Maurice Roland Capitulo-Ampane

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Availability: Summer 2025

EXPERIENCE

6 River Systems (Ocado Group)   **Waltham, MA**
Software Engineering Intern   Summer 2024
- Engineered a patent-pending robot detection system incorporating C++, Python, and ROS2, enhancing real-time operational efficiency and accuracy improving overall system responsiveness to environmental changes
- Developed a simulation in Gazebo and utilized RViz2 for rapid prototyping and optimization of the detection system
- Implemented the detector in C++, achieving over an 80% reduction in CPU usage, optimizing performance and efficiency

Olin Electric Motorsports (Formula SAE Electric)   **Needham, MA**
Accumulator Subteam Lead   Summer 2023 - Summer 2024
- Directed a team of 12 engineers in the development and manufacturing of a 6-segment, 400-volt modular battery pack, specifically engineered to power a high-performance Formula-style electric vehicle
- Oversaw the design and fabrication of battery segments, enclosures, and safety systems, ensuring optimal performance and reliability

Dive Technologies   **Quincy, MA**
Robotics Intern   Fall 2021 - Spring 2022
- Developed a sophisticated location plotter in Python to track an Autonomous Underwater Vehicle (AUV), enhancing navigation accuracy and data visualization
- Refined the geometry for buoyancy foam manufacturing leveraging SOLIDWORKS, reducing material waste

PROJECTS

Gesture Controlled Robot | Python, ROS2, OpenCV, Scikit-learn
- Trained a Scikit-learn neural network to classify 9 distinct hand gestures for teleoperation control, enabling seamless behavior switching and sound playback
- Utilized OpenCV to compile the training dataset and facilitate real-time classification, elevating user experience
- Constructed and integrated a finite state machine in Python using ROS2 to operate smoothly with the classifier

Voice-Operated Robot Assistant | Python, ROS2, TensorFlow, AprilTags
- Configured a TensorFlow neural network to identify 4 unique voices based on spectrogram data
- Leveraged Google Speech-to-Text to drive the robot, enabling robot positioning and item retrieval
- Employed AprilTags and YOLO v8 for precise item identification, complemented by SORT for efficient item tracking

EDUCATION

Olin College of Engineering   **Needham, MA**
Bachelor of Science: Software Engineering (GPA: 3.84)   May 2026
- Relevant Coursework: Computational Robotics (Python / ROS2), Machine Learning (Python / MATLAB), Software Design (Python), Principles of Integrated Engineering (C++), Discrete Mathematics
- Awarded a 50% merit-based scholarship for academic excellence
- Computational Robotics Course Assistant

SKILLS

Languages & Frameworks: Python, C++, Java, SQL, ROS2, Tensorflow, MATLAB
Web Development: HTML, CSS, Flask, Django, Markdown
Tools & Platforms: Linux, Git/Github, Jira, Wireshark, Simulink, LaTeX
Other & Personal Interests: RA (Resident Assistant), Fire Arts, Eagle Scout / Assistant Scoutmaster, Teaching, Acting