Florian Schwarzinger

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Skills

Machining: CNC Mill, Injection Molding, Welding, Lathe, Sheet Metal Forming, Plasma Cutting, FDM Printing, Resin Printing, Laser Cutting, Thermo-Forming, Casting, CAM
Programming: Linux, C++, Python, Rust, GitHub/GitLab, Java, OpenCV, ROS, Arduino, MATLAB
Software: SOLIDWORKS, OnShape, Jira, TestRails, Microsoft Office Suite, Adobe Creative Cloud

Experience

University of Washington - Applied Physics Laboratory - Seattle, WA - Ocean Engineering Intern
June - August 2021

- Modified commercially available underwater Remotely Operated Vehicles (ROVs) to enable autonomous following of one ROV by another, utilizing Python, ROS, and OpenCV
- Altered chassis and electronics housing to integrate external sensors into preexisting structure
- Reverse-engineered software architecture and implemented multiple custom control behaviors

ThayerMahan - Groton CT - Research and Development Intern
May - December 2022

- Worked on development, calibration, field testing and maintenance for autonomous jetski
- Utilized Python and OpenCV to control FLIR camera and continuously capture and stitch together 360-degree thermal image
- Developed microcontroller code and prototyped circuitry for mechanical whale blow simulator

Piaggio Fast Forward - Boston, MA - Software Engineer in Test
September 2023 - February 2025

- Built a physics model in Python to process motion data of autonomous cargo-carrying robot
- Executed physical and automated testing to identify and diagnose defects, and to validate fixes
- Developed, extended, and maintained automation testing frameworks
- Achieved a 50% reduction in automation runtime, and raised test reliability from 75% to 98%

Projects

All projects can be found in more detail on my portfolio (fschwarzinger.com).

Shadow Boxing Robot

- Worked on the mechanical design of a robot built to mirror a person's movement
- Designed, assembled, and tested a 2 degree of freedom (DOF) hip joint, a 2 DOF shoulder joint, and a 1 DOF elbow joint using OnShape and SolidWorks
- Tested and iterated on several designs to meet and exceed evolving project requirements

Robotic Tug-Boat

- Wrote Arduino code to make a robotic tug-boat follow a specified target using object detection
- Created arbiter to take movement commands from multiple inputs, process the information, and arbitrate which command should be followed

Rubik's Cube Solving Robot

- Wrote Python program to solve a Rubik's cube and output to a microcontroller via serial
- Optimized the program using Rust, graph data structures, and multiple search algorithms
- Utilized Onshape to design CAD model, optimizing mechanical structure for fastest solve time

Education

Olin College of Engineering - Needham MA

- Bachelors of Science in Engineering: Robotics
- Relevant coursework: Mechanical Prototyping, Design For Manufacturing, Fundamentals of Robotics, Robotics System Integration, Dynamics, Discrete, Data Structures and Algorithms