in a targeted manner. Some network criminals will also take the opportunity to steal information and arbitrarily use users' personal data. The proliferation of false video content on the network is also a major problem that the industry has difficulty completely addressing. Facial-changing fake video made by generative AI has strong fidelity. Most of the events described in the video are fictional. Ordinary people are easily misled and eventually disrupt the healthy and orderly network public opinion environment. In addition, the inherent bias of the algorithm cannot be underestimated. The proportion of materials selected by the training algorithm is not balanced; coupled with the loopholes retained in the early stage of software development, the platform will have a subjective tilt when filtering and pushing video content. This situation not only makes the content push loss fairness but also makes it difficult for users to browse a wide range of niches and diverse types of creative content.

To properly address various ethical problems in the short video industry, the most basic approach is to constantly revise the current legal provisions. The relevant provisions need to define the legal responsibilities of both the short video platform and the content creator and divide the scope of responsibility of the user information security, content screening and the

smooth operation of the algorithm. The administrative supervision department can introduce special data management regulations to restrict the use of encryption methods to store user privacy on major platforms. However, anyone who needs to obtain personal information must obtain the user's consent in advance. The short video industry should also do a good job of self-regulation, unite to establish industry associations, jointly discuss effective ethical guidelines, and remind every practitioner to adhere to the moral bottom line of content creation. We can also use cutting-edge technology to help daily supervision work: the blockchain can completely retain the original data at the beginning of the birth of the video. When encountering false tampering content, the staff can follow the record traceability verification to distinguish the fake video generated by AI; in addition, an algorithm detection tool is built to regularly find problems in the operation of the algorithm, eliminate inherent bias, and build a benign and fair short video industry environment step by step.

7.2. Copyright Protection Dilemma and Solutions

In recent years, the overall development scale of the digital creative field has continued to grow, and the protection of intellectual property rights has gradually attracted the attention of all walks of life in society as a whole. Currently, many short video creators use generative AI to complete the entire process of shooting and editing, and the resulting copyright conflicts are also increasing. Although artificial intelligence tools simplify the video creation process and greatly reduce the time spent on creation, there are no general rules or regulations to define the relevant rights and responsibilities: Who owns the copyright of the content created by AI does not have a standard answer, and what regulations need to be followed to use external materials during the creation period are not clearly defined. The industry needs to formulate unified standards on the basis of its own development status, explore practical treatment methods, and properly handle emerging copyright disputes.

In their own research articles, Li Baixiao and Dong Xiaofei noted that there is no specific law to clarify the scope of copyright ownership of AI-generated content in China's current legal framework. Whether a short video is produced by artificial intelligence as a whole or only part of the clip is generated by AI, the copyright of this work is specific to whom, and there is no clear answer at the legal level. In the early stage of artificial intelligence research and development, the system needs to read a large number of literary works and film and television image data to complete training and learning. Because of this, it is difficult to distinguish whether the short video produced by AI is original content. Even if the law permits such creations to be protected by copyright, this right should be handed over to the algorithm development team, the party providing data resources, or the creators who routinely use AI tools to shoot clipped videos. The community has not yet been able to reach a consensus. Moreover, the re-editing and re-editing of short video materials produced by AI can easily lead to various copyright contradictions. Many short video practitioners suspect that the process is cumbersome; they will not apply for the use of various audio and video materials in advance and directly embezzle the audio and video resources protected by copyright. Continued, the legitimate rights and interests of the original creators will continue to be violated.

To thoroughly rectify the endless copyright disputes in the short video industry, relying on one party alone to promote governance is not ideal. The legislature, major short video platforms and content creators need to cooperate with each other and work together to implement various governance measures step by step. Copyright-related legal provisions need to be continuously optimized and adjusted to clarify the evaluation criteria for the originality of AI creation content and to determine the detailed rules for the division of copyright ownership and income distribution. In the process of determining the ownership of copyright, the staff needs to comprehensively consider the time and effort invested by the creator, the innovation value of the work and other conditions, and finally provide an objective and fair judgment result.

The short video industry also needs to build a material exchange authorization channel and a complete copyright traceability verification system. Relying on blockchain technology, we retain complete information on the entire process of creation and register each source of material and authorized filing data one by one. All copyright records can be checked at any time, and the records can be retained throughout the process to facilitate subsequent traceability. In addition, it is necessary to popularize copyright legal knowledge for creators. Through continuous preaching, we will enhance the legal awareness of practitioners in the industry and guide them to standardize the use of various artificial intelligence tools for content creation. When editing video materials, creators can give priority to public materials that are free of copyright restrictions and allow commercial use; if video clips protected by copyright need to be used, they must apply for formal permission in advance to reduce the occurrence of various copyright infringement problems from the source.

8. Conclusion

AI-enabled short video development is now the general trend of the digital culture industry and is moving forward, completely changing the past operating state of the short video industry. The integration of the two not only brings a steady stream of creative vitality to the industry but also excavates many development possibilities that have not been available in the past. Moreover, various practical problems have followed, and it is urgent for the industry to resolve them one by one in light of the actual situation.

When videos are created, creators can save much production time with the help of various intelligent tools, and the content of the output is more abundant. The entire process of preshooting and postediting has become simpler and smoother. At the level of content dissemination, new technologies have broken through the constraints of traditional communication models. The audience no longer simply receives push content and interacts more closely with each other, and the communication path continues to expand. Short videos are being gradually integrated into various scenes of people's daily lives. With respect to the overall content ecosystem, the creation and sharing of knowledge content usher in new opportunities. Ordinary netizens have the conditions to popularize short videos of science. However, how to maintain the accuracy of knowledge content and do a good job in positive cultural and ideological guidance is key work that cannot be ignored at present. From the user's perspective, the platform's exclusive content recommendation and online learning section continue to be optimized. People's experience when watching videos and learning knowledge is stronger, and their enthusiasm to participate in various interactions is also significantly improved.

The combination of artificial intelligence and short videos has brought much convenience to the development of the industry, but the various problems that arise also need to be addressed. Endless ethical issues continue to interfere with the smooth and orderly progress of the short video industry. With respect to personal privacy leakage, the spread of false videos on the internet, and the bias of the algorithm itself, all kinds of bad phenomena have destroyed the normal operating environment of the platform. The contradiction in copyright has not been properly handled, and the copyright ownership of AI-generated content has not been uniformly defined. All kinds of infringements have occurred frequently, and it is difficult to completely eliminate them. To make the short video industry rely on artificial intelligence for steady and long-term development, given full play to its multiple roles of inheriting culture, popularizing knowledge, facilitating public communication and promoting the progress of related industries, it is necessary for different subjects of society to participate in governance. The relevant regulatory authorities should fulfil their own management responsibilities, constantly revise and improve the existing laws and regulations, and build a sound legal supervision system; the

whole industry of short video should perform a good job of self-control, formulate practical employment norms and moral standards, and create a positive and healthy industry environment. All major short video platforms need to shoulder their social responsibilities, continuously upgrade management and control technology, and carefully audit each content; content creators should also continue to enrich themselves, establish a good concept of copyright, and carefully polish the original video content. The government, platform, industry and creators cooperate with each other to gather governance forces to solve the existing shortcomings of the industry and grasp the development opportunities brought by the digital era.

As I continue to advance this research in the future, I will continue to pay attention to the updates to and changes in generative AI technology and pay attention to the new industry trends that are generated every moment in the short video field. Slowly ponder the internal mechanism of the combination and interaction of artificial intelligence and short video, enrich the content of this research from different levels, and make the analysis of the whole research more in-depth and complete. On the basis of the current real operations of the industry, in combination with various conclusions drawn from previous research, this paper provides a theoretical reference that is realistic and provides solutions that can be implemented to ensure that the short video industry can operate stably for a long time. In addition, it is hoped that it can help the domestic digital culture industry overcome all types of obstacles on the way forward, complete the overall transformation of the industry through continuous innovation, and finally put the whole industry on a high-quality, long-term and stable development path.

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