

EE/CprE/SE 492 SDDec19-10

Programmable Holiday Lights

Week 5 Report

10/25/19 - 11/08/19

Client: Dr. Tom Daniels and Wife

Advisor: Dr. Tom Daniels

Team Members:

Jake Grace - Software Lead

Joe Nunez - Meeting Scribe

Chad Griggs - Report Manager

Valery Smith - Signal Processing Specialist

Thien Nguyen - Front End Dev/Web Master

Steven Williams - Hardware Lead

Past Week Accomplishments:

- Able to get (decently okay) data from the camera pi and send that back to the tree pi for that step of the calibration process

Pending Issues

- Will need to determine method to keep unwanted items from managing to slip into the box via the holes drilled in the top. Ideas include using small holes and/or a mesh underneath the holes
- Real time clock for the tree pi was ordered. Still waiting on delivery.
- The Camerapi needs a facelift. We will need a way to better secure the camera to the pi.

Plans for Coming Weeks

- Still need to plan and drill holes for the top of the box.
- Second peer-review meeting is next thursday
- Update calibration to use image subtraction for more accurate LED coordinates
- Start developing the lightController state machine

Individual Contributions

Team Member	Weekly Contribution	Weekly Hours	Total Hours
Jake Grace	<p>Finally found an efficient solution to light detection using openCV (a mix of contouring and masking) and modified the script to output useful images and coordinates for the next step of calibration.</p> <p>Now able to start a script on the tree pi that connects to the camera pi and communicate back and forth receiving valid x,y,psi data for each light</p>	10	34
Joe Nunez	<p>Met with Dr. Daniels to update the treesolv code to accept multiple rotations of each LED. Worked with Steven to update part of the webapp to accept the json output from the updated code. Worked with Jake to get training data for myself and Dr. Daniels. Met with the entire team to flesh out plans for the service that will run on the control pi.</p>	9	33
Thien Nguyen	<p>Assisted with Jake in better color detection and Contouring; Coordinates of Lights.</p>	3	17
Chad Griggs	<p>Met with group to work on and plan networking issues and integration phase. Ordered real-time clock for treepi.</p>	5	25
Valery Smith	<p>Worked with Steve to set up treePi as a wireless access point, made a mess. Met with Chad, Steve and Dr.D to clean that up. Met with team to understand overall Controller program. Made takePic and Calibrate programs into functions. Outlined other fuctions to be put into the Master Main.</p>	5.5	32
Steven Williams	<p>Updating webserver with Joe, setup wireless AP mode for treepi, planned master script/system layout,</p>	9	44