Christopher Walczak

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OBJECTIVE

Dynamic Computer Science and Robotics double major with hands-on experience in robotics, computer vision, software development, and embedded systems, seeking experience in innovative drone research.

EDUCATION

Worcester Polytechnic Institute (WPI), Worcester MA — **August 2021 - present**

B.S. Robotics & B.S. Computer Science, GPA: 3.87/4.0 — **Completed: May 2025**

M.S. Robotics & Computer Science (planned) — **Expected Graduation: May 2027**

SKILLS

Languages: MATLAB, C, C++,Python, Java, JavaScript, HTML

Libraries: ROS, SLAM, OpenCV, SQL, WebGL

Software: Ardupilot Mission Planner, QtCreator, Blender, Zbrush, SOLIDWORKS, Final Cut Pro X , Prusa Slicer, UltiMaker Cura

Links: http://www.youtube.com/@polandsfinest4594 | https://github.com/cwalczak66

WORK EXPERIENCE

NRIEP SOFTWARE ENGINEERING INTERNSHIP, *Naval Undersea Warfare Center, Newport, RH* **June 2025 - August 2025**

- Developed and documented a custom software recording system using a blend of MATLAB and C for model munition simulations, significantly improving post-test analysis capabilities for the software and analysis team.
- Streamlined previously manual data capture processes, enhancing team efficiency and accelerating test results.
- Designed and documented automated testing programs in C to simulate a wide range of recording environments and data scenarios, ensuring tool robustness and ability to handle large data inputs.
- Collaborated closely with software engineers to ensure seamless system integration and full compliance with all critical performance and reliability requirements.

COMBUSTION ENGINEERING RESEARCH LAB MQP, *Shibaura Institute of Technology*, *Tokyo, Japan* **September 2024 - December 2024**

- Co-developed IgniteCV, a modular computer vision tool built in C++ using OpenCV, Qt, and CMake. The software automates the analysis of combustion experiments by identifying flame speed, angle of attack, burned area, and rocket propulsion patterns from high-speed video data.
- Designed and implemented a real-time flame tracking UI for visualizing processed data and exporting analytical results to CSV, streamlining experimental workflows for researchers.
- Proactively gathered software requirements through direct collaboration with Japanese researchers, overcoming language and communication barriers to deliver a solution aligned with the lab's technical and research needs.

PROJECTS

MORPHING FUSELAGE VTOL UAV (SOARV2) MQP, *WPI* **January 2024 - present**

- Spearheaded flight testing research for a morphing VTOL UAV, leveraging personal expertise and enthusiasm for drone systems and piloting; served as the primary test pilot for all flight experiments
- Designed a UAV integrating soft robotics with drone maneuverability, using ArduPilot for precise flight control and data collection, and conducting experiments on flight performance and energy efficiency.
- Modified C++ ArduPilot firmware to evaluate control surface behavior during flight mode transitions; documented findings and collaborated with faculty and peers to present results effectively.

BRIGHAM WOMEN'S HOSPITAL SOFTWARE PROJECT, *WPI* **January 2023 - February 2023**

- Worked in a team of ten students to create a software template for Brigham Women's Hospital's multi service platform in Java, which included a pathfinder, map editor, csv file management, and handling of medical service requests.
- Developed team working skills, large scale object oriented design, agile scrum workflow, Git, used collaborative software like Jira to manage tasks, and leadership experience being the lead front end engineer.
- Collaborated in the creation of detailed user stories and software requirements with the team, ensuring clear communication and alignment to promote seamless software development and maintain a unified project vision.

HONORS AND AWARDS

Rho Beta Epsilon (Robotics Engineering Honor Society)(2024)

MQP finalist award (SOARV2) (2025)

Best MQP video presentation award (SOARV2) (2025)

Deans List (all semesters) (2021-2025)

NSLS (National Society of Leaders and Success) (2024)