

## EE / CprE / SE 491 – sdmay19-01

### Athlete Motion Tracking

#### Week 2 Report

1/31/19 – 2/7/19

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 and completed a presentation for our Client on the current status of the project and future goals. During our meeting clarification was made on intrusive vs non-intrusive equipment. On the hardware side, research was completed for pressure sensors and Arduinos. The camera setup was tested with different positions, heights, and distances between the subject. On the software side, the data recreation animation was made to run smoother and the raw video footage was sent to sync with animation. On the web app additional work was done to the cards and functionality was added to change between cameras.

#### Past Week Accomplishments

- Camera Setup testing and pressure sensor research - Ryan
  - Camera
    - Tested camera setup at home and experimented with different camera positions, heights, angles and distances between the subject that is being tracked
    - Configured cameras to work within a home environment, which involved extensive calibration within the ipi software
  - Pressure sensors
    - Researched how to use pressure sensors with an Arduino and what data values they output
- Prepared for client meeting and Arduino research - Maddie
  - Client meeting
    - Created documentation that explained what we are looking for to complete the pressure sensor system
    - Also included information regarding pricing to help the client compare

- Links were also included to make purchasing easier for the client
    - By the end of the meeting a strong understanding of what we considered intrusive and non-intrusive for the athlete was established
  - Arduino
    - Research was completed on the different types of different Arduinos
- Updates to data recreation program and prepared for client presentation – Nathan
  - Animation
    - Used an animation library to display the data points and remove stuttering when the next frame of data was to be displayed
  - Video Sync
    - Added a side by side view of the raw video footage, using openCv, with the animation to show client that we can sync them and that they are 1 to 1
- Updates to web application and prepared for client presentation – Monte
  - UI
    - Continued work on the cards
  - Camera view
    - Added functionality to change between the different cameras

### Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Ryan Hansen	Tested camera setup with different positions, distances, etc. Configured cameras to work in home environment. Research on connecting Arduino with pressure sensors and the data they output.	9	84
Madeline Rogers	Prepared for client meeting by creating documentation explaining what was needed for pressure sensors. Research on the types of Arduinos.	7	86
Nathan Mazarelo	Used an animation library to remove stuttering from the data animation when frame data was updated. Added in a side by side view of the raw video synced to the animation using openCv.	9	88
Monte Friestad	Continued work on the cards for the web app. Added functionality to change between the different cameras.	8	83

## Plans for Coming Week

- Team
  - Create a Gantt chart displaying the timeline of the project
- Maddie & Ryan
  - More research on the pressure sensors and Arduino
  - Get a shopping list sent to the client
- Nathan
  - Start working on calculating angles from the points of motion in the data animation
- Monte
  - Start working on adding data and graphs to cards