

Fabrizio Coronado

fabrizzio37@gmail.com | (301)-915-4046 | [YouTube](#) | [Linkedin](#) | [Github](#)

Education

University of Maryland, Master's of Engineering in Robotics

December 2024

- GPA: 3.5/4.0

University of Maryland, Bachelor's of Science in Mechanical Engineering

May 2021

- GPA: 3.59/4.0

Skills

Software: Github, TracSVN, JIRA, ROS, [Gazebo](#), [MoveIt!](#), OMPL, Docker, Linux, PTC Creo, SolidWorks

Programming Languages: Python, C++ , MATLAB, ITOS, CCL

Other: PyTorch, OpenCV, Raspberry Pi, Matplotlib, NumPy, CMake, [Unit testing](#), CI, Doxygen, DNNs, [Calibration](#)

Projects

Autonomous Robot: [Real self-driving robot collected and transported objects](#)

- Designed robot to navigate a randomized environment and transport blocks in specified order within 10 minutes
- Assembled and wired a mobile robot consisting of a Raspberry Pi, distance sensor, IMU, gripper and camera
- Programmed algorithms for localization, planning and control enabling precise movement and spatial awareness
- [Completed obstacle course](#) with contingency planning successfully working upon gripper dropping blocks

Optical Flow Network: Motion segmentation and tracking using deep learning

- Formulated a system to segment and track motion in dynamic environments using deep learning techniques
- Improved accuracy and robustness of motion segmentation and object tracking under occlusions
- Implemented flow estimation with RAFT network and integrated SIFT with Kalman filter for robust tracking
- Achieved high-accuracy motion segmentation and tracking with reliable performance in complex scenarios

Swarm Robots: Simulation of a swarm following software development standards

- Developed a swarm to simulate coordinated navigation while adhering to software development best practices
- Demonstrated 20+ bots traveling to shared location without collisions inside of Gazebo using SLAM
- Integrated Github CI for automated testing and coverage reports with detailed backlogs and UML diagrams

LLM Quantization: [Application and evaluation of various quantization methods](#)

- Tasked with comparing the effects of various post training quantization techniques on the factuality of LLMs
- Modified and integrated 8-bit, 4-bit, BiLLM and pruning optimization methods on Llama-3.2-3B
- Adapted MMLU evaluation by using 5-shot learning and filtering out low-scoring and math heavy subjects
- Discovered 4-bit PTQ decreased the model size by 78% while only decreasing accuracy by 3%

Experience

Software Engineer, [NASA JPSS](#) – Lanham, MD

July 2021 – Present

- Wrote and validated scripts to control thermal and power subsystems on simulator and actual satellite
- Coordinated daily operations between subsystem teams to manage simulator availability and product testing
- Lead the development of 35-page guide on how to configure, troubleshoot and upkeep RTOS satellite simulators
- Led satellite test events as flight director, coordinating teams and ensuring safe execution of scripted procedures

Technical Intern, BAE Systems – Rockville, MD

June 2020 – Jan 2021

- Supported the development of the Ohio-class submarine strategic weapon system as a cross-functional team
- Modeled and drafted 40+ CAD models and drawings while managing configuration updates via Windchill PLM
- Produced quality models and documentation, contributing to the upkeep and modernization of the SWS system