



Education

Duke University Pratt School of Engineering; Durham, NC

Expected - May 2025

Major: Mechanical Engineering GPA: 3.4

Related Coursework: Finite Element Method, Robotic Design, Constructal Design Theory

Denver South High School - Valedictorian, Denver, CO

May 2021

Skills

Technology: Solidworks, Autodesk Inventor, Python, HTML, CSS, Adobe Illustrator, Premier Pro

Interpersonal: Empowering teams, leading with creativity, and managing projects from start to finish

Projects

Autonomous Underwater Vehicle - Electrical lead, Duke University,

August 2024 - Current

Senior capstone, developing autonomous underwater acoustic and visual data recorder

- Developed Time Delay of Arrival return home capability utilizing PAMGuard software for Hydrophones
- Integrated ultrasonic sensors for autonomous control, pressure gauge, Ph & temperature sensor, 3 servo controls, thruster, all controlled by Raspberry Pi 5 running Robot Operating System 2 (ROS)
- Custom-built watertight enclosure tested to 30 meters and unique bio-mimetic design

Antroid - Personal Project, Duke University

January - May 2024

- Designed, built, and programmed a bio-inspired hexapod robot to mimic ant and centipede morphology.
- Controlled 8 motors using Python and GitHub repository integrated with Raspberry Pi 4
- Presented on a bi-weekly basis on prototyping, CAD, 3D printing, debugging, and creative process
- Antroid's dancing capabilities won the end-of-semester competition at Duke University

Duke & Engineers in Action Bridge Project - *Construction & Media Manager*, Eswatini

May - July 2023

In-country manager for the longest suspended bridge (122m) in Eswatini, benefiting 680 residents of Manzini, SZ with improved access to school, healthcare, and economic opportunity.

- Directed 50+ worker's daily tasks, material and tool distribution, and construction schedule
- Designed excavation plans, organized pre-trip skill seminars, and presented at four review calls
- Navigated language barriers, cultural challenges, and daily obstacles toward a shared goal.

Related Experiences

Engineering Curriculum Development - Duke University

June - Aug 2024

- Designed low-cost and reproducible PID-controlled balance beam lab
- Mentored 30 high school students through a STEM engineering design process summer camp

Alfred Manufacturing - *Manufacturing Process Intern*, Denver, CO

July - Aug 2023

- Collaborated with machining experts to develop manufacturable engineering solutions.
- Produced 30,000 parts while experimenting with modern production techniques.

Murex Resorts - *Scuba Guide / Dive Master*, North Sulawesi, Indonesia

May - Aug 2022

- Led scuba excursions, ensuring safety in turbulent dive conditions while educating guests.
- Restored and reorganized a neglected coral nursery, simplifying data collection methods.

Generation Ocean - *Founder, Student Director, Voting Board Member*

June 2013 - Aug 2021

501(c)(3) "mobilizing and educating the next generation in the ocean, about the ocean, and for the ocean."

- Supervised 48 students over four research and humanitarian expeditions to Cuba and Curaçao
- Engineered a deepwater ROV for research in Cuba and completed 4-year research project
- Raised over \$40,000 through auctions, local grant awards, and general donations

Duke Campus Involvement and Leadership

Robotics and Diving Club (RAD) - *President & Founder*, Duke University

August 2022 - Present

- Duke recognized club increasing access to the ocean through scuba diving expeditions, guest lectures, and robotic videography tools. Secured outside funding for a scholarship program.

I'm Not Done Yet Foundation - *Student Board Member*

February 2022 - Present

- Raised \$450,000 for adolescent cancer patients through three Shave and Buzz fundraisers.