Ravi Dhaliwal

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Education

University of California, Los Angeles - Physics B.S. CS Minor — Expected Graduation June 2025
Activities: Rocket Project at UCLA, Formula SAE
GPA: 3.5

Experience

Aerodynamics Subteam, Bruin Formula SAE — Sept 2023 – Present
- Attached Pitot tubes to 3D printed mounts on the vehicle to measure the flow rate of air around the chassis
- Analyzed the flow rate data to determine if any aerodynamic elements on the chassis needed to be changed to make the vehicle experience decreased drag forces

Propulsion Analysis Subteam, Rocket Project at UCLA — Sept 2023 – Present
- Utilized HRAP software in MatLab to simulate thrust curves of a hybrid rocket motor
- With this, I found the optimal curve for the feed rate of oxidizer into the motor

Principle Investigator, NASA – Remote — Sept 2023 – Dec 2023
- As Principal Investigator, I lead a proposal for funding a conceptual engineering project to enhance thrust in satellite electronic propulsion systems.
- Specifically focused on investigating the feasibility of utilizing super-capacitors to induce large current increases in the thruster, which in turn increased thrust output
- Led research efforts, organized and managed teams by assigning roles and responsibilities, and conducted various simulations using pSpice
- Cumulated in a ten page proposal that was presented to a NASA board.

Student Researcher, University of California, Riverside – Riverside, CA — June 2022 – Feb 2023
- Tasked with designing a venturi tube that would be used in a water filtration system
- Utilized SolidWorks and Matlab to design the tube, aiming for improved efficiency compared to conventional methods of distillation
- Conducted CFD simulations in SolidWorks to verify the designs functionality under load, ensuring a sufficient pressure drop was achieved.
- The designed venturi tube achieved an 87% increase in efficiency compared to traditional methods of distillation

Projects

Rear Wing Design Project
- Designed a rear wing in SolidWorks, with three adjustable splitters, all with variable angle of attacks
- Simulated the downforce produced by the wing at various speeds using Star-CCM+

Level Two Rocket
- Designed and fabricated a 3-foot-long rocket with avionic systems for data logging, which reached an apogee of 1000m
- Received a level one and level two certification from the National Association of Rocketry

Skills

CAD: SolidWorks, Inventor, AutoCAD
Analysis: STAR-CCM+
Languages: MATLAB, Python, R, SQL, C++, C, C#, Java, Excel