

EE/CprE/SE 491 Weekly Report #9

Sept 28 - Oct 12 2020

Group Number: 3

Project Title: Squirrel

Client: Bob Thompson; Advisor: Gary Tuttle

Team Members: Isaac Tegeler, Devon Driscoll, Richard Cushing, Dan Gilbert, Abraham

Contreras-Ramos, Cole Patton

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### **Weekly Summary:**

Met with our advisor about risk assessment. Determined the rest of the parts that we will need for the semester, and ordered the parts via ETG.

### **Past week accomplishments**

Isaac: Determined which motors we will need as well as which controllers, and sent email to ETG to get them ordered.

Cole: Began work on the Jetson Nano. Successfully set up the Nano and tested raspberry pi camera, checking and comparing how different resolutions affected the FPS. Transferred all the machine vision code to the Nano along with the trained data models, and installed the requirements to get it to run.

Richard: Met with Tuttle about new camera gimble. Printed 11 of 34 parts with multiple failures. Bigger parts have been warping and needs adjustments.

Abraham: Calculated how much power we need. Found an adequate power supply for the peripherals.

Dan: Met with advisor and decided to shift to prefab gimbal system over our designed gears. Began slicing/printing parts.

Devon: Got some testing with the Python scripts done. Research on how to emulate using an LCD without having a physical device to work with.

### **Pending issues:**

We have solved most of the pending design issues and we are now at high risk for those that are remaining. One of these major risks is that we likely need most parts to be printed before the end of October if we want to have time to assemble and test everything. Additionally we are behind on writing the code. We need to work more on completing code for motor control.

### **Hours Worked**

<b><u>Name</u></b>	<b><u>Contributions</u></b>	<b><u>Hours this week</u></b>	<b><u>Hours cumulative</u></b>
Isaac	Found a new model to use for the targeting system, determined what motors we needed, and ordered them.	12	30
Cole	Setup Jetson Nano and tested the Raspberry Pi camera. Transferred Machine vision code to it and installed necessary dependencies.	6	25
Devon	Python skeleton code, LCD skeleton code, LCD usage	6	25

	research		
Richard	Meeting with Tuttle, printing out the multiple 3D printed parts of the Camera Gimble	15	39
Abraham	Power supply, circuit design, meetings	6	18
Dan	Began printing parts for prefab gimbal, part research, meetings,	5	27

### **Plans for the upcoming week**

#### **Isaac:**

At this point I am blocked on work to do until the parts start to arrive. I will spend the next week on filling out the functions in our API skeleton code so that once the parts are here we can immediately begin testing the code.

**Cole:** Now that the detection code is running on the Jetson Nano, my plan is to write an isolated program that reads frames from the Raspberry Pi camera at a set pace, starting at one frame per second. Once the program is working, I'll start integrating it into the detection code.

**Devon:** Continue working on functions in our API on our repository. Work on LCD notifications.

**Richard:** Continue printing the rest of the 3D parts. Possibly go to try to cut pieces we bought.

**Abraham:** Create a schematic for setting up and connecting power supply and peripherals.

**Dan:** Continue printing and testing parts for gimbal. Assemble parts, and discuss next steps with the advisor and team.