

Thomas Ibrahim

thomasibrahim903@gmail.com | (714) 707-1509

EDUCATION

University of California, Irvine
B.S. Aerospace Engineering
GPA: 3.87

06/2027 | Irvine, CA

EXPERIENCE

Engineering Camp Mentor 06/2025 – 11/2025 | Irvine CA
UC Irvine Office of Access and Inclusion
• Taught CAD, fabrication, and Raspberry Pi coding to middle school students; guided high school students on AI-enabled soccer robots using OpenCV.
• Mentored community college students in Level 1 NAR rocket design, testing, and certification.
• Developed leadership and technical instruction skills while fostering STEM engagement.

PROJECTS

Vehicle Efficiency Modeling 01/2025 – 02/2025
MATLAB Course
• Led a 4-person team to acquire real-time vehicle performance data via OBD-II across acceleration, cruising, and braking regimes; processed and analyzed 1,800+ data points in MATLAB to model and predict fuel efficiency under varying driving conditions.
• Developed MATLAB-based acceleration and steady-state fuel efficiency models using curve fitting and predictive analysis, evaluating model accuracy across multiple operating regimes.

Custom Payload Quadcopter 08/2025 – 12/2025
Independent Project
• Designed and fabricated 3D-printed airframe; integrated electronics and performed PID tuning to improve flight stability and payload handling.
• Added a servo-actuated claw for aerial payload pickup and release.

6-Axis Robot Arm 08/2025 – 10/2025
Independent Project
• Engineered a 6-DOF robotic claw with custom Arduino firmware in C++, integrating mechanical design, servo actuation, and inverse kinematics for precise multi-axis motion.

Spacecraft Thermal Management Systems | E-Ink 09/2025 – Present
UC Irvine Senior Design
• Designed and programmed an ESP32-based experiment to automate thermal vacuum testing of electrochromic/E-ink variable emissivity devices for CubeSat thermal regulation.
• Conducted testing to evaluate temperature control performance and the feasibility of E-ink as a VED alternative.

Flapping Wing Micro Air Vehicle | Novel Mechanism 09/2025 – Present
UC Irvine Senior Design
• Led redesign and prototyping of dual-servo X-frame flapper, including CAD modeling, laser-cut fabrication, and preliminary flight tests.
• Optimized mechanical actuation and wing motion using unsteady aerodynamics principles to prepare for full flapper integration.

Level 1 NAR High-Power Rocket 08/2025 – 11/2025
Independent Project
• Designed, built, and launched a Level 1 NAR-certified rocket; performed CG/CP analysis, aerodynamic modeling, and full-flight simulation in OpenRocket.
• Validated simulations with flight tests, achieving safe and repeatable recovery.

SKILLS

Solidworks | Fusion360 | MATLAB | ANSYS | C++ | Microcontrollers | Level 1 NAR Certified