

To: Dr. Dean

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We are currently in the process of figuring out which tracking algorithm we are going to use. One option is using the Auburn logo. We were thinking of having the swimmer wear an Auburn logo swim cap and training the tracker to track the logo. However, after running some simulations, this may not be a viable option. We will keep this as a backup option. Secondly, we are also working on tracking a certain color, using the RGB values. We are considering tracking a color not commonly found in the pool, for example, pink or a highlighter color. We are waiting to get an Auburn swim cap from Wendy so that we can capture some footage of swimmers wearing an Auburn swim cap and a pink swim cap. We are also working on the control signals. We are using OpenCV on the raspberry pi to track faces. (This is just to simulate tracking.) As the face moves across the screen, or x-axis, it assigns a value that is divided by the width of the frame and then multiplied by 255 to create a range of voltages between 0V and 5V. This analog signal is then sent to the Arduino, which has the control code, then the control signal is sent through a filter to a signal analyzer right now (will be the sabertooth motor). We are also using this same tracking algorithm with RoboRealm. So far, we were able to get a signal from going to RoboRealm route. We are still working on the raspberry pi.

Last Wednesday, we worked with RoboRealm, trying to measure the output signals of RoboRealm going to the Arduino. We used an Arduino program from RoboRealm's website. We tried to measure the signals using an oscilloscope and multi-meter. We could not ever see the output signal. We would need to purchase a tablet for RoboRealm to run in robot, would have to figure out how to power the tablet and set it up for ease of use. On Friday, we worked on color tracking using a camera and video footage. On Monday, we worked on controls and color tracking. (See above paragraph for details).

As far as achievements, we were able to get a signal output from the Arduino while tracking a blue pen using color tracking and RoboRealm. We could use this once we figure out which tracking algorithm we are going to use. We are working on getting the raspberry pi/OpenCV to take the place of RoboRealm in that option since we would need a tablet to run RoboRealm.