

RYAN D'CUNHA

Tampa, FL

☎ 727-218-8411

✉ ryan.dcunha@duke.edu

🌐 [linkedin.com/in/ryan-dcunha](https://www.linkedin.com/in/ryan-dcunha)

Website: ryan-dcunha.tech

Education

Duke University- Pratt School of Engineering

August 2021 - Present

Bachelors in Biomedical Engineering and Computer Science | GPA: 3.98

Expected Graduation: May 2025

- BME Design Fellowship: Fellowship to promote medical device prototyping and innovation skills
- Certificate in Innovation and Entrepreneurship
- Relevant Coursework: Quantitative Physiology and Applied Statistics, MedTech Prototyping Skills, Medical Instrumentation, Signal Processing, Data Structures and Algorithms, Operating Systems

Work Experience

Delsys | R&D Intern

May 2023 - August 2023

12 week internship at wearable sensor medical device company specializing in electrical and software aspects of EMGs

- NeuroMap software development
- Polygraph electrical firmware data collection

You Lab | Undergraduate Researcher

January 2022 - Present

Currently in Dr. Lingchong You's lab to encapsulate engineered bacteria to sense and respond to signals using biosensors

- Awarded Duke Undergraduate Research Assistantship Grant for \$400 renewable every semester and invited to present at annual Duke Undergraduate Research Symposium
- Developed and trained machine learning algorithm using support vector regression in Python to predict chemical concentration inputs of biosensors based on cell fluorescence outputs
- Design wet lab experiments to collect data on biosensor interactions by culturing and encapsulating bacteria

MEDesign | Vice President

January 2022 - Present

Duke Medical Device Design Club

- Manage \$8000 budget to distribute among project teams, write grant and budget proposals, and present to Duke engineering alumni and medical device foundations for funding
- Facilitate project teams by helping mentor and brainstorm electrical and software components of stroke device, suturing device, breathalyzer, and arm splint

Projects

Duke Hackathon | 24 hour Team Hackathon

October 2022

Designed drink coaster to track daily water consumption and notify user with LEDs and text if intake wasn't met hourly

- 2nd place Healthcare Track, 1st place First Time Hackathon Team, Most Creative Use of Twilio API Award
- Printed CAD enclosure for microcontroller, force sensing resistor, and LEDs and calibrated device using linear regression
- Programmed in C to connect Photon with Twilio API through webhooks

Wearable Breathalyzer | Project Team Leader

August 2022 - Present

Currently designing wearable breathalyzer along with app to monitor BAC levels for young adults

- Prototyped using Arduino and sensors to build PCB and use Bluetooth to connect microcontroller to app
- Code app in Flutter and Swift to display and analyze BAC levels after utilizing Figma to design UI/UX
- Manage \$5000 budget and lead weekly meetings of 15 engineers to integrate CAD, electrical, and software components

Leadership Experience

Duke Academic Resource Center | Peer Tutor

August 2022 - Present

- Tutor 4 hourly sessions per week for Multivariable Calculus and Computational Methods in Engineering in Python

Duke Engineers for International Development | Treasurer

August 2021 - January 2022

- Worked on year-long West Virginia project alongside JZ Engineering firm to design bridge and write bridge reports
- Managed club budget of \$10000 to allocate money for international and domestic projects and coordinated fundraiser with corporations such as Panda Express

Technical Skills

Software: Python, C, Java, MATLAB, JavaScript, SQL, x86, Git, Tensorflow, PyTorch, OpenCV

Technologies: Microcontrollers, Circuit Design (KiCad), PCB Layout, Soldering, OnShape, Fusion360,