

ADIEN HARO

Lancaster, CA

☎ (661) 310-4646 ✉ adienharo@gmail.com 🔗 linkedin.com/in/adienharo

Education

California Polytechnic State University

Bachelor of Science in Mechanical Engineering

June 2025

San Luis Obispo, CA

Skills

CAD & Manufacturing: SolidWorks, Fusion 360, FDM 3D Printing, Machining (Lathes, Mills), GD&T, Composites

Analysis: MATLAB, ANSYS, Microsoft Excel, Microsoft Word, Office 365

Project Management & Compliance: System Integration, Hardware Validation, Gantt Chart Scheduling, BOM Management, Material Testing, Technical Documentation, Risk Assessment

FAA Certificates: Small UAS Pilot

Collegiate Experience

Raytheon (RTX) Autonomous Vehicles Competition

Sep. 2024 – June 2025

UAV Project Lead | Mechanical Engineering Team

San Luis Obispo, CA

- Remote pilot in command responsible for testing, prototyping and risk mitigation among an interdisciplinary team
- Lead structural and propulsive system design for a Raytheon-sponsored aerial hexacopter drone (UAV) working in conjunction with a medical delivery vehicle (UGV), both vehicles operating autonomously
- Managed bill of materials ensuring reliable lead times meeting stakeholder requirements of a \$10K budget
- Coordinated Gantt chart-based scheduling with our computer engineering team ensuring tasks were completed on time complying with competition requirements
- Conducted hazard prevention through protection systems reducing electrical fire and propeller hazard risks

Northrop Grumman Collaboration Project (NGCP)

Apr. 2023 – June 2025

Propulsion Lead | Aerospace Engineering Team

San Luis Obispo, CA

- Lead drone propulsion system analysis and design, ensuring alignment with Northrop Grumman project objectives
- Increased UAV flight endurance by 20% through motor/propeller optimization via MATLAB data analysis
- Modeled battery configurations using MATLAB to maximize UAV endurance and system reliability

Projects

Autonomous Scout Hexacopter Drone (UAV) | (RTX)

Sep. 2024 – June 2025

- Conducted ANSYS composite stress analysis for UAV carbon fiber frame utilizing research validated mechanical properties, ensuring structural integrity under operational load conditions
- 3D printed functional prototypes iteratively testing for tolerances and mechanical load resistance through multiple design iterations, used PETG material for increased ductility and higher heat resistance
- Prepared technical reports with detailed structural calculations highlighting principle stresses and MATLAB propulsion efficiency plots to support motor selection
- Established and managed a comprehensive power budget, optimizing battery selection to improve flight endurance
- Designed and modeled the depth camera mount in SolidWorks to optimize UAV center of gravity and integrated a polarized filter, enhancing vision quality during flight operations
- Modeled protective chassis shell improving mechanical and thermal protection from potential hazards for flight hardware

Carbon Fiber/Aluminum Honeycomb Composite Research

Jan. 2025 – March 2025

- Manufactured and cured composite test samples using prepreg layups in an autoclave following ASTM D3039
- Conducted vibrational analysis of 90/90/0/0s and 0/0/90/90s using an oscilloscope finding experimental natural frequencies and damping
- Measured flexural moduli using 3 point bend test, and strain using Instron equipment

Vertical Takeoff and Landing Aircraft (VTOL) | (NGCP)

Sep. 2024 – June 2025

- Conducted market trade studies to evaluate current VTOL design configurations and used MATLAB tools to streamline motor selection and design iterations, improving team workflow and accuracy
- Performed constraint analysis sourcing viable motor and propeller combinations, validating system feasibility following Northrop Grumman's defined performance targets