CSCI992 Project review of Augmented Reality campus navigation

1. Project background

With the development of big data network and smart mobile phone, more and more people especially for students make use of the applications of mobile phone. Meanwhile, the use of mobile phone will make our daily life convenient. Our project is a smart phone navigation application that can help students go to correct destinations on campus.

2. Project modification

1. Application scenario

We suppose a scenario that there are many buildings in the campus which do not have a name and there are many buildings near the objective destinations. New students who are first come to the campus. Then do not know the correct way to the destination what they want. First of all, they can open the application in their smart phone. Meanwhile, the program will prompt the user input a destination. Then they program will show a direction which depends on the user's location on the screen. At the same time, the program will open the camera. Then the user should hold the smart phone and keep scanning the surroundings. After a while, the label of destination will be shown on the screen with the distance and direction. Students can follow the prompt information so that they can find the objectives.

2. Platform modification

Because of lack of equipment of current members, we have to change the platform. We change the platform from the IOS to Android. Considering the practicality and convenience, we also modify PC to mobile platform.

3. Technique modification

Because there are two main coder leaving and prior vision of project need a huge of time and work. After project member meeting, we decided two possible way. The first point is deleting some functional requirements. Such as the Open TLD which is an open source. The second point is problem of calculation. Because of the high resolution ratio pictures, even the pictures in different angles or whether there is some other objects cover the aim objects or the difference of light source. We cannot use deep learning technique. Although we use Artificial Neural Network (ANN) or Self-organizing map (SOM), the calculating of data will beyond our imagination and our requirement ability.

3. Current plan

1. The design and operation of Android platform

1. UI: How to build the platform and framework, especially the design of user interface design.
2. Navigation: how do we design the navigation structure? It includes two parts
    1. How to make sure the direction of objectives.
    2. How to make sure the way and distance of objectives

2. The application of camera

In our project, we should connect the camera and keeping scan the surroundings.

3. Integrating the finished functional requirement

4. Detailed project plan

1. Basic UI design and operations in Android platform (week 6 and week 7).
2. Basic navigation API invoking (week 8).
3. How do we build Android framework (week 9 and week 10).

4. Inserting or showing labels on the screen using direction and destination (week 11 and week 12).
5. Operations of compass and calculating the direction of destination (week 13).
6. Program testing (week 14 and week 15).