

Mark DeMonte Jr.

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EDUCATION

Duke University

August 2024 – May 2028

B.S.E. Candidate, Double Major in Electrical & Computer Engineering and Computer Science; Minor in Chemistry

GPA: 3.62/4.00 | National Merit Scholar | Study Abroad in Madrid, Spain (Fall 2026)

Relevant Coursework: Data Structures & Algorithms, Signals & Systems, Fields & Waves, Linear Algebra, Probability

TECHNICAL & RESEARCH EXPERIENCE

Helping Hand

April 2026 – Present

Agency Initiatives & Engineering Intern

La Grange, IL / Remote

- Cut week-long admissions and outreach processes to minutes by building and iterating Power Automate workflows with AI tools, after interviewing 14 department directors over six weeks to identify the time-consuming operational tasks
- Built Power BI and Power Query dashboards tracking department expenses and fundraising revenue for \$5M+ annually, and wrote Python scripts and Power Automate expressions to clean the client data and merge duplicate client records
- Standardized historical medical, demographic, and care data for 1,000+ clients, redesigned intake workflows for 200+ staff, and used Python and Excel to update 5,000 data points across about 250 client records in the Therap platform

Duke SMIF Cleanroom – Wang Lab

March 2026 – Present

Undergraduate Researcher (paused for study abroad until January 2027)

Durham, NC

- Investigating machine learning methods to optimize reactive ion etching parameters for semiconductor nanofabrication
- Secured a \$2,000 Duke undergraduate research grant and developed the project's first-phase RIE experimental procedure

Curious Cardinals

May 2025 – Present

Campus Ambassador & Engineering Research Mentor

Remote

- Mentor 7 students through individualized engineering research, translating project work into accessible technical concepts
- Ran a campus outreach campaign, emailing 400+ Duke students to expand awareness of and enrollment in the program

TECHNICAL PROJECTS

Antweight Combat Robot Design

January 2026 – May 2026

Mechanical Team Lead

Durham, NC

- Led the mechanical design and build of a horizontal bar-spinner antweight robot using CAD, soldering, and 3D printing
- Integrated mechanical and electrical systems into a competitive robot; finished 3–0 and won the Duke Antweight Division

Alumni Connection Platform

February 2026 – March 2026

Python Prototype Developer

Durham, NC

- Coded a Python and HTML web prototype with AI tools and Claude Club leadership to connect students with alumni
- Implemented features for alumni visit postings and student coordination of mentorship and networking opportunities

Sleep Study Analyzer

January 2025 – May 2025

Python Developer

Durham, NC

- Built a Python tool with two collaborators to detect sleep apnea and hypoxia in 5,000 entries, passing all test cases
- Built the NumPy and SciPy blood-pressure module, computing systolic and diastolic averages and flagging missed beats

Gyroscopic Food Transportation Device

August 2024 – December 2024

Engineering Team Lead

Durham, NC

- Led a four-person engineering team designing and prototyping a gyroscopically stabilized bowl for Parkinson's patients
- Laser-cut the acrylic frame using Adobe Illustrator and a Trotec laser cutter, and presented progress to 40+ attendees

LEADERSHIP

Organ Donation Advocacy (SODA)

August 2022 – Present

Founder & President

Durham, NC

- Raised \$2,000 and partnered with the IL Secretary of State to expand a statewide organ donation drive to 50+ schools
- Founded Duke's SODA chapter, recruiting 20 members to lead peer-to-peer organ donation education and registration

Best Buddies & Special Olympics

August 2022 – Present

President & Friendship Advisor

Durham, NC

- Oversee Best Buddies and Special Olympics at Duke, coordinating weekly programming for 100+ athletes and 25 families

SKILLS & HONORS

- **Programming:** Python, NumPy, SciPy, Matplotlib, Java, SQL, HTML, Git, MATLAB, Object-Oriented Programming
- **Data & Automation:** Excel, Power BI, Power Query, Power Automate, SharePoint, Claude, ChatGPT, Copilot, Word
- **Electrical & Research:** Circuit Analysis, Digital Logic, Signal Processing, PSpice, Arduino, ESP32, RIE Fabrication
- **Fabrication & Design:** Laser Cutting, Adobe Illustrator, Onshape, AutoCAD, Soldering, 3D Printing, Prototyping
- **Honors:** Duke Research Grant, Bass Connections Showcase Finalist, Illinois State Scholar, IL Certificate of Service