MEEN 689 Term Project Proposal

Group Members:

Ju-Hsuan Chang	727005179	jhchang19950903@tamu.edu
Kuan Wei Liu	329007124	kerwin.liu0134@tamu.edu
Jui-Chun Yang	230002810	yang_tw@tamu.edu
Yen-Hsiang Huang	329007045	jeffrey4696@tamu.edu
Li-Tsung Lin	629009385	litsung.lin@tamu.edu

Project:

Localization with IMU and light sensors

Sensors (all from android phone):

1. IMU
2. GPS
3. Light sensor

Detail:

In this project, we will design a two-dimensional map, with several light sources on the wall as landmarks. With multiple smartphones mounted on a mobile robot(or some moving platform) we collect raw data from the sensors mentioned above as the robot goes through the map and performs localization with particle filter.

In order to make an accurate estimation of the robot's motion, we will combine IMU with GPS by sensor fusion. If time permits, we will perform localization with Kalman filter, and compare the performance between the two methods.