

Dominique Munoz

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Professional Statement

Mechanical Engineering student with a solid foundation in core engineering principles, seeking to contribute to a forward-thinking team. Eager to apply hands-on problem-solving skills and technical expertise in real-world projects, while continuously advancing knowledge in the field.

Education:

August 2022 - May 2026

California State Polytechnic University - Pomona

GPA: 3.4/4.0

Bachelor of Science, Mechanical Engineering

Relevant Coursework: Thermodynamics, Fluid Mechanics, Mechanics of Materials, Stress Analysis, Finite Element Analysis, Heat Transfer, Vibrations

Skills: SolidWorks, Matlab, FEMAP, ANSYS, Microsoft Office, Mastercam, GD&T, Thermal Desktop, Teamcenter

Projects:

NASA Human Lander Challenge

California State Polytechnic University - Pomona

Thermal Analysis Engineer

January 2025 - June 2025

- Competed in a collegiate design competition in Huntsville, Alabama, securing 4th place out of 12 participating universities.
- Collaborated in a team of four to develop innovative, systems-level solutions for advancing cryogenic fluid technologies for space applications.
- Utilized Thermal Desktop to perform thermal conductivity analysis on proposed design solutions to ensure effective heat transfer and system reliability.
- Designed and evaluated engineering solutions to mitigate challenges such as boil-off, thermal stratification, and fluid dynamics in microgravity environments.

Northrop Grumman Collaboration Project (NGCP)

California State Polytechnic University - Pomona

Analysis Subteam

June 2025 - Present

- Performed structural analysis and hand calculations in a four-person team to validate load-bearing capacity and mitigate risk of mechanical failure.
- Conducted stress analysis in FEMAP on multiple components to validate structural performance and ensure compliance with design requirements.
- Collaborated with Chassis and Payload subteams to review and refine UGV designs, ensuring structural integrity throughout all development phases.

UMBRA: Project CE-MARC

California State Polytechnic University - Pomona

Engineering Design Lead

August 2024 - Present

- Led a team of 3 in the design and development of a prototype rocket capsule, including precision engineering of fittings, servo mounts, and various structural components.
- Conducted stress analysis in SolidWorks for individual components and the main rocket structure to ensure design integrity and performance under operational conditions.
- Facilitated team communication and adherence to deadlines, ensuring efficient collaboration and project progress demonstrating ease of teamwork.

Liquid Rocket Lab: Bronco 1

California State Polytechnic University - Pomona

Propellant Feed Systems

July 2024 - Present

- Executed liquid oxygen (LOX) cleaning procedures to maintain propellant feed system integrity and compliance with cryogenic safety standards
- Assembled, fitted, and aligned cryogenic propellant lines and feed system hardware for the Bronco 1 rocket, ensuring precise integration for launch performance.
- Conducted leak detection testing using pressure checks and verification methods to identify and mitigate system failures