

# Creating Realistic Model of 2D Layouts using Augmented Reality

Manisha S. Otari

Assistant Professor, Department of Computer Science & Engineering, N. K. Orchid College of Engineering & Technology, Solapur, India

**Abstract:** Augmented reality (AR) is an emerging computer technology where the perception of the user is where he/she can understand the 2D layouts into a realistic model. The application is blended between a realistic environment and computer-generated virtual objects coexisting in the same space. This application can be used by any person where he/she can give the 2D layout as an input for this application and the application can generate 3D realistic model. The aim of this application is to visualize layouts without thinking it in a technical perception.

**Keywords:** ARCore, Scene form, Android Studio

## 1. Introduction

Imagine how your life would be different if you had timely solutions at your fingertips. Let's take a traveler's experience, for instance. The application as your ultimate tour guide – no need for lengthy information search, preliminary bookings or planning your itinerary in advance. Just Go and live in the moment and follow your heart's appeal. Remember your childhood sensations? The desire of adventure, the excitement of discovery, the magic of make-believe. You travel the streets and the place is no longer alien – it opens up and reveals every hidden nook, tells an enchanting story of every object at which you direct your smart phone's camera.

So, here we are going to develop an application which is based on augmented reality. This show will show the actual or 3D view of the object which is going to be developed by the developer by using 2D layout of the object. This application will represent the virtual view of the actual object. Just think of that we can see what will be happen with the object which we will buy from the developer.

The application will help the user to unveil the past, present, and future of the technology.

That is being used by the developer, and handled by the customer. It will make a clear idea to the customer that what he/she is going to have. It will be more efficient to the developer also that what kind of object they have to make for the customer and how does it look like. It also ensures the good customer reviews as both developer party and customer party knows the actual view of the product that they will have. This will be advantage to the developer to increase the customers so that their business will grow. Developer will use our application for customer satisfaction. Our application will be available soon on

Google Play Store for various user. Depending upon user the extra file used for application will downloaded. So considering all this points we have developed an application for "CREATING REALISTIC 3D MODEL FROM 2D LAYOUTS".

### A. Simplify to visualize the product

Augmented Reality (AR) is a ground breaking technology which enhances the real world by virtual objects in order to create a new mixed reality environment. Typically Augmented Reality systems consist of an output device displaying the virtual information, a tracking system for determining position and orientation of the user, a computer processing the necessary data and arbitrary input devices for navigation and interaction.

### B. Recommending right products to customers

As we see it is difficult to the customer to recognize that what kind of product they actually going to have when it is totally developed. So, this application will help them to visualize how their product will look like.

### C. Helps developer to develop an object

When the developer is having the 2D layout of the object they can use this application and make sure what they have to actually make for the customer. To get satisfaction of the customer by their service.

### D. Being user-friendly

By having 2D layout of the object the application will gets its dimensions and create a virtual view of the object and shows how the product going to look like.

### E. Being available for users 24 X 7

Our Application is going to help 24 x 7 to take the 2D layout and create a 3D or virtual image of the object.

## 2. Implementation

First of all, we need an environment to develop this application. For actual environment we have used Unity software. To run the AR application or to support the AR to application we have used ARCore a Google platform. For revolution of model, zoom in/out or for change of color of model we have done scripting with C# language.

### 3. How to use

As we know, this application will run on android platform. Install the apk file into our android device. After installation, allow the permission which will use by application (for example camera permission). Application will start automatically the camera for scanning purpose. We have to place camera on alphabet to generate the augmented image. With respect to alphabet we will get the 3D model.

#### A. Road

Here when user scan the alphabet R after the scanning is done the vuforia analyse the targeted image and checks for the desirable image in the data set to replace it. Then unity takes this image as input convert it to 3D model then that 3D model will get converted to augmented image which shows the constructed Road.



Fig. 1. Constructed road

#### B. AR (Augmented Reality)

Augmented reality is a technology that works on computer vision based recognition algorithms to augment sound, video, graphics and other sensor based inputs on real world objects using the camera of your device. It is a good way to render real world information and present it in an interactive way so that virtual elements become part of the real world Augmented reality displays superimpose information in your field of view and can take you into a new world where the real and virtual worlds are tightly coupled. It is not just limited to desktop or mobile devices.

### 4. Conclusion

This paper presented an overview on Creating Realistic Model of 2D layouts using Augmented Reality.

### References

- [1] [https://en.wikipedia.org/wiki/Augmented\\_reality](https://en.wikipedia.org/wiki/Augmented_reality)
- [2] <https://thinkmobiles.com/blog/what-is-augmented-reality>
- [3] <https://www.quora.com/How-does-Augmented-Reality-Work>
- [4] <https://www.forbes.com/sites/bernardmarr/2018/07/30/9-powerful-realworld-applications-of-augmented-reality-ar-today/>
- [5] <https://developer.vuforia.com/>
- [6] <https://codelabs.developers.google.com/codelabs/sceneformintro/index.html?index=..%2F..%2Fio2018>
- [7] <https://www.digitaltrends.com/mobile/best-arcore-apps-for-android/>
- [8] <https://developers.google.com/ar/>