

## EE / CprE / SE 491 – sdmay19-01

### Athlete Motion Tracking

#### Week 9 Report

4/4/19 – 4/10/19

Client: Nathan Johnson

Faculty Advisor: Phillip Jones

#### Team Members:

Nathan Mazarelo — *Weekly Reporter/Software Developer*

Monte Friestad — *Spokesperson/Software Developer*

Madeline Rogers — *Meeting Facilitator/Hardware Maintainer*

Ryan Hansen — *Scribe/Hardware Maintainer*

#### Weekly Summary

This week our team prepared for a meeting with our client. The current status of the pressure sensors system, camera setup, web app, and design analysis were showcased. PCB circuit was revised as per request of client. Voltage conversion and data saved to sd card was completed. Research was completed for resources needed for testing. In the data analysis program, work was done on the layout of the subplot as well as syncing them to the frames of the video. The animations were exported to a video output and the raw angle data were sent to a text file for integration with web application. In the web app, work was done on integration with the videos and web framework.

#### Past Week Accomplishments

- PCB revision, Breadboard circuit, Voltage conversion- Ryan
  - PCB revision
    - When meeting with Nathan, he requested that the PCB is made a little smaller, so I made a revision of the PCB I designed last week.
  - Breadboard Circuit
    - Spent some time altering the breadboard circuit as well so we can use it as a part of our demo
  - Voltage conversion with sd card
    - Worked on the code for the Arduino a little more too. It is now able to take the analog voltage readings from the circuit, compute the voltage, and save those values to the sd card in a text file with timestamps.

- Preparing for client meeting, Testing resources, Arduino Code- Maddie
  - Prepared for client meeting
    - Spent two hours prepping for the client by setting up the meeting. The meeting consisted of showing the web application, analysis, and the camera and circuits.
  - Testing Resources
    - Along with this time was spent researching what resources would be needed for testing
  - Arduino Code
    - Time was also spent looking at the code for the Arduino
  
- Continued work on data analysis program- Nathan
  - Angle tracking subplot
    - Created a specific subplot for tracking angles that is synced with the frames of the video recording
  - Subplot layout
    - Implemented GridSpec layout for a more uniform way of inserting additional subplots and arranging current subplots
  - Integration with web application
    - Created a video output of the script displaying the various subplots for use in the web app
    - Exported the raw angle data into a txt format for the web app
  - Prepared for meeting with client by completing the above tasks
  
- Continued work on the web application- Monte
  - Integration with data
    - I worked on the integration between the web application and the videos
    - The application needs to get the videos from an http request since the web app can't send all of data at the same time
  - Prepared for the meeting with client
  - Pending Issues
    - I need to find a way to make a stream for the videos when the request is made then make the video play on those streams

### Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Ryan Hansen	PCB revision completed. Altered the breadboard circuit for the demo.	8	130

	Implemented Arduino code to convert the voltage readings and save the results to a sd card in a text file with time stamps.		
Madeline Rogers	Spent time prepping for the client by setting up the meeting. Research resources that would be needed for testing. Time also spent looking at code for the Arduino.	6	127
Nathan Mazarelo	Synced the angle tracking subplot with the frames of the video recording. Implemented GridSpec layout for subplots. Created video output of the animations and txt output of the raw angle data for web integration.	10	136
Monte Friestad	Continued working on integrating videos into the web app.	15	131

### Plans for Coming Week

- Team
  - Prepare for filming demo videos for the final presentation slides and take screenshots for poster
- Ryan
  - I need to make up a parts list so the components can be ordered from Digikey and finalize the new PCB revision to be printed.