Nicholas V. Murolo

LinkedIn

Education

Carnegie Mellon University — *Pittsburgh, PA*
Bachelor of Science in Mechanical Engineering
Additional Major in Robotics
GPA: 3.69 / 4.0 | Sept 2019 – May 2023

Teaching Assistant for Intro to Robotics (16-311), Spring 2022 & 2023

Professional Experience

H Quest Vanguard — *Pittsburgh, PA*
Systems Engineer II | July 2023 – Present
(previously Systems Engineer I, Mechanical Engineer)

Lead systems and electrical integration engineer on plasma-based process equipment, covering system architecture, industrial controls, and functional safety. I design and implement distributed control and monitoring systems, specify and build control panels, and develop Python-based tooling and UIs. I've set up safety and hazard analysis practices for high-power systems, supported deployment and commissioning at external sites, and built water cooling and gas-handling systems for process development. I also mentor interns and junior engineers.

Argo AI — *Pittsburgh, PA*
Integration & Test Engineer Intern | May 2022 – Aug 2022

Worked on physical validation for autonomous vehicle perception and impact detection. I designed and ran physical tests integrating LiDAR, cameras, IMUs, and other sensors, and built Python tooling to automate data workflows and analysis. I created Jupyter-based workflows that standardized test card generation, execution tracking, and results review for the test engineering team.

Projects

Printed Clicks (Personal Venture) | April 2025 - Present

Personal venture focused on custom mechanical keyboards and tactile devices. I design reversible, double-sided PCBs in KiCad; coordinate fabrication; and assemble SMD and through-hole components. I implement custom QMK firmware and design/3D-print ergonomic cases and fidget devices based on keyboard switches. I registered a Pennsylvania business entity and handle sourcing, manufacturing, and fulfillment.

Robotics Capstone: FPS Gaming Robot | Aug 2022 – May 2023

Led mechanical design for a mobile robot that can operate a first-person shooter game, while contributing to system architecture. I defined requirements, created CAD models, integrated mechanical and electrical subsystems, and planned the project using Gantt charts. Our team executed test plans and requirements verification, culminating in a live demo where the robot successfully played Counter-Strike.

Carnegie Mellon Racing (Formula SAE Electric) | Sept 2019 – May 2023

Member of the electric Formula SAE team focusing on suspension design and analysis. I led the design of uprights and control arms, using SOLIDWORKS and ANSYS for structural analysis and optimization, and developed custom MATLAB tools for suspension force analysis. I collaborated on Design for Manufacturing improvements and fabricated components using manual machining, including mills and lathes.

Skills

Programming
Python, MATLAB, C, C++, Java, JavaScript

Tools & Software
OnShape, SOLIDWORKS, ANSYS, Git, draw.io, Jupyter, PyTorch

Hardware & Systems
SCADA, Raspberry Pi and single-board computers, PLCs, 3D printing, soldering (SMD & THT), industrial fittings and connectors

Focus Areas
System architecture & integration, functional safety & hazard analysis, experimental design, technical documentation