

ENRIQUE SANCHEZ JR

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Education

M.S. Mechanical Engineering **Cal State University, Long Beach | Fall 2026**
Emphasis: Dynamics, Vibration, Control, Robotics

B.S. Mechanical Engineering **Cal State University, Long Beach | Fall 2024**
Coursework: Control System, Modeling of Dynamic Systems, Robotics, Fluid Mechanics, Thermodynamics

Certifications

Yellow Belt Course: Lean, Six Sigma, Theory of Constraints July 09, 2019
Green Belt Course: Lean, Six Sigma, Theory of Constraints November 01, 2019

Experience

Mechanical Engineer – Systems Integration Lead (Intern)

American Tenet, San Antonio, TX | May 2025 – Present

- Leading mechanical design for HAVOC-3, a Group 2 UAS fixed-wing drone with 4–6 hour endurance.
- Designed airframe in SolidWorks and ran aerodynamic/structural simulations using ANSYS.
- Integrated EO/IR, LIDAR, and machine-learning payloads into modular system architecture.
- Oversaw prototyping with 3D printing and supervised early-stage launch system testing.

Mechanical Engineer – Axial Flux Motor (Intern)

Performance Axial Flux LLC, San Antonio, TX | May 2025 – Present

- Designed and validated next-gen axial flux electric motor components in Fusion 360 and SimScale.
- Collaborated on thermal management and system integration.
- Contributed to full-cycle development: CAD modeling → simulation → CNC machining → assembly.

United States Marine Corps – Sergeant San Diego, CA June 2014 – May 2020

Motor Vehicle and Semitrailer Refueler Operator

- Maintained and operated tactical diesel vehicles and pressurized fuel systems, gaining applied experience in fluid mechanics, flow rate control, and mechanical systems diagnostics.
- Led logistics operations for 100+ personnel, optimizing transport workflows and implementing preventive maintenance schedules, resulting in \$500K+ in cost savings.
- Supervised technical teams and trained junior Marines in equipment safety protocols, mechanical troubleshooting, and hazardous materials handling.

Projects/Research

Human Performance and Robotics Laboratory June 2024 – Current

- Worked on several research projects: rehabilitation robotics, human-robot interaction. Responsibilities included literature research, design, control of a robotic manipulator, and manuscript proofreading.
- Demonstrated lab projects (motion augmentation system and portable sensors) at Stanford Robotics Center opening which hosted ~1000 participants, including faculty and industry representatives.
- *Publication:* IEEE Humanoids Conference 2025 - Co-author, energy optimization study comparing human vs. robotic gait using triboelectric nanogenerators.

Design Project: Offshore Wind Turbine, Long Beach, CA January 2024 – Dec 2024

- Led the design of a semi-submersible offshore wind turbine (1kW/48h output), including CFD and FEA simulation under 13 m/s wind and 0.5 m wave conditions.
- Collaborated on material selection for saltwater durability and designed a tension leg platform using off-the-shelf components.
- Managed a cross-functional team to integrate SolidWorks models with MATLAB simulations, optimizing buoyancy, power generation, and structural stability.

Skills

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|--------------|--------------------|-------------|
| • SolidWorks | • 3D Printing | • Soldering |
| • Fusion 360 | • Machining Metals | • Matlab |
| • SimScale | (CNC, Mill, Lathe) | • Welding |