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Augmented Reality Maps

S Megaloshini, M Mridhul, Sa Pragadish, R Priyadharshika and P Subhashree

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SUBHASHREE P[1], MEGALOSHINI S[2], MRIDHUL M[3], PRAGADISH SA[4], PRIYADHARSHIKA R[5]

[1st] Assistant Professor, Department of Computer Science and Engineering, SNS College Of Technology, Coimbatore, Tamil Nadu, India

[2,3,4,5] Student, Department of Computer Science and Engineering, SNS College Of Technology, Coimbatore, Tamil Nadu, India

Abstract: ***The introduction of Android system and smart phones are growing faster and more easily with internet access to smart phones, user location information can be quoted anywhere at any time with ease. With this growth, many new technologies are introduced and to be very beneficial to the Users as they can be used with the existing technologies applications in various fields. One of the major technologies introduced is Augmented Reality, this can be used to interact with the real world using virtual objects and videos. Augmented Reality based Technology enables the provision of a variety of information such as photos and placement of buildings in the travel field. Most of the unconventional virtual programming are used for the Visual Trace Way (Marker and Marker less method). For visual tracking, digital tagging and digital information should be provided while the Nonvisual Trace Way requires the use of Hardware (G.P.S, sensors etc.). Most navigation requests can only show the path from the user's current location to its destination. In this paper, the design and implementation of augmented reality system are discussed. It will use a well-designed smart phone camera and GPS to display user centric information in real time on a smart phone.***

Keywords: Augmented Reality, Navigation, Physical World, Travel.

1. INTRODUCTION

Augmented reality (AR) is a technology that enhances the real-world environment with digital information and interactive elements. It allows users to experience a hybrid environment where virtual objects and information are seamlessly integrated into the physical world. In the context of tourism, AR has the potential to revolutionize the way travelers interact with destinations and enhance the overall travel experience. By providing real-time information and interactive elements, AR applications can help travelers navigate unfamiliar environments, discover new points of interest, and learn about the history and culture of a destination. In this paper, we propose the development of a tourism application that leverages AR technology to create a more immersive and personalized travel experience. Our application aims to provide travelers with a range of features and functionality that make it easier to plan and enjoy their trip, including interactive maps, personalized recommendations, and real-time updates about events and attractions. Through the use of AR, we believe our application has the potential to significantly enhance the travel experience and provide travelers with a more meaningful and engaging way to explore a destination.

There are many different ways that AR can be used in a tourism application to enhance the travel experience. One key feature is the ability to provide real-time information and guidance to travelers as they navigate unfamiliar environments. This can be achieved through the use of interactive maps that highlight points of interest and provide directions to key locations. Additionally, AR can be used to provide travelers with information about the history and culture of a destination, such as by displaying virtual markers or overlays that provide context and background information about significant landmarks or sites.

Another key aspect of a tourism application using AR is the ability to provide personalized recommendations and suggestions based on the interests and preferences of the user. This can be achieved through the use of machine learning algorithms that analyze the user's past travel history and preferences to generate recommendations for activities and attractions that are tailored to their interests.

Finally, a tourism application using AR can provide real-time updates and alerts about events, attractions, and travel disruptions, helping travelers to stay informed and plan their trip more effectively. Overall, the use of AR in a tourism application has the potential to significantly enhance the travel experience by providing travelers with a more immersive and personalized way to explore and discover new destinations.

2. LITERATURE SURVEY

AR can be used to provide travelers with interactive maps, personalized recommendations, and real-time updates about events and attractions, helping them to plan and enjoy their trip more effectively. AR can help travelers navigate unfamiliar environments and discover new points of interest, making it easier for them to explore and discover new destinations.AR can be used to provide context and background information about landmarks and sites, helping travelers to better understand the history and culture of a destination.AR can create more immersive and engaging travel experiences, helping to make the trip more enjoyable and memorable. AR allows users to experience a hybrid reality where virtual elements are seamlessly integrated into the physical environment, creating a more immersive and engaging experience.AR applications can provide users with real-time information and guidance as they navigate unfamiliar environments, making it easier to find their way and discover new points of interest.AR can be used to provide personalized recommendations and suggestions based on the interests and preferences of the user, helping them to discover and explore new destinations in a more meaningful and engaging way. AR can be used to visualize and interact with complex systems, such as machinery and buildings, in a more intuitive and efficient way, improving productivity and reducing the risk of errors.AR can be used to provide information and access to people with disabilities, such as those with visual impairments, helping to improve accessibility and inclusivity.

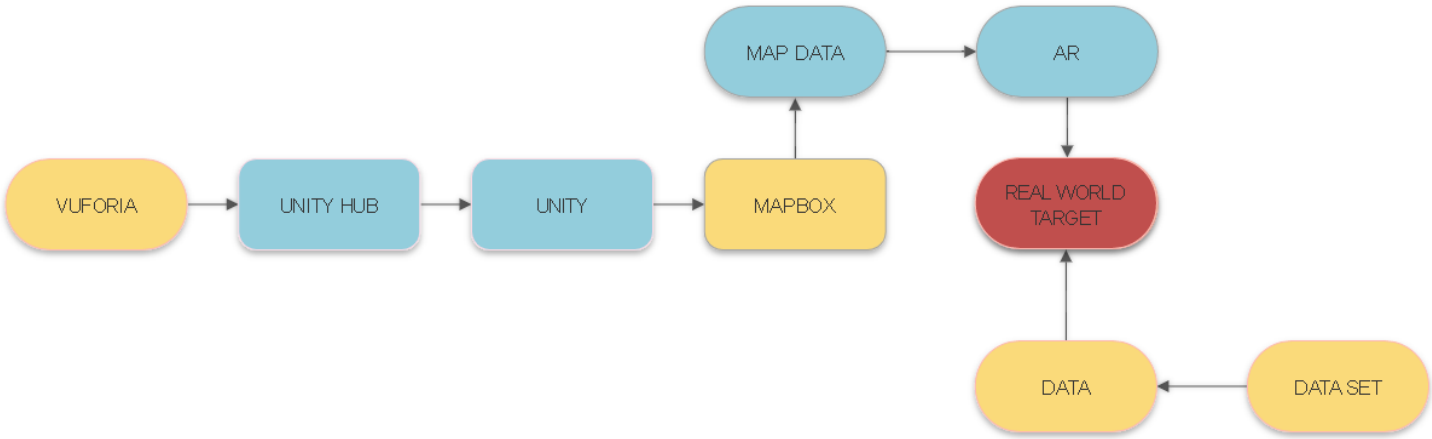

Fig 1.1 Architecture Diagram

Vuforia is a software platform for creating augmented reality (AR) experiences. It provides developers with tools and libraries for building AR applications that can be accessed using a smartphone or tablet. Some of the key functions of Vuforia include:

- Target recognition
- Image tracking
- Object tracking
- Cloud recognition

Vuforia is used in a variety of applications, including entertainment, education, and marketing, to create immersive and interactive AR experiences. It is available as a cloud-based service and can be accessed via APIs or through a variety of third-party integrations.

3. PROPOSED SYSTEM

3.1 ARCHITECTURE DIAGRAM

In Fig 1.1, We Understand that the architecture data flow and software working process of this software. This software, where Users like Admin, Costumer and who can access this software, they upload the data or read the data, and delete the data in the software. They can see for the best recommendation using particular application

Unity is a cross-platform game engine and development platform that is used to create games and interactive content for a wide range of platforms, including PC, console, mobile, and virtual and augmented reality (VR/AR).

The recommendation process has been occurring through the Collaborative filtering algorithm K-Nearest Neighbor which makes the recommendation of hotels and other thigs easy for the user. It works by identifying the K number of training examples that are closest to the location, and then using these examples to make a prediction about the hotels.

Mapbox is a mapping platform that provides developers with tools and APIs for building custom maps and location-based applications. Mapbox offers a variety of mapping services, including the ability to display maps, search for and geocode addresses and places, and calculate directions and routes.

3.2 MODULES LIST

In this Software, there are several modules to access the database and can read, write, update, and delete the data. several features can be implemented in this software namely, the user can update any new location, they can also add new location or any details the other used need. First the costumer needs to register in the application, if he/she is a new user or they can directly sign in and redirect to next page where they can add the details and fields required. Next, the page will redirect the user to view page where the user can view the root in an AR view.

3.2.1 REGISTRATION PAGE

A registration page is a page on a website/application that allows users to create an account or register for access to certain features or content on the site/app. It typically includes a form that users can fill out to provide information such as their name, email address, number and password. Once the user completes the form and submits it, their account is created and they can log in to the site/app using their email address and password. Registration pages are commonly used on websites that offer paid content or services, but they can also be used on sites/app that offer free content or resources as a way to gather information about their users.

3.2.2 LOGIN PAGE

A login page is a page on a website that allows users to enter their username and password to access their account or a protected area of the site. It typically includes a form that users can fill out to enter their login credentials. Once the user enters their information and clicks the "login" or "submit" button, the site verifies their credentials and grants them access to their account or the protected area if they are correct. Login pages are commonly used on websites that require users to create an account in order to access certain features or content. This could include sites that offer paid content or services, as well as sites that offer free content or resources. By requiring users to log in, the site can track their activity and personalize the content or services they receive. To access a login page, users typically need to click on a "login" or "sign in" button or link, which is usually located in the top right corner of the homepage or in the site's main navigation menu. Some sites may also have a dedicated login page that users can access directly by entering the URL in their web browser.

3.2.3 VEHICAL DETAILS PAGE

A vehicle detail page is a page on a application that provides detailed information about a specific vehicle. It typically includes information about the vehicle's make, model, year, trim level, and mileage. Vehicle detail pages are commonly found on car dealership websites, where they are used to showcase the vehicles that are available for sale. They may also be found on sites that specialize in buying and selling vehicles, or on sites that provide information and resources for car enthusiasts. In addition to presenting information about the vehicle, a vehicle detail page may also include links to related pages on the site, such as a page with financing options or a page with information about the dealership's service and repair capabilities

3.2.4 TRIP DETAIL PAGE

A trip detail page is a page on a application that provides detailed information about a specific trip or vacation package. It typically includes information about the destination, duration, and itinerary of the trip, as well as the cost and any included amenities or activities. Some trip detail pages may also include photos or videos of the destination, customer reviews, and information about the travel company or tour operator that is offering the trip. Trip detail pages are commonly found on travel websites, where they are used to showcase the various trips and vacation packages that are available for booking. They may also be found on the websites of travel companies or tour operators, or on sites that specialize in finding and comparing travel deals.

3.2.5 ROOT SELECTION PAGE

A path selection page in an application is a page or screen that allows users to choose from a list of options or paths in order to navigate to a specific destination or achieve a particular goal. It may include a list of links or buttons that represent different paths or actions that the user can take. Path selection pages are commonly used in applications that have a complex or multi-faceted structure, where users need to navigate through multiple screens or menus in order to access specific features or functions. By providing a path selection page, the application can help users quickly find and access the content or functionality they are looking for.

3.2.6 REAL WORLD + AR OUT-TURN

AR out-turn visualization is the use of augmented reality (AR) technology to allow users to see how a product will look in their space before they buy it. This can be particularly useful for products such as furniture, home decor, and appliances, which may be difficult to visualize or judge based on a 2D image or description alone. The user can then move the device around to view the product from different angles and see how it will look in different parts of the room. Real-world visualization is the process of creating a visual representation of a real-world environment or scene. This can be done using a variety of techniques, including computer graphics, photography, and video. Real-world visualization is often used for a wide range of applications, including mapping, architecture, engineering, and entertainment.

4. RESEARCH CHALLENGES

There are many challenges that researchers may face when conducting research, depending on the specific field and topic they are studying. Some common challenges that researchers may encounter include:

- Access to data or resources
- Limited time or funding
- Ethical considerations
- Difficulty in replicating results
- Difficulty in publishing results

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