Ethan Lam

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Objective: Aspiring mechanical engineer with hands on experience in 3D CAD design on Solidworks, Ansys and additive manufacturing methods and passion for innovation. Eager to apply technical skills to a full-time position that will allow me to continue learning and contribute to project success.

Education

California State Polytechnic University, Pomona
May 2025 (expected)

Bachelor of Science, Mechanical Engineering

Relevant Courses:

Engineering Materials, Mechanics of Materials, Thermodynamics, Heat Transfer, Fluid Mechanics, Mechanical Systems Control, Machine Design, Stress Analysis, Finite Element Analysis, Safe Product Design and Analysis, Mechatronics, Mechanical Measurements

Projects

Autonomous Drone

- Contributed to the development of an autonomous drone designed to guide users to predetermined locations based on selectable input, assisting with both hardware assembly and navigation logic.
- Assembled the drone body and performed precise soldering of electronic speed controllers (ESCs) to ensure reliable power distribution and motor control.
- Helped program key flight functionalities including GPS-based tracking, a manual flight mode, and a stable landing sequence using Arduino

Formula SAE

Mechanical Design Engineer (June 2023 – Aug 2024)

- Led a project to design, develop, and manufacture a 3D printed TPU protective boot for the vehicle's constant velocity (CV) joint to protect sensitive drivetrain components from debris.
- Led a project to design, manufacture, and implement the use of custom dollies to move vehicle into the trailer without scratching the diffuser and undertray.
- Tested TPU boot and dollies on Solidworks, utilizing analytical engineering techniques such as finite element analysis (FEA).
- Generated a bill of materials for all projects to efficiently estimate the cost of the project and to ensure clarity when collaborating with other team members.

Bronco Space AI Rover

Mechanical Design Engineer (Dec 2021 – Mar 2023)

- Worked in a subsystem team of three engineers to successfully design, prototype, and manufacture wheels and tires for a rover designed to traverse a Mars like environment at University Rover Challenge (URC) competitions.
- Utilized use of 3D printers and PLA to manufacture rover wheels in order to significantly reduce weight and the cost of manufacturing.
- Assisted in design and development of honeycomb lattice structure for rover wheels, allowing for use of cheaper and lighter weight materials.
- Assisted in the development and manufacturing of a mechanical system to collect, mix, and analyze the contents of dirt samples for use by the rover in completion.
- Successfully presented a mechanical sampling system to the Bronco Space board to gain $3000 in additional project funding.

Work Experience

Daniel Company

Mechanical Engineer Intern (Aug 2024 – Current)

- Analyzed technical specifications and HVAC ductwork blueprint drawings for project bids, ensuring accurate and comprehensive evaluations.
- Authored operating and maintenance manuals tailored to specific project requirements and instrumentation packages, enhancing user understanding and product functionality.
- Conducted detailed takeoffs to estimate project costs, contributing to precise budgeting and financial planning for project bids.
- Created 3D CAD models of ductwork systems and odor control vessels using SketchUp and developed 2D engineering drawings using Layout for contractor design reviews.
- Worked alongside engineers and contractors to optimize ductwork system designs, enhancing manufacturability, assembly efficiency, and overall system performance while minimizing material usage and labor costs.

MEP-Wise

Maximizing Engineering Potential Subject Tutor (Aug 2023 – May 2024)

- Assisted engineering students through tutoring of various engineering courses such as Dynamics and Thermodynamics.
- Utilized critical thinking and communication skills to explain various engineering concepts in unique ways to ensure the student is able to understand.

Skills:

Solidworks, FEA, VBA, Additive Manufacturing, Material Testing, Soldering, Microsoft Office Suite, MATLAB, Simulink, SketchUp, Ansys APDL, FTA, FMEA, Python, Siemens Simcenter Femap, NASTRAN