Zachary Selzman

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Work Experience

SULI Intern June 2025 — August 2025
National Laboratory of the Rockies, US Department of Energy *Boulder Colorado*
- Worked as a undergraduate engineering intern at the National Wind Technology Center for the Field Test and Validation Group
- Performed data analysis on small distributed wind turbines to determine the effects of obstacle wakes on power performance in accordance with IEC standards
- Completed various deliverables, including a full-scale research paper and presentation

Aerodynamics Team Member September 2024 — Present
Cal Poly Wind Power *San Luis Obispo, CA*
- Work with a small team developing the blades, nosecone, and nacelle cover for the club wind turbine, optimizing for successful operation at the DOE Collegiate Wind Power competition (CWC)
- Use Qblade and Xfoil-based panel codes to quantify airfoil power output for a range of wind speeds and tip-speed ratios
- Perform testing and validation of the turbine in a wind tunnel, and blade structural testing

Instructional Student Leader September 2024 — June 2025
California Polytechnic State University *San Luis Obispo, CA*
- Responsible for running student tutor sessions in Physics, Statics, and Multivariable Calculus
- Assisted with test preparation, homework help, and general lectures

Education

California Polytechnic State University San Luis Obispo, CA
Bachelor's of Science, Aerospace Engineering *Sep 2023 — Expecting June 2027*
- Dean's List Recipient, member of the AIAA, Wind Power, and Alpine Clubs

Projects

Air Motor
California Polytechnic State University *San Luis Obispo, CA*
- Designed and machined parts of an air motor on a lathe and CNC mill in addition to outsourced casts

Screw Driver
California Polytechnic State University *San Luis Obispo, CA*
- Designed and machined a screw driver with a modular tip for both flathead and phillips head bits

Aerodynamic Code Adventure
California Polytechnic State University *San Luis Obispo, CA*
- Used `Waterlily.jl`, a Julia-based viscous flow solver to characterize the Strouhal number of unsteady flow around a cylinder for various Reynolds numbers
- Deployed various boundary conditions and flow visualization techniques

Technical Skills

Matlab, Python, Julia, Qblade, simFlow, Solidworks, AutoCAD, Ansys Fluent, Granta EDUpack Arduino, GD&T, Test Engineering

Personal Interests

Climbing, Running, Paragliding, Stall Aerodynamics, Aeroelasticity