Eli Goreta

Ann Arbor, Michigan

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Education

University of Michigan - Ann Arbor: College of Engineering April 2025
Bachelor of Science in Engineering in Computer Engineering w/ Minor in Mathematics *Ann Arbor, Michigan*

Technical Skills

Languages/ Software : C/C++, Java, Python, MATLAB, Swift, LaTeX, ARM, Visual Studio Code, XCode, Git, ROS, Gazebo, Fusion360

Relevant Coursework : Algorithms and Data Structures, Computer Organization, Discrete Mathematics, Differential Equations, Multivariable Calculus, Physics 1-2, Probability

Experience

Grader August 2023 – Present
EECS 183: Elementary Programming Concepts

- Grades code quality on student's programming projects in 1,200+ student course
- Assists in proctoring of exams and grading of exams
- Assists at special events throughout the course, including a student final project showcase at the end of the semester

Software Team Member September 2022 – Present
Michigan Autonomous Aerial Vehicles

- Designs computer vision software using OpenCV in Python and GPS-based path planning onboard the drone
- Competes in an autonomous drone competition in which the drone must complete strenuous software-based and physical tasks in a very limited timeframe

College Instructor June 2021 – Present
University of Michigan: Dearborn - Math Corps *Dearborn, Michigan*

- Instructs 60 middle-school students on both core and advanced mathematics concepts and administrates activities
- Manages 18-person team of high-school teaching assistants
- Works closely with UM-Dearborn Mathematics faculty

Projects

Color-Based Vision Algorithm
Personal Project

- Developed an algorithm in C++ onboard an Arduino that utilizes a convolutional neural network, determining a subject in a video of a predetermined hex-value, returning the vector center-offset of the subject. The offset is passed to a program that controls two servo motors, allowing for the camera to physically track (tilt and rotation, turreted-style) the subject in real time.

Maze Solving Algorithm
Algorithms and Data Structures

- Developed a multi-level maze solving algorithm in C++ using both depth-first-search and breadth-first-search searching and backtracing techniques that is optimized in both time and space complexity using both STL and custom data structures.

CPU and RAM Simulators
Computer Organization

- Developed a suite of programs that simulate the cache, virtual memory, and pipelined instruction processing of a CPU and RAM that interface with a custom, 32-bit assembly language.

Volunteer Work

Robotics Mentor April 2022 – Present
FRC 5090 - Torquenados

- Instructs and advises students of world championship-level team in robotics engineering, including advanced programming skills and algorithms, embedded systems design, and engineering design processes