**Sebastian Baldini**

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**Objective**

I am a Robotics Engineering major and Computer Science Minor in my senior year of my undergraduate degree and am starting my Masters at Worcester Polytechnic Institute looking for summer internships and fall Co-ops .

**Education**

Worcester Polytechnic Institute: Bachelor of Science in Robotics: 3.5 GPA May 2025

Master of Science in Robotics May 2026

**Professional Experience**

**Drone Controls and Simulation Lead**, PEAR Lab WPI August 2024- Present

* Programming trajectories for drone interception of flying objects with ROS 2
* Integrating and improving on internal simulation tools for improved use of perception with drones

**Undergrad Researcher**, Soft Robotics Lab WPI August 2024- Present

* Developing custom embedded sensors and encoders for robotic applications
* Researching soft body alternatives for modern mechanical systems and sensors
* Maintaining lab equipment and assisting others in developing and manufacturing soft body components

**Robotic Weapon Systems and Testing Intern**, Sig Sauer May 2024 – August 2024

* Worked on mechanical and electrical design for automated weapon systems
* Programmed custom computer vision tools with high-speed video for testing and evaluation
* Managed and designed parts for both machining and SLS laser printing for multiple teams

**Undergrad Research Assistant**, Robotic Materials Group August 2023 – May 2024

* Lead undergrad researcher on novel encoding utilizing multi-material FDM printing
* Developing soft robotic quadrupedal robot to traverse while being highly resistant to physical damage

**Residential Program Assistant**, WPI Frontiers Pre-Collegiate Program June 2023 - August 2023

* Provided high school students with a college-like experience
* Assisted in the management and running of events to ensure a safe and memorable experience

**Intern Production Assistant**, Millenium Slate May 2022 - Aug 2022

* Operated and assisted in prototyping new industrial production lines

**Skills**

**Programming Languages**: C++, C, Python, Java, Rust, MATLAB, HTML, CSS

**Software**: Solidworks Associate, Fusion 360, EAGLE PCB, ABB Robot Studio, Figma, Robot Operating System (ROS)

**Class Experience**: Computer Vision, Soft Robotics, Dynamics, Biomedical Robotics, Autonomous Ariel Robotics

**Leadership**

**Alpha Phi Omega**: Merit Badge University Chair and Omega Head of House May 2023- December 2023

* Organized a 2-day event with over 100 Boy Scouts coming from off campus to receive Merit Badges

**Phi Kappa Theta:** Brother and Interim Social Chair August 2023 – Current

* Assisting in the planning and development of inter-fraternity and philanthropy events.

**Organizations**

**AIAA Jet Engine Project Control System**: August 2023 – Jan 2024

* Lead the development of current control box system
* Designed new test stand for jet engine fuel systems and sensor array processing

**Project Experience**

**Industrial Robotics Class Project:**  November 2023 – December 2023

* Programmed a 6-DOF ABB arm with PLC control to manipulate and stack objects
* Utilized offline and online programming to simulate the robot before real world testing
* Learned how to optimize motion paths to avoid singularities to ensure consistent motion

**ROS Robot with LiDAR Path Planning and Exploration:** November 2023 – December 2023

* Programmed a robot utilizing Robot Operating System (ROS) to explore an unknown map
* Implemented the A\* algorithm to explore new frontiers and unexplored regions of the field
* Utilized LiDAR sensor to create a 2D map and use it to solve the kidnapping problem