

# Eoghan McIvor

[eoghan@cmu.edu](mailto:eoghan@cmu.edu)
[eoghan.codes](https://eoghan.codes)
[github.com/Eoghanmc22](https://github.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](https://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

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**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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