

Study of Generative AI Enabled Cultural Heritage Short-Form Video Creation

Han Luo, Yonghua Jiang*

Beijing Technology and Business University, Beijing 100048

ABSTRACT

This paper focuses on the intersection of Generative Artificial Intelligence (GenAI) technology and Cultural Heritage short-form videos. It analyzes representative exemplary cases of Cultural Heritage short-form videos and examines, from five distinct perspectives, the creative advantages afforded by Generative AI technologies in the production of Cultural Heritage short-form videos. Through this analysis, the study aims to enhance the transmission and dissemination of Cultural Heritage and to offer valuable references and insights for theoretical research in this domain.

KEYWORDS

Generative AI; Cultural Heritage; Short-Form Video Creation

1 Overview of Cultural Heritage

“Cultural Heritage” refers to the historical vestiges and spiritual creations transmitted across generations and endowed with value. It encompasses two interrelated dimensions: “Tangible Cultural Heritage”, which comprises physical entities such as monuments, historic sites, and artifacts, and “Intangible Cultural Heritage”, which includes oral traditions, performing arts, social practices, rituals and festive events, traditional crafts, and other forms of living wisdom. Together, these dimensions carry the collective memory and vitality of civilizations.

Cultural Heritage constitutes a priceless asset of human society. However, many heritage elements have faced significant challenges in their transmission due to the vicissitudes of time and changing socio-cultural contexts. Therefore, safeguarding and developing Cultural Heritage in the new era has emerged as an urgent issue. It is important to leverage cutting-edge digital and information technologies to protect, document, and perpetuate Cultural Heritage, thereby enabling it to shine with renewed radiance for future generations.

2 Application Development of Generative AI in Cultural Heritage Transmission

2.1 Current State of Generative AI

Generative AI, leveraging principles such as deep learning, adversarial training, probabilistic modeling, and attention mechanisms, can produce high-quality, diverse text, image, audio, and video outputs. Since ChatGPT was launched by OpenAI in November 2022, conversational AI has entered a new developmental phase. A proliferation of tools—Stable Diffusion, Midjourney, Doubao, Qwen, DeepSeek, and Dreamina—has since emerged, democratizing access to generative models across domains. These platforms can efficiently and accurately address user queries, significantly lowering the cost of information retrieval. In product design and manufacturing, applications like Midjourney, Doubao, and Dreamina enable the rapid creation of photorealistic renderings, streamlining iterative workflows. In art and design, Generative AI analyzes vast datasets—historical works, trend data, and user preferences—to generate outputs that preserve traditional aesthetics while introducing novel elements. This technology’s adoption is accelerating globally, capturing ever-larger market share. According to industry analyses, the AI in Art Market was valued at approximately USD 3.2 billion in 2024, is forecast to reach USD 5.3 billion in 2025, and to grow to USD 40.4 billion by 2033, at a 28.9 percent CAGR^[1]. More complex interfaces—such as ComfyUI, an open-source, node-based Stable Diffusion UI—have emerged, enabling creators to construct custom generative workflows and push creative boundaries with greater personalization and control. It is evident that Generative AI will continue to expand its influence across industries, embedding itself as an indispensable component of modern life.

2.2 Significance of Generative AI in Enabling Cultural Heritage Protection and Transmission

Generative AI is increasingly applied to Cultural Heritage conservation and transmission, unlocking boundless possibilities for digital innovation and development. AI models can extract the essence of heritage from massive datasets by identifying and isolating key elements and features, enabling automated classification and systematic organization of information and greatly enhancing data-processing depth and efficiency. Once organized, this information can be presented in novel formats—digital archives, interactive exhibits, or creative media renditions—broadening public access

and engagement^[2]. For instance, researchers at the Hong Kong Polytechnic University developed the “Beauty of Cantonese Porcelain” platform, using thousands of Guangcai images to train a generative model that produces traditional-style enamel patterns, thereby preserving and revitalizing Lingnan ceramic art in the digital era.

Empowered by such platforms, creators have generated a wide array of cultural-heritage-themed advertisements, animations, and commercial films featuring intricate visuals and meticulously designed storyboards. In April 2025, CCTV’s special program “AI Tales” aired the segment “Bringing the Moon to the Sea, Grasping the Milky Way in the Nine Heavens,” which leveraged generative techniques to reimagine Dunhuang cave deities and spacecraft as immersive digital murals, exemplifying how Generative AI can function as a new productive force in storytelling and heritage interpretation. By animating Cultural Heritage with Generative AI, these initiatives present heritage to the public in more vivid and intuitive ways, significantly amplifying its visibility and societal impact.

3 Analysis of Exemplary Cases of Generative AI-Empowered Cultural Heritage Short-Form Videos

3.1 Porcelain Charm - Passing on the Legacy, Never Dies

The series of short videos on intangible cultural heritage launched by the Central Committee of the Communist Youth League, titled “Porcelain Charm - Passing on the Legacy, Never Dies”, injects “life” into porcelain statues through real-life filming and generative AI technology, vividly narrating the story of the inheritance of ceramic skills. From the perspective of ancient times to the present, it tells the origin, firing process, and history of blue and white porcelain, and finally showcases the scene of China’s representative intangible cultural heritage taking great strides towards the world stage.

The video content uses AI tools to reconstruct historical scenes that are difficult to achieve through real shooting, slowly telling the history of porcelain development through the origin of porcelain. Short videos have utilized generative AI tools to bring the previously dormant porcelain in museums to life, achieving the “revitalization” of porcelain. The film also creatively applied artificial intelligence to assist in the production of the creative and Chinese style font “China” and accompanied it with music and rhythm for transitions. In terms of production cycle, the team completed the entire film production in just one week, saving 90% of human resources and time costs compared to traditional processes such as live action and special effects production. (Dawei 2025) The Central Committee of the Communist Youth League has chosen “Porcelain Charm - Passing on the Legacy” as the opening of the “New Year’s Eve of Youth Culture”, demonstrating the vitality and potential of the innovative inheritance of culture among the younger generation.



Figure 1 Porcelain Charm - Passing on the Legacy, Never Dies

3.2 The Journey to the West: The Mysterious Calculation

In January 2025, Spring Airlines launched the Journey to the West: The Mysterious Calculation series, which is a Chinese New Year’s short video produced by production personnel using generative AI tools to assist in writing scripts, lines, and character images, combined with shadow puppetry art style. The content is compact in plot, humorous in plot, and has a unified style, with the main theme of the journey to the west where the master and apprentice take the opportunity to return home for the Chinese New Year. The video content perfectly combines the hollow light and shadow effects of traditional shadow puppetry with the dynamic images created by artificial intelligence tools, reconstructing the classic scene of the four disciples in Journey to the West. It also incorporates modern aviation elements, successfully attracting young audiences’ attention to intangible cultural heritage. The production of Spring Airlines has achieved a deep integration of intangible cultural heritage dissemination and brand marketing. While promoting its own aviation

brand, it has further deepened the public's understanding of the cultural heritage of "shadow puppetry", which is an excellent case of using generative AI tools to empower cultural heritage short-form videos.



Figure 2 The Journey to the West: The Mysterious Calculation

3.3 Chinese Mythology

In March 2024, CCTV launched Chinese Mythology, China's first AI end-to-end micro-drama series, comprising six 4–5 minutes episodes that reimagine classics like Nuwa repairing the sky and Jingwei filling the sea—all art, storyboard, video, dubbing, and music generated via AI in collaboration with Tsinghua University's Metaverse Culture Lab. It not only reproduces historical mythological characters but also achieves the reconstruction of cultural and historical scenes. Although there is still a lot of room for improvement in terms of scene, character portrayal, and dubbing, it undoubtedly represents an innovative attempt of generative AI technology in the field of short videos. Its multilingual CGTN edition underscores the format's global outreach potential, marking a milestone in AI-powered cultural content production.

4 Analysis of the Advantages of Generative AI in Empowering Cultural Heritage Short-Form Videos

This section outlines five principal advantages of Generative AI when applied to Cultural Heritage short videos: its ability to co-construct narrative frameworks, enable creative transitions, dynamically activate static heritage artifacts, reconstruct historical scenes, and adapt content for cross-cultural audiences. Together, these capabilities not only streamline production workflows but also enrich storytelling depth and broaden audience reach.

4.1 Intelligent Construction of Narrative Framework

Generative AI has enormous potential in constructing narrative frameworks by proposing multiple storylines and scene layouts based on a creator's prompts. Creators can compare and analyze AI-generated proposals—different plot trajectories, richer visual arrangements, or more nuanced story elements—to refine scripts and amplify their own creativity. In short-form video production, a compelling core narrative is vital to engaging viewers. In early development stages, leveraging AI for iterative brainstorming helps fuse human insight with algorithmic suggestions, continuously strengthening the narrative structure.

4.2 Creative Scene Transition design

A key advantage of Generative AI is its support for inventive scene transitions. AI tools can generate bespoke visual elements—animated typefaces, stylized effects, or morphing sequences—and synchronize them with music and rhythm to produce seamless, attention-grabbing cuts. For instance, CNN's March 2024 special "AI Wo Zhonghua" harnessed AI to create time-lapse-style traversals and dynamic scene evolutions, yielding a novel viewing experience that traditional editing alone would struggle to deliver.

4.3 Dynamic Activation of Cultural Heritage

Generative AI can “bring to life” static artifacts or artworks by converting them into dynamic, animated forms, imbuing short videos with heightened creativity. In CCTV’s 2025 online Spring Festival Gala opener “My Hometown Shines 5.0,” AI platforms Tencent Yuanbao and Hunyuan digitally animated museum-held relics—such as a dancing ceramic figurine and the Changxin Palace lantern—and even generated localized dialect voiceovers, creating a striking, immersive performance.

4.4 Reconstruction of Cultural and Historical Scenes

Reconstructing impossible or inaccessible historical settings is another strength of Generative AI. For example, Gansu Broadcasting’s “The Mystery of Ma Jiayao: The Divine Staff Cipher” used AI to recreate ancient tribal environments and grand narrative backdrops at relatively low cost. By visualizing comprehensive, historically informed scenes, creators can fully exercise their imagination and deliver a vivid “visual feast” that traditional live-action filming alone could not achieve.

4.5 Cross-Cultural Semantic Adaptation

As Cultural Heritage content reaches global audiences, adaptations for different legal, cultural, and linguistic contexts become essential. Generative AI can rapidly produce multilingual dubbing tracks and subtitles, enabling short videos to transcend language barriers and expand their reach. Moreover, by analyzing target viewers’ cultural preferences, AI-driven language models can tailor visual styles and narrative nuances to local tastes, enhancing engagement and reinforcing the transmission of heritage across cultural divides.

5 Conclusion

The development of Generative AI has provided significant momentum for the creation of Cultural Heritage short-form video content. The exemplary cases mentioned above all demonstrate the innovative potential of this technology. With the assistance of Generative AI tools, we can better construct narrative frameworks, create more engaging creative transitions, dynamically vitalize Cultural Heritage artifacts, reconstruct cultural and historical scenes, and more conveniently achieve cross-cultural semantic adaptation, making Cultural Heritage short-form videos more impactful. Today, whether on CCTV’s short-video platform, local broadcast stations, or among individual users, more and more people are beginning to learn and employ AI technologies to assist in creating Cultural Heritage-related short-form video content. In the future, Generative AI will continue to evolve and improve, and, with the aid of such tools, creators will produce richer and more engaging content, thereby achieving better transmission and development of Cultural Heritage. This trend will further foster the preservation and promotion of Cultural Heritage on a global scale.

References

- [1] Dawei, C. (2025). "The Application of AI Generation Technology in the Protection and Inheritance of Intangible Cultural Heritage." *New Legend* (5): 55-57.
- [2] Xiaolin, L. (2024). "Application of Artificial Intelligence in the Inheritance and Innovation of Intangible Cultural Heritage." *Screen Printing*(22): 105-107.