EE/CprE/SE 492 BI-WEEKLY REPORT 2

1/30 - 2/13

Group number: 32

Project title: Development of a Smart Sensing System for Road Performance Data Collection

Client &/Advisor: PROSPER - Bo Yang & Halil Ceylan

Team Members/Role: Victor Guerra, Ethan Young, Michael Petersen, Shlok Singh

o **Weekly Summary:**
The last two weeks we continued to debug the IRI calculation that we got from Bo in fortran. The fortran is not converting over nicely and this will require more work to get right. Development on the Arduino has continued with saving gps coordinates and acceleration data to the sd card. Also the server has a database setup now to use when saving iri and gps coordinates.

o **Past week accomplishments**
   ● Arduino continuously samples Accelerometer and writes to the SD card. Implementation of faster polling rates and GPS data is ready, pending device memory.
   ● Continued debugging efforts with IRI calculation
   ● MySQL database setup as well as a different cloud setup

o **Pending issues**
   ● In order to increase the polling rate of the Arduino, additional memory is needed from cleaning up module libraries.
   ● The IRI calculation is still getting us a value of over 300,000. We have narrowed down the issue to the filtering arrays that increase the profile data by factors of up to twenty repeatedly for each data point. Most likely, the filtering arrays are being calculated incorrectly, but this requires more investigation

o **Individual contributions**

Name	Individual Contributions	Hours this week	Total Hours
Victor Guerra	IRI Calculation, Arduino Testing	12	89
Ethan Young	IRI Calculation, Arduino Testing	12	93
Michael Petersen	Arduino Testing	12	84
Shlok Singh	Server Preparation/Development	12	86

o **Plans for the upcoming week**
- With the Arduino device, testing is to be done on the transmission of data from the SD card to the web server. From there, it will be easier to clean up module libraries, remove unnecessary memory usage, and increase the polling rate.
- There will also be a start of the sampling rate done this week including when we should start sampling based on the speed the car is moving.
- We will narrow down the IRI calculation issues more than we have done already and get it functional.

o **Summary of weekly advisor meeting**

Meeting with Bo, we updated him on our progress so far as well as explain what we are working on currently. Yeuyi is currently out of the country.