

Augmented Reality for Real Estate

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Abstract— Augmented Reality (AR) transforms the real physical environment by overlaying digital elements like visuals, music, or sensory inputs, enhancing the user's perception of reality through technology. With technological advancements, AR is increasingly adopted across various industries, including real estate. Although largely untapped, AR presents vast opportunities for the real estate sector. By integrating AR, developers can address the challenge of showcasing properties to consumers effectively, saving time and resources. Augmented Reality revolutionizes how investors, stakeholders, and clients interact with properties, offering immersive experiences without physical visits. Our project aims to develop a user-friendly mobile app enabling users to virtually explore properties in 3D, eliminating the need for physical visits. Additionally, this app empowers developers to diversify their marketing strategies and provide buyers with unforgettable home experiences.

I. INTRODUCTION

The first ever Augmented reality app was created in 1968 by father of computer graphics “Ivan Sutherland”. It turned into an AR head-installed display gadget. From then on AR superior as we arables and digital shows. It could format virtual factors at the actual international photo, as an instance, show geological information approximately about a selected area. In the year 2008, Augmented reality has opened a way of using augmented reality in industrial purpose. A Garman agency developed an augmented reality application for BMW Mini. To enable it a customer had to point a camera at a printed a dand the model of car auto come alive at the display. The customer could manipulate car on the screen by controlling it and move it around to view at different angles, simply by manipulating the printed image. In the early 2010s Augmented reality introduced that might have interaction with actions in the real world in real time. For that reason, the virtual try on technology has all started by augmented reality’s instant face recognition revolutionized buying experience. Now

you can try out anything form virtual making up your face to place a couchin side your home.

In 2016, augmented reality(AR) catapulted into the mainstream with the release of Pokemon Go, an AR game that grew to 45 million daily active users after just two months on the market. Since then AR has been adopted in various industries.

Let’s take a look at what augmented reality is, the benefits of augmented reality.

Augmented reality can be described in somewhere between physical world and virtual world where computer generated images, texts, sounds, animations, videos are layered on the top of the physical view. Users can interact with these elements via application on smart phones, tablets, augmented reality headsets like Microsoft Holo Lens, and augmented reality glasses like Vuzix Blade.

1.2. Objectives of present study:

- Make the Auto CAD drawing plans into a 3D architectural visualization.
- Texturing the models to give a better look.
- Develop 3D models of the Auto CAD plans with Exterior and Interior views.
- To develop and implement an innovative augmented reality (AR) solution.
- Making “Real view: AR for real estates” an application with Augmented Reality and Virtual Reality along with First person view.

II. SOFTWARE USED

2.1. Auto desk 3ds Max

Autodesk 3ds Max, in the past 3D Studio and 3D Studio Max, is an expert 3D PC designs program for making3D activity’s, models, recreations and pictures. It is made and conveyed by means of Autodesk Media

and Entertainment. It has showing capacities and versatile module designing and can be used on the Microsoft Windows. It is every now and again utilized by computer game engineers, numerous TV ad studios and design representation studios. It is additionally utilized for motion picture impacts and film pre-representation.

Autodesk 3ds Max is a professional 3D modeling, animation, and rendering software widely used in industries such as architecture, film, gaming, and design. It allows users to create stunning visual effects, animations, and virtual environments. Some key features include polygon modeling, texturing, rigging, animation tools, dynamics simulation, and advanced rendering capabilities. It supports various file formats for interoperability and offers extensive customization through scripting and plugins. Additionally, Autodesk provides comprehensive documentation, tutorials and community support for users to learn and enhance their skills with 3ds Max.

2.2. UNITY 3D:

Unity (game engine) As of 2018, the engine has been extended to support 27 platforms. The motor can be utilized to make both three-dimensional and two-dimensional amusements and additionally reenactments for its numerous stages. Unity is a cross-stage diversion motor created by Unity Technologies, previously reported and discharged in June 2005 at Apple Inc.'s Worldwide Developers Conference as an OS X-elite amusement motor. Starting in 2018, the motor has been reached out to help 27 platforms. The motor can be utilized to make both three dimensional and two-dimensional amusements and also reenactments for its Numerous stages.

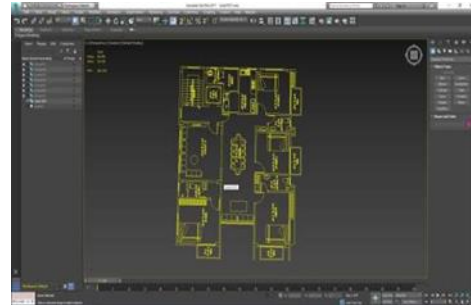
Unity is a powerful and versatile real-time 3D development platform used to create interactive experiences across various industries, including gaming, film, architecture, automotive, and education. Here's a brief overview of Unity 3D software:

III. EXPERIMENTAL PROCEDURE

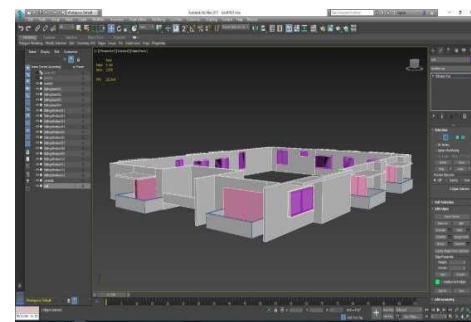
The experimental procedure has been described in following paragraphs.

3.1 Design Procedure:

Then, select the faces and cut out the window and door space according to the AutoCAD plan. Then change standard primitive to door and select door for making the doors. I have used Pivot door and sliding door. Then place the doors according to the plan in the 3d model. Same goes for windows.



Imported AutoCAD model in 3ds max.



Placing windows and doors in 3ds max

- Texturing work flow

Open Material Edit or press CTRL+M (Shortcut key). Change the material mode to compact Material mode. Select a Material slate and double click on its diffuse, click bitmap to insert an image as a texture map. I have used wooden textures for room floor, tiles for kitchen and bathroom floor. I have used multi/sub-object material system for the floor texturing. To do this, I pick another material slate and changed its mode to standard to multi/sub object material mode. Then I set the ID's I needed. I picked each material to each id. Then I assigned the material to the floors. I have selected each floor and assign material ids to each to get the right material I have set for them. After that I have used UVW map modifier to each object to set the texture right.

CONCLUSION

Technology Evaluation as the project revolved around Auto desk 3ds Max and Unity it was necessary to learn. This created a large stress on the project initially which pushed it slightly behind schedule. This is to be expected with any new technology; however, talking on the REALVIEW project increased the risk with using new methods of exporting the models to unity. Creating models in 3ds max and Exporting them was a good learning experience.

Representation of various cameras, edges, surfaces and lighting makes a moment reaction environment; this decreases the time required to design key components however increases the requirement for experimentation. It ought to likewise be noticed that the 3d yield is exceptionally great for engineers with no past involvement in such an amazing situation.

Creating curved, rectangle, square model, Max seems a little out of its depth. Whilst it offers a coding environment to create animation it sometimes seems too heavy to handle even slightly complex tasks – especially making a model.

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