EE/CprE/SE 492 SDDec19-10

Programmable Holiday Lights

Week 2 Report

9/14/19 - 9/27/19
Client: Dr. Tom Daniels and Wife
Advisor: Dr. Tom Daniels

Team Members:
Jake Grace - Software Lead
Joe Nunez - Meeting Scribe
Chad Griggs - Report Manager
Val Smith - Signal Processing Specialist
Thien Nguyen - Front End Dev/Web Master
Steven Williams - Hardware Lead

Past Week Accomplishments:

- Created the lazy susan by cutting plywood, attaching them to the susan and then attaching the feet
- Install new larger SD card in the tree pi and correctly set up python 3 environment with openCV v4.1.2
- Fix screen issues with camera pi
- Describe algorithms for light position recognition
- Preparation for peer review presentation next week

Pending Issues

- The metal used to reinforce the box needs to be redone. The superglue has come undone and an alternate solution must be developed and implemented.
- Heating in the box overall must be accounted for.
- Settle on algorithm for detecting lights

Plans for Coming Weeks

- A parts list has been made and the parts need to be ordered

    - We are ordering an actual buck converter to replace the one we have now which is just another linear voltage regulator that has a limited current output.
- Describe algorithm for lights, start building program for it
- Need to improve the plywood for the lazy susan. One circle is slightly larger and have some straight edges.
- Need to drill holes in the lazy susan and install the slip ring that was ordered to allow the tree to spin without twisting the cord.
- Install the new buck converter and perform testing to make sure it is working correctly and as expected
- First peer review presentation next week

Individual Contributions

Team Member	Weekly Contribution	Weekly Hours	Total Hours
Jake Grace	Found, ordered, installed new SD card for tree pi. Compiled OpenCV v4.1.2 and setup Python 3 environment	5	20
Joe Nunez	Wrote an algorithm in pseudocode to handle the image recognition in a way that should be easy and lightweight. Met with the team and Dr. Daniels and went over the algorithm and modified it to handle a normalization of the data points. Began work on python code for image recognition, but am running into errors with some packages, most notably numpy.	5	11
Thien Nguyen	Worked on Presentation for next week. Some discussion how to work with calibration/image uploading with Steven. SD Cards File Transfering?	3	8
Chad Griggs	Worked on weekly report. Discussed with team about lazy susan and calibration algorithm. Helped with the lazy susan build and with part procurement. Worked on presentation slides for next week	6	10
Valery Smith	Organized meeting with advisor, collaborated with team. Researched, wrote and tested python program that uses ssh to run a python program on another device. Worked on presentation.	5	17.5
Steven Williams	Built the lazy susan with Dr D, started a parts list, fixed pi screen issue, figuring out math for getting light positions	5	20