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EE/CprE/SE 491 WEEKLY REPORT 6  
10/18/2024 – 10/24/2024  
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

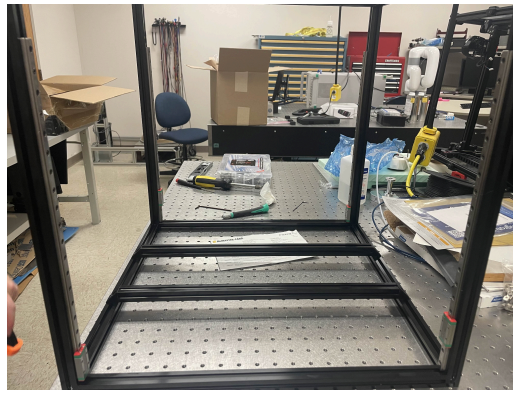
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## Week's Overview

This week we made a lot of progress on the build of the Voron printer. The frame was built at the beginning of this week, starting with the extrusions that make up the outer frame. Then, we were able to add the linear rails and begin the assembly of the Z-axis motor drive trains. We have also installed all of the heated inserts into the necessary plastic parts of the Voron printer so we could continue with assembly and began the idler construction and drive train assembly. Along with that, we also finished soldering the final components onto the circuit board, and it is ready for the software to be uploaded and be tested.

- **Key Accomplishments:**

- Nate: Continued construction of Voron by assembling base plate and bed of printer along with other small components
- Luke: Finished soldering the pcb and continued with the assembly of the Voron by assembling the bed and other small components
- Daniel: assembled Voron frame, motor trains, learned about SPI, compiled all heat-set inserts into one doc, broke up tasks for build of printer.
- James: Continued build of Voron printer frame and further brainstorming and documentation.
- Collectively: Continued and made great progress at building the Voron
  - frame coming together square



- **Challenges/Issues:**

- Nate: Small issue with DIN rail not fitting correctly, fixed it by cutting it shorter with table saw
- Luke: Soldered the SMA connectors on the wrong direction the first time so had to go back and change those around
- Daniel: Lack of access to facilities, slight issue with DIN channel. Determine how the printer will locate its toolhead (sensor). Linear rails need double checks on their alignment.
- James: None

## Individual Contributions

Name	Individual Contributions	Hours this week	Hours cumulative
Nate	Worked on base plate and bed of voron and started idler construction	5	23
Luke	Finished soldering the pcb which will be used as the sensor. Helped assemble the Voron bed and started the idler construction	6	23
Daniel	learned about SPI, compiled all heat-set inserts into one doc, planned tasks for build	6	22
James	Voron frame build and documentation	6	22

## **Upcoming Week's Plan**

- Nate: Continue build of Voron printer, start on construction of gantry system of voron
- Luke: Program the software onto the pcb and start testing the pcb. Continue to build the Voron printer
- James: Continue build of Voron printer frame and potentially begin concepts for scanner housing.
- Daniel: Finish motion system and frame, and start on electronic portion of the build

## **Advisor Meeting Summary**

- **Key Discussions:**
  - Feedback on Gantt chart and requirements
    - Everything looked good
- **Action Items:**
  - Follow up with Dr. Tayeb about work done to develop PCB transceiver
  - Continue physical build