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VR BASED 360 DEGREE MODEL HOUSE SHOWCASE GOOGLE CARDBOARD

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Abstract: Mobile technology have rapidly advanced over the years, successful researches of Virtual Reality on mobile phones under the different mobile platforms have made it possible to implement augmented reality technology on mobiles. Now the possibility of combining real time visual with VIRTUAL reality seems to be a success. Virtual Reality (VR) has become one of the leading trends in recent years. There is no doubt this technology will dominate in 2020 and the years that follow. Real estate agents, designers and people who plan to remodel their houses, apartments or offices can all find an ideal solution in AR.The model house is a package of commercial houses, and is also a reference example of the decoration effect of the buyers. The model house is the face of a real estate, and its quality directly affects the sales of the house. While VR allows users to see things in a three-dimensional space in a timely and unrestricted manner, as if they were there. Therefore, combining VR with a model house can bring a better experience to users.

1.INTRODUCTION

Virtual Reality (VR) is not an entirely new concept; it has existed in various forms since the late 1960s. It has been known by names such as synthetic environment, cyberspace, artificial reality, simulator technology and so on and so forth before VR was eventually adopted. The latest manifestation of VR is desktop VR. Desktop VR is also known by other names such as Window on World or non-immersive VR .As a result of proliferation of desktop VR, the technology has continued to develop applications that are less than fully immersive. These non-immersive VR applications are far less expensive and technically daunting and have made inroads into industry training and development. VR has perhaps at last come within the realm of possibility for general creation and use most especially in education where computer-based virtual learning environments (VLE) are packaged as desktop VR. This, in turn, points the way for its inclusion in educational programs .

These computer-based virtual learning environments (VLEs) have opened new realms in the teaching, learning, and practice of medicine, physical sciences and engineering among others.

1.2 OBJECTIVE

To enhance an immersive experience than regular photographs or videos 360° panoramic contents are used.
To develop the real estate business an imaginary virtual reality of 360 degree panoramic content is used to attract the buyers to buy the property

1.3 SCOPE

Virtual Reality is something that allows everyone to experience the impossible. Virtual Reality is the term used to describe a three-dimensional for yet to building things, which is used in real estate , remodeling apartments, reconstructing offices

2.ANALYSIS

2.1 SYSTEM ANALYSIS

2.1.1PROBLEM STATEMENT

- Virtual reality systems should, to a high degree, accurately model their real life counterparts so that when people need to be trained or exposed to a situation where it is too dangerous to experience the real thing, you can instead **enter the safe and controlled environment of virtual reality.**
- Virtual reality is still a developing field with constant advances being made. These advances need to be tested to determine how accurately a system is modeled with this new set of tools.
- We propose to compile tools for building a virtual environment and for testing it in comparison to the actual real-life environment to determine how accurately our system emulates the real experience.

The benefits of testing virtual reality example :**equipment on a roller coaster environment** are that it requires less equipment, because a roller coaster is not as interactive as other systems, and that a roller coaster produces many different types of biological responses, which we are able to measure for both the real-life experience and for the virtual experience alike.

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2.1.2 EXISTING SYSTEM:

- Marketing a property that isn't constructed yet has always been a challenge for real estate developers and agents. You've probably seen large three-dimensional models that show a new property or neighborhood. These models help potential buyers imagine the architecture.
- When it comes to interiors of these new constructions, real estate agents create large showrooms with full-scale models of apartments. Needless to say, these marketing methods require considerable investment. Virtual reality can effectively solve this problem and allow potential homebuyers to carefully check out both the exterior and interior of yet-to-be-built properties. While we have used these contributions to enable our VR, we believe they have the potential to impact many more applications in the field of visual computing.

- When you are working in a 180 degree format, you can step off at any point for a break, because the semi-circle is like a platform in which you stand, however if you are working the 360 degree format, there is no other platform, you are the platform from which all things come and all things are disseminated. The quality for 180-degree videos is grainy.

2.1.3 PROPOSED SYSTEM:

- Virtual Reality (VR) became one of the leading trends in Real estate agents, designers and people who plan to remodel their houses, apartments or offices — all can find an ideal solution in VR.
- Our results indicate that the transition type has a significant impact on the subjective feeling of moving through the house, with the 3D model and Mobius transitions producing a stronger feeling of moving through the house than the teleport transition.
- A pointing task was unable to identify any significant difference in spatial awareness between transition types. . This app helps to use VR in home design to make panorama 360º images.
- It allows you to develop creative and advanced home and interior projects for your family or business and also helps to design a copy of your house and export the final result into panorama 360º images and videos.
- The designs created in 360º can be viewed on google card board

3.SYSTEM DESIGN

Design is the creation of a plan or conversation for the construction of an object or a system . it is a roadmap or a strategic approach for someone to achieve a unique expectation . design is the process of defining the architecture , components , modules, interface and data a system to satisfy specified requirements . it could be seen as the application of the system theory to product development.

4.MODULES

The proposed system has three modules which clearly depicts the flow of system. The modules are listed below,

- Head tracking
- 360 Viewing
- Content Creation

Head tracking

The head tracking system in VR headsets follows the movements of your head to sides and angles. It assigns X, Y, Z axis to directions and movements, and involves tools like accelerometer, gyroscope, a circle of LEDs (around the headset to enable the outside camera). Head tracking requires low latency, i.e. 50 milliseconds or less, otherwise, users will notice the lag between head movements and a simulation.

Content Creation

Though not engineered and implemented well enough yet, motion tracking would raise VR to a totally new level. The thing is, that without motion tracking you'd be limited in VR – unable to look around and move around. Through concepts of the 6DoF (six degrees of freedom) and 3D space, options to support motion tracking fall into 2 groups, optical and non-optical tracking. Optical tracking is typically a camera on a headset to follow the movements, while non-optical means the use of other sensors on a device or a body. Most of the existing devices actually combine both options.

5.1.2. Viewing 360 degree

Some headsets contain an infrared controller that tracks the direction of your eyes inside a virtual environment. The major benefit of this technology is to get a more realistic and deeper field of view. 360-degree VR (360-degree virtual reality) is an simulation of an altered, substituted environment that surrounds the user, allowing them to look around them in all directions, just as they can in real life. VR is poised to give birth to new forms of storytelling and emotionally powerful experiences. Yet making VR is perceived as intimidating: it's expensive and requires both special hardware and skills. we have evaluated important aspects of 360 videos, namely presence, perceptual quality, and acceptability.

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Also, the evaluation was carried out with different influence factors such as encoding parameters, content characteristics, device types, and rendering modes.

5.RESULT AND DISCUSSION

The impact of different transition types in MV360M for static scenes, in which users can navigate around a captured virtual space via a connected network of panoramic views. The three transition types explored were teleportation, a linear move through a 3D model of the scene, and an image-based Mobius transformation. The metrics investigated were spatial awareness, users' movement profiles, transition preference and the subjective feelings of moving through the space, disorientation, dizziness, and naturalness. Our results indicate that the transition type has a significant impact on the subjective feeling of moving through the space, with the 3D model and Mobius transitions producing a stronger feeling of moving ¨ through the space than the teleport transition. The transition type also had a significant effect on a user's movement profile, with users taking on average 1.6 seconds longer to initiate the next transition following a teleport transition than a 3D model or Mobius transition. ¨ The subjective feelings of naturalness, disorientation and dizziness were not significantly different between transition types. A pointing task was unable to identify any significant difference in spatial awareness between transition types. These results indicate that the choice of transition type may have an impact on several aspects of the user's experience when exploring MV360M, and as a result content creators must think carefully before selecting a transition type.

6.CONCLUSION

In this project we have demonstrated an virtual reality App that highlight of our system is mainly the project engineering optimization We concluded from a user study that this App strongly improves the sense of connection with the VR model house, if you simply walk around the room and watch the home placement effect. There is absolutely no way to highlight the advantages of VR., and motivates people to know more about the real estate related information. While we have used these contributions to enable our potential to impact many more applications in the field of VR model House display of Real Estate

7.FUTURE ENHANCEMENT

Virtual Reality seems to be the next big revolution that awaits us and once it becomes widely popular in the web, it could truly elevate our lifestyle. Like in any case, one cannot accurately foresee the changes that they will bring upon us but we surely can make some assumptions based on the present trends. allow images to be seen in HD. They are developing Virtual Reality headsets in 8K and with much more powerful processors. There is even talk that in the next few years they could integrate Artificial Intelligence. The latest 5G standard can also provide very interesting scenarios for the evolution of VR. This standard will allow **more devices and large user communities to be connected.** In addition, its almost imperceptible latency will make it possible for consumers to receive images in real time, almost as if they were seeing them with their own eyes.

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