

Innovative Applications of Artificial Intelligence in New Media Content Creation and Dissemination

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Abstract

This study delves into the innovative applications of Artificial Intelligence (AI) technology in the realm of new media content creation and dissemination. Through rigorous theoretical analysis and practical case studies, it unveils how AI technology significantly enhances the efficiency and quality of content creation, enabling highly personalized information dissemination and precise marketing strategies. The research findings demonstrate the immense potential of AI in the new media landscape, enhancing the intelligence and personalization of content while propelling an overall intelligent transformation of the industry. This provides vital theoretical underpinnings and practical guidance for the future development of the new media sector.

Keywords

Artificial intelligence technology; new media content creation; personalized dissemination.

1. Introduction

Mobile connectivity makes everything a medium. In the realm of media, this new wave of technological revolution signifies a new era for content production and dissemination efficiency[1]. Artificial Intelligence (AI) is no longer merely a trend but a defining characteristic of our times, permeating every aspect of the media industry. The rapid advancements in information technology, particularly the proliferation of the Internet and mobile devices, have significantly accelerated the speed of information dissemination and enhanced interactivity. Breakthroughs in AI's data processing and language capabilities have paved new avenues for new media content creation and dissemination. By automating content generation and offering personalized recommendations, AI technology enhances dissemination efficiency and user experience, fostering a symbiotic relationship with the growth of the new media industry (see Figure 1). This study aims to explore how AI fosters the intelligence and personalization of new media content, optimizing user experiences and communication strategies, thereby providing guidance for both the theory and practice of new media communication.

2. Overview of artificial intelligence technologies and new media

2.1. Overview of artificial intelligence technology

Artificial Intelligence (AI) technology, as a cutting-edge exploration of simulating human intelligence, relies on key technologies such as deep learning, natural language processing (see Figure 2) and computer vision to realize intelligent analysis and application of complex information. With the leap in big data processing capacity and computing efficiency, AI technology has shown great potential in the field of new media communication. Tencent News and other platforms have successfully integrated AI technology to achieve automated generation of news content and personalized and accurate delivery, significantly improving production efficiency and content quality. At the same time, through the deep mining of user behavior data, AI optimizes information distribution strategies, enhances user interaction

experience, and promotes the intelligent transformation of the new media ecosystem, highlighting the value and far-reaching impact of AI's wide application in the field of new media communication.

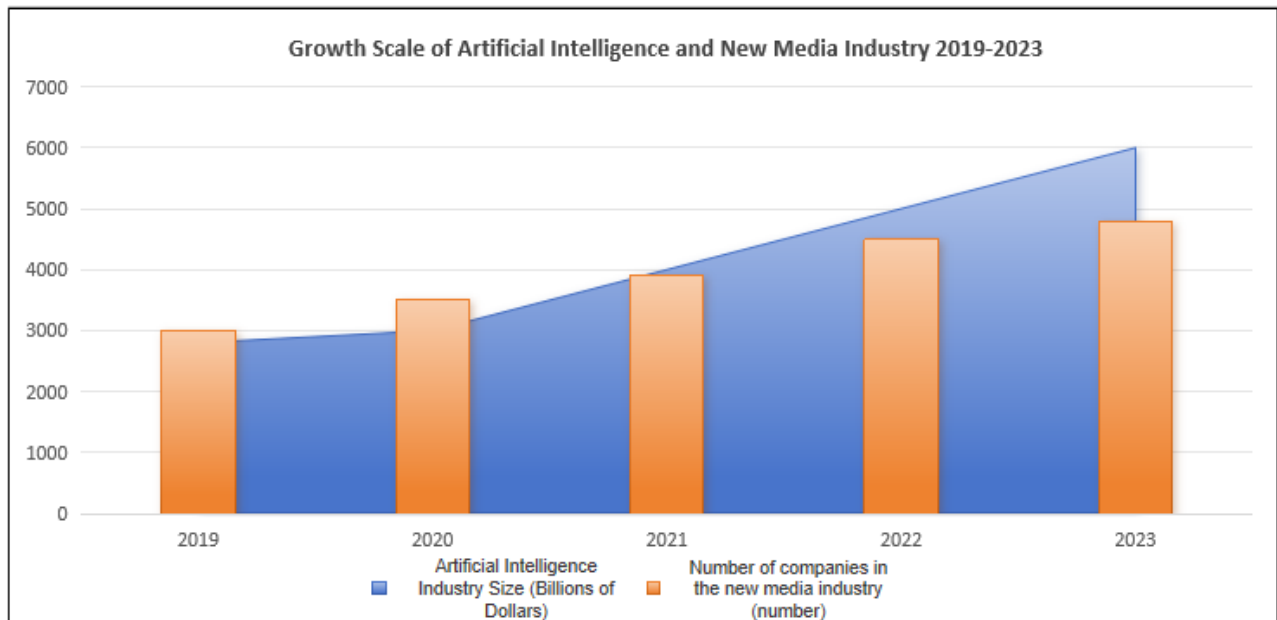


Figure 1. Growth Scale of Artificial Intelligence and New Media Industry 2019-2023
(Data source: <https://www.chyxx.com/industry/1182080.html>)

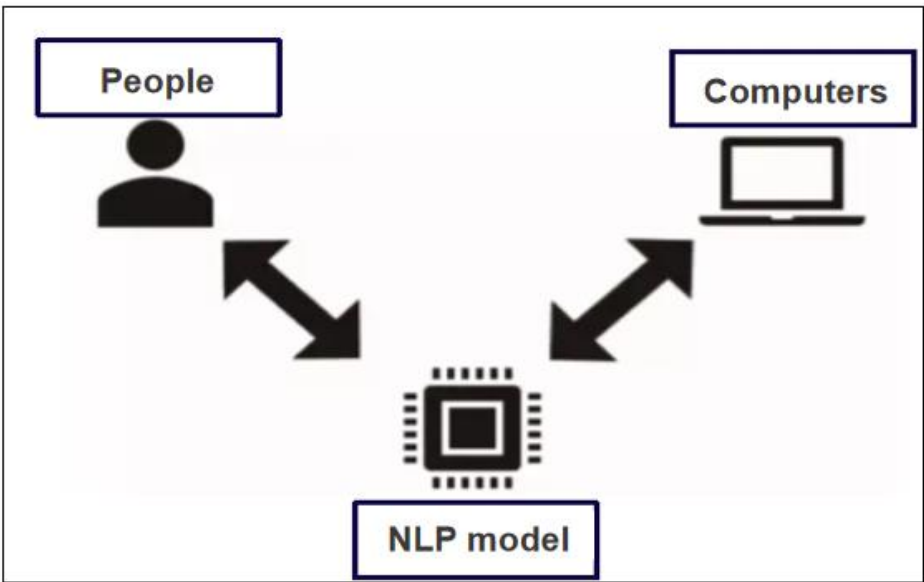


Figure 2. Natural Language Processing

2.2. Characteristics of new media content creation and dissemination

In the era of new media, content creation shows a high degree of diversification and high efficiency needs, and the deep integration of artificial intelligence (AI) technology provides strong support for this. Mainstream platforms such as Tencent News realize the automatic generation of news articles with the help of AI, which not only improves the efficiency of content output, but also guarantees the timeliness and accuracy of information, and meets the diversified information needs of users. New media communication emphasizes immediacy, interactivity and personalization, immediacy requires content to respond quickly to social

hotspots, AI-assisted content generation system effectively shortens the production cycle; interactivity promotes in-depth participation of users, real-time social media interaction mechanism to stimulate close to the user's content innovation; personalized communication through big data and AI analysis to accurately match the user's interests and enhance user stickiness and satisfaction [2]. In the face of the increasing diversity of user preferences, new media platforms continue to optimize content strategy, use A/B testing, user profiling and other means to iterate the personalized recommendation mechanism, injecting vitality into content innovation. In short, content creation and dissemination in the new media environment is relying on AI technology to explore a new direction of greater efficiency, precision and personalization.

3. The innovative application value of artificial intelligence in new media content creation and dissemination

3.1. Significant improvements in the efficiency of content and quality creation

Artificial intelligence has shown significant innovative value in new media content creation and dissemination, especially in improving the efficiency and quality of content creation. The integration of deep learning and natural language processing technology enables intelligent generation technology to efficiently produce high-quality text, image and video content. For example, Tencent's Intelligent Writing Assistant can quickly generate well-structured and fluent news reports based on keywords and topics, significantly shortening the creation cycle and ensuring the timeliness of information. Intelligent image generation technology can create visual content that meets specific styles and themes by learning from massive amounts of data, enriching the forms of expression of new media. Artificial intelligence technology realizes accurate matching and customized services by analyzing user behavior data, such as Tencent news application using AI algorithms to dynamically push customized news, enhance user satisfaction and stickiness, and effectively solve the problem of information overload and audience matching. In promoting content form and style innovation, AI provides advanced functions such as creative generation and style migration, encouraging creators to break through tradition, such as the use of generative antagonistic network technology to create image works integrating a variety of artistic styles, injecting visual impact into new media content [3]. Intelligent editing tools simplify operations such as video editing and adding special effects, further promoting the diversification of new media content.

3.2. Personalized communication and precision marketing

In the field of personalized communication and precision marketing, the application of artificial intelligence technology has significantly promoted the innovation and development of the new media industry. Relying on big data analysis and machine learning algorithms, new media platforms are able to deeply analyze users' behavioral trajectories, interest preferences and consumption patterns, and build highly refined user profiles. These profiles serve as the basis for personalized communication and precision marketing, enabling the intelligent recommendation system to real-time and accurately push content and services that meet the personalized needs of users, which greatly improves user experience and platform stickiness (see Figure 3). At the level of precision marketing, with the help of AI technology, advertisers are able to accurately calculate advertising efficiency indexes, dynamically adjust the deployment strategy, combine A/B testing and AI optimization algorithms to realize the scientific iteration of the marketing plan, and significantly improve the marketing efficiency and effect. With the deepening of the application of technology, user privacy protection and algorithm transparency have become urgent issues. New media platforms need to strictly comply with relevant laws and regulations, strengthen data security mechanisms and user

privacy protection measures to ensure that the application of technology is properly carried out within the legal framework, so as to maintain user trust and promote the healthy and sustainable development of the new media industry [4].

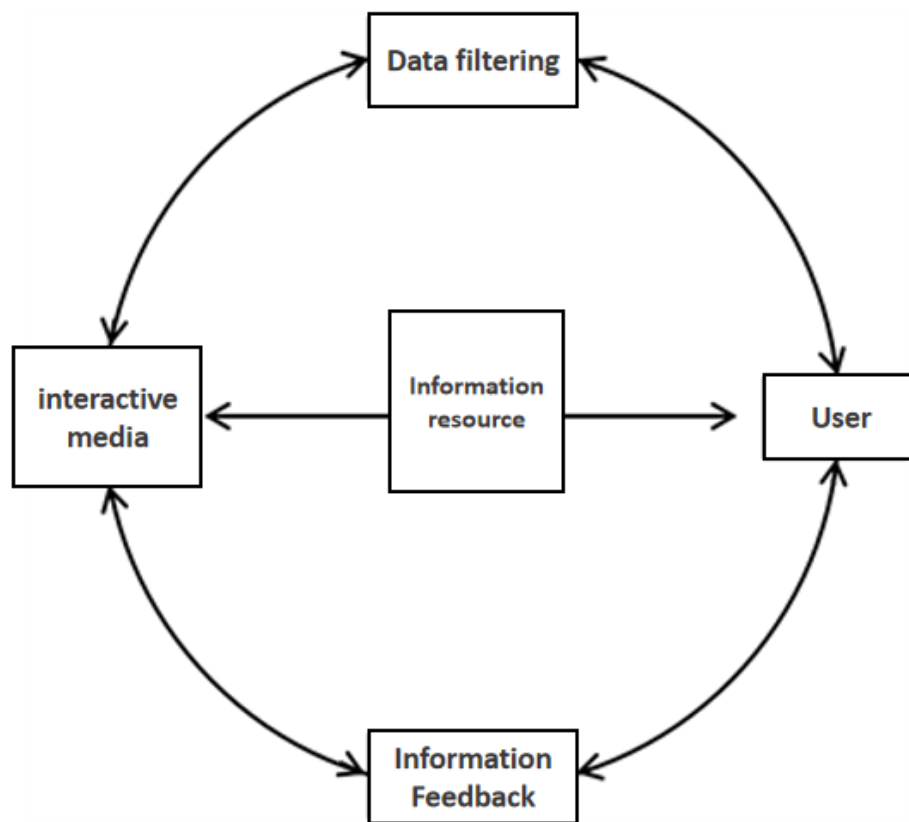


Figure 3. Model diagram for personalized information dissemination

3.3. Cross-platform content collaboration and distribution

Artificial intelligence shows remarkable potential in cross-platform content creation and adaptation, automatically adjusting the form and style of content based on platform characteristics and user preferences, such as generating vertical screen content for short video platforms and customizing voice content for audio platforms, reflecting the in-depth optimization of AI for content creation. The construction of intelligent content distribution network improves content transmission efficiency and user experience. By analyzing user equipment, network environment and other factors, AI provides the most optimized transmission scheme, which not only accelerates loading speed, but also reduces data consumption and enhances user satisfaction. The practice of Jiangxi Province's media integration center, with the help of Xinhua Zhiyun's data center AI capabilities, has realized multi-dimensional resource sharing and synergy such as text, voice, images, etc., improved the front-end business capabilities such as intelligent production, media management, feeds, public opinion monitoring, etc., and facilitated the in-depth sharing of users and content, such as Jiangxi Daily Newspaper's use of AI technology to significantly improve the efficiency of video production and make up for the short board of short-video production capacity, which has highlighted the importance of The practical application value of AI in media convergence (see Figure 4).

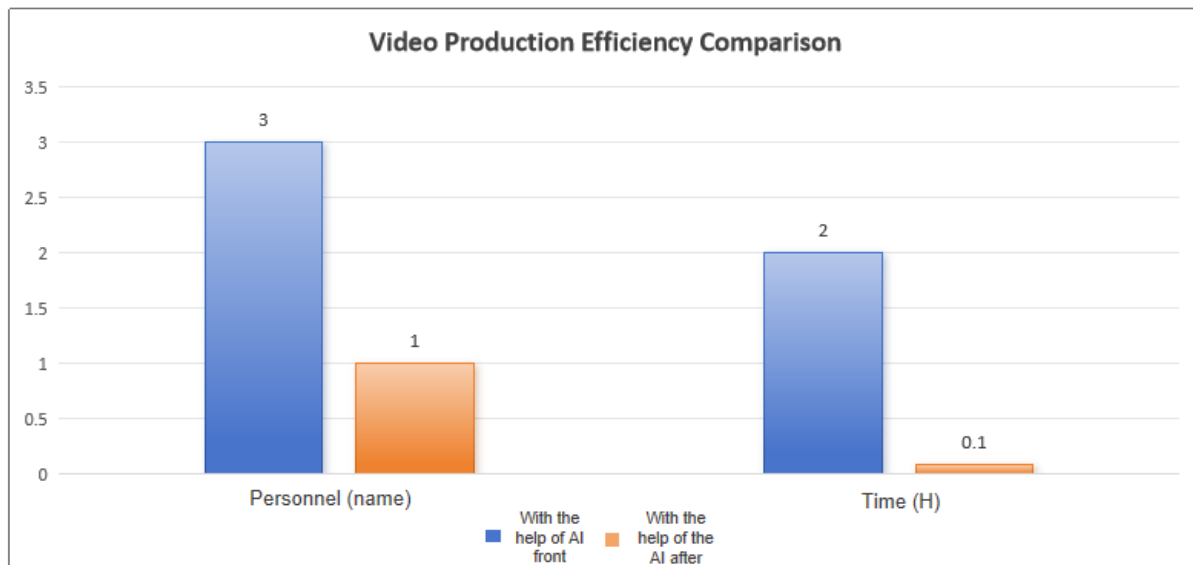


Figure 4. Comparison of video production efficiency

(Data source : https://www.thepaper.cn/newsDetail_forward_5307412)

4. Innovative application strategies of artificial intelligence in new media content creation and dissemination

4.1. Strengthen the research and development and application of technology

New media platforms should actively respond to technological advances and increase investment in the research and development of artificial intelligence technology, aiming to promote the continuous upgrading of technological innovation and application. This strategy not only requires the platform's internal technical team to continuously explore cutting-edge technologies, but also needs to seek external cooperation, especially in-depth cooperation with new technology companies and institutions of higher learning. For example, through close collaboration with technology giants such as Tencent and Alibaba, as well as renowned universities such as Tsinghua University and Peking University, we are jointly exploring new paths for AI in the creation and dissemination of new media content. This kind of cross-field cooperation can help accelerate the transformation of technological achievements, improve the intelligence level of new media platforms, and thus take the lead in the fierce market competition [5]. Strengthening technology research and development also needs to pay attention to intellectual property protection to ensure that the results of technological innovation are properly protected, laying a solid foundation for the sustainable development of new media platforms.

4.2. Building an intelligent content ecology

In the field of new media, building an intelligent content ecosystem is the core of driving content innovation and efficient dissemination. With the help of natural language processing and machine learning technologies, intelligent content creation tools, such as intelligent writing assistants, not only improve the efficiency of creation, but also encourage creators to utilize AI for content innovation and enhance the uniqueness and attractiveness of content. At the same time, intelligent communication channels realize accurate push and personalized display through in-depth analysis of user behavioral data and interest preferences, and dynamically adjust their strategies based on feedback and interaction data to ensure that the content is continuously optimized and updated to meet diversified needs. This ecosystem integrates AI technology in both creation and dissemination, and jointly promotes the innovative vitality and sustainable development of new media.

4.3. Enhancing user experience and participation

In the new media environment, improving user experience and engagement has become a core issue. Relying on user profiles and behavioral data, personalized service realizes the customization of content recommendation with the help of algorithmic models to meet the diversified needs of users, thus enhancing user experience and satisfaction. At the same time, interactive innovation through voice recognition, image recognition and other artificial intelligence technologies, innovate the way users interact with content, enhance user stickiness. 360 company adopts the big model + knowledge base + Agent mode, build AI business assistant, to pirate shrimp and rice brand new product development as an example, the model through learning industry knowledge, put forward new product suggestions, and use AI to generate material pictures to get user feedback, shorten the Testing time. In the promotion of new products, AI digital employees show the advantages of Agent mode and improve work efficiency and output quality. It is worth noting that 79.1% of users accept the application of AI digital people in advertising and brand communication, and their application in research, after-sales and consulting scenarios brings users a new consumer experience with both a sense of technology and humanization (see Figure 5). This model not only saves enterprise labor costs and improves production capacity, but also highlights the broad application prospects of AI in the commercial field, which is highly regarded by advertisers.

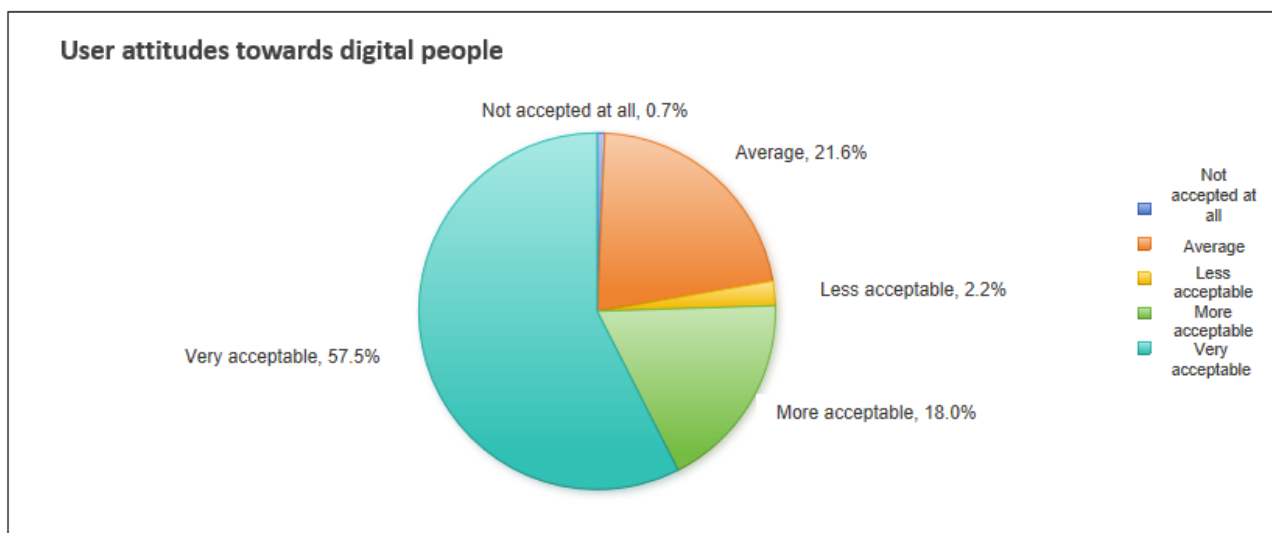


Figure 5. Percentage of users' attitudes toward digital people

(Data source : <https://caijing.chinadaily.com.cn/a/202401/10/WS659e0624a310af3247ffb6f1.html>)

4.4. Enhance data security and privacy protection

In the context of the digital era, data security and privacy protection have risen to the core of enterprise operations. In order to effectively respond to this challenge, enterprises must build a set of perfect data management system, which should cover the entire process of collecting, storing and using user data, and ensure the security of data in the transmission and storage process. Data encryption technology plays a key role in this process by encrypting data to form a strong protective net, effectively preventing data from being illegally stolen or tampered with during transmission. Strengthening privacy protection measures is essential to safeguard the rights and interests of users. Enterprises should apply advanced encryption technology and access control mechanisms to strictly limit access to sensitive data, which can only be accessed by authorized personnel, thus greatly reducing the risk of privacy leakage. In view of the continuous evolution of the technological environment and laws and regulations, enterprises also need to regularly review and update their data security and privacy protection systems,

and through continuous improvement and optimization, build a more solid data security and privacy protection barrier to provide users with a safe and reliable service environment.

5. Conclusion

This study systematically explores the innovative application of AI technology in new media content creation and dissemination, focusing on its significant contribution to enhancing the efficiency and quality of content creation, promoting personalized dissemination and precision marketing, and strengthening public opinion monitoring and crisis public relations. The integration of AI technology not only provides the core power for the intelligent transformation of the new media industry, but also significantly accelerates the overall development pace of the industry. Looking into the future, AI technology in the field of new media shows broad application prospects, technological innovation will continue to drive the optimization of algorithms and models to enhance the intelligent level of content creation; at the same time, the deepening of the application will promote the comprehensive integration of AI technology in all aspects of the new media, to achieve the efficient operation of communication and marketing. Ecological construction is crucial for the new media industry to form a perfect intelligent ecosystem and enhance overall competitiveness. Therefore, keeping an eye on the latest progress of AI technology, increasing investment in new media platforms, promoting technological innovation and application upgrading, and encouraging extensive participation and support from the government, industry organizations and all sectors of the community are key measures to jointly promote the new media industry towards a smarter future.

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