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

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WORK EXPERIENCE

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

- Resolved **~100** CAD/assembly failures; improved BOM match **15/60 (25%) → 57/60 (95%)** by adding **25** current components and removing **30** obsolete parts **(3/60 cables excluded per scope)**
- Produced SOLIDWORKS + PDM assemblies/drawings with GD&T
- Executed **15+** manufacturing build/teardown procedures and **5** formal V&V procedures; 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.
- Lifecycle verification: executed **3×360-cycle** wipe durability tests per procedure; documented results for review.

PROJECT EXPERIENCE

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

- Converted turret drivetrain from 2:1 belt/pulley → 1:1 direct drive in SOLIDWORKS; redesigned mount/bearing plate stack and slip-ring integration; reduced assembly/disassembly **time 15 min → 9 min (–40%)** by eliminating belt/pulley service steps.

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

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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)