# Proposal of Indoor localization and mobile computing

Yuan Fangxu, 20799126, [fyuanad@connect.ust.hk](mailto:fyuanad@connect.ust.hk)

# 1. Project Description

A variety of approaches to the study of indoor localization from different perspectives, all of which approach the study of indoor localization and zoning in an efficient and inexpensive manner. Most of them are based on the traditional RSS fingerprint technique, but novel in their use of different clustering methods to classify indoor areas.

# Final Report

Details in the final report will include analysis of using smartphones to collect acceleration data as well as Wi-Fi RSS fingerprint data is crucial for indoor localization. In my opinion, the initial idea about IMPLEMENTATION is that a rough building plan can be obtained from the user's motion trajectory, which can be obtained using anchor point in paper #1 This trajectory can be obtained by means of anchor points in paper #1. In the step of identifying houses and corridors, we can use whether the user is moving or stationary to determine whether it is a corridor or a room and then cluster the Wi-Fi RSS fingerprint values of each room based on the DBSCAN algorithm to automatically obtain the number of rooms in the building. Finally, we can obtain the order and size of the rooms based on the room adjacency diagram and the force-directed dilation method in Paper #3, which enables an efficient and automatic way to obtain the floor plan of the building and locate the users based on their acceleration data and RSS fingerprint data, which greatly reduce the workload of human labelling.

# Workload and Grading Criteria

This project is regarded as a standard 3-credit project. Final grade depends on final project report and system. Each could be counted as 50 percent to the final grade.