Angel Casanova

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EDUCATION

The Johns Hopkins University Baltimore, MD
Master of Science in Engineering: Mechanical Engineering | Robotics May 2026
- GPA 3.47; Distinguished Masters Fellow
- Relevant Courses: **Algorithms for Sensor Based Robotics**, **AI/ML** for Global Health, System Dynamics, **Mechatronics, Production** System Analysis, **Aerospace** Structures

University of Delaware, College of Engineering Newark, DE
Bachelor of Mechanical Engineering May 2024
- GPA 3.75; Dean's List: Spring 2021 – Spring 2024
- Relevant Courses: **Controls Systems, Digital Control Systems**, Machine Design, **Coding with LLMs**, Fluid Mechanics, Aerodynamics, **Intro to Robotics**, Dynamics
- Extracurriculars: NSBE Secretary, Teaching Assistant (Thermodynamics), basketball, guitar, videography

EXPERIENCES

Carnegie Robotics Pittsburgh, PA
Manufacturing Engineering Intern June 2025 – August 2025
- Designed and executed **thermal tests** in a custom-built enclosure to compare cerakote vs. powder coat thermal performance
- **Automated** air-quality monitoring system with real-time **data logging**; saved **~$20K/year** in technician labor
- Improved epoxy potting process by revising instructions per datasheet; achieved 100% leak test pass rate and **reduced rework**
- Supported MVP autonomous cart development by **designing fixtures** for LiDAR sensors and motors

Wabtec Corporation Erie, PA
Battery Packaging Mechanical Engineering Intern May 2023 – July 2023
- Compared cell stack band sizes on various criteria to **optimize volume efficiency** for safety purposes
- Tested burst disk gasket pressure for confidence in sealing capability
- Calculated maximum pressure drop across a cooling manifold in a battery pack for new product design
- Sourced pipe/hose fittings, clamps, and seals for a battery pack cooling manifold

Teaching Assistant (TA), University of Delaware Newark, DE
Thermodynamics TA August 2022 – December 2023
- Assisted in the development of students' knowledge in the class and helped increase **their overall grade by 10%**
- Led discussion classes and extra review sessions for students to help gain understanding of material
- Balanced this position successfully with 5 classes and 4 projects in the same semester

PROJECTS

Senior Design Project – Unattended Laser Therapy Medical Device (Enovis) Fall 2023
- Collaborated with team members to design proof of concept medical device that automated laser therapy
- **Programmed two motors** to follow grid-like path based using live sensor data from ultrasonic sensor
- Worked closely with industry sponsor to implement design wants and constraints

Breast Cancer Malignancy Detection Machine Learning Algorithm Optimization – Johns Hopkins University Fall 2024
- Trained a computationally efficient **AI/ML algorithm** that was able to detect breast cancer malignancy with **84% accuracy** on breast cytology slide images
- Wrote Python scripts to preprocess and **manage 1100+ image files** for training, ensuring correct sorting and automating data augmentation
- Conducted **sensitivity analysis** on the trained model to identify failure points across varying levels of image augmentation
- Developed a final robust model that performed **85% better** than the original with defected and augmented images

SKILLS

Technical: Python, MATLAB, C++, SolidWorks, Linux, Google Colab
Soft: active listener, **fast learner**, **curious**, analytical thinking, time management, resourceful