EE/CprE/SE 491 WEEKLY REPORT 9
11/8/2024 – 11/14/2024
Group number: sdmay25-15
Project title: Millimeter-wave 3D Scanner
Client &/Advisor: Mohammad Tayeb Al Qaseer
Team Members/Role:
Nathan Reff
Luke Post
James Peterson
Daniel Ripley-Betts

Week's Overview

This week was primarily focused on the presentation of our lightning talk in class. Outside of that we worked on the prototyping of the sensor mount, the continuation of the electronics build, building the second PCB, and the completion of the sensor itself. All that's left on the electronics is to route the cables, connect the limit switches that we have now, and do the final power-on. We will soon test the mount to make sure the fit is good and will be doing testing (without the mount on) of the movement system.

- **Key Accomplishments:**
  - Nate: Worked on wiring and electronic parts of build. Assisted in installing raspberry pi, controller board and power supply
  - Luke: Built an extension cord for the x-axis limit switch and started soldering and testing the second PCB
  - Daniel: I coordinated with Dr Tayeb in order to get the firmware in hand. Pull the dimensions off of the STL prototype of the mount and recreated them in a cad file so that I can modify them. made a couple iterations on it to allow for connectors.
  - James: Dug into Web-based UI tools for python, brainstormed needed parts for UI, prepared for presentation
  - Collectively: Got through the first of 2 presentations on our project this semeseter

- **Challenges/Issues:**
  - Nate: none
  - Luke: Unsure how to connect one of the components to the second PCB

- Daniel: getting in to finish the electronics and work on the mount has been tough
- James: Need to figure out if html will support what we need

Individual Contributions

Name	Individual Contributions	Hours this week	Hours cumulative
Nate	Installed the stepper drivers on the controller board. Assisted in installation and testing of electronic parts	5	41
Luke	Built extension cord for x-axis limit switch Started second pcb build and testing	6	41
Daniel	Building electronics of the motion system, modeling and printing housing	5	41
James	Duginto UI and drafted needed functions	6	41

Upcoming Week's Plan

- Nate: Finish the electronics of the build and try to implement automatic movement on the gantry system
- Luke: Finish the second PCB, program the PCBs, and test both the bords together
- James: Continue to work on the UI research and concepts, determine if html will work.
- Daniel: Finish electronics, continue to work on housing

Advisor Meeting Summary

- **Key Discussions:**
    - No meeting this week, we are reaching out to find out if Dr. Tayeb will attend the faculty panel presentation.
- **Action Items:**
    -