Carmen Tracy-Amoroso

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EDUCATION

Georgia Institute of Technology, Atlanta, Georgia May 2026

Bachelor of Science in Mechanical Engineering

- *GPA:* 3.97/4.0
- *Minor:* Computer Science - Computing and Devices
- *Concentration:* Thermal, Fluid, and Energy Systems
- *Select Courses:* Mechanics of Deformable Bodies, Heat Transfer, Internal Combustion Engines, Electrochemical Energy Storage and Conversion

EXPERIENCE

Manufacturing Engineering Intern, Husco International, Waukesha, Wisconsin January 2024 – August 2024

- Promoted to line manufacturing engineer after two months to oversee and improve two high-volume (8,000 parts/day) automated solenoid production lines
- Designed and tested iterative machine changes to a bolt insertion system, including adding a locating fixture and blow off station, to increase yield by 30% and decrease machine faults after a part change
- Installed and configured Cognex vision systems and LVDTs for more accurate identification of part damage after several customer returns
- Implemented program changes to Allen Bradley PLCs to minimize downtime, increasing throughput by about 750 parts per day
- Assisted technicians in troubleshooting day-to-day electrical, pneumatic, and mechanical issues, such as rewiring a bowl feeder to activate based on a part detection sensor to increase the speed of part feeding

PROJECTS

Autonomous Counter UAS Turret Atlanta, Georgia January 2026 – May 2026

Interdisciplinary Capstone Project for DIU

- Designed a fully automatic pneumatic net launcher to neutralizes drones using computer vision tracking
- Fabricated turret structure using laser cutting, 3D printing, waterjet, and power tools
- Wired and programmed an STM32 to interface with motor drivers for 90° pitch and 300° yaw rotation
- Achieved 100% successes in net deployment and hovering drone capture, and 75% capture rate for moving targets in final demonstration

Yellow Jacket Space Program (YJSP), Atlanta, Georgia August 2024 – December 2025

Engine Development team for Darcy: a liquid fueled N_2O and IPA rocket

- Created MATLAB and Excel scripts to speed up engine testing data analysis and get real time data from force transducers and thermocouples
- Manufactured an 8” diameter carbon fiber and epoxy ablative composite engine using a 3D printed mold for an engine hot fire and rocket static fire
- Tested propulsion system components, including isolated injector cold flows to determine accurate fuel and oxidizer flow rates for a 34 second engine hot fire
- Participated in lectures and trainings on Finite Element Analysis (ANSYS), machining (water jet and mill), and heat transfer through several rocket engine types

LEADERSHIP

Teaching Assistant, **Georgia Institute of Technology,** Atlanta, Georgia January 2025 – May 2026

Dynamic (ME 2202), Fluids (ME 3340), Energy System Analysis and Design (ME 4315)

- Conducted weekly office hours for 1.5 hours to help 6-8 students understand course content and assignments
- Graded and provided feedback on assignments for 30 students every week

Treasurer of the Women’s Club Water Polo Team, Atlanta, Georgia August 2024 – May 2025

- Developed and implemented a plan to increase membership by 40% through campus advertising
- Designed and sold $2,000 of team merchandise to pay for housing and tournament fees for 6 tournaments

SKILLS

Design: SolidWorks, Autodesk Inventor, Creo, ANSYS (Finite Element Analysis), Root Cause Analysis, COMSOL (CFD)
Programming: MATLAB, C, C++, Java, Python, Embedded Systems (Arduino), Programmable Logic Controller (PLC)
Fabrication: 3D Printing, Laser Cutting, Milling, Turning/Lathing, Drilling, Surface Grinding, Soldering, Water Jet
Software: Microsoft Office Suite, Google Suite