
EE/CprE/SE 491 WEEKLY REPORT 1

8/26 – 9/22

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:** This week and last week we worked on a timeline as a group to get ourselves a bit more organized. There were contributions made with finding and comparing different parts and microcontrollers including the start of a pro-con list. We also began researching the International Road Index. There were calculations found on the IRI as well as intervals for each data sampling. There still is much more to find out with the IRI specifically with using the physical hardware components.
- o **Past week accomplishments**
 - Developed a timeline and workflow for the project
 - Began hardware research and considered Raspberry Pi vs. Arduino controllers
 - We decided that Arduino's are more cost effective and are fully featured for this project
 - Began software research into IRI calculations
 - We began considering how to develop testing data for our initial software calculations
 - The IRI calculations depend on frequency of measurements; we will need readings approximately every 300mm to sufficiently calculate IRI, which correlated to a 75Hz polling rate at the standard 80km/h (49.7mph) golden car test speed
- o **Pending issues**
 - No pending issues

o **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Victor Guerra	Advisor Meeting + Group Meeting	4	5
Ethan Young	Advisor Meeting + Group Meeting	4	5
Michael Petersen	Advisor Meeting + Group Meeting	4	5
Shlok Singh	Advisor Meeting	1	2

o **Plans for the upcoming week**

- Create finalized 'Parts List' and decided microcontroller + sensors required to begin initial design

o **Summary of weekly advisor meeting** *(If applicable/optional)*

This week we met Halil, Bo, and Yueyi and discussed the beginnings of the project, the requirements, and plans for future meetings. We also looked at the provided vehicle that is currently used to take IRI readings to learn about the purpose of our project. For the upcoming meeting we made plans to have a timeline for the semester and set rough deadlines for different milestones.