Aadi Shah

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EDUCATION

University of Southern California **Los Angeles, CA**
Bachelor of Science in Mechanical Engineering; Minor in Business Finance May 2027
Honors: Presidential Scholar (Half-Tuition Merit Scholarship), Dean's List (Fall 2023 – Present) GPA: 3.8

SKILLS

Technical: Python, Matlab, CAD (NX, SolidWorks), LabView, Basic FEA, C++, Arduino
Lab: Waveform Generator, Oscilloscope, VBench, Multimeter, 3D Printing, Laser cutting, Power Tools, Woodworking

PROJECTS & ENGINEERING EXPERIENCE

USC Racing (SAE) **Los Angeles, CA**
Mechanical Engineer December 2023 – Present
- Designed drivetrain-adjacent mechanical components in SolidWorks (chain shield), accounting for alignment and durability
- Diagnosed localized wear from chain movement and mounting misalignment; modified geometry with local relief
- Prototyped components using 3D printing and validated fit and behavior through physical assembly and testing
- Supported underbody and floor integration by adjusting hole locations, introducing slots, and refining edge profiles to improve assembly tolerance and reduce interference across adjacent subsystems during full vehicle integration
- Collaborated across vehicle subsystems to ensure clean integration and competition compliance

Autonomous Vehicle Design Project (King of the Hill) **Los Angeles, CA**
Design Lead March 2024 – May 2024
- Built wooden-chassis Arduino vehicle for a torque and speed-driven climbing challenge under dynamic load conditions
- Designed and reinforced chassis geometry to reduce structural flex under torque, improving motor alignment, drivetrain consistency, and mechanical reliability during repeated climbing tests and competitive match conditions
- Determined placement of motors, battery, Arduino, and sensors to improve traction, stability, accessibility, wiring robustness, and impact survivability under dynamic loading, vibration, and repeated physical contact
- Implemented physical defensive structures to protect motors, wiring, and sensors during sustained contact
- Debugged inconsistent performance by identifying mechanical and electrical failure modes (mount flex, wiring movement, voltage drop), securing wiring and improving mounting rigidity to achieve more reliable operation
- Tuned Arduino control logic to match physical system limits once mechanical stability was achieved

USC Rocket Propulsion Lab (RPL) **Los Angeles, CA**
Manufacturing Engineer September 2024 – Present
- Designed and modified CAD models for parts, mounts, and structural interfaces supporting rocket hardware assemblies
- Focused on mechanical fit, mounting constraints, load paths, and reliability rather than advanced simulation
- Evaluated how boundary conditions such as mount orientation and constraint assumptions influence behavior and reliability
- Gained experience integrating component-level designs into larger assemblies under real-world constraints

WORK EXPERIENCE

Viterbi School of Engineering **Los Angeles, CA**
Teaching Assistant & Freshman Academy Coach August 2024 – Present
- Only international coach (800+ applicants) chosen to mentor first-year engineers; led sessions on professional practice

Savla Research Group **Los Angeles, CA**
CURVE Research Fellow August 2023 – May 2024
- Awarded $3300 annual grant to research ramp metering in diverse traffic scenarios by coding computer simulations
- Analyzed ramp metering performance w/ VISSIM to devise strategies to reduce congestion & improve traffic flow

SKILLS & INTERESTS

Interests: Cars, Formula 1, Hiking, Cooking, Road Biking, Traveling, Chess, Photography, Football