

JOHN PHAM

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Education

California Polytechnic University Pomona

Aug 2022 - Present

Bachelor's of Science in **Mechanical Engineering** - GPA: 3.17/4.0, Graduation: **Fall 2026**

Minor in **Materials Engineering**

Relevant Coursework: Entertainment Design Engineering, Fracture and Failure Analysis, Mechanical Measurements, Finite Element Analysis, Machine Design, Stress Analysis, Mechanics of Materials, Engineering Materials, Manufacturing Systems and Processing, Controls of Mechanical Systems, Vector Dynamics, Engineering Graphics and Visualization, Computer-aided Computations, Introduction to Design, Heat Transfer, Thermodynamics, Fluid Mechanics, Vector Statics

Skills

Technical: Machining/Fabrication, SMAW, GMAW, FCAW, DFM/DFA, Root Cause Analysis, Graphic Design

Software: FEMAP/NX Nastran, Solidworks, MATLAB, AutoCAD, Microsoft Office Suite, Adobe Suite, Procreate

Interpersonal: Receptive, Attention to Detail, Positive Team Influence, Conflict Resolution, Diligent

Leadership Experience

Mechanism Lead, Cal Poly Rose Float

Jan 2023 - Jan 2024

- Designed, fabricated, and tuned a **12 ft** long biomimetic eel dorsal fin mechanism, incorporating custom universal joints able to be driven by a single high-torque hydraulic motor (3000 psi)
- Generated cooperative Bill of Materials, balancing cost and quality of assembly, ensuring reliability throughout **~1000 cycles** of testing and showtime with minimal cost
- Demonstrated technical skills in arc welding, **SolidWorks**, mechanical design, and DFM/DFA principles
- Maintained clear communication with a counterpart university **250 miles** away to ensuring deadlines are met
- Collaborated with 3 adjacent departments to ensure functionality, consistent visual aesthetic, and concealment, contributing to the float earning the **Crown City Innovation Award** for imagination, innovation, and technology

Structural Welder, Cal Poly Rose Float

Jan 2024 - Present

- Fabricated and aligned metal components (tubing, steel grids, complex assemblies) using SMAW and machining tools, ensuring precise and safe assembly in confined work environments
- Inspected and remediated welds across multiple projects to prevent failures and ensure high quality assemblies
- Mentored and provided technical welding support across the team, improving overall weld quality

Graphic/Rendering Artist, Cal Poly Rose Float

Jan 2024 - Jan 2026

- Collaborated with interdisciplinary teams across 2 campuses to design the float, the official rendering, conceptual artwork, merchandise, and graphics, creating a unified visual gallery using Procreate and Adobe Suite, leading to the design of 2 floats winning the **2025 Leishman Public Spirit Award** and the **2026 Sweepstakes Award**

Projects

Rope Climbing Robot, Machine Design Term Project

Aug 2025 - Dec 2025

- Modeled and 3D printed a DC motor actuated mechanism, able to securely climb a rope inclined at 30 degrees
- Provided conceptual sketches, theoretical calculations, technical design drawings, a bill of materials, and many design considerations in a comprehensive report

FEA of Humanoid Robot CAD Model, FEA Final Project

Mar 2025 - May 2025

- Conducted finite element analysis (FEA) on a humanoid robot CAD model using **FEMAP/NX Nastran**, accurately applying specified loads and constraints to evaluate joint behaviour
- Extracted and analyzed simulation results, including von Mises and principal stress contours, total constraint forces, and maximum displacements, to identify potential failure points

Work Experience

Intern, MESA Associates, Inc.

Apr 2022 - Apr 2022

- Reviewed and corrected redlined **AutoCAD** drawings for projects including **Sofi Stadium's SCE substation**, ensuring accurate dimensions and achieving approval for manufacture and installation

Associated Students Incorporated, Adventures Route Setter

Jun 2024 - Present

- Creatively design and set climbing routes on a 51 ft wall using rigging equipment in collaboration with 4 other route setters to foster a safe, fun, and welcoming climbing community