Vanu(r) Rao

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Summary

Passionate mechanical engineering student with a strong dedication to designing and implementing innovative solutions that excel in both performance and aesthetics. Track record of excellence in engineering competitions for 5+ years. Seeking Summer and offseason internships.

Skills

- CAD (Solidworks, NX, CATIA)
- Tolerance Analysis & GD&T
- Additive Manufacturing
- CFD (Ansys Fluent)
- FEA (Ansys, NX Simcenter)
- Thermal Analysis
- Programming (Python, Matlab)
- Design for Manufacturing
- Leadership & Critical Thinking

Experience

Anduril Costa Mesa, CA

Mechanical Engineering Intern *June 2025 - Present*

- Developed and tested thermal management solution for onboard GPUs including heat pipe and heatsink design
- Designed injection molded IP and EMI motor shield, validating thermal margin in sustained heavy hovers
- Designed and built prototype drone airframe to test robustness and attachment mechanisms

Zipline San Francisco, CA

Thermal Engineering Intern *January 2025 - June 2025*

- Tested prototype next-gen drone battery HVAC system in environmental chamber to characterize cooling performance and outline refrigeration cycle requirements
- Modeled cooling capacity performance of various compressor and heat exchanger combinations in python to validate requirements, inform component selection, and budget power draw
- Designed injection molded thermal system frame and impeller for mass production volumes
- Tested system durability in extreme temperature or corrosive environments and lifetime drone impact loading
- Led vendor discussions, presenting Q&As and examining technical proficiency for down-selection
- Performed a trade study on moving thermal system offboard with fluid, thermal, cost, and structural factors

UWashington Formula Motorsports Seattle, WA

Aerodynamics Engineer *May 2024 - Present*

- Simulated undertray aerodynamic performance in CFD, analyzing vortical flows and diffuser performance to increase component downforce by 60%
- Utilized design-of-experiments and gaussian regression with parametric CAD to rapidly evolve concepts

Thermal Engineer *October 2023 - May 2024*

- Analyzed and optimized geometry within inverter cold plate for improved heat transfer and flow rate, increasing efficiency from 95% to 97% and heat transfer coefficient by 44% while reducing mass by 50%
- Validated performance gains with bench testing setups and on-car telemetry data

Boeing Everett, WA

Flight Deck Design Engineering Intern *June 2024 - September 2024*

- Designed a device to aid blind travelers navigating the cabin using vibration for BCA ONE design challenge, integrating potential user feedback and considering implementation costs
- Wrote and packaged a Python script to process supplier data metrics in Excel, reducing time spent by 90%
- Conducted root cause corrective action (RCCA) analysis to reduce HUD sunvisor rejection rate

FineTech Toolings Bangalore, India

Design Engineering Intern *August 2023 - September 2023*

- Modeled a novel HSK-CNC chuck adapter fixture concept using a lever to increase holding force
- Rendered mechanical product visualizations demonstrating gear ratios of boring tools

Design Projects

https://raovanu.github.io/

Education

University of Washington Seattle, WA

Pursuing Bachelor of Science in Mechanical Engineering, GPA 3.95 *Expected graduation June 2027*

Relevant coursework (through Fall 2025): Thermodynamics, Mechanics of Materials, Kinematics & Dynamics, Visualization & CAD, Beginning Scientific Computing, Engineering Statics, Fundamentals of Materials Science