Uma Iyer

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Ambitious and curious undergraduate student driven by a deep passion for learning, with a strong interest in aerospace propulsion, mechanical design, and sustainable energy solutions.

EDUCATION

University of California, Irvine, B.S. in Mechanical Engineering, *Senior* Graduation: June 2026

Courses: Applied Thermodynamics, Fluid Mechanics, Control Systems, Mechanical Vibrations, Theory of Machines, Mechanical Behavior of Materials and Structures, Heat Transfer, Machine Shop, Welding

WORK EXPERIENCE

Blue Origin- Test Engineering Intern, Van Horn, TX (June 2025- Sep 2025)

- Audited and revised Piping & Instrumentation Diagram and Engineering Bill of Materials by conducting physical inspections of vacuum engine test stands, tracing facility fluid flow paths, and eliminating component discrepancies to ensure accurate ground system design and management.
- Redesigned the water chilling system to improve water processing used to create a vacuum environment for testing components, and enhanced system winterization capabilities to contribute to reliable test operations.
- Supported test conductors and directors with test control room console navigation, valve actuation, and data reduction, gaining hands-on experience with test stand operations and fluid control systems.

UCI Student Housing- Resident Advisor, Irvine, CA (Sep 2025- Present)

- Supervised and supported a community of 87 residents across 3 floors, serving as the main POC for housing, roommate, and facility concerns; served duty shifts to resolve emergencies/policy violations, ensuring a safe/inclusive living environment.
- Planned and executed multiple hall programs including managing budget/supplies, creating flyers, and gauging resident interest to strengthen community engagement and daily interaction.

PROJECTS & RESEARCH

UCI Rocket Project Liquids- Lead Propulsion Engineer, Irvine, CA (Mar 2024-Present)

- Led a propulsion team, managing timelines for quick turnaround, task delegation, and cross-functional collaboration across avionics, launch vehicle, and operations teams, ensuring system integration & test readiness.
- Conducted engine failure analyses and led system redesigns including CAD-driven feed system updates to accommodate vehicle aerostructure constraints and improve reliability during cold flows and hot fires.
- Performed cryogenic propellant filling operations and pressure decay leak checks; built and tested igniter system and valve and regulator assemblies while developing knowledge of rocket fluid systems.

National Fuel Cell Research Center- Undergraduate Researcher, Irvine, CA (June 2024- Present)

- Formulated a platinum carbon catalyst ink recipe and SOP for ink fabrication/cell assembly through material experimentation to advance cation transport research within cement electrolyzer cells.
- Developed a test setup and data processing model to obtain the thermal conductivity of porous transport layers to gauge heat distribution and maximize thermal efficiency criteria in electrolyzers.

UCI Solar Car Team- Aerobody Engineer, Irvine, CA (Mar 2024-Sep 2024)

- Created fiberglass composite layups for aeroshell manufacturing through quality control and material selection, considering durability and flexibility; developed complex assembly of solar car aeroshell through CAD modeling and Ansys FEA simulations to optimize flow velocity and reduce drag.

LEADERSHIP EXPERIENCE

UCI Engineering Ambassador Network- Ambassador, Irvine, CA (Jan 2025- Present)

- Contributed to the success of prospective and current engineering students through boothing events and online engagement, to advocate for resources that develop technical and professional skills in engineering.

NASA L'SPACE Mission Concept Academy- Lead Thermal Engineer, Irvine, CA (Sep 2024-Dec 2024)

- Oversaw the design of an effective lunar rover thermal regulation system by conducting material trade studies and modeling in NX CAD, with considerations of thermal insulation, radiators, and passive cooling to protect rover/lander & electronic instruments in extreme temperatures and the lunar regolith.