

Sharil Maredia

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EDUCATION

Massachusetts Institute of Technology
Sept. 2024 - Present | Cambridge, MA
M.S. Mechanical Engineering Candidate
Specialization in Machine Design
5.0 GPA (out of 5.0)

Massachusetts Institute of Technology
Sept. 2020 - May 2024 | Cambridge, MA
B.S. Mechanical Engineering
5.0 GPA (out of 5.0)

AWARDS/HONORS

Research paper accepted into SPIE Medical Imaging Symposium

Co-authored and presented "Sound speed estimation in layered media using the angular coherence of plane waves" at the 2020 SPIE Medical Imaging Ultrasonic Imaging and Tomography Symposium

PROJECTS

OnTrack

Led a team to develop an automated solution that cleans rails for commuter trains, preventing issues with rail traction that cause trains to miss their braking zone. The proposed solution would enable more frequent maintenance while cutting down operating expenses.

Desktop Lathe

Designed and built a precision desktop lathe capable of machining aluminum with 50 micron accuracy and 40 micron repeatability

Resin 3D Printer

Contributed to the construction of a DLP Resin 3D Printer, specifically working on the print bed, including leveling, movement, and resin distribution.

RV-12 Airplane

Led the construction of the avionics and inner wing structure for a fully functional, operable Van's RV-12 aircraft.

SKILLS

SolidWorks • Siemens NX • CATIA • PTC
Creo • DFM • FEA • GD&T • CFD • Python
• MATLAB • Robotics • Mechanical Design

WORK EXPERIENCE

MIT SELF-ASSEMBLY LAB | RESEARCHER

September 2024 - Present | Cambridge, MA

- Developed a large-scale, 3D gantry system to simulate ocean currents and tides for coastal restoration research
- Designed a precision motion control system to replicate real-world sediment transport conditions

TESLA | NEW PROGRAMS ENGINEERING INTERN

May 2024 - August 2024, May 2025 - August 2025 | Hawthorne, CA

- Led the development of the HVAC system for the Tesla Robovan and a critical system on the Roadster as the Responsible Engineer
- Supported Cybercab prototype builds by designing numerous parts to solve problems that arose during production and miscellaneous process optimization tasks
- Developed a LIDAR-based ground truth model test rig for the Model 3 to be used for Robotaxi calibration

MIT ACCELERATED MATERIALS LABORATORY FOR SUSTAINABILITY | UNDERGRADUATE RESEARCHER

September 2023 - May 2024 | Cambridge, MA

- Designed a millimeter-scale junction that mixes precursor fluids with vastly different properties in the laminar regime, while ensuring precise compositional control
- Integrated device into Archerfish, a high throughput material synthesis system designed to optimize parts of hydrogen fuel cells
- Tested designs via CFD simulations and physical experiments

TESLA | MECHANICAL DESIGN ENGINEERING INTERN

May 2023-August 2023 | Palo Alto, CA

- Designed and validated changes to the Model S/X battery pack to reduce thermal event propagation through the pack, minimize costs, and improve ease of assembly on the production line
- Developed new structural parts for the high voltage distribution system in the Model 3/Y battery pack, allowing the electrical system to be installed such that headcount and BOM costs are minimized

SPACEX | MECHANICAL ENGINEERING INTERN

May 2022-Aug 2022 | Redmond, WA

- Designed automated tooling for the Starlink solar module production line, leading to a significant increase in production rate and yield
- Aided in the design, manufacturing, and assembly of the onboard power systems for the v2.0 Starlink satellite

EXTRACURRICULAR ACTIVITIES

SOLAR ELECTRIC VEHICLE TEAM | MECHANICAL ENGINEER

September 2020 - October 2022 | Cambridge, MA

- Worked on CAD for new suspension and steering system
- Collaborated closely with Aerospace Team to optimize energy savings from the suspension system
- Helped with larger-scale integration of all the subsystems on the vehicle
- 2021 American Solar Challenge race Winner