Event Designer Using Augmented Reality

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***Abstract*— The purpose of the application is to introduce the concept of augmented reality in event designing and management. Planning and designing an event can be stressful and a tiring task for both the clients and event planners. Event designers usually show various catalogs of the designs of the event based on the venue. Clients normally do not get a good picture of the design without a visual design demonstration. Event designers usually go through an extent of sketching the setup which is not only time-consuming but also might not satisfy the customers as it may not provide a good visualization as opposed to a real-life demo. For the implementation of the idea, we weighed in all the resources available in the field of AR concerning its portability, comparability, and software requirements and deduced to develop it using Unity engine with the additional integration of Vuforia. The Event Designer using Augmented Reality is beneficial to people in organizing any kind of event designing.**

Keywords – Augmented Reality, Event Designing

I. INTRODUCTION

Planning and designing an event can be stressful and also a tiring task for both the clients and event planners. Event designers usually show various catalogs of the designs of the event based on the venue. It is a time-consuming task and clients usually do not have the time to go through it. It is difficult to fulfill the customer's contentment of decoration of the event setup without providing an imaginary picture to refer will make them confused.

Clients normally do not get a good picture of the design without a visual design. It is also difficult for event designers to gain the attention of the customers by just providing them with the idea and showcasing the images of previously done events. Some event designers also go to an extent of sketching the setup which is not only time-consuming also may still not satisfy the customers as it doesn't provide better visualization. There are high chances that the clients may not be satisfied with the outcome of the event designing as it may not meet their expectations. Hence there should be a way to let the customers view the complete setup of the event beforehand using Augmented Reality.

The purpose of this application is to provide customers and event designers with a per-event demonstration for events such as birthday parties and other local events through the help of portable augmented reality support. Event designers and customers that use the application can be considered as the target audience. It allows the event designers to involve their clients in every step of the designing of the event through our application thus ensuring to meet the client expectations.

Users will be able to use the mobile application to plan an event by placing the props into the virtual view of the area, that can be seen on the smartphone screen. With AR implemented, they will be able to choose models (props) from the catalog and place the same into the virtual composite of the plane surface by focusing the surface through the camera.

II. RELATED WORK

The first is the 'IKEA augmented reality (AR)' application that allows users to test IKEA's products in real time through Apple iOS 11's ARKit technology. Dubbed IKEA Place, the iPhone- and iPad-compatible free application features realistically-rendered, true-to-scale 3D products. "The application automatically scales products, based on room dimensions, with 98 percent accuracy. In order to visualize a product within a space, the application scans the expanse of a room through an iPhone or an iPad camera. Users can browse through over 2,000 IKEA products on an online database, to make their selections. Once chosen, users must point the device to the desired spot in a room, then drag and drop the selected product onto the space. IKEA Place can also save each user's favorite products, share their selections on social media, and facilitate direct purchases through the IKEA website. According to the company, the first set of launched products mainly include large-scale furniture such as sofas, armchairs, coffee tables, and storage solutions.

Secondly, Pokémon Go is a 2016 augmented reality (AR) mobile game developed and published by Niantic in collaboration with Nintendo and The Pokémon Company for iOS and Android devices. A part of the Pokémon franchise, the game is the result of a collaboration between Niantic, Nintendo and The Pokémon Company. It uses mobile devices with GPS to locate, capture, train, and battle virtual creatures, called Pokémon, which appear as if they are in the player's real-world location.

The third is Google Lens, which is an image recognition technology developed by Google, designed to bring up relevant information related to objects it identifies using visual analysis based on a neural network. First announced during Google I/O 2017, it was first provided as a standalone application, later being integrated into Android's standard camera application.

III. THE PROPOSED SYSTEM

The proposed system is an android based application implementing augmented reality using Unity with Vuforia AR. This product will initially be developed with just the dependence on an android smart-phone with the camera but will expand as features are added to work on the goals of the project. Users will be able to use the mobile application to plan an event by placing the props into the virtual view of the area, that can be seen on the smart-phone screen. With AR implemented, they will be able to choose models (props) from the catalog and place the same into the virtual composite of the plane surface by focusing the surface through the camera.

A. AR interface

Here the user can navigate the phone camera to the target position of where the item would be placed. The app then analyses and takes in the coordinates for the accurate positioning of the props. The application aims to visualize the décor elements in the surrounding space displayed on the smartphone screen. This will be provided with the use of the smartphone camera and AR functionalities.

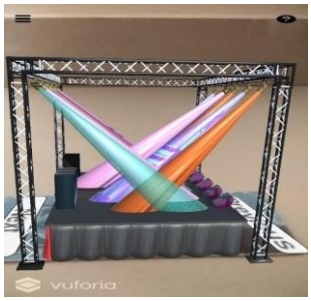

Fig. 1. AR Interface

B. Prop Models

The prop cards can be used to display multiple models of the same category. There is a next and previous button which when clicked changes the prop. Depending on the event, the user will select the decor accordingly. Once the user places the card, the same will appear on the screen in the direction of the camera. The props associated with the respective image target recognized are displayed. The user can then browse through the categories and each object will be displayed by clicking on the previous and next buttons.

C. Help and Menu

Users are provided with a function called Help where further explanations and directions on how to use the application. They are also provided with a Menu function that displays the list of categories available. The help button will provide the user with instructions on how to use the application in case of difficulty and for efficient and smooth functioning.

IV. METHODOLOGY

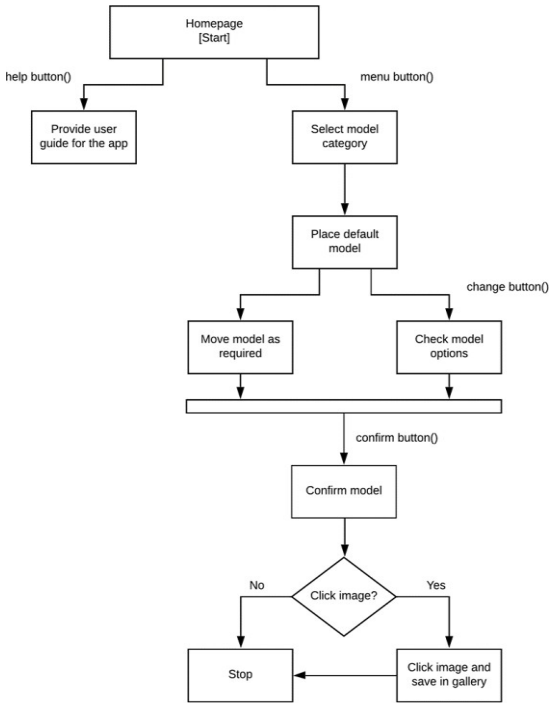

Fig. 2. *Flow Diagram*

The basic methodology that we rely on is the concept of Visual Inertial Odometry which is the identification of a real-world space through a virtual lens (smartphone camera) to create a background on the phone display to add virtual items in it. Visual Inertial Odometry is implemented by us through the android smartphone using the combination of the devices IME sensors (Accelerometer, Gyroscope & Camera) which is used to highlight feature points (camera understands the world concerning these points).

We make use of image targets which are physical cards used to display the objects on them. These targets are stored in the database generated by Vuforia. Each target has to be unique and complex for the API to recognize it easily. These image targets correspond to a specific category of models.

The props that have been used for our project are downloaded as an obj file and are imported into Unity. These props are placed horizontally on top of image targets. When the user directs the camera on the image target the default model corresponding to the image target is displayed along with two virtual buttons, ‘Next’ and ‘Previous’.

Each category is provided with various kinds of models. The user can then use these buttons to browse through the category to view the models within it. The user can then move the image targets around to create a specific layout depending on the event.

The app consists of a help button that provides the user with instructions to use the app. The menu button displays the catalogue of models that are provided. The camera button enables the user to click the image of the final event design and the image is saved on the user’s device.

RESULTS AND DISCUSSION

On Completion of this application the customers and event designers will get a pre-event 3D demonstration for events such as birthday parties and other local events through the help of portable augmented reality support. Event designers and customers that use the application can be considered as the target audience. It allows the event designers to involve their clients in every step of the designing of the event through our application thus ensuring to meet the client expectations.

Fig 3. Result

CONCLUSION

The need to merge the physical world and the virtual world has been long overdue. Augmented Reality can create a geometrically accurate composite of the real world in virtual reality and this model alone is enough to replace long documentations and sketches of the layout that can only be understood by a professional. Through this project, our main aim is to provide customers with a pre-event demonstration for certain local events. Successful implementation of augmented reality in the designing of an event would mean that the need for a lot of financial resources can be reduced before organizing the actual event and also provide the clients with the virtual setup of the event. Since AR is still very much in its early stages, its potential to impact the events industry is huge. Considering the current AR trends, it's likely that events like marriage and birthday parties will become less reliant on physical objects during their planning, which in turn could save events companies from overbearing demonstration and planning costs.

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THE PROPOSED SYSTEM REFERENCES

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