



Research on the Dissemination of Chinese Excellent Traditional Culture in the Environment of Artificial Intelligence

Kexin Li*

Shandong Institute of Commerce and Technology, Ji'nan, China

*shuiling9979@sina.com

Abstract. The rapid advancement of artificial intelligence (AI) has revealed unprecedented potential for cultural dissemination, particularly through generative AI (AIGC). This paper examines how AI empowers the spread of Chinese Excellent Traditional Culture through innovations in content creation, global dissemination, and engagement with younger audiences. Technologies such as text-to-image, text-to-video, and virtual reality enhance both dissemination efficiency and audience interaction through immersive experiences. Additionally, AI-powered personalized recommendations and automated translation significantly extend the global reach of Chinese culture.

While AI offers numerous benefits, its application introduces challenges such as content authenticity, cultural misinterpretation, and legal uncertainties. This paper proposes strategies focused on technological optimization, interdisciplinary collaboration, and copyright protection to ensure the sustainable and accurate transmission of Chinese culture in the AI era. By offering new perspectives on cultural dissemination, this paper aims to promote global understanding and appreciation of Chinese Excellent Traditional Culture.

Keywords: AI, Chinese Excellent Traditional Culture, Cultural Communication

1 Introduction

Xi Jinping (2014) once emphasized that “Chinese Excellent Traditional Culture is the root and soul of the Chinese nation”^[1]. This cultural heritage encompasses philosophy, art, literature, history, and more, reflecting the unique wisdom and historical depth of the Chinese people. However, with technological advancements, the dissemination of Chinese Excellent Traditional Culture faces significant challenges. Revitalizing this heritage and effectively transmitting its essence through emerging technologies has become a key focus in academic and cultural circles.

The rise of artificial intelligence (AI) offers new solutions for these challenges. Since the introduction of ChatGPT in late 2022, AI—especially generative AI (AIGC)—has rapidly integrated into social life. Through data-driven training and deep learning, AIGC enables large-scale content creation and intelligent dissemination,

fostering innovation in the cultural and creative industries. AI allows Chinese Excellent Traditional Culture to be shared with global audiences in more engaging and diverse ways, addressing issues such as limited content variety and reach in traditional communication.

However, AI's integration into cultural dissemination brings new challenges. Verifying the authenticity of AI-generated content can be difficult, and low-quality content risks diluting cultural value. Additionally, the reliance on Western data sources in AI systems may introduce cultural bias, affecting the accurate representation of Chinese culture. Other challenges include a shortage of professionals skilled in both AI and cultural knowledge, as well as unresolved copyright issues in the digital transformation process.

This paper explores how technology can address these challenges to ensure the sustainable dissemination of Chinese Excellent Traditional Culture in the AI era.

2 The Current Situation of AI Applications in Cultural Communication

AI has become a key force in reshaping cultural communication, offering new opportunities for how culture is created, shared, and experienced. Generative AI (AIGC) enhances content production by enabling large-scale, automated creation and personalized dissemination, making cultural content more engaging and accessible to diverse audiences. These innovations have enriched traditional cultural expression and expanded global engagement.

2.1 Cultural Communication in the New Media Environment

With the rapid development of information technology, especially the widespread use of the Internet and smart devices, cultural communication has undergone significant changes. Traditional media, such as newspapers, radio, and television, which once dominated the field, have gradually been replaced by multimedia platforms that emphasize interactivity. In this new media environment, information spreads faster and cultural content is presented in more diverse and personalized formats through social media, short-video apps, and virtual reality technologies.

New media has not only transformed the means of communication but also reshaped the relationship between producers and consumers of content. In new media era, audiences are no longer passive consumers but can actively engage in the production and dissemination of cultural content. This two-way interaction disrupts the traditional media's control over information and fosters greater participation. The algorithmic recommendations powered by big data and artificial intelligence further enhance the efficiency and precision of cultural dissemination, enabling users to quickly access content tailored to their interests. This instant and customized communication model expands the reach and impact of cultural content, ensuring that it is no longer restricted by time or space.

2.2 Artificial Intelligence as a New Productive Force in Cultural Communication

Gong and Chen (2009) argue that “in an era where science and technology have become the primary productive forces, digital technologies, along with modern artistic concepts and advanced inputs, have naturally become essential productive forces in artistic creation”^[2]. The emergence of generative AI (AIGC) has further transformed cultural communication. By generating text, images, audio, and video, AIGC significantly enhances the efficiency and creativity of content production, enabling the rapid generation of culturally rich content.

AIGC simplifies the presentation of complex cultural elements through forms such as text-to-image, text-to-video, and text-to-audio generation. For example, text-to-image technology generates visuals from descriptions, making it ideal for displaying ancient paintings and traditional crafts. Text-to-video technology creates short videos with dynamic visual effects, making cultural content more vivid and enhancing audience immersion and engagement.

To promote traditional Chinese culture more effectively, new innovative forms have emerged, including 3D animation, short videos, and interactive games. Integrating traditional cultural themes with formats popular among younger audiences not only enriches cultural expression but also injects new vitality (Jiang, 2024)^[3]. For instance, at the “Intangible Cultural Heritage and Chinese Old Brand” exhibition held on November 5, 2019, the shadow play *The Great Sage Arrives*, created by Tongji University and Shanghai University, became a highlight. This performance incorporated multi-sensory interactive technology, allowing the audience to influence the storyline and character actions through drumming. This transformation from passive viewing to active participation gave the shadow play a new sense of life.

Similarly, the *Painted Characters, Horses, and Carriages Traveling Map* video, produced by the Hubei Provincial Museum, uses AIGC to animate static illustrations, offering viewers a deeper cultural experience. In 2024, the micro-short drama *Myths of China*, a collaboration between CCTV and Tsinghua University’s AI Lab, was fully AI-produced, modernizing traditional Chinese mythology and increasing engagement and cultural identification among younger audiences.

AI has empowered the dissemination of Chinese Excellent Traditional Culture by creatively transforming both the content and presentation of cultural expression. Through enhanced interactivity and diverse forms of display, AI has sparked audience interest, improved dissemination, and revitalized traditional culture.

These technologies ensure that cultural communication is no longer limited to static text or images. Instead, dynamic forms such as video, audio, and virtual reality enhance cultural expression and broaden the scope of cultural dissemination.

3 How Artificial Intelligence Enables the Dissemination of Chinese Excellent Traditional Culture

AI has opened new avenues for the dissemination of Chinese Excellent Traditional Culture, offering innovative ways to present and engage with cultural content. Generative AI (AIGC) not only enhances the efficiency of cultural production but also makes traditional culture more interactive and accessible to global and younger audiences. By combining modern technologies such as virtual reality (VR) and personalized recommendations, AI helps overcome the limitations of traditional communication methods, revitalizing cultural expression and extending its reach. This section explores the various ways AI empowers the dissemination of traditional culture, focusing on its role in fostering innovation, broadening global influence, and engaging younger generations.

3.1 Generative AI Drives Innovation in the Dissemination of Chinese Excellent Traditional Culture

Generative Artificial Intelligence (AIGC) has injected new vitality into the dissemination of Chinese Excellent Traditional Culture. With its multimodal capabilities—generating text, images, audio, and video—AIGC enables the core elements of traditional culture to be communicated quickly and accurately to diverse audiences in various forms. Poetry, painting, music, and other cultural content have been digitized and reinterpreted through AI, enriching expression and enhancing engagement. For example, AIGC can generate modern poetry in the style of Tang and Song dynasties or recreate the aesthetic mood of traditional Chinese paintings through image generation technology, making cultural communication more dynamic and appealing.

A notable example is the 2024 micro-short drama *Chinese Myths*, jointly produced by CCTV and the AI Lab of Tsinghua University. Fully generated using AI, it offers a fresh interpretation of traditional Chinese myths, significantly enhancing young audiences' interest in and identification with traditional culture.

AIGC also enhances the vividness of traditional culture through virtual reality (VR) and augmented reality (AR) technologies. Virtual experiences allow audiences to immerse themselves in ancient cultural scenes, deepening interactivity and emotional engagement. This innovative communication approach greatly improves the expressiveness of traditional culture and encourages audience participation.

According to Zhang and Ji (2004), AI-powered tools generate graphics and images at a speed unimaginable by humans, with production happening in seconds—far surpassing manual methods. This marks the rise of a new productive force^[4]. AIGC, as a new driving force in artistic production, not only reduces costs and increases efficiency but also conserves resources and overcomes the limitations of traditional dissemination methods.

3.2 AI Expands the Breadth and Depth of Chinese Excellent Traditional Culture Dissemination

AI technology's ability to process data and deliver personalized recommendations extends the dissemination of Chinese Excellent Traditional Culture beyond domestic borders, enabling global reach. For example, AI can automatically generate multilingual subtitles and dubbing with precise lip-syncing, allowing cultural works to be localized for diverse international audiences, thus enhancing their global appeal and accessibility.

In March 2024, the AI-generated animated series *Ode to a Thousand Autumns* was released in English on CCTV's CGTN, marking a new approach to promoting Chinese culture internationally. Building upon the Chinese version, which leveraged AI-powered video generation to boost efficiency, the English edition integrated AI-driven audio technology to enhance translation and dubbing quality. That same month, the five-episode animated documentary *The Ins and Outs* was released on Central Video, utilizing AI-powered translation. This advanced integration of AI translation and dubbing minimizes human errors, producing subtitles and dubbing simultaneously, which enables seamless content distribution across both domestic and overseas markets.

Additionally, AI-powered recommendation engines push cultural content aligned with users' interests and behavior, significantly improving the precision and effectiveness of cultural communication. This personalized approach increases audience engagement and ensures that Chinese Excellent Traditional Culture resonates more deeply with both local and global audiences.

3.3 The Potential of Generative AI in Engaging Younger Audiences with Traditional Culture

Generative AI plays a crucial role in fostering interaction between Chinese Excellent Traditional Culture and younger generations. By creating modern cultural products, such as virtual idols and digital Chinese-style IPs, AI enables the fusion of traditional culture with contemporary popular trends. For instance, many cultural and creative products use AI to generate virtual Chinese-style idols, attracting the interest and admiration of young audiences. These virtual idols preserve the authenticity of traditional culture while making it more accessible through modern imagery and expressions.

AI-powered interactive experiences are also reshaping the dissemination of culture. In virtual performances and interactive exhibitions, AI-generated cultural content moves beyond static displays, allowing audiences to engage actively through interactive devices. This participatory approach deepens immersion, enhancing the audience's connection with traditional culture. Such immersive interactions spark young people's interest in traditional culture and motivate them to explore Chinese Excellent Traditional Culture more deeply.

4 Challenges and Risks of Artificial Intelligence in the Dissemination of Chinese Excellent Traditional Culture

While artificial intelligence offers innovative tools for the dissemination of Chinese Excellent Traditional Culture, its application also introduces significant challenges and risks. These challenges range from issues of authenticity and cultural misinterpretation to complex legal questions surrounding copyright and intellectual property. Moreover, the successful integration of AI in cultural communication requires overcoming talent shortages and technical barriers. This section explores the key obstacles AI presents in cultural dissemination, focusing on the difficulties in ensuring cultural accuracy, balancing creative freedom with copyright protection, and addressing the need for interdisciplinary expertise and localized AI models.

4.1 Issues of Authenticity and Cultural Context Adaptability

While generative AI can efficiently produce large volumes of cultural content, it faces challenges regarding the authenticity of that content and its alignment with cultural contexts. AIGC relies on vast datasets for training, but these datasets often lack the cultural depth and historical nuance necessary to accurately convey the core values of Chinese Excellent Traditional Culture. As a result, AI-generated content can become distorted in subtle details and fail to capture the essence of the culture. For example, AI-generated versions of *Will Enter the Wine* created by bloggers on platforms like Bilibili and Xiaohongshu were criticized for their absurd artistic styles, incoherent logic, and lack of emotional depth and philosophical meaning. Such works risk being misaligned with cultural contexts, leaving audiences with an awkward impression of AI-generated poetry^[5].

Moreover, as AI systems rely primarily on data-driven computation and pattern recognition, they inherently lack the cognitive capacity to grasp the emotional depth and value systems embedded within cultural works, as human understanding does. This limitation increases the likelihood of bias or misinterpretation, especially when AI generates content that requires deep cultural sensitivity. The risks are particularly evident in the dissemination of traditional Chinese culture, which carries strong national identity and historical significance.

4.2 Value Conflict and Cultural Misinterpretation in Cross-Cultural Communication

Chinese Excellent Traditional Culture faces inherent challenges in cross-cultural communication due to cultural differences, and the involvement of generative AI may further exacerbate these challenges. AI models heavily depend on training data that often incorporate diverse cultural elements from a globalized context. If these cultural biases are not carefully managed, the generated content may reflect Western cultural biases or interpretations that diverge from the core values of Chinese culture, leading to misinterpretation and value conflicts.

The development of Chinese Excellent Traditional Culture follows a historical and social filtering process, and its dissemination should be grounded in clear core values and societal recognition. However, the use of generative AI in cultural dissemination raises concerns about the potential erosion of ideological control and narrative authority. Large AI models developed primarily in Western contexts, such as ChatGPT, may inadvertently become vehicles for promoting non-mainstream ideologies and Western-centric views of civilization (Zhang, 2023)^[6].

For example, AI-generated content might conflate concepts from Chinese tradition with Western symbol systems, undermining the integrity of the cultural message. This not only weakens the effectiveness of global dissemination but can also lead to misunderstandings or even cultural conflicts. As AI-generated content reaches global audiences, ensuring that it faithfully conveys the essence of Chinese Excellent Traditional Culture—without being diluted or misinterpreted by global cultural trends—has become a pressing challenge.

4.3 Copyright and Intellectual Property Issues

The copyright and intellectual property rights (IPR) of AI-generated content have become pressing concerns in both academia and the cultural and creative industries. The widespread use of AIGC has sparked debates regarding the attribution of copyright. According to Article 3 of China's Copyright Law, a “work” is defined as an intellectual achievement in literature, art, or science that is both original and expressed in a specific form, with originality being the core criterion for copyright protection (Zheng & Sun, 2024)^[7]. However, since AI-generated content is based on existing datasets, questions arise about whether such works qualify as original and whether their copyright should belong to AI developers, users, or data providers. These issues remain unresolved, as a unified global legal framework for AI-generated content is yet to be established.

In the dissemination of Chinese Excellent Traditional Culture, these legal complexities are particularly pronounced. For instance, AI-generated traditional Chinese paintings, calligraphy, or musical compositions may be derived from cultural heritage or copyrighted works, creating ambiguity in their legal status. In international communication, striking a balance between the creative freedom of AI and the protection of cultural copyrights presents a significant challenge for cultural dissemination.

4.4 Talent Shortage and Technical Barriers

The dissemination of Chinese Excellent Traditional Culture requires not only technical support but also interdisciplinary talents with expertise in both cultural knowledge and AI technology. The extensive use of generative AI in cultural communication demands highly skilled professionals who can integrate these two domains. However, such talents remain scarce both domestically and internationally, limiting the deeper application of AI in cultural dissemination.

Colleges and research institutions are also lagging behind in developing interdisciplinary programs, with limited collaboration between liberal arts and STEM fields.

Cultivating more interdisciplinary talents has become a crucial prerequisite for advancing the integration of AI and traditional culture. Additionally, the combination of AI technology with cultural dissemination faces technical barriers and application challenges. Developing AI models and ensuring their localized adaptation require significant technological expertise and resources, further constraining the reach and impact of cultural communication.

5 Strategies for Optimizing the Application of AI in the Dissemination of Chinese Excellent Traditional Culture

5.1 Enhancing Content Review and Oversight Mechanisms

Generative AI can rapidly produce large volumes of cultural content, but ensuring the authenticity, accuracy, and transmission of cultural values throughout this process is essential. Therefore, it is necessary to establish strict content review and oversight mechanisms at all stages of AI-assisted cultural dissemination to ensure that the generated content aligns with the core values of Chinese Excellent Traditional Culture and avoids cultural distortion or misinterpretation.

Firstly, manual review mechanisms should be integrated into every step of AI content generation and distribution, especially for content deeply rooted in traditional Chinese culture. Review teams should consist of experts with extensive cultural knowledge, combining human oversight with AI-based checks to ensure that cultural backgrounds are accurately represented and that errors or distortions in AI-generated content are minimized.

Secondly, efforts should be made to enhance the cultural sensitivity of AI systems to prevent the generation of biased or inappropriate content. This can be achieved by regularly updating and refining the training datasets used by AI models to ensure that the generated content not only reflects the core values of Chinese Excellent Traditional Culture but is also adaptable to cross-cultural communication, reducing the risk of cultural misunderstandings.

5.2 Promoting the Development and Application of Chinese AI Technology

To strengthen the influence of Chinese Excellent Traditional Culture in the global cultural market, it is essential to promote the development and application of Chinese AI technology. The localization advantage of Chinese AI lies in its deeper understanding of China's cultural background, historical heritage, and modern communication needs. By developing AI algorithms and models tailored to Chinese characteristics, AI technology can better support the digital dissemination of Chinese Excellent Traditional Culture.

Chinese AI enterprises and research institutions should receive strong support to increase R&D investment in developing localized AI technologies suited to cultural dissemination. Utilizing localized datasets and cultural resources for AI training will

ensure that AI-generated content aligns more closely with the expressions and spiritual essence of traditional Chinese culture. This approach not only improves the quality of generated cultural content but also mitigates misunderstandings and misinterpretations in cross-cultural communication.

Meanwhile, the Chinese government and enterprises should enhance support for the application of Chinese AI technologies in the cultural industry. Encouraging collaborations between cultural and creative enterprises and AI technology companies will help develop communication projects that align with market needs. For instance, AI-powered virtual museums, cultural creative products, and digital national-style IPs can be promoted using Chinese AI technologies, thereby expanding the global influence of Chinese Excellent Traditional Culture.

5.3 Improving the Cultural Copyright Protection System

In the era of artificial intelligence, the copyright protection and dissemination models for cultural content require further optimization. AI-generated cultural content raises legal uncertainties regarding creative freedom and copyright ownership. Therefore, improving relevant laws, regulations, and policies to ensure proper attribution of AI-generated content is essential for the healthy dissemination of Chinese Excellent Traditional Culture.

The government should establish a comprehensive copyright protection system for AI-generated content, clearly defining the legal status and ownership rights of such works. Strengthening legal frameworks will provide robust protection for the use of AI in cultural creation while mitigating the risk of copyright or intellectual property infringement. In cross-border cultural communication, copyright protection becomes even more critical. Therefore, international copyright rules should be developed to ensure that Chinese Excellent Traditional Culture is safeguarded during global dissemination.

5.4 Promoting In-depth Cooperation between AI Technology, Universities, and Cultural Institutions

To cultivate more talents with interdisciplinary expertise, fostering in-depth cooperation between AI technology, universities, and cultural institutions is essential. The application of generative AI in cultural communication requires not only technical specialists but also experts with deep cultural literacy. Therefore, universities and research institutions must prioritize the development of composite talents who can integrate cultural knowledge with AI technology to meet the increasingly complex demands of cultural communication.

Universities should offer interdisciplinary courses that combine computer science, cultural studies, history, and art to nurture students proficient in both AI technology and cultural content. These future professionals will be better equipped to apply AI tools in the dissemination of Chinese Excellent Traditional Culture. Additionally, cultural institutions and universities specializing in the arts should integrate AI education into

their curricula, enabling students to master emerging technologies and broaden their career prospects within the cultural and creative industries.

Cultural institutions and research units should strengthen collaboration with AI companies to carry out cross-disciplinary research projects. By jointly developing initiatives related to cultural digitization and AI applications, new methods of cultural dissemination can be explored, enhancing the impact of traditional culture. Such cooperation not only drives technological progress but also promotes deeper integration between the cultural and technology sectors.

6 Conclusion

As AI technology continues to evolve, generative AI will play an increasingly significant role in the global dissemination of Chinese Excellent Traditional Culture. Striking a balance between technological innovation and cultural heritage, as well as using technology to enhance cultural influence while ensuring accurate communication, will be key challenges for both academia and the cultural industry. To fully harness the potential of AI and prevent the distortion or dilution of core cultural values, targeted strategies must be implemented in areas such as technological development, content oversight, copyright protection, and talent cultivation. These optimization measures will ensure the sustainability of cultural dissemination and breathe new life into Chinese Excellent Traditional Culture in the digital era.

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