Emily Ramírez

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EDUCATION

University of Southern California, Los Angeles, CA — Expected: May. 2026

- Major: Mechanical Engineering B.S.
- Extracurriculars: USC Marching Band, SHPE, SWE, Associated Students of Biomedical Engineering (ASBME)
- Awards: Hispanic Scholarship Fund (HSF) Scholar, QuestBridge Scholar, Latino Alumni Association (LAA) Scholar

PROFESSIONAL EXPERIENCE

Amazon, Seattle, WA — May. 2025 - Aug. 2025

Construction Manager Intern - Global Engineering Services (GES)

- Streamlined cross-functional coordination by developing installation sequences that aligned MHE, electrical, structural, and other design teams, reducing costly rework, RFIs, and change orders
- Evaluated 60+ change orders across facilities to identify risk patterns and implement new budget and scope management methodologies, strengthening project controls and risk mitigation
- Authored a 15+ page executive report integrating technical, financial, and process data into actionable recommendations for leadership, supporting investment and design decisions for future projects

New Jersey Economic Development Authority (NJEDA), Camden, NJ — Jun. 2024 - Aug. 2024

Wind Port Intern - Infrastructure Division

- Reviewed 100+ pages of construction drawings and permitting documentation to verify compliance with technical specifications and regulatory standards, supporting project handover readiness and schedule adherence
- Coordinated with contractors, design teams, and project stakeholders during preconstruction meetings to track scope changes, manage interface risk, and ensure alignment on project timelines and execution plans
- Researched typical layouts, capabilities, and operational technologies of 30+ European and U.S. offshore wind ports to support design and logistics planning for the New Jersey Wind Port

ACADEMIC PROJECTS & LEADERSHIP

Comprehensive Structural Analysis & ANSYS Simulation Project, Los Angeles, CA — Aug. 2025 - Dec. 2025

- Performed finite element analysis (FEA) in ANSYS to evaluate stress, strain, deformation, and load response of mechanical and aerospace components under multiple boundary conditions
- Built detailed geometry, meshing, and model setups, selecting appropriate element types, mesh densities, and solver settings to balance accuracy and computational efficiency.
- Conducted static structural, thermal, and modal analyses to identify critical stress regions, thermal gradients, natural frequencies, and potential resonance
- Assessed failure modes and safety margins, applying concepts such as yield criteria, buckling risk, and fatigue sensitivity for informed design recommendations.

Senior Design Capstone: Solar Panel Actuation with Shape Memory Alloys, Los Angeles, CA — Jul. 2025 - Dec. 2025

- Designed a linear SMA actuation system for Mars rover solar panels, including a sliding mechanism and custom SMA housing to convert linear motion into rotational panel deployment.
- Developed CAD models, assemblies, and engineering drawings in NX to define component geometry, system integration, and assembly procedures, supporting DFM and dimensional alignment before full-scale production.
- Optimized SMA-based deployment system through multiple prototype iterations, cutting SMA count by 25%, reducing required pull force by 57.5% to achieve full 180° panel rotation, and increasing deployable solar panel surface area by 30%.

Junior Capstone: Design and CAD Analysis of a Go-Kart, Los Angeles, CA — Apr. 2025 - May. 2025

- Designed and modeled over 20 custom components forming the go-kart's engine and steering mechanism using Siemens NX
- Drafted detailed engineering drawings and BOMs for assemblies and components to ensure manufacturability and accuracy
- Performed finite element analysis (FEA) to assess the structural integrity and enhance the mechanical performance of the kart

SeaPerch Challenge (sponsored by the U.S. Navy) - Chief Engineer, Philadelphia, PA — Jan. 2022 - Apr. 2022

- Developed a remotely operated vehicle (ROV) with a team of 4 and maneuvered it through an underwater obstacle course
- Authored a report detailing budget allocation, building process/materials, experimental data collected, and design approach
- Soldered motor parts, wires, the control box, and other components of the ROV
- Conducted rigorous testing and design review of prototypes, identifying and resolving design flaws to achieve targeted ROV performance, cost, specifications, and quality standards

SKILLS

- Programming & Software: MATLAB, ANSYS, Siemens NX, LabVIEW, C++, Microsoft 365 (Excel, Word, PowerPoint)
- Technical Skills: Product Engineering, 3D Printing, Drafting & Analysis of Engineering Drawings, Technical Writing