

# Assignment 3

18-798 IVM

Due: Oct. 21, Tuesday, 2014

Please include figures, source code, results and discussions in the report.

## Problems

1. (25%) Download the robot Roomba video from the Assignment 3 folder. Apply Approximate Median filter to segment the foreground (the robot) and the background. Take a screenshot of the foreground and the background in your report (Hint: you may start with the sample code from the BB).
2. (Bonus 10%) How many seconds are needed to make the robot Roomba to disappear into the background? Please describe the calculation.
3. (25%) Use the same video to plot the Motion Energy Image.
4. (25%) Use the same video to plot the Motion History Image.
5. (25%) Track the green light on the robot Roomba and plot the trajectory of the light in the white color and superimpose to the background in ONE image (Hint: use color-based tracking or mean-shift based tracking algorithms).