

Steven Paustian

CSE 489

Term Project Progress Report

Date Due: 3/31/14

Instructor: Dr. Jun Zheng

For my Term Project I am doing a research survey of phone sensors including accelerometer, GPS, magnetometer, gyroscope, GPS and camera. I'm interested in these sensor's capabilities (raw-readings) and how one algorithmically increase their capacity for use, especially through combination. I have completed the accelerometer and magnetometer section, including code samples for common ways to access and exploit their potential.

I am also interested in the errors inherent in these sensors; most particularly how to minimize them, and understanding how these errors limit what we can achieve in terms app capability. For instance, the accelerometer and gyroscope can have large errors attached their readings, but together using certain algorithmic filters we can calculate things like the angle we have rotated around an axis (x, y, or z). Minimizing this error can help with applications such as augmented reality, which experience certain limitations on mobile phones. I am currently working on this section.