Alex Pacheco Santiago

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EDUCATION

University of California, San Diego - La Jolla, CA **September 2022 - June 2026**

- Major: B.S. in Mechanical Engineering
- Graduation Date: June 2026
- Relevant Coursework: Mechanical Design; Controls; CAD Design; Fluid Mechanics

WORK EXPERIENCE

Hardware Engineering Intern - Leica Biosystems (Danaher) - Vista, CA June 2025 - September 2025

- Fixed 100+ CAD/assembly errors, updated 25+ components, and removed 30 obsolete parts, improving BOM accuracy to 95%
- Produced SOLIDWORKS + PDM assemblies/drawings with GD&T
- Executed 15+ manufacturing build/teardown procedures
- Performed 5 formal V&V procedures confirming mechanical reliability and functionality; summarized results for design reviews.
- Built an Excel traceability tracker for part/requirement status within design-control workflows, improving visibility across design, manufacturing, and V&V.
- Collaborated with senior engineers across design, manufacturing, and V&V teams to resolve issues and improve compliance
- Designed SOLIDWORKS assemblies, cable DWGs, and 3D-printed fixtures

PROJECT EXPERIENCE

Triton Robotics - Mechanical Engineer **July 2024 - Present**

- Converted turret from 2:1 belt/pulley to 1:1 direct-drive in SOLIDWORKS, achieving 2x rotation speed and eliminating belt maintenance; delivered a 12-part direct-drive assembly with reduced mass vs. belt drive; integrated slip-ring mount/wiring.

Triton UAS – Lead Engineer, Onboarding Project **September 2024 - December 2024**

- Led concept to CAD to fabrication of a V-tail fixed-wing UAV; coordinated motor/electronics integration; executed a planned shakedown flight validating controls, structural integrity, and power system (~1 min)

Mechanical - Design Robotic Project **September 2023 - December 2023**

- Designed and built a 2-wheel friction drivetrain, combined with a double reverse four-bar mechanism to lift and transport a container

SKILLS

CAD & Design: SOLIDWORKS + PDM, Fusion 360, AutoCAD; GD&T, DFM/DFA, FEA
Fabrication: 3D printing, laser cutting, soldering, basic machining (bandsaw, drill press)
Test & Metrology: V&V (verification & validation), test fixtures, calipers/torque wrench/multimeter
Software: MATLAB, Python, Excel, Arduino prototyping, MS Office
Leadership: Team Captain – Intramural Soccer (UCSD); Cross Country & Track (High School)