

Brian Luu

brian.l.pstna@gmail.com | brianluu.info

Education

University of California, Irvine

Expected June 2027

Bachelor of Science in Aerospace Engineering

GPA – 3.795

Cerritos College

June 2025

Composites Manufacturing Certificate

Experience

Mechanical Engineering Intern, Subterranean Defense Stealth Startup – Lake Forest, CA

Jun 2025 – Present

- Conceptualized, designed, fabricated, and tested mechanical systems for use in the subterranean
- Redesigned system chassis to withstand higher torsional loads, increasing torsional yield by 33% and improving overall structural integrity under dynamic loading tests.
- Collected field data using a torque and amp sensor to test system efficiency, discovering the optimal build for excavation
- Implemented dynamic sealing systems and chassis modifications to protect internal electronics and structure from the subterranean, leading to longer testing life
- Fabricated several parts through a 3-Axis CNC machine, 3D printers, and a manual lathe to be implemented into the final product

Wastewater Collections Intern, City of Roseville – Roseville, CA

Jan 2023 – June 2023

- Identified and repaired several air-release valves in recycled water lines that were damaged due to rust and disrepair
- Installed cured-in-place pipe lining to reline and repair damaged sewage pipes in local neighborhoods

Projects

Solar Car Aerobody Lead – ucisolarcar.org

Sep 2024 – Present

- Led a team of 9 to design, manufacture, and test UCI's first Solar Car Aeroshell for FSGP 2025 and 2026
- Executed composite layup on hybrid wood/aluminum tooling to achieve 1.08 g/in², 25% below the weight goal verified through density testing
- Analyzed aeroshell aerodynamics in ANSYS Fluent, optimizing lift/drag balance to verify that a neutral-aero body minimized resistance and maximized efficiency
- Tested the aeroshell aerodynamics through tuft flow visualization, discovering critical areas of separated flow
- Competed in the Formula Sun Grand Prix and passed mechanical and body regulation inspections

UAV Forge Aircraft Member – uavforge.eng.uci.edu

Sep 2025 – Present

- Performed lift and drag analysis on airfoil design for VTOL through ANSYS Fluent
- Designing and manufacturing a lifting system for VTOL flight to compete in the 2026 SUAS Competition

Rocket Nozzle/Injector Design

Mar 2023- May 2023

- Designed a hybrid fluid injector system to combine two liquid fuels in a combustion chamber
- Implemented a nozzle design and dimensions through Rocket Propulsion Analysis platform, before fully integrating it with the injector system
- Performed CFD analysis on the design to see if the liquid fuels would mix properly in a swirl through velocity simulations

Skills

Software: SolidWorks, Siemens NX, ANSYS Fluent, Inventor, Fusion CAM, MATLAB

Hardware: Composite Layup, 3D Printing, Laser Cutting, CNC Router, CNC Mill, Lathe, Soldering