

Alejandro Fernandez

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Experience

Cal Poly Formula SAE Team - San Luis Obispo

Electronics Packaging Team Lead - June 2025 - Present

- Designed and developed impact resistant hardware enclosures for sensitive electronics using **Siemens NX CAD** software and advanced **composite 3D printing** (Carbon-Nylon FDM).
- Engineered **vibration isolation** systems and **thermal management** validated through **MATLAB** simulations to ensure reliability under dynamic environmental conditions.
- Oversaw **experimental testing**, data interpretation, and documentation in compliance with engineering quality standards and project planning milestones.

Aerodynamics Subteam Member - September 2024 - June 2025

- Manufactured composite **aerodynamic package** to optimize downforce and drag performance for the Formula SAE vehicle.
- Supported conceptual design and development of aerodynamic components using **SolidWorks** and CNC machining, contributing to overall vehicle efficiency and performance testing.
- Produced **precision machined** and 3D printed parts under tight tolerances using **GD&T principles**.

Projects

Long Range Survey UAS

- Produced and flight-tested an **autonomous fixed-wing aircraft** with a 14 km control range, integrating ArduPilot for autonomous navigation, mission planning, and propulsion control.
- Constructed a portable **radio ground station** for live telemetry and real-time data monitoring.

Race Quadcopter

- Engineered a **high-speed UAV** platform optimized for agility, aerodynamic balance, and low-latency video transmission.
- Conducted performance testing and **iterative design** analysis to improve flight stability and **propulsion efficiency**.

Education - California Polytechnic San Luis Obispo - Aerospace Engineering - GPA: 3.8

Relevant Coursework: Engineering Statics/Dynamics, Mechanics of Materials I, Aerospace Thermodynamics, Introduction to Aerospace Design, Linear Analysis I

Technical Skills

Design & Modeling: Siemens NX, Fusion 360, SolidWorks, MATLAB

Machining & Manufacturing: Lathe, Mill, TIG/MIG Welding, Composites, Intro CNC Machining

3D Printing: FDM, SLA, Advanced Materials (Nylon, Carbon Fiber, ASA, TPU)

Languages: Spanish