Introduction:

- Jorian -> Electrical engineering student -> Specialize in robotics and control systems -> graduating Winter 2020

Project Overview

- Automated Microbial Analysis -> Sponsor is Analysis Laboratory -> Project goals are to automate the counting and analysis of petrifilm samples (pass/fail). Petrifilm is used to determine bacterial colony precense within liquid samples. These specific samples are for anerobic bacteria.
- Project uses a Delta robot for manipulation and movement of samples. System was chosen for its accuracy, speed, and reliabiltiy.
- Samples will be analyzed using computer vision and then sorted into pass/fail piles for pickup
- All data will be placed into a unique spreadsheet per process and made available to the client

Project Roles

- My role was the mechanical design
- Designed all the mechanical parts including the Frame, end effector, arms, motor mounts, motors, and mounting apparatus'
- Used CAD tools to design all the parts
- Used a 3D printer to manufacture any custom parts
- Used generative design tools to minimize material costs while maintaining strucutural integrity.

Takeaways

- Developed mechanical skills in control systems
- Utilized advanded design techniques to generate organic shapes
- Collaborated with a diverse team to complete a complex project.

A link to the recording can be found here (I did not have access to a working webcam for this, sorry)

https://drive.google.com/open?id=1vYuGMOYrPq_KzEH4uz40xzkmvdgGDscQ