

sdmay19-16: Smartphone App to Detect TwD (Texting while Driving)

Week 5 Report

October 7 - October 13

Team Members

- Kristina Robinson - *Project Lead*
- Andrew Knaack - *Lead Designer*
- Ryan Baker - *Lead Architect*
- Sara Mace - *Meeting Scribe*
- Lucas Golinghorst - *Test Engineer*
- Derek Clayton - *Report Manager*

Summary of Progress this Report

- Our focus for this week was to start collecting data for four out of our six methods of detecting texting while driving. Each of us took pictures in our car from five points of reference for our phone camera test method. For the texting speed method, we all conducted texting speed trials to come up with our average words per minute when typing. During the tests, we monitored errors per minute as well. Everyone recorded their average walking speeds to/from class and their leisurely walking speeds, for data for the speedometer test. Some members conducted research on machine learning involving photography and image identification.

Pending Issues

- Three of our solutions still need methods of data collection.
- More research must be conducted on machine learning image identification
- We must determine a method for gathering data for the centripetal acceleration research
- Research on machine learning methods for phone handling must be conducted

Plans for Upcoming Reporting Period

- Everyone is expected to do research on general machine learning to get an understanding of it.
- Derek and Ryan will conduct research on methods of measuring centripetal acceleration for data collection.
- Everyone will brainstorm methods of collecting data for phone handling and centripetal acceleration.
- Kristina will ask for feedback on the project plan if not given by the 16th.
- Sara will continue conducting research on machine learning imaging solutions.
- Andrew will continue preparing the application in Android studio for test implementation.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Kristina Robinson	Started collecting data for determining user's texting speed and walking speed. For texting speed I completed three trials of a typing test to get my average words per minute, characters per minute, and errors per minute. To determine walking speed, I used a	6	31.5

	speedometer application to see my average walking speed.		
Andrew Knaack	Contributed to statistical research by measuring my own average texting speed, spelling, taking pictures of the inside of my car, and walking speed (as assigned). Also researched how to run a background service in Android Studio and the proper interface to implement.	6	31
Ryan Baker	Helped add to statistical research by adding my average texting speed, along with errors per minute. In addition providing pictures for where people would normally text from my car and recording my average walking speed at different intervals. I also looked a bit into machine learning.	6	31
Sara Mace	Contributed to the statistical research by determining my average texting speed, spelling errors and determined my average walking speed. I also took pictures of the inside of my car. I started doing some research into how we can use machine learning into the photos of the car we took.	6.5	32
Lucas Golinghorst	Tested my average texting speed, recording my words per minute, characters per minute, and words per error. I also tested my average walking speed and continued research on machine learning strategies.	6	32
Derek Clayton	Contributed to data pool with photos from five reference points in my car. I also measured my texting speed and error rate, adding it to the data pool. I downloaded a speedometer app to measure my walking speeds at a casual pace, to-class pace, and urgent pace.	6.5	30.5
		Total Group Hours:	188

Gitlab Activity Summary

- 10/9/18: Andrew Knack tested the android studio environment on his computer with the mobile application (5 changed files, 5 additions, 10 deletions).