

EE/CprE/SE 492 WEEKLY REPORT 4

2/27/2020-3/12/2020

Group Number: 17

Project Title: Development of an App for Android Smart Phone for Pavement Roughness Estimation

Client/Advisor: Halil Ceylan

Team Members:

Tanner Dempsay – Communications Manager

Joe Van Treeck – Data Manager

Christian Royston – Git Master

Justin Kuennen – Web Master

Greg Starr – Logistics Manager

Kyle Eckrich – Report Manager

Weekly Summary

- Backend
 - The route management Python tool has been fully integrated with the NodeJS server, allowing for data to be passed back and forth using JSON format.
 - Added placeholder socket listeners for route data fetching for users. Kyle will work to add database read functionality to these.
 - Added support for user's car configurations to be passed into the python tool. These contain constants used in the IRI calculation.
- Frontend
 - Justin has added map views to the route history list and has been tweaking the UI to work across different device screens.
 - Justin also ported over the functionality from the prototype application. This includes the ability to record routes and send that data to the server. Now all of our major components are under a single Android project.
 - Greg has ported the route tracing from the prototype app to the main project.
- IRI calculation
 - The IRI calculation functions now use the car constants passed into them instead of default values.
 - Joe is reworking the state-space computations using numpy/scipy
- Peer evaluation
 - In addition to project, our group also worked on the peer evaluation video required, including recording the presentation and relevant demos.

Past Week Accomplishments

- Route record functionality in final app project
- Finished communication structure between server and python tool.
- Route tracing on map view.

- Peer evaluation presentation

Individual Contributions

<u>Team Member</u>	<u>Contributions</u>	<u>Hours This Integration</u>	<u>Cumulative Hours</u>
Tanner Dempsay	Helped port network interface used for route data sending to main Android project. Finished python tool communication protocol with server.	18	60
Christian Royston	Working on settings screen for updating vehicle constant values like mass.	14	53
Joe Van Treeck	Reworking calculations to better match state-space representation of Quarter-Car model	13	60
Justin Kuennen	Adding map view to route history screens	15	56
Kyle Eckrich	Working on route data read/write to database for users	16	64
Greg Starr	Added route tracing to map view on route record screen	13	50

Plans for the Upcoming Week

- Finish route data transfer to DB
- Finish IRI calculations in Python
- Finish route list view on frontend
- Beta of settings screen