IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

DEVELOPMENT OF A VIRTUAL TOUR TO REVIVE INDIAN HERITAGES IN BANGALORE

[1]Manasa R, [2] Dr Usha J

[1]Student, [2] Professor

[1]Department of MCA,
[1]RV College of Engineering, Bengaluru, India.

Abstract: An immersive experience of a virtual guide that guides various destination using AR technology, QR Codes with detailed information of our heritage in Bangalore state will be created to revive the cultural heritage and its rich historic era where an individual gets acquainted with the cultural history of Bangalore and its various monuments and heritage. The application will be hosted with dynamic website that is interactive and informative. QR code reader with enable relevant heritage information retrieval and display. The QR code reader will scan and the a virtual Avatar with the help of AR simulation supported with speech feature to guide the user to retrieve information about the places they want to visit in Bangalore. This voice feature will have Start, play, pause, fast forward and stop features to help in immersive experience of 3D Image.This AR technology helps to known about our cultural with the help of real world entity to know better and experience better

Index Terms **– Qr code, Avatar, 3D image**

I INTRODUCTION

This digital toy based application will revive and promote the cultural heritage in Bangalore with an innovative experience. QR code reader with enable relevant heritage information retrieval and display. The QR code reader in turn will trigger a virtual Avatar with the help of AR simulation supported with speech feature to guide the user to retrieve information about the places The application will also help in immersive experience of 3D The aim to design and develop the project is to produce a tourist guide application to tourists. This local area expert undertaking is an Android application which uses expanded reality to give greater intuitiveness to the clients' view.The users will have more consistent information about their target location. The application of augmented reality technology in will have an important contribution for the transformation of cities towards smart cities and could lead to future interactive applications. The application will help to provide modern technology to boost tourism and the Avatar will give the voice over for more interacting with the user.

The utilization of expanded reality in learning is a significant subject of exploration AR empowers the expansion of virtual items into genuine conditions to work with continuous connection Research on AR applications in Learning is as yet in a beginning phase, The utilization of AR has gotten more open as it no longer requires specific hardware and may handily be utilized on cell phones Most individuals currently own cell phones, and the utilization of these gadgets has expanded, There by empowering more noteworthy admittance to AR . The applications for portable AR are expanding quickly and the possibility of versatile AR has expanded because of advances in versatile innovation AR portable applications are accessible for a few spaces of and related AR

applications are presently more regularly found on cell phones.The critical motivation behind shared AR is to deliver a scene that numerous clients can perceive from their own viewpoints.This is cultivated utilizing ARWorldMap, a depiction of all the accessible spatial planning data from the clients' gadgets. 3-D AR objects are then planned onto the territory very much like genuine items in reality. Progressed admirably, this cycle makes the fantasy of a common virtual space that every one of the clients can collaborate with consistently. Because of significant degree of intuitiveness multi-client AR experience makes schooling, show and cooperation simple and compelling. QR code reader with enable relevant heritage information retrieval and display.

I. LITERATURE REVIEW

This paper surveys the field of augmented reality (AR), in which 3D virtual objects are integrated into a 3D real environment in real time. It describes the medical, manufacturing, visualization, path planning, entertainment, and military applications that have been explored. This paper describes the characteristics of augmented reality systems, including a detailed discussion of the tradeoffs between optical and video blending approaches. Registration and sensing errors are two of the biggest problems in building effective augmented reality systems, so this paper summarizes current efforts to overcome these problems. Future directions and areas requiring further research are discussed. This survey provides a starting point for anyone interested in researching or using augmented reality. [1].

Azuma published a survey on augmented reality (AR). Our goal is to complement, rather than replace, the original survey by presenting representative examples of the new advances. We refer one to the original survey for descriptions of potential applications (such as medical visualization, maintenance and repair of complex equipment, annotation, and path planning); summaries of AR system characteristics (such as the advantages and disadvantages of optical and video approaches to blending virtual and real, problems in display focus and contrast, and system portability); and an introduction to the crucial problem of registration, including sources of registration error and error-reduction strategies[2]

Each industrial process imposes its own peculiar requirements. This creates the need for specialized technical solutions, which in turn poses new sets of challenges. Because most industries must concern themselves with at least some of these industrial procedures, we consider design, commissioning, manufacturing, quality control, training, monitoring and control, and service and maintenance. AR lets users reconstruct virtual models of their area of interest and visualize models within their static views of a real scene.[3].

AR is a key user-interface technology for personalized, situated information delivery, navigation, on-demand instruction and games. The widespread availability and rapid evolution of smartphones and new devices such as Hololens enables software-only solutions for AR, where it was previously necessary to assemble custom hardware solutions. However, ergonomic and technical limitations of existing devices make this a challenging endeavor. In particular, it is necessary to design novel efficient real-time computer vision and computer graphics algorithms, and create new lightweight forms of interaction with the environment through small form-factor devices. This tutorial will present selected technical achievements in this field and highlight some examples of successful application prototypes[4]

This paper provides a classification of perceptual issues in augmented reality, created with a visual processing and interpretation pipeline in mind. We organize issues into ones related to the environment, capturing, augmentation, display, and individual user differences. We also illuminate issues associated with more recent platforms such as handhelds or projector-camera systems. Throughout, we describe current approaches to addressing these problems, and suggest directions for future research.[5]

F. Fritz et. al, portrays the method of fostering an intelligent representation framework that incorporates Increased Reality Technologies with a vacationer application.Augmented Reality is utilized to improve the genuine scene by media customized intelligent data. This makes the application more easy to use and the client can without much of a stretch get the data which else he would have accumulated from some relative or a local area expert.This paper proposes on traveler associations to concoct alluring interactive media content that pulls in travelers. It says that huge measure of informationis lying in computerized design, similar to varying media content, electronic messages or topographical information frameworks which is unused or scarcely utilized and is inaccessible for guests. Coming up with an imaginative mixed media content with utilization of such information can assist sightseers with enhancing their insight at the traveler place.[6]

Although the concepts of virtual reality (VR) and augmented reality (AR) were invented decades ago (if not centuries ago, in a broader sense), the technologies enabling VR and AR just collectively met a critical point in recent years as people started enjoying the experience rather than merely tolerating it, as they did in the early days. From this point, more and more people believe that VR and AR have the potential to disruptively change our world in many respects[7]

In Augmented reality has the undeveloped of boosting the encompassing actual climate of the traveler in a significant way. The regular methodology for designers furthermore, content distributers is to utilize disconnected information bases for giving rich substance to the increased reality application, yet it restricts the data profundity of environmental factors assessment for vacationers. Henceforth, specialists have investigated and misused Semantic Web and particularly Connected Information advancements for improving substance in versatile increased reality applications for vacationers. Increased reality can convey an encounter to sightseers which is substantially more than reality another component of buyer fulfillment is arisen which is known as experience, so the organizations working under this area are selling the items and administrations, yet in addition furnishing the experience through connection with them. Encounters increment the worth of the item, brand, organization. Vacationer experience are the establishment for experience economy.[8]

The augmented reality (AR) research community has been developing a manifold of ideas and concepts to improve the depiction of virtual objects in a real scene. In contrast, current AR applications require the use of unwieldy equipment which discourages their use. In order to essentially ease the perception of digital information and to naturally interact with the pervasive computing landscape, the required AR equipment has to be seamlessly integrated into the user's natural environment. Considering this basic principle, this paper proposes the car as an AR apparatus and presents an innovative visualization paradigm for navigation systems that is anticipated to enhance user interaction[9]

Augmented reality is increasingly reaching young users such as elementary-school and high-school children, as their parents and teachers become aware of the technology and its potential for education. Although research has shown that AR systems have the potential to improve student learning, the educator community does not clearly understand the educational impact of AR, nor the factors which impact the educational effectiveness of AR. In this poster, we analyse 32 publications that have previously compared learning effects of AR vs non-AR applications. We identify a list of positive and negative impacts of AR on student learning, and identify potential underlying causes for these effects. Our vision is that educational initiatives will exploit these factors, in order to realize the full potential of AR to enrich learner's lives[10].

II. PROPOSED SYSTEM

Augmented reality (AR) obtains increasing acceptance in the operating room. However, a meaningful augmentation of the surgical view with a 3D visualization of planning data which allows reliable comparisons of distances and spatial relations is still an open request.We introduce methods for inoperative visualization of 3D planning models which extend illustrative rendering and AR techniques. We aim to reduce visual complexity of 3D planning models and accentuate spatial relations between relevant objects. The main contribution of our work is an advanced silhouette algorithm for 3D planning models combined with procedural textures

In addition, we present a method for illustrative visualization of resection surfaces.In this project we have four models login page, QR code, Virtual avatar and 3D image to get the information the user should login by giving email username password and after registering and user can login by give valid credentials once user login user will get the homepage and select the place once the place is selected the avatar will appear and give information about the place if the user want to see the image in 3D model he can scan the QR 3D image will appear and give the still more information user can play are pause the voice and click on more information will appear so user can see still more images and brief information about the place.

III. RESEARCH METHODOLOGY

The research method used in this application development is a systematic design method to AR content development that includes two steps: creating 3D model for Bangalore place , and designing the interactive interface.

The AR applications consists of 3 parts (i) Login to the website (ii) Scan the QR code (iii) redirecting to Website

The user data will be storing in the fire base the QR code data will using the Vuforia platform for once the QR code is scanned the avatar will appear over voice over by using the unity open source platform.user can click on more information and get the more images about the Bangalore place.once the user will get sufficient data user can click on exit AR application will be closed.AR provides new ways of interacting with the real world and can create experiences that would not be possible in either a completely real or virtual world . AR has the unique ability to create immersive hybrid learning environments that combine real and virtual objects

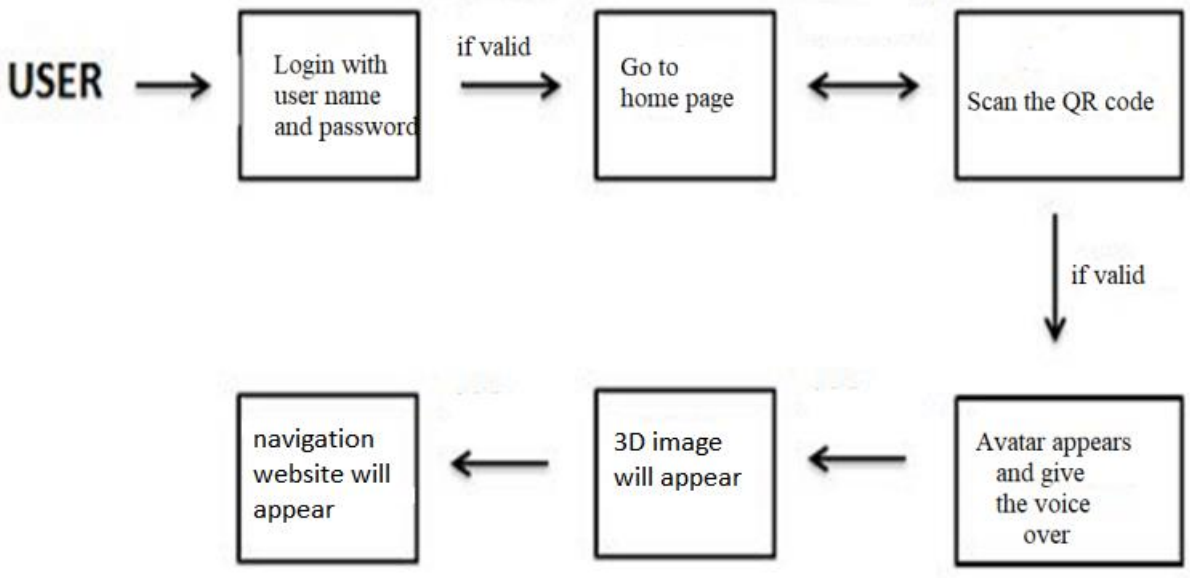

Fig 4.1 Block Diagram of Developed AR Application

IV. RESULTS

The modules have been implemented and evaluated along with the screenshot, Home page is shown in Fig2, 3D model in Fig 3 and more images that is redirecting t website in Fig 4

Fig 2: Home page

In Fig 2 Once the user login to the app Home page will Appear user can click on the place information about the Bangalore place will given by avatar using voice over.

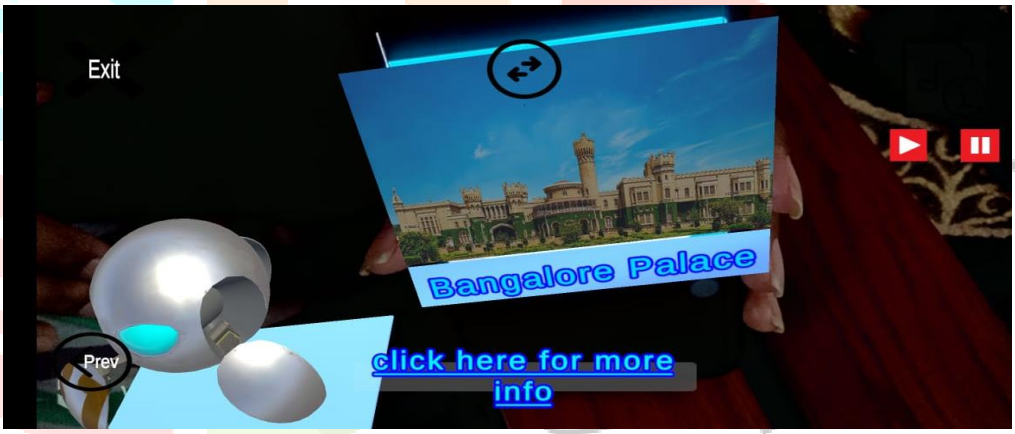

Fig 3 : 3D model

In Fig 3 once the user click on Bangalore place user can get QR code and information about the Bangalore palace will get by using the voice over.

V. CONCLUSION & FUTURE SCOPE

This AR Android Application by using Firebase database which is open source and The objective of this research was to understand the impact of an AR mobile application on exploring the heritage places . And this Application is more interacting by using AR and interacting with the avatar and get the information over voice so that it will be more convent to the user and get knowing about the place nether type in search box. QR code helps user for easy operating. 3D image is more interesting than the normal image.

In Future More places can be added User can add images and information user can also add reviews and leave comments in the application Avatar can be improved and user can add own voice Videos can be added in the place of images for more interaction.Avatar can be changed to user voice and face 3D image can be improved to 4d and 5D videos can be added in the place of images.

REFERENCES

1. M. Sirakaya and D. A. Sirakaya, "Trends in educational AR studies: a systematic review," Malaysian Online Journal of Educational Technology, vol. 6, no. 2, pp. 60–74, 2018.
2. J. Mart´ın-Gutierrez, P. Fabiani, W. Benesova, M. D. Meneses, ´ and C. E. Mora, "AR to promote collaborative and autonomous learning in higher education," Computers in Human Behavior, vol. 51, pp. 752–761, 2015.
3. M. Akc¸ayır and G. Akc¸ayır, "Advantages and challenges associated with AR for education: a systematic review of the literature," Educational Research Review, vol. 20, pp. 1–11, 2017.
4. J. Pelet, Mobile Platforms, Design, and Apps for Social Commerce, Business Science Reference, Pennsylvania, Pa, USA, 2017
5. R. D. A. Budiman, "Developing learning media based on AR (AR) to improve learning motivation," Journal of Education, vol. 1, no. 2, pp. 89–94, 2016.
6. E. Solak and R. Cakir, "Exploring the efect of materials designed with AR on language learners' vocabulary learning," Te Journal of Educators Online, vol. 12, no. 2, pp. 50–72, 2015
7. M. Billinghurst, A. Clark, and G. Lee, "A survey of AR," Foundations and Trends in Human-Computer Interaction, vol. 8, pp. 73–272, 2015
8. X. Wei, D. Weng, Y. Liu, and Y. Wang, "Teaching based on AR for a technical creative design course," Computers and Education, vol. 81, pp. 221–234, 2015.
9. Y. Jain, "8 examples of AR apps and their successful uses," 2017, https://www.newgenapps.com/blog/augmented-reality-appsar-examples-success
10. M. Popolo, J. Schneider, and P. Hyde, "Te 10 best virtual reality headsets," 2018, https://www.lifewire.com/best-virtual-realityheadsets-4060322
11. M. Akc¸ayır, G. Akc¸ayır, H. M. Pektas¸, and M. A. Ocak, "AR in science laboratories: the efects of AR on university students' laboratory skills and attitudes toward science laboratories," Computers in Human Behavior, vol. 57, pp. 334–342, 2016
12. V. Gopalan, J. A. A. Abubakar, A. N. Zulkifi, A. Alwi, and R. C. Mat, "A review of the motivation theories in learning," AIP Conference Proceedings, vol. 1891, no. 1, 2017
13. I. C. S. da Silva, G. Klein, and D. M. Brandao, "Segmented ˜ and detailed visualization of anatomical structures based on AR for health education and knowledge discovery," Advances in Science, vol. 2, no. 3, pp. 469–478, 2017
14. H. Wu, S. W. Lee, H. Chang, and J. Liang, "Current status, opportunities and challenges of AR in education," Computers and Education, vol. 62, pp. 41–49, 2013
15. J. Pelet, Mobile Platforms, Design, and Apps for Social Commerce, Business Science Reference, Pennsylvania, Pa, USA, 2017.