Peter Murray

peter@petermurray.net
Worcester, MA
www.petermurray.net (check it out)

Hello! I'm Peter, and I'm looking for interdisciplinary projects that spark joy, like my robotic musical siren, helping build an electric racecar, and building animations that explain fundamental motion planning topics.

EDUCATION

Worcester Polytechnic Institute   *Sep. 2019 – Dec. 2023*
M.S. Robotics Engineering (3.8/4.0), B.S. Mechanical Engineering (3.8/4.0)

Sturgis Charter Public School (3.7/4.0)   *Sep. 2016 – May 2019*

PROFESSIONAL EXPERIENCE

Worcester Polytechnic Institute   *Jan 2024 – Jun. 2024 (anticipated)*
Currently an assistant manager for WPI's undergraduate robotics labs. Supporting our OpenMANIPULATOR-X robotic arm lab, turtlebot navigation lab, and helping faculty maintain, design and implement lab equipment.

Draper Laboratory   *May 2023 – Aug. 2023*
Supported hardware-in-the-loop simulation of tactical systems under systems engineering by validating network messages, troubleshooting decoding, and visualizing a timeline of network data and system flags.

Teledyne Marine   *May 2022 – Aug. 2022*
Supported mechanical design and development of unmanned underwater Slocum Gliders. Created a simple python tool to collect and synthesize tidal current information, expanding an ocean current model for glider navigation.

EdgeTech   *Jun. 2021 – Sep. 2021*
Designed and shipped custom, add-on parts for customer's underwater tow vehicles, 3D printing parts for prototyping and production. Created part and assembly design and documentation for new and existing products.

PROJECTS

Miren, a Musically Attentive Siren   *Sep. 2023 – Dec. 2023*
Miren is a wireless volume and pitch-controllable air raid siren that can listen to its environment, identify melodies, and generate a continuation of the melody using a 2nd order Markov chain. It is also extremely loud.

RRT Kinodynamic Planner for Planar Manipulators   *Sep. 2023 – Dec. 2023*
An exercise in motion planning, myself and two others built an actuated planar manipulator simulator to dynamically navigate a workspace using the RRT algorithm.

Programmatic Motion Planning Animations   *Sep. 2023 – Dec. 2023*
Created animations with *Manim* to visualize and explain compelling search algorithms and robotic configuration space topology, using my own implementations of RRT, RRT*, and a 2R manipulator simulation.

Formula Electric   *Sep. 2022 – May 2023*
Helped design, build, and manufacture the accumulator and power systems on WPI's electric racecar that competed in the "Formula Hybrid + Electric" 2023 competition. Placed 3rd overall!

High Power Rocketry Club   *Sep. 2021 – May 2023*
Helped design, build, and troubleshoot PCBs for 2022-23's rocket. Helped design, model, and prototype the UAV payload for HPRC's 2021-22 competition rocket.

SKILLS

Mechanical: Solidworks, Fusion 360. Experience with part/assembly drawings, DG&T, and CNC machining basics.
Programming (in order of proficiency): Python, MATLAB, C/C++, currently learning more about embedded implementations.
Other: Familiar with ROS, KiCAD, a little Altium designer.