

# EE/CprE/SE 492 SDDec19-10

## Programmable Holiday Lights

### Week 3 Report

9/28/19 - 10/10/19

**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

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### **Past Week Accomplishments:**

- New buck converter and slip ring have arrived. Can now install new buck converter and continue working on lazy susan
- Had first peer review presentation
- Made progress mapping lights to a virtual cone

### **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**

- 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
- Fix the supports for the box - we will drill holes in the metal supports for small bolts with lock rings to more securely attach the supports to make the box less flimsy.

## Individual Contributions

<b>Team Member</b>	<b>Weekly Contribution</b>	<b>Weekly Hours</b>	<b>Total Hours</b>
Jake Grace	Created a script to detect light position in XY coordinates on an image to be fed to the rest of our math calculations	3	23
Joe Nunez	Worked on the code and algorithm to convert a 2d view of the tree to a 3d cone using sample data generated in python. Met with Dr. Daniels and the team to discuss how we're going to implement these features and how the calculations are going to work.	7	18
Thien Nguyen	Helped Joe with coordinates and algorithms.	3	11
Chad Griggs	Met with team to discuss/work on mapping coordinates and calibration algorithm	5	15
Valery Smith	Implemented program that uses SSH and command line args in python to turn on a light and take a picture of each light from the number of face as specified by the User. I used this program with Steve to get pictures of all the lights at different angles. Met with Danile and team to discuss progress and algorithms. Plan to make different versions of calibration program for different calibration methods.	4.5	22
Steven Williams	Ordered parts, worked on network connections, helped figure out maths for mapping coords	5	25