

# 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

- 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
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## 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
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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)