EE/CprE/SE 492 STATUS REPORT 2
01/31/2025 - 02/13/2025
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 team sdmay25-15 finally attested the motion system of the MAVinator millimeter wavelength scanner and had great success. The motion control system is working on the z-axis, but the X and Y axis have issues with the stepper driver and software configuration. This is easily resolved by getting a different set of stepper drivers that should be here in a couple of days. After meeting with our client we need to look into making an in-house software separate from Octoprint.

- **Key Accomplishments:**

    - Nate: Researched software and firmware for scanner - Octoprint, Marlin and also did some more research on utilizing python

    - Luke: Researched plugins for Octoprint that could be used for our project

    - Daniel: I discovered the issue with the communication between the laptop and the printer. Instead of using a USB Serial output on the octopus board, we used the USB-c. Discovered a solution for the stepper driver issue for A&B Motors.

    - James: Researched Octoprint software to see if it can be modified to work with our project requirements.

    - Collectively:

        - met with Dr. Tayeb, made progress on the software side for the scanner

- **Challenges/Issues:**

    - Nate: None

    - Luke: None

- ○ Daniel: A&B Motors require new stepper drivers. More work will be required to develop and how software instead of modifying octoprint

- ○ James: None

Individual Contributions

Name	Individual Contributions	Hours this week	Hours cumulative
Nate	Researched software and firmware for connection to the scanner	5	58
Luke	Researched plugins for Octoprint that would allow us to add our own buttons and controls to the GUI	5	55
Daniel	Discovered the issue with the communication between the laptop and the printer. Instead of using a USB a Serial output on the octopus board we needed to use the usb-c. Discovered a solution for the stepper driver issue for the A&B Motors.	11	64
James	Research into Octoprint	6	59

Upcoming Week's Plan

- ● Nate: Get more progress done on the scanner, continue work on software to scanner connection

- ● Luke: Hopefully start the coding process and get some more insight into which direction we will be going with the software.

- ● James: Start modifying Octoprint code to work with our scanner platform.

- Daniel: Regroup with the team, renew the plan and try to get current stepper motor drivers working.

Advisor Meeting Summary

- **Key Discussions:**
  - Dr Tayeb was excited to see the motion system moving. Dr Tayeb insisted on a standalone software.

- **Action Items:**
  - Figure out software