Vanu V. Rao

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Summary of Skills

- CAD: Solidworks, Autodesk Inventor & Fusion 360, Onshape, nTop, Blender
- CFD simulation: Ansys Fluent
- Additive Manufacturing (FDM) Software: Ultimaker Cura, Autodesk Meshmixer
- Programming: Java, Python, MATLAB (Beginner)
- Good Communication, Teamwork, Critical Thinking, and Adaptability

Education

University of Washington* - Seattle, WA** ***Expected graduation June 2026

Pursuing Bachelor of Science in Mechanical Engineering, GPA 3.93

Relevant coursework (through Spring 2024): Mechanics of Materials, Kinematics & Dynamics, Visualization & CAD, Beginning Scientific Computing, Engineering Statics, Fundamentals of Materials Science

Experience

Incoming Mechanical Engineering Intern - *Boeing, Everett, WA* *Starting June 2024*

Electric Powertrain Engineer - *UW Formula Motorsports, Seattle, WA* *October 2023 - Present*

- Analyzed and optimized geometry within inverter cold plate for improved heat transfer and flow rate, reducing mass by 50% and cooling inefficiency by 41%
- Compiled and presented designs to industry professionals and integrated feedback into work
- Pinned out and waterproofed inverter connectors
- Collaborate with 90+ students to build a Formula 1 style electric race car for the Formula Student Competition

Intern - *FineTech Toolings, Bangalore, India* *August 2023*

- Modeled a novel HSK-CNC chuck adapter fixture concept using a lever to increase holding force
- Assembled mechanical product visualizations demonstrating gear ratios of boring tools
- Learned process planning in a commercial setting
- Observed end-to-end design and fabrication of precision machined, injection molded, and stamped parts

3D Printing Lead - *Newport High School Rocketry Club, Bellevue, WA* *2019 - 2023*

- Co-captained 2022 national *American Rocketry Challenge* champion team of 10, competing at the *International Rocketry Challenge* in London, England against three countries' representative teams
- Developed and simulated rocket designs using *OpenRocket*
- Designed and 3D printed end-use rocketry components such as nose cones, fins, transitions, and altimeter sleds using *Onshape, Autodesk Fusion 360,* and *Cura*
- Constructed, assembled, and launched numerous model rocket bodies

CAD (Computer Aided Design) VP - *Newport Robotics Group 948, Bellevue, WA* *2019 - 2023*

- Competed in 2023 FIRST Robotics Competition World Championship
- Developed, wrote, and implemented design training curriculum for subgroup of 15-20 in team of 100
- Managed the design and prototyping process of 125 lb robot
- Designed 3D printed accessories such as earrings and aglet covers

Design Projects: raovanu.github.io

Rocket nose cone mounted airbrake for precise payload deployment, Climber capable of traversing a 125 lb robot across multiple spaced rungs, Broadsword - Inspired by Christian Iconography, The Consuming Dark - Path of Exile, Tombfinger - Warframe

Awards and Achievements

Keynote Speaker, "How to Win the American Rocketry Challenge" vNARCON *January 2024*

Team Sustainability Award, FIRST Robotics Competition World Championship *April 2023*

1st place, The American Rocketry Challenge National Finals *May 2022*

2nd place, International Rocketry Challenge *July 2022*

Yale Young Global Scholar *July 2022*

Semifinalist, FIRST Robotics Competition Dean's List *April 2022*

1st place, The American Rocketry Challenge National Presentation Competition *May 2020*