EE/CprE/SE 491 WEEKLY REPORT 4
10/04/2024 – 10/10/2024
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 was a very important week for Team 15. This week we met with Dr. Tayeb, and began the soldering process for our millimeter wavelength scanner PCB. The soldering team applied a mask to the pcb to evenly distribute the solder paste, then picked and placed all resistors, capacitors, and integrated circuits needed by the schematics. Unfortunately the soldering team was unable to complete the first phase earlier this week due to being short one 350 ohm resistor. Equally importantly we received the parts for the Voron printer and looked them over after our meeting with Dr. Tayeb. We have begun the build and made plans to continue through this week and next. It feels as though this week is the beginning of our window of opportunity to make this project go smoothly from the start, which is very exciting!

- **Key Accomplishments:**
    - James: More research into web app development for UI, brainstorming ideas for neat and easy to use UI. Stayed up to date on soldering progress and results.
    - Luke: Helped with the first phase of soldering (applying paste with flux, laying out caps, resistors, and ICs using schematic).
    - Nate: Conducted more background research - millimeter wave sensing, familiarized myself with our electronic components - PCB and kit that we just received
    - Daniel: Helped with first phase of soldering (applying past with flux, laying out caps, resistors, and ICs using schematic)
    - Collectively: Printer parts have arrived and we have started assembling (inspection first). We all inspected the pcb before we put it in the ReFlow oven
- **Challenges/Issues:**
    - Nate: None
    - Daniel: we were short one 350 ohm resistor, understanding SPI interfaces
    - Luke: we were short one 350 ohm resistor

- James: None

Individual Contributions

Name	Individual Contributions	Hours this week	Hours cumulative
Nate	Contributed in the first phase of soldering, familiarized myself with the new electronic components from the kit and conducted some more research	6	11
Luke	Completed the first phase of soldering and contributed to the necessary documentation for the class that we needed to do outside of the class period	6	14
Daniel	Help with the first phase of soldering, study boards of voron builds	6	9
James	Research on easy to use UI and communicating about soldering progress.	6	10

Upcoming Week's Plan

- Nate: Continue to familiarize myself with all our technology, and help with the start of the building of the hardware
- Luke: Finish the soldering and continue to get the Voron printer built. I want to start testing the circuit board as well.
- James: Begin building the Voron printer frame after kit came in. Observe PCB soldering completion.
- Daniel: Get the frame of the Voron printer built. Finish the soldering if needed. Work on Gant chart and introduction for design documentation. Try to observe some testing. Learn about SPI interfaces.

Advisor Meeting Summary

- **Key Discussions:**
    - We met with our advisor for a check in meeting, he received all the equipment that will be needed for the assembling phase and gave us an outline of when we should have building and testing done.
- **Action Items:**
    - Set up an action plan and gantt chart for the timeline of the assembling phase
    - Work to complete build of scanner body (printer)
    - Work on design document
    - Prepare for first semesters presentation