EE / Cpr E / SE 492 - SDMAY 21 - 48
Learning Holiday Light Display
Week 4 Report
Mar 2, 2021 - Mar 15, 2021
Client and Faculty Advisor: Dr. Daniels

Team Members:
Christopher Woods - Chief Software Engineer
Ty Gardner - Chief Engineer (Computer Vision)
Jacob Martin - Chief Computer Engineer
Ashkirat Singh - Meeting Facilitator
Mitchell Wadle - Meeting Scribe
Joyeux Noel - Report Manager

Weekly Summary:
The objective for the past two weeks was to upgrade the setup by doing a fresh install of the Raspberry Pi OS on a new SD card such that we can begin making progress on the calibration procedure. We settled on this approach because the old SD card posed a lot of challenges related to Python and several libraries as the installation was not done properly for us to use Paramiko (one of the libraries) successfully. Now, we have to get the web server up and running on the new Tree Pi because the old one had too many issues to be effective in our project. The tasks that our team was able to accomplish include: getting the new Tree Pi up and working on one of the Raspberry Pis, successfully establishing a connection between the two Pis, and also getting an additional Raspberry Pi to run tests on the Lazy Susan.

Past Week Accomplishments:
Mitchell: Researched and ordered the necessary hardware components for motorizing the Lazy Susan, including a new wooden slab which would be used to partially replace the non-functional wooden piece currently being used on the Lazy Susan

Jacob: Helped with setup of the new Raspberry Pi image, started refactor of communication between the Camera and Tree Pi, setting up of the web server on the new Tree Pi, as well as establishing a connection between the Tree Pi and the Camera Pi.

Joyeux: helped Mithcell in the ordering and organization of the new components that will be used in the motorizing of the Lazy Susan

Chris: Helped with setup of the new Raspberry Pi image, started refactor of communication between the Camera and Tree Pi and state management to use ZeroMQ, a message queue suite.

Ty: Helped with the image processing procedure such that once everything is put together, the animation process is streamlined with the calibration of the LEDs.

Ash: Helped Jacob with the setting up of the connection between the two Pis after installing a new Raspberry Pi image on the new SD card, and borrowed an extra Raspberry Pi from the ETG for running the new Tree Pi since the old one stopped working (will use this board until a new one gets delivered for a more permanent solution).

Pending Issues:

- Install Python again on the new SD card with the fresh image of the Raspberry Pi OS and make sure that same issues which caused the move to a new SD card don't persist
- Start putting all the components together, namely: the calibration procedure, the pattern processing and rendering, as well as the Lazy Susan motorization

Individual Contributions:

Team Member	Contribution	Weekly Hours	Total Hours
Jacob Martin	Installed the Raspberry Pi OS, and successfully established the connection between the Pis, as well as the web server on the new SD card	16	40
Chris Woods	Started refactor of communication between the Camera and Tree Pi	15	44

Ty Gardner	Refined the code which will be used for the image processing	14	39
Ash Singh	Helped with the connection of the two Pis after a fresh install of the Raspberry Pi OS on the new SD card	14	41
Joyeux Noel	Helped Mitchell with ordering the parts that would be used for motorizing the Lazy Susan	12	34
Mitchell Wadle	Ordered the parts that would be necessary for motorizing the Lazy Susan	14	36

Plans for Coming Week:
- Lazy Susan - Joyeux and Mitchell
  - Run tests on the parts that get delivered using an extra Raspberry Pi (same model as the ones we are using for the project)

- Animation - Ty and Ash
  - Run tests on the code for the animation feature and make sure that the current configuration (top view of the tree on a 2-D plane) gets rendered properly when the pattern is displayed onto the tree

- Calibration - Chris and Jacob
  - Run tests on the code for the calibration and make sure no issues that haunted the team previously persist on the new image of the Raspberry Pi OS