

Steer the Sphere: Navigate the Location nearby Using Augmented Reality

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Abstract – As the world is moving towards innovation, the lives of humans is getting tangled with the development around and so the need of alternative to find means and ways to navigate through places is needed. Augmented reality is a new technology which integrates the virtual world of a smartphone with the real world of nearby locations observed by the humans. The application is solely developed for the purpose of surfing through places when the location for a user is new. The application is developed taking into consideration different layers of users, to make sure even a layman finds it easy to operate. The main screen of the proposed application gives the address of the current location and two buttons. The first button is the map view and gives the representation of the current location on the map, with another option of augmented reality view. The second button on the main screen is the augment camera view. When this button is clicked the real world objects are then augmented with the location to be searched on the screen. The screen also provides the button if a user wishes to switch to the actual map view for ease of understanding.

Keywords- Augmented reality, Navigate, Augment camera.

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INTRODUCTION

The objective of this android application for smart phones is to give information about the area to be navigated, which gives the information about the landmarks which are in the vicinity of the current location. This mobile application is a finder of the areas which are to be searched or navigated. The application uses the information of the location of user in order to locate his/her position and then the user may turn on the camera, where there are two options to be used, the augmented reality camera and the map view of the space.

The application also uses the knowledge of the current location and nearby landmarks to augment them on the camera preview, thereby giving a more contextual experience to its users. As the Augmented Reality often referred to the AR, is a combination of real and virtual (computer-generated) worlds. Given a real subject, which is captured on the camera this technology augments the image with the information. Often a user finds it difficult to locate the desired destination when the area entered is new. The issue of searching desired locations has always been a difficult task, in order to sort this, the concept of 'Steer the Sphere' has come in place. The application provides a quick look of destination. This is only possible when that particular location is marked. The marker is responsible to give the area with all the places which are landmarks. Thus, having the places or locations marked is helpful when navigating through places. Augmented reality is vital to augment the real world objects with the virtual objects, and the location of the user is helpful while navigation. Since, people have issues when travelling through new places, this application acts as a guide. Android is used as a base for the application to be used on, because it itself provides a base to millions of users across the world. This application will not only help navigate through places but will also make the users feel safe.

II-LITERATURE SURVEY

Augmented reality (AR) and virtual reality (VR) are becoming a part of everyday life with the advance of other technologies such as computer vision systems, sensing technologies, graphics, mobile computing, etc. Their primary goal is to help users achieve their goals effectively and efficiently with satisfaction. [1] This paper describes the trends of how user studies have been incorporated into AR and VR papers published in two

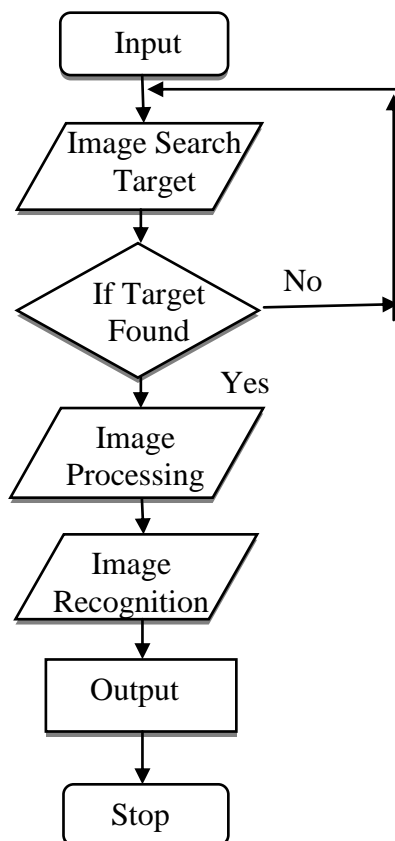
major conferences over the past three years. In addition, this paper presents implications on what needs to be taken into account when planning a user study in the field of AR and VR research.

Extensive research and development has taken place over the last 20 years in the areas of pattern recognition and image processing. Areas to which these disciplines have been applied include business (e.g., character recognition), medicine (diagnosis, abnormality detection), automation (robot vision), military intelligence, communications (data compression, speech recognition), and many others. [2] This paper presents a very brief survey of recent developments in basic pattern recognition and image processing techniques.

EXISTING SYSTEM

1. The system which already exists in the environment is efficient by does not give the exact positioning of the desired location.
2. The places which are interior to the actual space visible are not exactly displayed.
3. People may find it difficult to identify the places on their own due to lack of knowledge of that area, thus there is no precise navigation of the area.
4. Highly compatible applications are developed but their lack in providing the actual location and information is why this system has been proposed for.

ARCHITECTURE DIAGRAM



PROPOSED SYSTEM

I. System Introduction

With growing population, the need for providing facilities to this population is growing each day. Where humans have now come across the technology of driverless cars, and machines which reduce human efforts, the need to bring the concept of no human help required to navigate through places was required to bring into picture. Thus our system focuses on giving humans a safer experience. In underdeveloped areas where women and children do not find safe to move around, the application will help them to find their way to the right location. Thus no third person can misguide these individuals in finding their way. Misleading is mostly observed when people have no right intentions, whom to trust n whom not to is a big question. Our application helps solve all these issues in one go. With installation of this application all need to be done is point the camera to which area you want to know about, may it be cafes or buildings anything, it will give the information of it then and there itself.

II. System Design

The home page of the application starts with camera view: Augmented Reality Camera view Virtual Camera Mode view. An AR UI for navigational guidance that adapts to the levels of positional tracking accuracy associated with the different tracking modes. The AR camera will provide the actual view of our surrounding into the real world. The information box is augmented into the real world view.

Augmented reality camera, augments the real world with the information to be displayed on our android device is the best way to understand how and what we are trying to navigate. The system is made more flexible by using the Geo Static Maps initially, through which the accurate co-ordinates will be achieved. View management attempts to ensure that virtual objects are laid out appropriately in the field of view such that they do not occlude more important physical or virtual objects and that their relationships with other objects are unambiguous.

III. System Features

- Efficient working
- Switching between AR cam and Virtual cam is available.
- Preserving and developing application for the effective use of technology.
- Positioning is made easy with the use of Geo Static Maps.
- Database is used for verifying the target area with the data fed in the system, if both are found to be exactly identical then it displays the

information.

- The admin can add new locations of landmarks as and when needed.
- Easy to operate, needs an android device for smooth functioning.

FUTURE APPLICABLE AREAS

The application is based on android, where there are no much requirements present to install the application. This application is mostly for areas with huge population and traffic, as a person in emergency of searching a hospital will find his/her destination within minutes. The information, may it be hospitals or metro stations, all will be provided precisely which will save users time and efforts.

It will always apply when navigation is to be done, in searching for chemists and cafes, in search of petrol pumps, etc. The application will only grow with the new changes and thus demand in technology. The application can further apply for military purposes for locating the armories.

CONCLUSION

The people will now find it easy to move around in new places. The incentive of implementing this application is to make the lifestyles of humans even more easier. As the population will increase each day, it is turning into very tough to manage the whole thing hastily. Our propounded android utility can act as an assistant to control the hardship and issues that arise while stepping into a new town or city.

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