

Benjamin Caro

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Portfolio



EDUCATION

University of Delaware

Honors Bachelor of Mechanical Engineering

- GPA 3.811 | Dean's List in Fall 2020, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024

Master of Science in Robotics

- GPA 3.958

Newark, DE

May 2024

Graduating May 2025

WORK EXPERIENCE

UD Mechanical Engineering Department

Fab Lab Technician – Lead

- Operate fabrication instruments (3D Printer, Laser Cutter) for over 600 students' assignments and for faculty research
- Consult with undergraduate students on the most time and cost-efficient manufacturing processes for projects
- Manage all other Fab Lab employees to ensure SOPs are followed properly

Undergraduate Research – PLSC, Dr. Bao's Lab

- Develop a novel hanging robot to scale linear and/or pivot irrigation systems without extra infrastructure installed
- Design and test various mechanical and electrical systems for proper functionality with a 30lb load

Graduate Research Assistant – HORC Lab

- Learn how to use ROS2 Humble with Gazebo Classic
- Create a digital twin of a swarm robots and arena for an offline simulator that uses realistic kinematics

Teaching Assistant – Computer Aided Design, Statics, Dynamics, Machine Design I & II

- Oversee more than 25 first year undergraduate students for lab/discussion
- Hold office hours for all 150 students, proctor exams, and grade weekly assignments

Stanley Black & Decker

Electro-mechanical Engineering Intern - Batteries

- Research and develop laser welding procedures to replace a solder joint inside of the DEWALT battery packs
- Run thermal studies to validate if the welded area performs favorably in comparison to the original joint
- Assist engineers and technicians on general battery work for various studies

Northrop Grumman

Manufacturing Engineering Intern – Conformal Coating

- Automate procedures on electrical boards that operators would traditionally work on to save time
- Create Work Instructions that detail specific procedures for different boards that operators can follow
- Analyze boards that operators have trouble with and create routing requests to resolve the issues

UD Center for Composite Materials

Intern – NASA ULI Project

- Prepare and assemble sample blanks for mechanical property testing
- Execute precise layup procedures in quasi-directional orientation using proprietary materials to increase strength
- Use technical knowledge to plan for efficient sizing to cut the material to usable sizes and minimize waste

AWARDS & CERTIFICATIONS

University of Delaware

- Mechanical Engineering Alumni Award – Outstanding Senior
- W. Francis Lindell Mechanical Engineering Award to the Distinguished Junior

Boy Scouts of America

- Eagle Scout

EXTRACURRICULAR ACTIVITIES

Mechanical Engineering Student Squad

Club Member

- Give tours through the Mechanical Engineering building for prospective students
- Host and volunteer at community events for undergraduate Mechanical Engineering students

SKILLS

- Proficient in: SolidWorks, Fusion 360, Onshape, Python, C/C++, Arduino, ROS2, MATLAB, Wiring, Word, PowerPoint, Excel