

Eoghan McIvor

hello@eoghan.codeseoghan.codesgithub.com/Eoghanmc22

EDUCATION

BS in Computer Science, Carnegie Mellon University, Pittsburgh, PA

Anticipated 2029

- Concentration in Artificial Intelligence

GPA: 4.0 / 4.0

Florida Atlantic University High School, Boca Raton, FL

August 2021 – April 2025

- Concentration in Computer Engineering

GPA: 4.0 / 4.0

ENGINEERING EXPERIENCE

Marine Advanced Technology Education (MATE)

Boca Raton, FL

Underwater Robotics Competition

October 2021 – August 2025

Chief Technology Officer

- Develop entirely custom control software using the Rust programming language for an underwater remotely operated vehicle (ROV)
- Apply OpenCV and AI to autonomously control of an underwater vehicle
- Design and prototype custom PCBs for electronics
- Assist with mechanical and electrical design of ROV
- Compete in MATE ROV Competition Worlds (2022-2024)
- Earned 4th place out of 63 teams from 12 countries (Worlds 2023)
- Earned 7th place out of 82 teams from 17 countries (Worlds 2024)
- (Github: [Eoghanmc22/mate-rov-2024](https://github.com/Eoghanmc22/mate-rov-2024), [Eoghanmc22/mate-rov-2023](https://github.com/Eoghanmc22/mate-rov-2023))

Dirty Mechanics FRC Robotics Team

Boca Raton, FL

Lead Programmer

June 2023 – August 2025

- Lead the programming of a competitive FRC robot
- Mentor peers in programming and engineering skills
- Engage in technical discussions with team members

RESEARCH ACTIVITY

Undergraduate Research in Autonomous Underwater Robotics

Boca Raton, FL

FAU's Center for Connected Autonomy and Artificial Intelligence

Spring 2024 – August 2025

- Publish paper as first author for the IEEE Symposium on Maritime Informatics & Robotics (doi.org/10.1109/MARIS64137.2025.11139513)
- Design and maintain autonomous control systems for a conservation related application of underwater ROVs
- Utilize an industry standard ROV and its software tooling

Optimizing Thruster Orientation on an Underwater ROV

Boca Raton, FL

FAU OURI Grant

Fall 2023 – Spring 2024

Awarded: \$1,200

- Composed grant application to fund R&D for MATE team
- Formulated and implemented a thruster orientation optimization algorithm in the Rust programming language
- Prototyped and built the electrical and mechanical designs of an underwater ROV to test the algorithm proposed in grant
- Presented findings at FAU's OURI undergraduate research symposium

Class Schedule Solver

Wellington, FL

Personal Project

August 2022

- Developed an algorithm to generate non-conflicting college class schedules that maximize a scoring heuristic
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MENTORING

Polo Park Middle School

Robotics Mentor

Wellington, FL
August 2021 – August 2025

- Taught STEM skills through FIRST robotics
- Introduced students to autonomous robotics, and control systems
- Mentored three teams totaling over 500 service hours

Scouts BSA

Eagle Scout Rank

Wellington, FL
April 2018 – August 2025

- Developed leadership and collaboration skills
 - Taught outdoors skills to younger scouts
 - Planned and lead an Eagle Scout service project to give back to underprivileged FIRST LEGO League teams in my community
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AWARDS

MATE ROV Competition MVP Award

MATE World Championship

Kingsport, TN
2024

MATE/NOAA Ocean Explorers Computer Coding Challenge Winner

MATE International Offseason Challenge

Internet
2024

FIRST Dean's List Semi-Finalist

Dirty Mechanics FRC Robotics Team

Boca Raton, FL
2024

Eagle Scout Rank

Scouts BSA

Wellington, FL
2024

Grand Prize Winner

Wave Makers Impact Entrepreneurship Competition

Palm Beach, FL
2024

Fourth Place, Intelligent Machines, Robotics, and Systems Software Category

Florida's State Science and Engineering Fair

Lakeland, FL
2024

Second Place, Engineering Category

Palm Beach Regional Science Fair

Palm Beach, FL
2024

Lockheed Martin Special Award

Palm Beach Regional Science Fair

Palm Beach, FL
2024

Navy League Special Award

Palm Beach Regional Science Fair

Palm Beach, FL
2024

Pathfinder Scholarship Nominee

FAU High School

Boca Raton, FL
2024

National Merit Semi-finalist

FAU High School

Boca Raton, FL
2024

FIRST Mentor of the Year

Polo Park Middle School Afterschool Robotics

Wellington, FL
2022, 2023

President's Honor List

Florida Atlantic University

Boca Raton, FL
Fall 2022 - Fall 2024

TECHNICAL SKILLS

- Operating Systems: Linux, Windows, MacOS
 - Programming Languages: Rust (Advanced), Java (Advanced), Python, C, HTML, CSS, JS, Bash
 - Software: JetBrains Suite, JProfiler, Fusion 360, Onshape, Vim, KiCAD EDA
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