

Advik Luchoomun

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EDUCATION

University of California, Berkeley

Jan. 2025 – Present

Bachelor of Science in Aerospace Engineering, AIAA & ASME member, GPA: 3.7

Berkeley, CA

Relevant Coursework: Dynamic Systems & Feedback; Dynamics & Controls of Autonomous Flight; Aerodynamics; Flight Testing; Orbital Dynamics; Optimization Modeling; Fluid Mechanics; Mechanics of Materials; Thermodynamics; Combustion Processes; Electronics for IoT

Chabot College

Aug. 2023 – May 2025

Associate Coursework in Engineering, Engineering Club President, GPA: 3.93

Hayward, CA

EXPERIENCE

Combustion Research Intern

June 2025 – November 2025

Sandia National Laboratories

Livermore, CA

- Supported experimental data acquisition in Sandia's Heavy-Duty Optical Engine Lab, ensuring safe operation of lab hardware while gaining experience with high-speed cameras, analog systems, and engine combustion processes.
- Developed a post-processing pipeline using MATLAB to extract key combustion metrics from raw high-speed optical and pressure data to characterize combustion phenomena and generate informative correlation graphs
- Served as liaison between project stakeholders, facilitating collaboration and communicating experimental progress.

Flow Lab Research Apprentice

September 2025 – Present

UC Berkeley

Berkeley, CA

- Investigated boundary layer flow separation via neuromorphic imaging techniques to sense flow separation
- Design and conducted tabletop experiments to demonstrate the use cases of neuromorphic imaging

Control Surfaces Team Lead

Jan. 2025 – Present

Cal Aero

Berkeley, CA

- Utilized first-principles, hand calculations, and textbook-derived MATLAB scripts to choose and size control surface airfoils, then tested designs using Ansys Fluent CFD simulations to contribute to placing 3rd nationally
- Rapidly iterated and fabricated control surface designs during manufacturing to adapt to dynamic limitations.
- Diagnosed integration bottlenecks in fuselage-wing interface and engineered modular solution for system unification.

Lead Counselor

Jun. 2022 – Aug. 2024

Up On Top

San Francisco, CA

- Delivered educational and community-focused programming for a nonprofit serving underprivileged children K-5 in San Francisco's Tenderloin district by coordinating weekly field trips while managing 3 interns
- Established unpaid internship program, saving the organization \$15,000 for reallocation to summer programming.

PROJECTS & AWARDS

ASME 2025 Internal Combustion Division Engine Impact Award

- Compiled 2-page abstract, "The Study on Flame Quenching Mechanisms in a Natural Gas Pre-chamber Spark-ignition Engine", and 10 minute presentation. Chosen to present at ICEF conference in Milwaukee.

Internet of Things Smart Structure

- Built an IoT cantilevered structure that monitored stress and oscillations with a strain gauge and accelerometer, using a lightweight Python FFT to detect loads and trigger damping and alerts on a custom dashboard.

3D Printed Espresso Machine

- Designed and fabricated a custom espresso apparatus integrated with an air compressor to extract shots at 130 psi.

Home Solar Panel Efficiency

- Applied regression techniques in MATLAB to optimize solar panel charging profiles for cost-effective EV charging.

SKILLS & INTERESTS

Technical Skills: MATLAB/Simulink; Python; C++; SolidWorks; Siemens NX; ANSYS Fluent; GitHub; LaTeX; Excel
Fabrication & Prototyping: CAD; 3D printing; composites; sensor integration; electronics prototyping; laser cutting