Gabriel P. Paier

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EDUCATION

University of California, Santa Barbara   Graduation: June 2025
Bachelor of Science, Mechanical Engineering   Cumulative GPA: 3.5

WORK EXPERIENCE

Caterpillar-Solar Turbines, Mechanical Engineering Intern, Engine Overhaul Supply Chain Group   June 2024-Present
- Worked hands-on with advanced mid-size industrial gas turbines ranging in size (1,400-55,000 hp), responding rapidly to quality issues from production and supporting engineering activities to meet tight manufacturing deadlines
- Created and implemented a quality improvement plan and manufacturing qualification (PPAP), resolving nonconformance issues at a supplier, increasing yield on a turbine sliding ring, and achieving cost savings of $1.6M
- Conducted multiple key supplier visits to strengthen relationships and drive collaborative quality improvement initiatives
- Consolidated, processed, and manipulated repair yield data in Excel from six suppliers to categorize defect causal codes, identifying trends, outliers, and root causes, and enabling data-driven recommendations for future repair programs
- Led a rapid improvement project addressing handling damage on turbine blades, saving $494,000
- Collaborated with design engineering to modify prints, improving manufacturability and boosting supplier efficiency

RedWire Space, Mechanical Engineering Intern, Lunar Gateway & ISS Solar Panels   June 2023-June 2024
- Utilized SolidWorks to design, prototype, and implement assemblies, structures, mechanisms, PCBs, and weldments meeting requirements for the Power and Propulsion Element of the Lunar Gateway's deployable solar arrays system
- Applied GD&T best practices to avoid over-tolerancing, optimizing manufacturability and minimizing production costs
- Designed and developed circuit board schematics using Autodesk Eagle, built and quality-checked PCBs, and implemented them into a 3D-printed rapid prototype for solar array validation
- Conducted structural and safety factor analyses to design wing transport platform and boom holder assemblies for Lunar Gateway wings while ensuring compliance with safety codes and load-bearing standards
- Constructed large deployment test structures using FARO Vantage Laser Tracker, ensuring their perpendicularity to gravitational force within 0.0010 inch to mitigate gravitational effects during panel test deployment
- Performed detailed redlining of engineering drawings to identify and resolve design discrepancies, ensuring compliance with NASA standards and manufacturability requirements

PROJECT EXPERIENCE

Senior Capstone, National Oceanic and Atmospheric Administration & UC Santa Barbara   September 2024-Present
- Engineered an unprecedented passive autonomous environmental DNA sampler for 30-day deployment off the Channel Islands

Aerodynamics Team, Formula SAE Team Gaucho Racing, UC Santa Barbara   April 2023-June 2024
- Hands-on experience with composites manufacturing including vacuum bagging, hot wire foam cutting using laser cut templates, complex laying of fiberglass for lightness and strength, and finishing parts

Mechanical Engineering Machine Shop, UC Santa Barbara   September 2021-December 2021
- Fabricated a compressed air motor from engineering drawings with complex industrial machinery, achieving tolerances within 0.0010" and 8,000 RPM

LEADERSHIP EXPERIENCE

New Venture Competition UC Santa Barbara Technology Management   September 2024-Present
- Principal entrepreneur developing a market-tested business model and prototype of a novel (patent pending) camping stove optimized for high-altitude conditions
- Earned a Technology Management Professional Certificate to leverage strategic business fundamentals

Volunteer Staff, UC Santa Barbara Department of Recreation   September 2021-Present
- Led and organized 7-day long freshman wilderness orientation trips, coordinating and collaborating with peer leaders and requiring WFA certification, extensive leadership, communication skills, and risk and crisis mitigation knowledge

SKILLS

- Proficient in SolidWorks, ANSYS, CREO, MATLAB, Python, Machine Learning, and interpreting engineering drawings
- Production Part Approval Process (PPAP), First Article Inspection (FAI), Six Sigma, Lean Manufacturing, and LabVIEW
- Complete restoration of a vintage 1973 Datsun 240z, including engine rebuild, bodywork, paint, interior, and wiring
- Lifeguard CPR, WFA, NJ boater, PADI Open Water Scuba Certified, and US Sailing Member and Certified Level 1 Instructor