Tomas Quesada

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Education

Pennsylvania State University | State College, PA *August 2025*
Master of Science, Mechanical Engineering - GPA: 3.91
● Mechanical Engineering Department Full Ride Scholarship Recipient
Pennsylvania State University | State College, PA *May 2023*
Bachelor of Science, Mechanical Engineering - GPA: 3.83

Relevant Experience

Penn State Neuromechanics Laboratory – State College, PA
Research Assistant *August 2023 – July 2025*
- Collaborating with the Neuromechanics Lab, specializing in the advancement of hand function restoration using robotics.
- Spearheading the design of a multi-material 3D-printed robotic hand with enhanced manufacturing capabilities.

Garmin – Kansas City, KS
Mechanical Engineering Intern *May 2024 – August 2024*
- Designed motor mounts for a live sonar scanner using Onshape, increasing the FOS by 25% from previous designs.
- Developed the mounts with DFM principles for plastic injection molding, with production targeting over 120,000 units.
- Engineered and validated a hydraulic test bed system for an actuator tested up to 1,000 psi and 5,000 pounds of force.
- Implemented an electronics system for the test bed, enabling life cycle testing of up to 1 million cycles.

Carnegie Robotics – Pittsburgh, PA
Mechanical Engineering Intern *May 2023 – August 2023*
- Designed and manufactured electronic component enclosures, panels, mounts, and casings for off-road autonomous vehicles, LiDAR sensors, and stereo cameras using SolidWorks.
- Participated in creating 75+ manufacturing and engineering drawings with explicit callouts such as bending and welding
- Machined parts using CNC, lathe, and threading machines to support rapid prototyping and final design iterations.

GE Appliances – Louisville, KY
Mechanical Engineering Intern *August 2021 – December 2021*
- Oversaw nozzle evaluation testing, achieving a 30% reduction in liquid system usage for the GE All-Season Indoor Garden.
- Optimized the bill of materials and achieved a 40% reduction in fastener component costs.
- Designed prototypes using SolidWorks, PTC Creo and rapid prototyping techniques to enhance structural integrity through the utilization of water resistant 3D-printed brackets and aluminum supports.

Projects

LiDAR Rescue Robot tomasquesadaportfolio.com/work/rescue-robot
- Developed a robot using LiDAR technology to autonomously navigate mazes and collect balls, in under 5 minutes.
- Created a custom electronic system with swappable lithium-ion batteries, integrating machine learning, PID, and computer vision to accurately identify and retrieve colored tennis balls with a 90% success rate during test runs.

ASME Human Powered Vehicle tomasquesadaportfolio.com/work/asme-hpv
- Contributed to the design and manufacturing of a human-powered vehicle for the ASME competition.
- Coordinated subsystems such as drivetrain, ergonomic seating, and rollover protection to meet competition guidelines.
- Gained hands-on experience with the band saw, MIG welding, and drill press during fabrication and assembly.

Skills

- SolidWorks, Onshape, Siemens NX, Creo, GD&T, CATIA V5, ANSYS, SolidWorks Simulation, OpenRocket, CoppelliaSim, DFM, Additive Manufacturing, Matlab, Windchill, and Bilingual (English/Spanish)