

EE / CprE / SE 491 – sdmay19-01

Athlete Motion Tracking

Week 3 Report

9/20/18 – 9/27/18

Client: Nathan Johnson

Faculty Advisor: Craig Rupp

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 began working with some of the tools we had researched the previous week. On the hardware side, we begin experimenting with the Kinect using the developer toolkit to figure out the capabilities of the camera. We also started using some of the software that is recommended for motion tracking cameras to understand more of its limitations. On the software side, we began developing some bare frameworks for the web application and testing analytical libraries in python. More research was completed on the web framework languages like Django and on python in general.

Past Week Accomplishments

- Camera software research and experimentation- Ryan
 - Learned more about motion tracking and how to pull data from motion capture software programs
 - Ipi software
 - Downloaded ipi software and learned how to use with the motion tracking cameras available
 - Found out that the software will require a certain number of cameras to fulfil its depth requirement
- Experimented with Kinect camera- Maddie
 - Checked out a Kinect from the department and begin experimenting with to see if the camera was going to be viable for the project
 - Developer toolkit

- Downloaded developer toolkit and started figuring out the capabilities with the Kinect
 - Was able to use the compiler to do basic coding to interface with Kinect for data concerning distance and colors
 -
- Experimented and researched with python in the web development area- Nathan
 - Learned more about how to use python in web application
 - Pydev
 - Started to use Pydev, an IDE for python development in the eclipse environment
 - Allows for Django integration which is useful for when the foundation of the web application is being developed
 - Started writing functional code with python analytics libraries
 - Matplotlib
 - Started to use matplotlib to graph vectors in a 3d plane to simulate the data being extracted from the camera
- Practice using python and Django for web development- Monte
 - Created a barebones website that can be added onto as we have more data, images, and pages
 - Django
 - Looked into the use of Django in web applications
 - Provides a concrete foundation for developers so that they can focus on the unique parts of the website
 - In our case the unique aspect would be the data presentation

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Ryan Hansen	Tested the ipi motion tracking software using cameras that were available. Started learning more about the limitations of the software.	6	16
Madeline Rogers	Started using Kinect with developer toolkit to interface in real time. Used the compiler to write basic code for distance and colors.	7	17
Nathan Mazarelo	Found an IDE for python development. Begin testing code using statistical libraries and plotting points in an 3D plane for simulation of camera data.	7	17
Monte Friestad	Created a barebones website using python that can be added onto. Started looking into the integration of Django in the web application.	7	17

Plans for Coming Week

- Ryan
 - Setup a testing area with multiple cameras that we already have in possession to take background samples and start making a base calibration for when we track the motion points
- Maddie
 - Look further into the capabilities of the developer toolkit for the Kinect and try to get python to interact with the toolkit
- Nathan
 - Look more into computing the angles of vectors in a 2D and 3D plane so we can analyze some of data being extracted from the camera
 - Add some functional code to the GitHub
- Monte
 - Research more into creating charts and graphs from the data extracted from the cameras in python
 - Add previous code to the GitHub

Gitlab Activity Summary

Nothing to report.
