

Virtually Interact With XR

AUTHORS

PALANIVASAN S¹, PADMANABAN M², GOWTHAM C V³, DINESH S S⁴, ARUN P⁵, MADAN S⁶.

¹Iyear, Department Information of Technology, Panimalar Engineering College, India

²Iyear, Department Information of Technology, Panimalar Engineering College, India

³Iyear, Department Information of Technology, Panimalar Engineering College, India

⁴Iyear, Department Information of Technology, Panimalar Engineering College, India

⁵Iyear, Department Information of Technology, Panimalar Engineering College, India

⁶Iyear, Department Information of Technology, Panimalar Engineering College, India

ABSTRACT

Travel restrictions during the pandemic have had an impact on the tourism sector, but at the same time, we have noticed a large growth in earnings for the sectors that provide remote communication. Numerous research have uncovered the benefits of virtual tourism, which draws travellers by offering VR/AR experience of the place. In the same way that digital ownership is preserved, virtual, mixed and augmented reality are used to enhance the user experience. Most of the tourism-related applications are currently unknown and out-of-date to the community, and as a result, they are gradually being phased out of the market. Virtual Tourism was created using Unity software, a free cross-platform game development program with a variety of tools and libraries to support this project. The design, development, and testing of the system and models are discussed in this thesis. We demonstrated how this effort resulted in the Users' new travel experience. Additionally, it can address the issues with time and health that hinder tourism. The implementation of this idea is anticipated to improve user experience using virtual reality in the tourism field. In this paper we present the realization of a Virtual Tour, to be displayed using the Head-Mounted Display "Oculus Rift", that merges the tourism field with modern VR (Virtual reality) technologies

Keywords: Virtual Reality; Immersive experience; Virtual experience.

INTRODUCTION

Now a days, Elderly and young people enjoy traveling but are unable to do so because of their health or because they lack travel companions or caregivers. Additionally, they are unable to travel long distances. Because of this, people who are unable to travel may grow bored with being at home, at the same time the world has been suffering from the COVID-19 pandemic since the start of 2020. Worldwide, rigorous controls, such as entry bans and quarantines, and preventive measures are put in place to stop the spread of the coronavirus, which lowers economic activity and saps nations' economic impetus. Regarding such a recession, the tourism sector is not an exception. In the first eight months of 2020, there were 70% fewer international tourist arrivals (overnight visitors) than there had been in the same period the year before due to the COVID-19 pandemic. So, for that reason, we proposed the idea of developing a VR tourism desktop application that combines the tourism field and the current VR technology.

Users can view the tourist destination. This will provide the user with an idea of the tour before they go, and it will also be helpful for people who can't travel to the country. This concept requires and enables people to travel to exciting tourist destinations in worldwide area places. Without actually going there, people would be able to experience popular tourist attractions.

1. Researching and creating Virtual Reality (VR) technology
2. To assist Users in journeying to their hearts' satisfaction.
3. To create a virtual feeling that is comparable to visiting the actual location.
4. To provide motivations for users who want to buy VR for the need of virtual traveling.

BACKGROUND

There is a lot of technology available now to promote travel. Through 360-degree vision provided by VR Glasses, virtual reality (VR) can assist users in gaining travel experience more conveniently and realistically. Long- distance journeys don't require energy, and they don't require guardians. When they choose, users can travel independently while staying at home. They do not have to be concerned about time, travel costs, or accidents. This idea simulates a real tourist attraction environment and within it, there will be activities that give the users the impression that they are actually inside a genuine tourist place.

LITERATURE SURVEY

Jung, T., Tom Dieck, M.C., Lee, H. et Chung, N. (2016) [1], This study attempts to look into how Virtual Reality (VR) affects the overall visitor experience in relation to the surrounding environment. Few attempts have been made in tourism research to examine factors that improve visitor experience using unique and developing technologies, such as virtual reality and augmented reality, respectively. However, research on visitor experience in a mixed environment that combines both VR and AR is lacking. The results of this research have managerial and theoretical concerns for the use of VR technology in a particular context.

Mirk, D. and Hlavacs, H. (2015) [2], In this research we conclude, Traveling physically between locations is always a part of tourism, which can be difficult, expensive, or even risky. By generating 3D simulations of actual tourist destinations in computers, virtual tourism strives to remove constraints. Virtual travel, however, is always reproduced or prerecorded.

Potter, L.E., Carter, L. & Coghlan, A. (2016) [3], According to this research, the quality of visitor experiences is an increasing concern for tourism operators as well as a developing market for nature-based travel. We explored the use of virtual reality in the field and analyzed whether it could be effectively applied in a natural

context. With various application opportunities explored, we discovered that there is a lot of potential for the use of VR in nature-based tourism for the supply of both information and education.

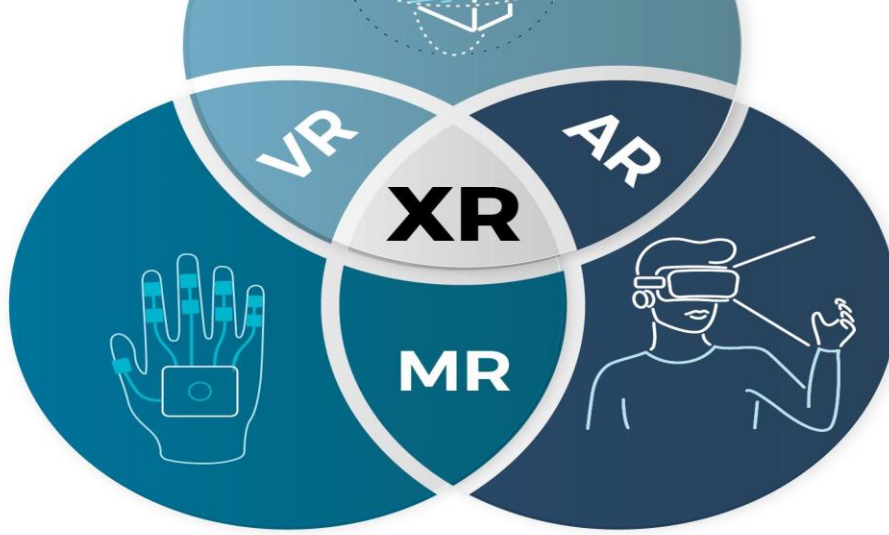
Ijsselsteijn, W.A. and Riva, G. (2003)[4], According to based on this research, VR and other material removal technologies have come to be intimately associated with presence, the sensation of "being there" in a mediated environment. Discussed are several forms of presence, such as co-presence, social presence, and physical presence. As media become more interactive, perceptually realistic, and immersive, the sensation of presence becomes more convincing.

Egger, R. (2016)[5], Emerging technologies, including Virtual Reality (VR), are impacting both tourists and tourism industry's supply . This study's objective is to analyze VR tourism research and present a comprehensive and up-to-date review. This study attempts to provide a systematic and structured overview of the field of virtual reality (VR) based on the technological evolution of the term and the inclusion of several VR systems with different possibilities. The overall goals of this article is to contribute to a deep understanding of virtual reality research in tourism.

Fineschi, A. & Pozzebon, A. (2015) [6], In this article, they demonstrate how paired full-panoramas, which will be projected via the head-mounted display "Oculus Rift," can be used to create a 3D virtual museum tour. From the beginning, which is the gathering of the necessary photos, to the conclusion, which is the development of the tour itself, the article explores each phase of the project in detail.

Guttentag, D.A. (2010) [7], This article explores the several uses of virtual reality (VR) in the field of tourism that demand further attention from academics and industry experts. The quantity and importance of such applications will surely rise as VR technology develops. Six tourism- related areas—planning and administration, marketing, entertainment, education, accessibility, and heritage preservation— may find VR to be very useful.

Jung, T. Tom Dieck, M.C Moorhouse, N. and Tom Dieck, D. (2017) [8],This article claims that interest in Virtual Reality (VR) has significantly increased among researchers, businesses, and the tourism industry in particular. There is, however, a dearth of a qualitative studies on how VR applications are used by tourists. The results indicate a favorable attitude toward the use of VR in the context of tourism since visitors were completely engaged in the experiment,this seemed to influence their behavioral to return to the scene again in the future.



The system is a virtual fact platform that lets in people to explore distinctive places and travel experiences the use of XR generation. The platform would be designed to provide customers with an immersive and interactive revel in, with a focal point on replicating the appearance, experience, and sounds of different places. The platform could include a spread of travel locations and studies, such as digital excursions of landmarks, museums, and cultural web sites, as well as digital adventure and outside reports, which includes trekking, camping, and wildlife exploration. The gadget could also include social functions, permitting customers to engage with other travelers, share tips and tips, and take part in institution sports[1].

To ensure the quality of experiences, the platform would use high-quality 3D models, audio recordings, and other digital assets to create a realistic environment. The system would also be designed to support a variety of XR devices, such as VR headsets, AR glasses, and mobiles, to allow accessibility for users[2].

For monetization , the system could offer a variety of pricing models, such as subscription-based access to certain destinations or experiences, or PPU (Pay per use) access to individual experiences. In addition to this, the platform could provide advertising opportunities for travel-related businesses, such as hotels, airplanes , and tour operators, to reach wide users[3].

Overall, this proposed system for virtual tourism using virtual interaction with XR would aim to provide users with a high-quality and engaging virtual travel experience, while also creating opportunities for monetization and partnerships with travel-related businesses[5].

RESULT AND DISCUSSION

According to the World Travel and Tourist Council (WTTC), the COVID-19 pandemic might put lots of jobs in danger worldwide in the travel and tourism industry. It will take ten months for the tourism industry to get back to normal after COVID-19 can be overcome. No one can predict when the tourism industry will recover because the COVID-19 vaccine won't be available until the middle of 2020. People find it challenging to cross

borders for personal, medical, and educational reasons as well as for tourism and other demands. Moreover, there is an alternate form of escape available in the form of virtual tours, which provide individuals with amusement while they escape their unpleasant and stressful surroundings. Without ever leaving their homes, people can have the feeling of a vacation

CONCLUSION

Virtual tours can provide a jumping-off point for alternative tourism both during and after the Corona pandemic. Additionally, there are some who lack access, financial ability, free time, and resources. People with disabilities and those with limited mobility, for instance, will be able to experience the pleasure of recreation through virtual tours. The advancement in technology allows for 3D visualization, which brings virtual tours closer to real and futuristic ones. Virtual tours can serve as an entrance and encourage people to go directly to these tourist destinations.

The COVID-19 pandemic serves as a warning to the travel and tourist sector to avoid carrying on as usual. This industry requires a major adjustment to survive the pandemic. To ensure that visitors feel comfortable during the trip, strict health measures and updated safety requirements are required.

REFERENCES

- [1] Mirk, D., and Hlavacs, H. (2015), "Virtual tourism with drones: Experiments and lag compensation", DroNet' 15: Florence, Italy, May 18, 2015, ACM, New York, pp. 45-50.
- [2] Potter, L.E., Carter, L. and Coghlan, A. (2016), "Virtual reality and nature-based tourism: An opportunity for operators and lag compensation", DroNet' 15: Florence, Italy, May 18, 2015, ACM, New York, 45-50.
- [3] Ijsselsteijn, W.A. and Riva, G. (2003), "Being There: The experience of presence in mediated environments", in Riva G., Davide F. and Ijsselsteijn W.A. (Eds.), Being There: Concepts, pp. 4-16.
- [4] Egger, R. (2016), "Virtual Reality in Tourism. A short introduction.", Presentation at the VR-Summit Salzburg, Salzburg University of Applied Sciences, Austria, October 5.
- [5] Fineschi, A. and Pozzebon, A. (2015), "A 3D virtual tour of the Santa Maria Della Scala Museum Complex in Siena, Italy, based on the use of Oculus RIFT HMD", in 2015 International Conference on 3D Imaging (IC3D), Liège, Belgium, December 14-15, 2015, IEEE Computer Society Press, pp. 1-5.
- [6] Guttentag, D.A. (2010), "Virtual reality: Applications and implications for tourism",

[7] Jung, T., tom Dieck, M.C., Moorhouse, N., and tom Dieck, D. (2017), "Tourists' experience of Virtual Reality applications", IEEE International Conference on Consumer Electronics (ICEE), Las Vegas, NV, USA, January 8-10, 2017, IEEE, pp.208-2

[8] M. Sumithra and Dr. S. Malathi, "A Novel Distributed Matching Global and Local Fuzzy Clustering (DMGLFC) FOR 3D Brain Image Segmentation for Tumor Detection", IETE Journal of Research, doi.org/10.1080/03772063.2022.2027284, 2021

[9] B.Buvanswari and T.Kalpalatha Reddy, "A Review of EEG Based Human Facial Expression Recognition Systems in Cognitive Sciences" International Conference on Energy, Communication, Data analytics and Soft Computing (ICECDS), CFP17M55-PRJ:978-1-5386-1886-8", August 2017.

[10] M. Sumithra and Dr. S. Malathi, "Modified Global Flower Pollination Algorithm-based image fusion for medical diagnosis using computed tomography and magnetic resonance imaging", International Journal of Imaging Systems and Technology, Vol. 31, Issue No.1, pp. 223-235, 2021

[11] K. Sridharan, and Dr. M. Chitra "SBPE: A paradigm Approach for proficient Information Retrieval, Jokull Journal", Vol 63, No. 7; Jul 2013

[12] M. Sumithra and Dr. S. Malathi, "3D Denselex NET Model with Back Propagation for Brain Tumor Segmentation", International Journal Of Current Research and Review, Vol. 13, Issue 12, 2021.

[13] B.Buvaneswari and Dr.T. Kalpalatha Reddy, "EEG signal classification using soft computing techniques for brain disease diagnosis", Journal of International Pharmaceutical Research, ISSN : 1674-0440, Vol.46, No.1, Pp.525-528, 2019.

[14] K. Sridharan, and Dr. M. Chitra "Web Based Agent And Assertion Passive Grading For Information Retrieval", ARPN Journal of Engineering and Applied Sciences, VOL. 10, NO. 16, September 2015 pp:7043-7048

[15] M. Sumithra and Dr. S. Malathi, "Segmentation Of Different Modalities Using Fuzzy K-Means And Wavelet ROI", International Journal Of Scientific & Technology Research, Vol. 8, Issue 11, pp. 996-1002, November 2019.

[16] M. Sumithra and S. Malathi, "A Survey of Brain Tumor Segmentation Methods with Different Image Modalities", International Journal of Computer Science Trends and Technology (IJCST) – Vol. 5 Issue 2, Mar – Apr 2017

- [17] B.Buvaneswari and Dr.T. Kalpalatha Reddy, “High Performance Hybrid Cognitive Framework for Bio-Facial Signal Fusion Processing for the Disease Diagnosis”, Measurement,ISSN: 0263-2241, Vol. 140, Pp.89-99,2019.
- [18] M. Sumithra and Dr. S. Malathi, “A Brief Survey on Multi Modalities Fusion”, Lecture Notes on Data Engineering and Communications Technologies, Springer, 35, pp. 1031-1041,2020.
- [19] M. Sumithra and S. Malathi, “A survey on Medical Image Segmentation Methods with Different Modalities”, International Journal of Engineering Research and Technology (IJERT) – Vol. 6 Issue 2, Mar 2018.
- [20] B.Buvaneswari and Dr.T. Kalpalatha Reddy,“ELSA- A Novel Technique to Predict Parkinson's Disease in Bio-Facial”, International Journal of Advanced Trends in Computer Science and Engineering, ISSN 2278-3091,Vol.8,No.1,Pp. 12-17,2019
- [21] K. Sridharan , and Dr. M. Chitra , Proficient Information Retrieval Using Trust Based Search On Expert And Knowledge Users Query Formulation System, Australian Journal of Basic and Applied Sciences, 9(23) July 2015, Pages: 755-765.
- [22] B.Buvaneswari and Dr.T. Kalpalatha Reddy, “ACPT- An Intelligent Methodology for Disease Diagnosis”,Journal of Advanced Research in Dynamical and Control Systems,ISSN : 0974-5572,Vol.11,No.4,Pp.2187-2194,2019.
- [23] Sumithra, M., Shruthi, S., Ram, S., Swathi, S., Deepika, T., "MRI image classification of brain tumor using deep neural network and deployment using web framework", Advances in Parallel Computing, 2021, 38, pp. 614–617.
- [24] K. Sridharan , and Dr. M. Chitra "RSSE: A Paradigm for Proficient Information Retrieval using Semantic Web" , Life Science Journal 2013;10(7s), pp: 418-425