

The Role of Technology in Promoting Sustainable Culture Heritage Tourism in Jiangxi, China

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ABSTRACT

The application of Virtual Reality (VR) technology promotes the production of distinguishing qualities and focus places, successfully increasing the confluence of culture heritage tourism and technology. Through the smooth blending of cultural content and technology innovations, this integration makes it possible to effectively spread Jiangxi's story. The research established an analytical framework for the successful deployment of VR technology in culture heritage tourism. The objective is to enable the sustainable integration of culture heritage tourism by concentrating on three (3) specific types: still VR, video VR, and game VR. The research examined the potential role of VR in promoting the sustainable development of culture heritage tourism in Jiangxi Province of China, using the Nanchang August 1st Memorial Hall as a case study. First, the statistics resources and development status of culture heritage tourism resources in Jiangxi were studied. Then, through the investigation of the Nanchang August 1st Memorial Hall, found the use of VR technology to enhance the experience of culture heritage tourism in Jiangxi Province, which could primarily be attributed to three (3) key factors, including widespread, considered beneficial and enhance the rate of active second visits. The role of technology in promoting sustainable culture heritage tourism in Jiangxi Province, China.

INTRODUCTION

According to The National Trust for Historic Preservation in the United States, cultural heritage tourism is defined as travelling to experience the places, artefact and activities that authentically represent the stories and people of the past and present. It includes cultural, historic and natural resources (Harney, 2019). These

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sites, which serve as monuments and landmarks, provide the foundation for culture heritage tourism, with historical significance, activity experience, and cultural spirit acting as key aspects. Culture heritage tourism aims to promote themed tourist activities focused on remembrance, education, visitation, and exploration, all oriented on the cultural history, actions, and ethos represented by these locations (Shan et al., 2024). As a form of cultural tourism with significant educational value, "culture heritage tourism" has gained popularity in China in recent years. For culture heritage, a spiritual component of cultural resource management, to achieve its prominence and educational significance, it needs a lot of material carriers. The growth of culture heritage tourism serves a critical role in increasing the educational relevance of red culture and promoting sustainable tourist development (Gui, 2024).

In recent years, culture heritage tourism of china has seen substantial growth, bolstered by the strong support of Chinese government. Notably, there has been constant development in product supply quality, which has coincided with a consistent increase in market size. The book of The Ministry of Culture and Tourism's Red Culture Tourism Bluebook (2022) shows that, in comparison to the same time in 2019, the total volume of culture heritage tourism increased significantly in the first quarter of 2021, growing at a pace of 1028 per cent (Wang, 2022). In a similar vein, the total number of red tourist experiences reported during the first half of 2021 saw a substantial increase of 268.8% when compared to the data obtained in 2019. Despite the impacts of the pandemic, culture heritage tourism demonstrates resilience, maintaining a stable and beneficial trend (Figure 1).

The purpose of this study is to analyse the empirical research that has been conducted on the use of VR technology in order to facilitate the sustainable integration of culture heritage tourism. During the Coronavirus disease 2019 (COVID-19) epidemic, high-tech firms may efficiently communicate narratives about revolutionary history and culture using VR technology (Wei, 2019). As was said before, this subsequently has the potential to contribute to the expansion and long-term viability of the culture heritage tourism economy. These organisations can make it easier for culture heritage tourism experiences to be seamlessly integrated by employing virtual reality. This study aims to develop an analytical framework for the effective implementation of VR technology in culture heritage tourism. Our objective is to facilitate the sustainable integration of culture heritage tourism by focusing on three (3) specific types, which include still VR, video VR and game VR.

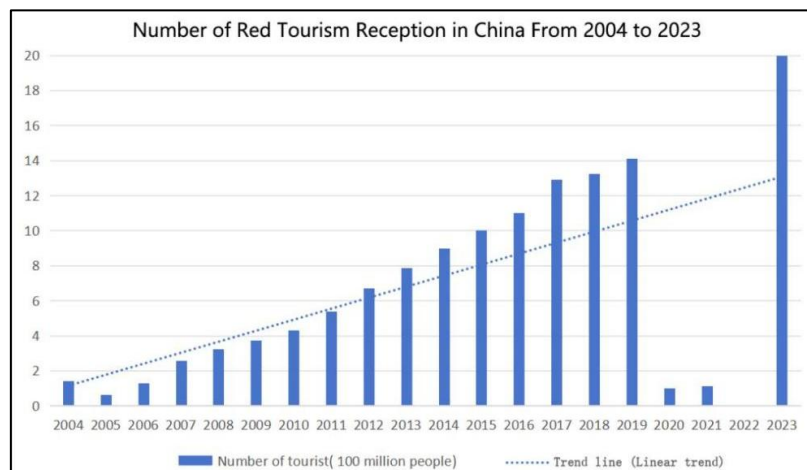


Fig. 1. Number of Culture Heritage Tourism Reception in China from 2004 to 2023

Source: Authors (2025)

LITERATURE REVIEW

The Development History of Cultural Heritage Tourism in China

A significant advance forward in the development of domestic culture heritage tourism was taken when, in late 2007, the Outline of the National Culture Heritage Tourism Development Plan 2004-2010 was initiated. This event represented a key milestone. A long historical trajectory has been followed by the development of culture heritage tourism in China, which has been divided into four (4) separate stages up to this point: the embryonic stage, the preliminary development stage, the increasingly mature stage, and the comprehensive development stage (Table 1) (Wang, 2023).

Table 1. The Development History of Culture Heritage Tourism in China

Stage time	1949-1977	1978-1989	1990-2003	2004-now
Stage name	Embryonic stage	Preliminary development stage	Increasingly mature stage	Comprehensive development stage
Stage content	Mainly purely political reception	Market operation and enterprise operation period	Gradually forming scale and entering the market	Coordinated development in all aspects of food, housing, transportation, etc.

Source: Authors (2025)

The Development and Utilisation of Cultural Heritage Tourism Resources in China

The development and utilisation of culture heritage tourism resources are mainly divided into two (2) categories: practical application and academic research. The first category is a useful application for investigating and exploring the development and usage of culture heritage resources. Liu et al. (2022) examined the use of virtual reality (VR) in enhancing the growth of culture heritage resources, with a particular emphasis on the Nanchang August 1st Memorial Hall as a case study. Lin et al. (2021) explored the cross-regional integration and growth of red tourist resources in the Central Soviet Area, using a cultural ecological viewpoint. Wang Lei's study on "The Development of Red Cultural Tourism Resources in Xiangyang, Hubei Province" investigated the advancement, integration, and utilisation of a specific culture heritage tourism resource (Wang, 2020). Ultimately, these studies possess considerable ramifications for China, enhancing its total advancement in this area.

The second category is academic research that focuses on the scholarly investigation of the development of. In "Shaping the Soul and Casting People: The Path of Cultural Identity in Red Cultural Tourism," Jiang et al. (2021) analyses interview data to create two (2) distinct cultural identity pathways (complete and incomplete trajectories) within the context of culture heritage tourism. Wang (2022) investigated the network's interest in culture heritage tourism over five (5) years using various index research techniques. The authors examined various factors that influence culture heritage tourism, as well as its temporal and geographical characteristics. Examining the culture and tourist integration aspect, the researchers putted out culture heritage tourism brands while investigating their current position holds immense importance.

The Current Situation of Culture Heritage Tourism in Jiangxi

Jiangxi Province is widely acknowledged as a significant site for culture heritage tourism in China. Jiangxi Province has a wealth of historically significant cultural treasures (Huang et al., 2024). As a result, Jiangxi's culture heritage tourism industry has become well-known and is now in the top ten (10) in China.

VR technology has emerged as a significant tool for culture heritage tourism development purposes in Jiangxi province. Jiangxi province has continuously used VR technology since 2020 to produce digital depictions of culture heritage tourism attractions (Wang J, 2022).

Throughout the revolutionary period of the CPC, Jiangxi Province was symbolically likened to a locale infused with revolutionary zeal and collective memories associated with the colour red (Lin, 2023). During the period spanning from the late 1920s to the early 1930s, the CPC cultivated and propagated three (3) distinct revolutionary spirits: the Jinggangshan Red Revolutionary Spirit, the August 1st Red Revolutionary Spirit, and the Fang Zhimin Red Revolutionary Spirit (Han, 2024). Jiangxi Province became a significant centre for China's Red Revolution as a direct consequence of the concentrated efforts that this province underwent. More than 260,000 people were sacrificed in Jiangxi Province during the Chinese Revolutionary War and were acknowledged as martyrs; 327 of them were regarded as founder generals. This figure accounts for approximately 20% of the overall number of martyrs in China (Zheng & Zhang, 2024). Additionally, it is essential to note that a significant number of martyrs have not been named, despite their substantial contributions. As of December 2022, Jiangxi Province is home to approximately 3,000 sites associated with China's revolutionary history. Among these sites are 350 patriotic education bases, of which 21 have been designated national demonstration bases (Han, 2024).

According to the China National Tourism Administration (2004), *Tourist Attractions Rating Categories and Assessment Criteria*: Scenic spots are divided into five (5) levels: A, AA, AAA, AAAA, and AAAAA. The A-level scenic spots are the lowest level compared to the AAAAA scenic spots, which are the highest level. As of March 2023, Jiangxi Province has three (3) 5A-level, 21 4A-level red cultural tourism scenic spots, and 11 national red cultural tourism series classic scenic spots. In addition, Jiangxi Province is home to 30 museums or memorial halls dedicated to the subject of the Red Revolution. These museums of the Red Revolution include four (4) national first-level museums, six (6) second-level museums, and ten (10) third-level museums (Zhou, 2023).

As of December 2022, 2,960 immovable cultural relics of revolutionary significance were located in Jiangxi Province. These relics were categorised into different levels of protection, including 42 at the national level, 432 at the provincial level, 69 at the municipal level and 644 at the county level. In addition, the province is home to 43,650 movable red revolutionary cultural relics, approximately 9,759 of which are considered valuable cultural relics. Furthermore, Jiangxi Province has documented 10,747 red slogans, which are further classified into 5,123 important red slogans (with 1,197 Class I, 1,554 Class II, and 2,372 Class III) and 5,624 general red slogans. Jiangxi Province is distinguished as one (1) of the provinces with the biggest number of chosen counties included in the national Red Revolution cultural relic conservation and utilisation region, including 87 counties, cities, and districts. Jiangxi province has a wealth of red resources, which provide a solid foundation for the development of culture heritage tourism in the area to achieve high standards (Zheng & Huang, 2023).

The "China Red Cultural Tourism Development Report (2022)" referenced in The Blue Book states that there has been a steadily increasing trend in the development of culture heritage tourism in China. Jiangxi Province ranked tenth (10th) out of the thirty-one (31) provincial-level administrative entities (not including Hong Kong, Macao, and Taiwan) in the culture heritage tourism Development Index rating. Nonetheless, it is essential to recognise that Jiangxi Province has not fully leveraged the potential advantages offered by its red tourism resources. According to the complete development index of national key red tourist places, no scenic spots in Jiangxi Province are represented among the top 12 national key culture heritage tourism regions. Likewise, an examination of the complete development index for national important red tourist cities reveals that no cities in Jiangxi Province rank among the top ten (10) national key culture heritage tourism cities. Notably, Jiangxi Province's Jinggangshan City ranks 15 in the overall index of red tourist development among national significant cities. It is possible to draw the conclusion,

based on the rating indicated earlier, that the overall competitiveness of culture heritage tourism in Jiangxi Province remains relatively low, with a notable gap compared to other provinces with equivalent culture heritage tourism resources (Wang, 2022).

Brief Summary

According to the conclusions of the aforementioned research, it is clear that a number of local and foreign professionals and academics have carefully studied and explored Jiangxi culture heritage tourism from various perspectives, which has led to significant theoretical developments. Some of their contributions have also provided valuable insights that will be useful for future research. With a rich history, Jiangxi Province is home to a plethora of red cultural riches that are both diverse and numerous. However, there is a lack of academic research about the integration of modern technological breakthroughs with culturally important red scenic spots, particularly focusing on the emerging VR technology.

METHODOLOGY

This study employed the case study method, an empirical investigation that examines current events within a real-world setting. This methodology was used to investigate the use of VR technology within the context of culture heritage tourism in Jiangxi Province.

Case Study

The Nanchang August 1st Memorial Hall is a unique memorial hall established in 1956 to commemorate the Nanchang Uprising. It was formally opened to the public on October 1st, 1959 (Jin H, 2023). A total of 5,903 square meters of space is occupied by the Nanchang August 1st Memorial Hall, which can be found at No. 380, Zhongshan Road, Nanchang City, Jiangxi Province, China in Figure 2 (Wang, 2023). There are a total of 509 exhibitions featuring various types of photographs and charts, 407 exhibits (sets) of cultural relics, and 51 pieces of art displayed at the Nanchang August 1st Memorial Hall complex. The main contents of the exhibition include the Nanchang August 1st Uprising in the memorial hall building, the glorious history of the People's Army, and the restoration of the old site. The Nanchang August 1st Memorial Hall is a national civilised unit, a national first-class museum, a national AAAA tourist attraction, and a national advanced collective for culture heritage tourism work, as well as the first batch of "patriotic education demonstration bases" (Jin, 2023).

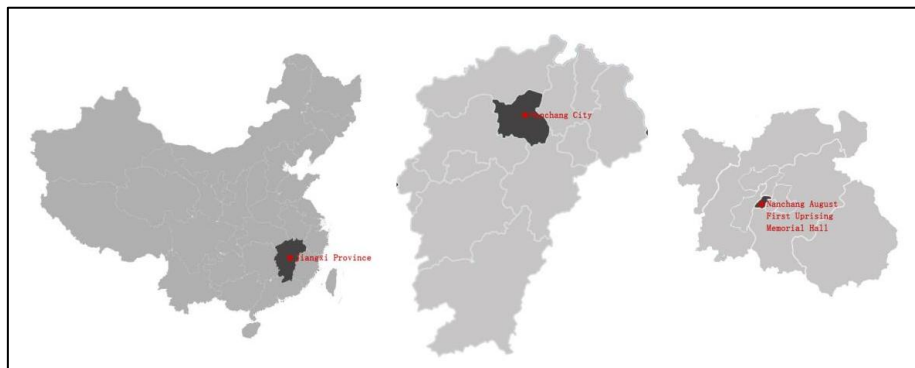


Fig. 2. Geographical Location Map of Nanchang August 1st Uprising Memorial Hall

Source: Authors (2025)



Fig. 3. Historical Building of Nanchang August First Uprising Memorial Hall

Source: China Daily (Government of China, 2018)

Data Collection and Processing

This study primarily employs qualitative analysis, with fieldwork serving as the primary data collection method. During 25 days of fieldwork, from March 1st to 15th, 2023, and from May 15th to 25th, 2023, the contents and forms of VR technology use in the Nanchang August 1st Memorial Hall were collected. Observations were made during both field surveys, and field notes were taken to document what was observed and experienced.

The first phase, a field investigation, was conducted from March 1st to 15th, 2023. The fieldwork was primarily focused on the Nanchang August 1st Memorial Hall, and the contents of VR technology were documented through the capture of pictures and videos, resulting in a total of 80 images and 15 videos.

The second phase was conducted for field verification from May 15th to 25th, 2023. Based on the previously organised materials, verification and amendments were made to the corresponding field situation to ensure the authenticity and consistency of the survey content. During the data collection, 56 pictures and ten (10) videos were taken and recorded. Poor pixels and incomplete shots were removed. The final valid pictures total 120, and 20 videos. Images and videos were categorised and analysed.

ANALYSIS AND DISCUSSION

The innovative display technologies used at the Nanchang August 1st Memorial Hall have accelerated the shift in display design towards a more environmentally conscious and sustainable model. Through the use of experience design, visitors can fully immerse themselves in the spirit of red culture, thereby satisfying their spiritual needs. At the Nanchang August 1st Memorial Hall, VR technology was utilised to enhance the overall visitor experience (He et al., 2023). The VR technology-based content showcases the remarkable history of the Chinese People's Liberation Army, showing how it transformed from a small and weak force to a powerful and resilient one. This narrative of the VR technology encompasses significant events such as the August 1st Nanchang Uprising, which served as a pivotal moment in the early military endeavours of the Communist Party of China. This demonstration received significant support from the Jiangxi Provincial

Party Committee and the general public, further enhancing the significance of the uprising (Huang & Liu, 2023).

On July 28th, 2017, to commemorate the 90th anniversary of the Nanchang Uprising and the founding of the Chinese People's Liberation Army, the Memorial Hall held a large-scale promotion. In the transformation, the memorial hall has introduced a variety of modern scientific and technological means, including VR technology. For example, a VR experience area was set up at the former site of Helong headquarters, utilising virtual restoration and full-view engine technology to recreate the scene of Helong's department attacking the enemy headquarters.



Fig. 4. "VR Experience Area" of Nanchang August 1st Uprising Memorial Hall

Source: CNR News (2017)

On April 16th, 2019, the Nanchang August 1st Memorial Hall inaugurated the "5G Red Cultural Tourism Demonstration Zone," therefore making it accessible to the public for experience engagement. A 5G+VR red tourist demonstration model has been successfully implemented for the very first time inside the province as a result of this development. The "5G Red Cultural Tourism Demonstration Zone" combines the capabilities of VR technology with the fast-paced characteristics of 5G technologies to provide an immersive experience for tourists. Visitors can browse and download information at a much faster pace thanks to the availability of 5G service inside the grounds of Memorial Hall (Huang & Liu, 2023). Consequently, this makes it possible for visitors to participate in VR immersive live broadcasts online, allowing them to fully immerse themselves in the historical context and importance of the Nanchang August 1st uprising. As a result, visitors have the opportunity to get a thorough comprehension of the spirit and substance of the Nanchang August 1st revolt.



Fig. 5. "5G culture heritage tourism Demonstration Zone" of Nanchang August 1st Uprising Memorial Hall

Source: China Daily (Government of China, 2018)

On December 26, 2023, Nanchang August 1 Memorial Hall launched the VR virtual exhibition "Who holds the air dance - MAO Zedong in Jiangxi". The exhibition is the first time that Nanchang August 1st Uprising Memorial Hall tries to combine VR virtual technology with multimedia data and modern information technology, break the limitation of time and space, and realise the upstream of the exhibition scene line.



Fig. 6. "VR Virtual Exhibition" of Nanchang August 1st Uprising Memorial Hall

Source: China Daily (Government of China, 2018)

Main Factors: VR Improves Jiangxi's Culture Heritage Tourism

The use of VR technology in culture heritage tourism within Jiangxi Province may significantly augment tourists' comprehension and enjoyment of tourist resources. By offering an interactive environment, VR technology has the potential to enhance tourists' engagement in tourism and foster a more immersive experience. Furthermore, integrating VR technology might augment the descriptive language used to depict tourist landscapes, thus increasing the entire tourism experience. In Jiangxi Province, VR technology for culture heritage tourism is still in its infancy and experimental stage (Yu & Yu, 2023). On the other hand, as VR technology continues to improve, its effect and ramifications for culture heritage tourism in Jiangxi Province are anticipated to significantly increase. Presently, VR technology to enhance the experience of culture heritage tourism in Jiangxi Province may be primarily attributed to three (3) key factors, which include widespread, considered beneficial and enhance the rate of active second visits.



Fig. 7. "5G Red Cultural Tourism Demonstration Zone" of Nanchang August 1st Uprising Memorial Hall

Source: China Daily (Government of China, 2018)

First, widespread. The "5G+VR culture heritage tourism Live Tour" program, just launched by the Nanchang August 1st Memorial Hall, allows visitors to participate in an immersive virtual reality experience via live online streaming (Yu & Yu, 2023). On the other hand, there are no restrictions placed on the location from which one (1) may receive the live stream. Simply connecting a mobile phone, tablet, or computer to the internet allows spectators to access the live broadcast and participate in interactive contact with the presenter in Figure 7. The expression of red culture has gone beyond its conventional limitations inside exhibition spaces. The notion has been animated and converted into a vivid visual representation that is accessible and viewable by anyone. The thing moves in the direction of the person whenever it is seen to be moving. Utilising a VR device and applying relevant computations to generate a simulated environment, users may interact with red culture in these designated regions (Lu, 2022). This technological breakthrough substantially expands the audience for patriotic education, hence promoting the extensive dissemination of patriotic principles (Jiang, 2020).

Second, considered beneficial. The Nanchang August 1st Memorial Hall provides guests with an immersive experience using virtual reality technology, along with the chance to engage digitally with significant cultural artefacts (Huang et al., 2024). These facilitate comprehension of the historical background and importance of the August 1st Uprising. Consequently, the essence of the August 1st Uprising becomes more profoundly entrenched in the awareness of visitors to the memorial hall. The immersive experience profoundly impacts people, but the exhibition of conventional cultural artifacts and reading books provide comparably lesser results collectively (Gui, 2024).

Furthermore, the VR technology has the potential to enhance the delivery of information to the audience. Cultural artefacts may be presented more vibrantly via the use of diverse media, such as audio and video, which increases their accessibility and personal effect (Lu, 2022). The reconstruction of the August 1st Uprising is made easier by VR technology, which provides access to minute details that could be difficult to identify from the mere examination of cultural artefacts. Visitors are given an example of troops climbing a snow-capped mountain, demonstrating the peak's height and slope as well as the soldiers' relentless and grueling effort. In the conventional manner of visiting, when one (1) briefly observes the mountain, visitors often fail to experience a deep sense of immersion (Xiamen, 2021). On the other hand, VR technology allows visitors to focus on the virtual world in front of them, giving them the impression that they are physically there.

Third, enhance the rate of active second visits. VR technologies are now experiencing significant popularity, with a reasonably high level of audience engagement. Teenagers, who have an increased propensity for developing technologies, are the principal population for patriotic education initiatives. By combining these two (2) technologies—5G and VR—Nanchang August 1st Memorial Hall raises the degree of interaction between museum visitors and the cultural artefacts kept there (Xiamen, 2021). It is now possible for visitors to participate in conversation with the "living" artefacts, since the style of communication that was previously used for visitation has shifted from being unidirectional to being bidirectional (Jiang C, 2020). It is because of this experience that visitors' perceptions of the Nanchang August 1st Memorial Hall are greatly improved, which in turn increases the possibility that they would return in the future. The traditional method of visitor interaction, which has traditionally had difficulty capturing the attention of tourists, has been much improved by this new creation, which marks substantial progress (Liu et al.2022).

The VR experience is a virtual reality interaction provided by an internet connection, allowing visitors to participate in the experience from any place with internet access, hence reducing the limits of physical locations (Lu, 2022). This immersive experience provides a degree of interaction, allowing visitors to adjust design aspects inside the virtual world by their own actions, encouraging public participation in the design

process. Additionally, the virtual reality VR experience demonstrates a careful concern for humanisation characteristics by catering to the viewpoint and requirements of children (Saverio et al., 2024).

Theoretical Framework: To Achieve Sustainability of VR and Culture Heritage Tourism

The benefit of VR technology resides not only in its capacity to provide a virtual environment for visitors, but also in its potential to augment engagement and communication between individuals and historical contexts. In prior trip experiences, the connection between individuals and the environment remained static, hindering active participation in the scene (Lu, 2022). Utilising VR technology, the spot manager facilitates chances for individuals to engage inside the venue, including seeing old royal structures and participating in the creation of traditional handicrafts, thereby enabling a more authentic emotional experience (Zhao & Agyeiwaah, 2023).

First, Still VR is based on static images. Nanchang August 1st Memorial Hall uses static VR technology to present the revolutionary site, internal scenes of the memorial hall, and other features to visitors in the form of 360-degree panoramic images. This technology uses multiple static photos around the shooting point to stitch together a panoramic image, allowing visitors to control their perspective through a mouse or VR device, as if they were in a real revolutionary historical scene (Huang & Liu, 2023). For example, the immersive real-life drama of the "August 1st of that year" revolutionary site uses static VR technology to allow visitors to experience the weight and shock of revolutionary history first-hand.

The Nanchang August 1st Memorial Hall also uses static VR technology to carry out education and training work (Jin, 2023). By simulating real revolutionary historical scenes and cultural relics' resources, we provide vivid and intuitive educational experiences for young students, party members and cadres (Huang & Liu, 2023). This educational approach not only improves teaching effectiveness but also enhances learners' sense of participation and memory depth.

Second, Video VR is based on dynamic video. The Nanchang August 1st Memorial Hall has created a new immersive visiting experience for visitors by utilising video VR technology based on dynamic videos (Xiamen, 2021). This experience, through real-time or pre-recorded video content, combined with VR headsets and other devices, allows users to feel as if they are immersed in historical events, such as experiencing intense combat scenes or participating in the planning process of uprisings, greatly enhancing tourists' sense of participation and immersion. At the same time, this technology also provides an interactive education mode, allowing visitors to have conversations with historical figures in virtual environments. The popularisation of distance education has also been achieved, expanding the educational function of the memorial hall, deepening emotional transmission, and providing an accessible way for special groups to visit (Huang & Liu, 2023).

In addition, the dynamic video VR application of the memorial hall also incorporates 5G technologies, offering a high-speed transmission VR live viewing experience that promotes the development of culture heritage tourism routes and the creation of cultural brands (Xiamen, 2021). The integration of technology and culture not only brings immersive live streaming experiences to tourists but also facilitates the construction of information for memorial halls and promotes the application of tourism big data and precision marketing service platforms. By jointly building laboratories and promoting the application of information technology in scenic areas, the case of the August 1st Memorial Hall has become a demonstration model for red VR tourism, providing a new path for the dissemination and education of red culture, and looking forward to the wider application prospects of 5G+VR technology in the field of culture heritage tourism (Huang & Liu, 2023).

Third, Game VR is based on kinesthetic games. VR technology for kinesthetic games allows tourists to freely move and interact in historical scenes recreated in a virtual environment. For example, tourists can participate in simulated battles of the Nanchang Uprising through sensory devices and experience the combat history of revolutionary martyrs. Tourists can control the characters in the game through body movements, such as climbing, jumping, and hiding. This immersive experience enhances their understanding and perception of historical events (Xiamen, 2021).

The August 1st Memorial Hall offers visitors a rich and diverse experience through the use of three (3) forms of VR technology: Still VR, Video VR, and Game VR. These technologies not only increase tourist engagement and satisfaction but also promote the development of cultural heritage and education. Through such innovative applications, the August 1st Uprising Memorial Hall has demonstrated a new path in digital transformation and innovative development, providing valuable reference for other historical and cultural attractions.

CONCLUSION

The application of VR technology within culture heritage tourism in Jiangxi Province has brought fresh energy and profoundly transformed individuals' travel experiences and cognitive perspectives. For individuals who want to delve thoroughly into the topic, the presentation of vast amounts of historical knowledge through textual narratives, pictorial representations, and audio-visual recordings presents challenges. Nonetheless, the application of VR technology holds the promise of addressing this limitation. The integration of VR technology offers visitors enriched and immersive visual experiences, hence enhancing their involvement in tourism and improving their creative expression skills. In addition to creating simulated environments for visitors, VR technology can enhance the level of interaction and communication between people and historical settings. In previous trip experiences, the degree of interaction between visitors and their environment was characterised by a lack of vitality and few chances for active participation. VR technology allows visitors to participate in spatial interactions, enhancing their experience of emotional realism.

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CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Zhou Shiwan conducted and conceptualised the research, wrote and revised the article with the assistance of Wang Tongyun. Raja Norashekin Raja Othman and Ahmad Nazrin Aris Anuar supervised the research process and deliverables. Raja Norashekin Raja Othman led the review process, made revisions, and approved the article for submission.

REFERENCES

- CNR News (2017). Retrieved from http://news.cnr.cn/dj/20170730/t20170730_523875159.shtml.
- China Daily (Government of China). (2018). *Nanchang August 1st Memorial Hall*. Retrieved July 17, 2025, from <https://govt.chinadaily.com.cn/s/201812/17/WS64487def498ea274927b8fbf/nanchang-august-1st-memorial-hall.html>.
- China National Tourism Administration (2004). *Tourist Attractions Rating Categories and Assessment Criteria* (Revised Ed.). Beijing, China: China National Tourism Administration.
- Gui, S. (2024). Study on Countermeasures and Paths to Enhance the Core Competitiveness of Nanchang Red Cultural Tourism. *Global human geography* (08), 99–101.
- Han, H. (2024). Jiangxi and the Long March from the Perspective of Red Culture. *Journal of Red Culture* (02), 5-16+109.
- Harney, M. (2019). Conservation and Cultural Tourism: Conflicts and Solutions. In EAAE Thematic Network on Conservation: Workshop VI (pp. 161-171). *European Association for Architectural Education*.
- He, L., Wan, F., & Yang, C. (2023). The more vibrant, the more brilliant: A study on the dissemination power of Jiangxi's red culture in the digital context. *Sound screen world* (24), 8-10.
- Huang, G., Zhao, T., Deng, S., Gao, H., Li, X., Zhou, F., & Ren, L. (2024). Red tourism enters life, red genes are passed down from generation to generation. *China Tourism News*, p. 001. <https://link.cnki.net/doi/10.28109/n.cnki.nclyb.2024.000905>.
- Huang, S., & Liu, Z. (2023). Digital Display and Protection of Revolutionary Cultural Relics in the Collection of Nanchang August 1st Uprising Memorial Hall. *Nanchang Cultural Relics* (05), 107-112.
- Jiang, C. (2020). Research on the Innovation and Problems of Patriotism Education Methods in the Age of Intelligent Media--Taking the Use of 5G+VR Technology in Nanchang Eighty-first Uprising Memorial Hall as an Example. *Media forum*, 3(09), 3-4.
- Jiang, Y. J., Chen, L., Zhou, H. L., (2021). Shaping the Soul and Casting People: The Path of Red Tourism Cultural Identity. *Social Sci.* 2021;289(5):68–72.
- Jiang, Y. J., Chen, L., & Zhou, H. L., (2021). Shaping the Soul and Casting People: The Path of Red Tourism Cultural Identity. *Social Sci.* 2021;289(5):68–72.
- Jin, H. (2023). Research on Enhancing the Effectiveness of the National Patriotic Education Base in Nanchang City in the New Era. (Master), *East China Jiaotong University (ECJU)*, East China Jiaotong University (ECJU). <https://link.cnki.net/doi/10.27147/d.cnki.ghdju.2023.000436>.
- Lin, H. (2023). Research on Youth Inheriting Red Sports Culture in Jiangxi Soviet Area. (Master), *Jiangxi Normal University*. <https://link.cnki.net/doi/10.27178/d.cnki.gjxsu.2023.000919>.
- Lin, M., Yan, Y., Zeng, C., Zhu, H., & Wang, F. (2021). Cross-regional integration and development of red

- tourism resources in the Central Soviet Area: a cultural ecology perspective. *Journal of Natural Resources*. <https://doi.org/10.31497/zrzyxb.20210708>.
- Liu, C., Huang, X., Zhu, Y., Xu, L., & Zeng, Y. (2022). Virtual reality technology helps activate red tourism resources - Taking Jiangxi Province's red tourism resources as an example. *Tourism Overview*.
- Lu, W. (2022). The Application of VR Technology in the Development of Jiangxi Red Culture Tourism. *Contemporary Tourism*.
- Severio, L., Matteo, M., Luca, M., Chiara, P., Daniele, Z., Massimo, P., Antonella, T., & Gianni, V. V., (2024). Virtual Reality in Cultural Heritage: A Setup for Balzi Rossi Museum. *Applied Sciences*. <https://doi.org/10.3390/app14093562>.
- Shan, N., Zhang, S., Liang, B., Wen, B., & Yang, W. (2024). Evaluation model and empirical analysis of integrated development of red culture and tourism based on combination empowerment Journal of Natural Science, *Hunan Normal University*, 1-15.
- Wang, J. (2022). China Red Tourism Development Report (2022). *Social Science Academic Press*.
- Wang, Y. (2023). Research on Tourist Satisfaction of Red Tourism Classic Scenic Spots in Jiangxi Province Based on Machine Learning. (Master), *Nanchang University*. <https://link.cnki.net/doi/10.27232/d.cnki.gnchu.2023.004577>.
- Wei, W. (2019). Research progress on virtual reality (VR) and augmented reality (AR) in tourism and hospitality: A critical review of publications from 2000 to 2018. *Journal of Hospitality and Tourism Technology*, 10(4), 539-570. <https://doi.org/10.1108/JHTT-04-2018-0030>.
- Xiamen, D. (2021). "5G+AR "technology blessing, let red resources" live ". *Tencent News*. <https://news.qq.com/rain/a/20210702A0BRRX00>.
- Yu, Y., & Yu, Z. (2023). Analysis of sustainable development path of red tourism in Jiangxi Province from the perspective of cultural and tourism integration. *Travel overview* (15), 80-82+86.
- Zhao, Y., & Agyeiwaah, E. (2023). Exploring value-based motivations for culture and heritage tourism using the means-end chain and laddering approach. *Journal of Heritage Tourism*. <https://doi.org/10.1080/1743873X.2023.2215933>.
- Zheng, P., & Huang, L. (2023). A study on the impact of culture heritage tourism in nurturing national identity--an empirical analysis based on survey data from typical culture heritage tourism areas in Jiangxi. *Journal of Donghua University of Science and Technology*.
- Zheng, W., & Zhang, Q. (2024). Study on the value and path of integrating red culture into ideological and political education in colleges and universities. *Chinese military to civilian conversion* (12), 212-214.
- Zhou, Y. (2023). Jiangxi culture and tourism resonate with the times, singing the unique brand of Jiangxi scenery. *China Tourism News*.



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