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INTELLI I DETECTOR

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Abstract: **Location-based augmented reality gives app developers the opportunity to engage on a more exciting and personal level with users. Rather than the regular, same display for all that you get in most apps, this technology allows you to deliver an experience relevant to where the user can get all the facilities on the go. No need of switching to different applications for the different functionality. It was first tested in one of the shopping mall in Singapore. In this application, using current location's latitude and longitude, we are detecting the current location's name, address, directions, ratings, reviews. In order to provide the better shopping experience to the user, it assists in finding the nearby hotels, Spa, Restaurants, ATMs, Banks, Pub,etc. Along with this, it will also provide the directions to reach that place using GPS.To expand the business, We have separate section called as 'Business Account' where in business can be added**.

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I INTRODUCTION

Shopping is an important part of our daily life and today's vibrant economy. With the proliferation of smartphones and ubiquitous supporting of 3G/4G/LTE networks, we have the opportunity to enhance the shopping experience through mobile technology. In this paper, we demonstrate Intelli I Detector, a novel location-based augmented reality application, for intelligent shopping in malls. The key functionality of Intelli I Detector, is to provide an augmented reality interface – where people can simply use ubiquitous smartphones to face the retailers (e.g., PastaMania and Starbucks), then IntelliShop will automatically recognize the retailers (i.e.,it is PastaMania or Starbucks) and bring their online reviews from various sources (including blogs, forums and publicly accessible social media) to display on the phones. It is worth noting that, IntelliShop provides seamless location-based augmented reality, which makes the review obtaining process much easier – the user now does not need to type the retailer name or browse through some retailer catalogue; instead she just simply raises the phone camera against the retailer for immediately getting its reviews displayed at the right location.

Technically, the retailer recognition is achieved by the location and the orientation information sensed by the phone. Along with this we are providing an interface to add business by the retailer, called as 'Switch to business', where any type of business such as shop, restaurant, ATMs, Banks, Pubs can be added. Where in the added business has to be verified by some recognized body such as Google. Also, the user will be able to get access to all the nearby places through GPS based location mechanism.

II. PROJECT SCOPE

In this project, we are focusing on different modules, in which we are developing image based shop detection, nearby places locator, adding the business, viewing the business.

User classes and Characteristics: The users of this application are normal people having android smartphone.

Operating Environment: Android device with the high speed internet connection and well resolution camera for good performance along with the android version 7.0 and above.

User documentation: All the users will be provided with the user manuals and system information documents

Assumptions and Dependencies: All the users are expected to use an android smartphone with operating system having version 7.0 and above. The mobile should have well working camera along with the location enables service. The user must also have a Google account linked to the smartphone.

Goals and objectives:

- To capture the image and get the Shop's Name, Address, Map Location, Ratings and Reviews.
- To get the nearby places such as Hotels, Spa, Restaurants, ATMs, Banks, Pub,etc.
- Retailers can add their own business along with necessary details and location.

Software Requirements:

- Operating System: Android
- Programming Environment: JDK 1.8
- Programming Tool: Android Studio

Database Requirements: We are using SQLite as the database. We are using the concept of parser and converter in this system. The information will be generated and managed at run time.

III. APPLICATIONS

- **Smartly designed:** This system is exclusively designed for improving the human shopping experience by providing all the necessary information on the go. Just by clicking the image, he can get the details of shop.
- **Secure:** It requires valid Google for authentication of user. So, only Google verified users can access the application. Hence it provides security upto great extent.
- **User friendly:** The environment is designed in consent of user convenience.

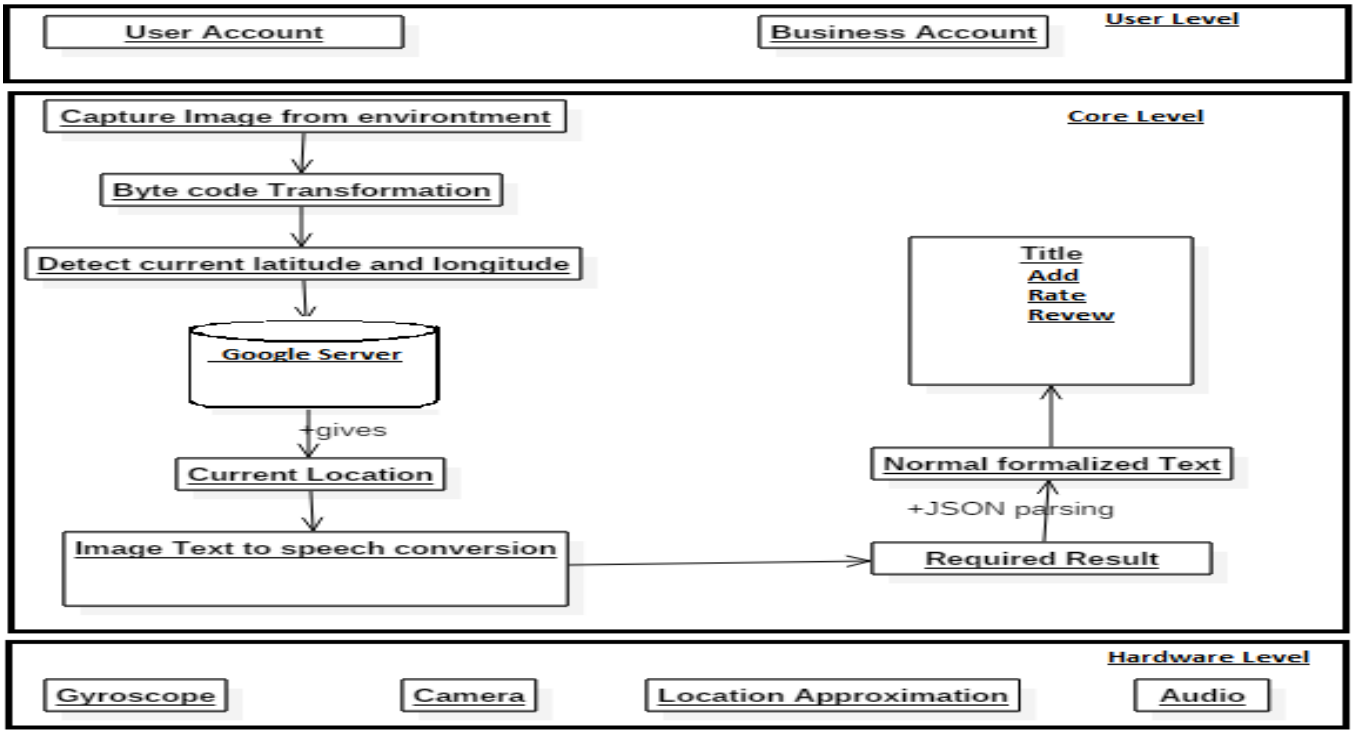

Figure 1. Architecture Diagram

IV. IMPLEMENTATION

Search: In Search method, the user clicks the image of shops(or maybe Hotel, Spa, Resto etc.) which gets stored in the database. The current location's Latitude and Longitude are sent to the google server. Which in turn sends the info about the location in the form of JSON. Then the parsing of JSON file is done to cast it into normal formatted text.

Nearby Places: This method uses the pre built database relying on SQLite which gives the nearby places such as Spa, Restaurants, ATMs, Banks, Pub on the basis of current location

Business Account: Here the data about the business retailer will be stored on a local server which will be added to the map upon verified by some authorized body.

We are making use of TensorFlow. TensorFlow is a machine learning system that operates at large scale and in heterogeneous environments. TensorFlow uses dataflow graphs to represent computation, shared state, and the operations that mutate that state. It maps the nodes of a dataflow graph across many machines in a cluster, and within a machine across multiple computational devices, including multi core CPUs, general purpose GPUs, and custom-designed ASICs known as Tensor Processing Units (TPUs).

Besides this, we make use of Google Cloud vision API and Deep Neural Networks for detecting the image.

V. CONCLUSION

We presented Intelli I Detector, a location-based augmented reality application for intelligent shopping in

malls. IntelliShop allows people to use ubiquitous smartphones to get the reviews of interested retailers by augmented reality.

We demonstrate the effectiveness of Intelli I Detector, in a test bed established in a real mall of Singapore. In the future, we consider to leverage heterogeneous inertial sensors on the phones to reduce the site surveying effort in a large-scale deployment.

VI. FUTURE SCOPE

The future of augmented reality seems really bright and progressive. Like other different evolving technology. It can be associated with other inter disciplinary domains such as Artificial Intelligence for the betterment of the application .Also the data added by the business retailer can be verified by the Google and added to the map.

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