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Vehicle Showcase Augmented Reality App with AI Bot

Nandhakumar.S[1], Sajan.S[2], Vigneshwar.D.K[3], Aruna.T.N[4]

UG Students[1,2,3] Assistant Professor[4]
Department of Computer Science and Engineering, KGiSL Institute of Technology, Coimbatore, TamilNadu, India

Abstract - The aim of this project is to develop AR vehicle showcase android app using Unity 3D and Vuforia. A voice controlled cloud based machine learning AI bot is integrated with wit.ai API. This app will project 3D model of vehicle in the real world, which makes the user to experience the view of real car showcase. Then by using our voice commands, the integrated bot will react to perform particular operation like open the car doors, change the colours, start the engine etc. The traditional way of buying a car is by visiting a car showroom and buying a car of our choice based on the features and accessories. The work pressure of the customer has been reduced. However, in Augmented Reality we will be projecting the car through the android application. Therefore, we can see the car in 360 degree in every angle. Through the projection, the customer gets full satisfaction as they are seeing the car in front of their eyes. We can also view the car through virtual projection and can alter the car that we want to like changing the color of the car, changing the alloys of wheels and we can redesign the car in our manner. We will be connecting our project with wit.ai bot so that it understands the human natural language and it proceeds upon that command. Finally, we can see our car in the way we want to alter it or view it in format of design.

Keywords - Unity 3D, Vuforia, Augmented Reality, AI.

I. INTRODUCTION

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real-world are "augmented" by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory, and olfactory. The overlaid sensory information can be constructive or destructive. In this way, augmented reality alters one's ongoing perception of a real-world environment, whereas virtual reality completely replaces the user's real-world environment with a simulated one.

Initially augmented reality was used largely in entertainment and gaming businesses, but now other industries are also showing interests. Augmented reality is also transforming the world of education, where content may be accessed by scanning or viewing an image with a mobile device or by bringing immersive, marker less AR experiences to the classroom. Augmented reality is used to enhance natural environments or situations and these information can be virtual or real.

II. PROBLEM DEFINITION

Usually we will visit the car showroom to view the features and accessories of car and purchase the car based on our needs. But in Augmented Reality we will be projecting the car through the android application. So we can see the car in 360 degree in every angle. Through the projection the customer gets full satisfaction as they are seeing the car in-front of their eyes. We can also view the car through virtual projection and can alter the car that we want to, like changing the color of the car, changing the alloys of wheels and we can redesign the car in our own manner. We will connect our project with wit.ai bot so that it understands the human natural language and it proceeds upon that. Finally we can see our car in the way we want to alter it or view it in format of design.

III. APPLICATIONS

Some of the applications of the AR have been described below

1) Education: AR provides extra digital information to the students on all the subjects, and make complex information easier to understand. AR has the ability to connect reality which opens more options for teachers and students.

2) Sales & Marketing: AR has become a game-changer for marketing and sales industries, were the companies face a rapid return on these AR investments.

3) ***Medical Fields:*** The real-time detailed images has transformed the practice of medicine more easy. Surgeons also have many anatomical data from images at their disposal, but they are mostly looking at 2-dimensional displays that they review prior to surgery.

IV. OBJECTIVE

There exists possibility that customers visits car showroom and don't find the car they are looking for. This can be a waste of time. Fortunately, this problem can be eliminated with Augmented Reality. Dealers and showrooms can use AR for showing customers different variants of cars they wish to see and test drives them to their heart's content. This can also simplify the decision-making process and help in ensuring the customer satisfaction.

V. MODULE SPLITUP

A. Module 1

1. Creation of intro scene.
2. Adding of 3D car models.

B. Module 2

1. Adding the windows, chassis and base of the car.

C. Module 3

1. Integration of voice AI controlled bot.
2. Communication code using C#.

D. Module 4

1. Improving the code.
2. Fixing the audio ascents and video quality.

VI. EXISTING SYSTEM

In the existing system, it is used to view the 3D model of the car using 2D Object recognition were in 2D Object recognition App ground plane detection is not possible.

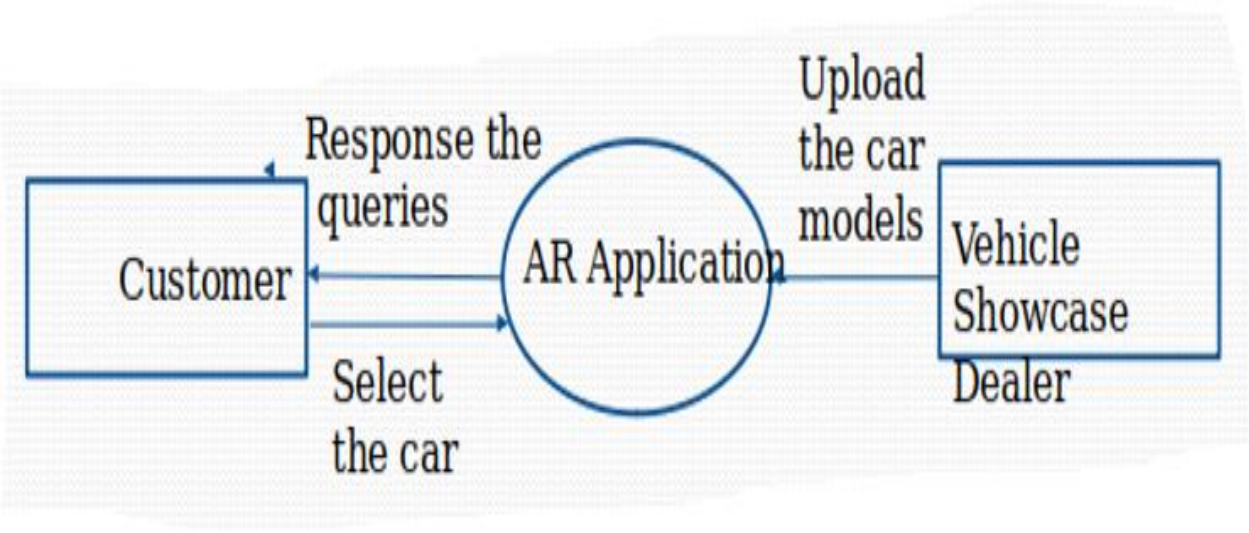
A. Drawbacks of existing system

1. In previous versions of AR, applications 2D Object recognition was used which won't give complete user experience.
2. To overcome this we have implemented 3D Object recognition with Ground plane detection.

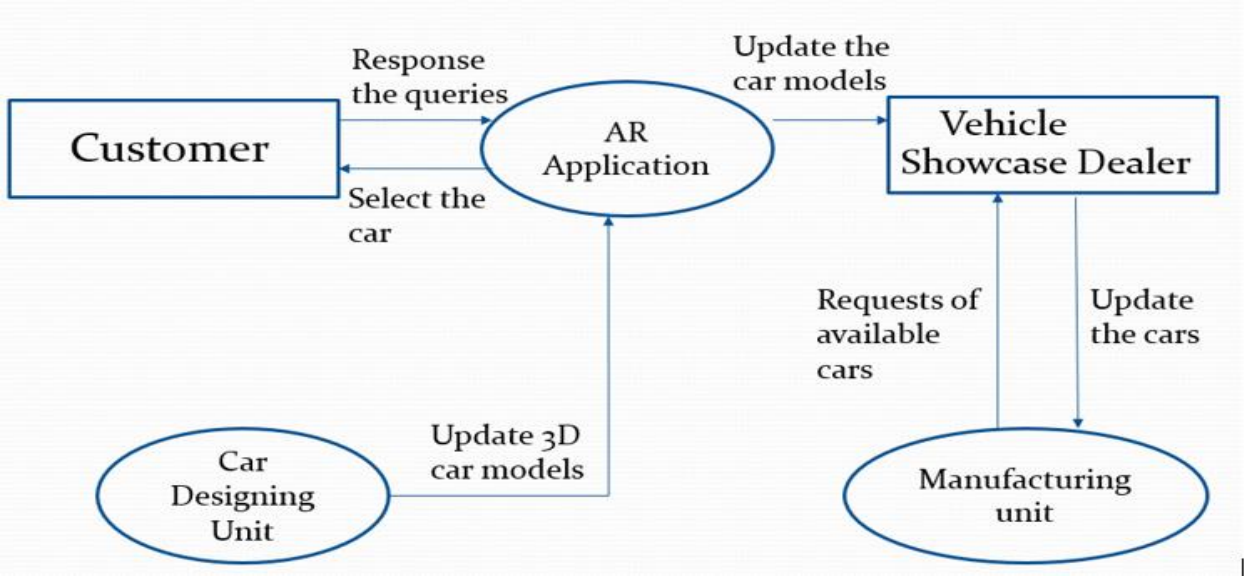
VII. PROPOSED SYSTEM

AR is all about superimposing computer-generated images on top of your view of reality, thus creating a composite view that augments the real world. In our App, we are implementing 3D Object recognition and Ground plane detection is possible

VIII. DATAFLOW DIAGRAM



DFD LEVEL 0



DFD LEVEL 1

IX. CONCLUSION

The main aim is to create a vehicle showcase app which projects a full size vehicle in the real world. Using voice commands user can open the car doors, change the colors etc. Even we can view a car promotional video on an AR video screen placed on the dashboard of the car. In addition, to build commercial ready apps, record your voice The main aim is to create a vehicle showcase app which projects a full size vehicle in the real world. Using voice commands user can open the car doors, change the colors etc. Even we can view a car promotional video on an AR video screen placed on the dashboard of the car. In addition, to build commercial ready apps, record your voice and automatically send the voice command to an online AI, which we train along the way.

X. REFERENCES

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