

Weekly Report #7

CPR E 491
Team 26
Robot League
11/8/2021 - 11/14/2021

Members:

Brogden Worcester - Client interaction

Dalton Holdredge - Document submitter/creator

Noah Brooks - Hardware team leader

Joseph Holtkamp - Software team leader

Jordan Suby - Individual component design

Cheyenne Smith - Team organizer

Tejas Agarwal - Finance officer

David Quan - Progress coordinator

What we've accomplished in the past week / what we've been researching:

Brogden Worcester - Conducted training on the Electrical engineering machine shop. Learned a little bit about using a 3D printer and CNC milling machine, but more training will be needed. Measured dimensions of parts on PHILIP. Designed a new layout for the next prototype and discussed design with classmates.

Dalton Holdredge - Trained multiple different models and deployed them on the raspberry pi. Compared the attributes of the different models (inference speed varies from 1.2 fps for the slowest model to 8 fps for the fastest model, while they all seem to have very similar accuracies)

Noah Brooks - worked towards stream video for a gui

Joseph Holtkamp - I implemented routing in our application that is concise and easy to alter. I also learned how to display a video feed in mjpeg format in a flutter application.

Jordan Suby - I downloaded all the dependencies for flutter and got a couple basic default apps created and pushed to git to demonstrate that everything was working.

Cheyenne Smith - looked into video streaming over http.

Tejas Agarwal - Looked for the components we would need for the final design of our arena

David Quan -

What we're planning to do in the coming week:

Brogden Worcester - Borrow 2 motors from ETG with appropriate speed. Measure dimensions and finalize plans with dimensions for the next prototype. Eventually put plans into 3D digital model.

Dalton Holdredge - Research and deploy a new method of capturing the video data from the camera (currently using the VideoStream() function from OpenCV). Figure out if we can use the current camera for the object detection (since it's FOV might not be good enough)

Noah Brooks - set up a stream over http for the app team.

Joseph Holtkamp -

Jordan Suby - Gain a better understanding of how to program in flutter and create a more complicated application as a learning experience. I will also be adding my work to the existing prototype of the app just to demonstrate our group is capable of collaborative coding. If I have time I may also explore OBS as means of streaming.

Cheyenne Smith - more in depth on http streaming; sketches

Tejas Agarwal - Research for the goal post to make the game auto reset.

David Quan -

Issues we had in the previous week:

Brogden Worcester -

Dalton Holdredge - The object detection is not working for the full camera resolution, so it is not currently able to detect the arena like we will need it to.

Noah Brooks - pi needed complete reset

Joseph Holtkamp - Mjpeg streams available for testing were few and far between. Additionally, arriving on this as a solution was difficult to reach as there was not a ton of helpful documentation. Also the flutter_mjpeg package does not support the web format.

Jordan Suby - Nothing too bad this week

Cheyenne Smith - other projects nothing too crazy this week.

Tejas Agarwal - Other classes are taking a lot of my time and it keeps getting worse every week

David Quan -