

To: Dr. Dean

From: Nicholas Thompson, Dustin Spencer, Avion Foreman, William Stewart, Jungihn Kim, Harrison Burch, Demetris Coleman

Subject: Weekly Status Report 3

Date: February 13, 2017

This week we are in the algorithm development stage. We completed the data acquisition stage last week. Although, we may have to record more footage if changes to the algorithm are necessary.

This past week we spent most of the time trying to find a computer to install software on so that we could run our Haar cascade trainer. The computers in Broun would not work because we couldn't run the trainer on a Windows computer. We then tried the Linux machines in Shelby, however we do not have the access rights to install software on those machines. Meanwhile, Dustin was running our trainer on his desktop computer at home. He ran the training program cutting the images down to 20 x 20 pixels, so that it would run quicker. The trainer finished on Friday and he tested it with a video of a swimmer that was recorded with a cell phone. The program tracked the swimmer, however it would find multiple swimmers in the picture. We call it a slight success; however, we are going to tweak the settings on the trainer. Also, last week Demetris obtained access to the CASIC supercomputer on campus. We are going to try and run the Haar trainer on it for quicker results. We will run the trainer using 100 x 100 pixel images this time to see if the algorithm is more accurate. However, we must install some software before running the trainer on the supercomputer. Last Friday, we also worked on figuring out how to power the raspberry pi. We couldn't find a wiring diagram so we spent some time analyzing the cart with a multi-meter, trying to figure out what each wire powered. We are still working on this. We also met with Dr. Roppel and talked with him about image tracking. He suggested using a program called RoboRealm. However, this program must run on Windows, and we do not have a Windows machine in the robot. We will do some research on RoboRealm and keep this idea as an alternative. We are also still trying to get WiFi access for the raspberry pi.

One big achievement we obtained was getting the tracking program semi-working. We are going to take some pictures of markers and run the trainer using markers to see if the tracker works better. An obstacle we faced was getting power to the raspberry pi, we are still trying to figure this out. The hardest part of this is trying to figure out the previous group's wiring.