

Peter Murray

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Project portfolio: <https://petmurr.github.io>

EDUCATION

Worcester Polytechnic Institute, Worcester, MA
M.S. Robotics Engineering (3.77/4.00)
B.S. Mechanical Engineering (3.77/4.00)

Sept 2019 – Dec 2023

EXPERIENCE

Worcester Polytechnic Institute, Worcester, MA
Assistant Lab Manager

Jan 2024 - July 2024

- Maintained hardware and software for undergraduate robotics labs teaching robotic arm kinematics/dynamics, and mobile robot LiDAR mapping, path planning and ROS networking.
- Developed "Armgui", a standalone C++ application to interface with and troubleshoot the OpenManipulatorX robot arm.
- Received Rho Beta Epsilon award for Excellence in Robotics Education.

Draper Laboratory, Cambridge, MA
Systems Engineering Intern

May 2023 - Aug 2023

- Supported hardware-in-the-loop models of tactical systems under Systems Engineering.
- Analyzed network data in multiple configurations for both requirement validation and protocol debugging.
- Developed an automated test report writing & timeline visualization software in python to easily review requirement validation.

Teledyne Marine, Falmouth, MA
Mechanical Engineering Intern

May 2022 - Aug 2022

- Prepared mechanical part and assembly drawings for chassis refinement and bulkhead redesigns for multiple versions of autonomous underwater gliders.
- Supported hardware production by assembling and pressure-testing autonomous float profilers, as well as designing and building a cart to transport gliders in excess of 100 lbs around manufacturing floors.
- Developed a python tool to collect and synthesize tidal current information, expanding an ocean current model to aid dead-reckoning navigation.

EdgeTech, Wareham, MA
Mechanical Engineering Intern

Jun 2021 - Sep 2021

- Created assembly procedures and revisioned Solidworks parts, assemblies, and drawings of underwater tow vehicles and top-side electronic enclosures.
- Implemented a wire management solution on an underwater vehicle in the field by designing and shipping a kit of 3D printed parts.

PROJECTS

Armgui

May 2024 - Jul 2024

- Developed standalone robot arm user interface in C++ to quickly test hardware and get users familiar with the OpenManipulatorX robot arm.
- Implemented hot-swappable USB connection on both Linux and Windows, automatic detection and configuration of servo operating modes, and interactive knobs for robot joint control.

Formula Electric 2023

Sep 2022 - May 2023

- Designed and manufactured a more reliable and serviceable battery/power systems on WPI's electric racecar. Our team placed 3rd overall in "Formula Hybrid + Electric" 2023 competition and received the "Excellence in EV Engineering" award.
- Led the development of a robust and safety-compliant enclosure for cell segments and high voltage electronics, adapting previous year's segments to rails for quick installation and removal.
- Designed and manufactured a removable fan manifold for the battery's cooling system.

High Power Rocketry Club

Sep 2021 - May 2023

- Supported a modular rocket avionics stack by building and troubleshooting a custom PCB that interfaced with other boards over CAN. Interfaced an IMU, barometer, magnetometer and GPS.

SKILLS

Prototyping: Part/assembly drawings, DG&T, laser cutting, sheet metal, CNC, 3D printing, soldering & PCB assembly.

Languages: C++, Python, MATLAB

Software: Solidworks, Fusion 360, ROS, KiCAD, Altium Designer.