Maurice Roland Capitulo-Ampane

617-842-9938 | mampane@olin.edu | linkedin.com/in/mampane/ | mampane.com
Availability: Full Time Starting May 2026

EXPERIENCE

Reframe Systems **Andover, MA**
Robotics Software Intern Summer 2025
- Implemented ROS2 to CAN firmware using MicroROS and C++ on a Teensy 4.1 to unlock BLDC motors and force-torque sensing for the next generation of end of arm tools for automated modular housing construction
- Used force-torque sensing to home motor axis, reduce points of failure, and prevent end of arm tool damage
- Integrated end of arm tool electronics to control motors and efficiently packaged relevant components

6 River Systems (Ocado Group) **Waltham, MA**
Robotics Software 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

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 4 critical subsystems, to ensure optimal performance and reliability

PROJECTS

Machine Tending Kinova Gen3 | C++, Python, ROS2, MoveIt2, Arduino
- Implemented robust pick and place loop with Kinova Gen3 arm for automated part manufacturing using MoveIt2
- Interfaced with a PLC over an Arduino and relay using 1 C++ and 2 Python ROS2 nodes to control a CNC mill

Gesture Controlled Robot | Python, ROS2, OpenCV, Scikit-learn
- Trained a Scikit-learn neural network to classify 9 hand gestures for teleoperation control
- Utilized OpenCV for training data and real-time classification, as well as audio feedback to elevate 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: Robotics Engineering (GPA: 3.84) May 2026
- Relevant Coursework: Computational Robotics (Python / ROS2), Machine Learning (Python / MATLAB), Software Design (Python), Combinatorics and Graph Theory (Python), Modern Robotics: Mechanics, Planning, and Control
- Introduction to Computational Robotics Course Assistant

SKILLS

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