

Caden Lenz

San Luis Obispo, CA | lenzcaden@gmail.com | 707-796-3811

EDUCATION

California Polytechnic State University

Bachelor of Science in Mechanical Engineering

Coursework: Dynamics, Mechanics of Materials, Design for Strength and Stiffness, Thermodynamics

San Luis Obispo, CA

Expected May 2028

SKILLS

Design & Software: SolidWorks, Onshape, Fusion 360, FEA

UAV Integration: ArduPilot configuration, Mission Planner, avionics packaging, subsystem integration

Manufacturing: 3D printing, soldering, lathe, milling, MIG, TIG, and stick welding

EXPERIENCE

Inspired Flight Technologies

Production Intern

San Luis Obispo, CA

May - August 2026

- Configured and integrated **flight controllers, GNSS receivers, and optical payloads** on production UAVs, supporting avionics setup and aircraft assembly.
- Translated engineering, production, and QC workflows into a **digital manufacturing instruction platform** with controlled revisions and role-based access for technicians and engineers.
- Added **assembly and page-level time tracking** to the instruction platform to support production review and analysis of time spent across assembly workflows.

LEADERSHIP

Cal Poly Unmanned Aerial Systems (Poly UAS)

Avionics Lead | Munnin Swarm UAV Program

San Luis Obispo, CA

2026 - Present

- Lead development across propulsion, avionics, communications, compute, and structures; **specify individual components** against Munnin system architecture and subsystem interface requirements.
- Design a **PAHT-CF airframe** with removable arms and replaceable landing-gear inserts, allowing individual components to be serviced or replaced without replacing the main body.
- Package avionics in a **protected central cavity** with mass near the aircraft centerline; separate high-current power and low-level signal routing to address integration and interference concerns.
- Analyze main-body thrust and bending loads using **preliminary inertial-relief FEA in SolidWorks**, applying arm thrust forces and moments to assess structural loading of the printed frame.
- Organized **60+ members** into UAV teams based on technical skills and program requirements.

TECHNICAL PROJECTS

Osiris | Group 2 Competition UAV

Poly UAS Mechanical Team

2025 - 2026

- Modeled structural components in **Onshape** for a Group 2 C-UASC aircraft; selected and specified individual components to meet aircraft architecture and integration requirements.
- Designed a **3D-printed compliant battery latch** that combines mechanical retention with accessible release for hot-swap replacement, addressing battery security and serviceability.
- Packaged a **21700-cell 6S4P battery** in a compact enclosure for integration into the airframe.

AutoFlag | Autonomous Skier-Down Detection

Independent Project

In Progress

- Designed a **water-resistant electromechanical flag system** for automatic rider-down indication, integrating rider detection with a physical deployment mechanism.
- Integrated **YOLOv5n on Arduino UNO Q** to detect riders and tow ropes; combined vision, GPS speed, roll, and pitch to distinguish rider falls from normal boat maneuvers.
- Developed **automatic flag actuation** with manual override, motion limits, and fault diagnostics to control deployment and support troubleshooting.