

Shawn Salvatto

 Boston, MA

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SUMMARY

Full-Stack Robotics Engineer with a Master's degree in Robotics Engineering and extensive experience in developing and deploying innovative automation solutions. Proficient in programming 6-axis robotic arms, implementing computer vision systems, and software development using Python and C++. Skilled in designing custom robotic solutions and managing complex system integrations for industrial applications. Passionate about leveraging advanced robotics technologies to drive efficiency and innovation. Proud member of the Fourth Industrial Revolution, committed to shaping a smarter, more connected future through robotics and automation.

EDUCATION

- Master of Science in Robotics Engineering, May 2023 - Worcester Polytechnic Institute (WPI), Worcester, MA
- Bachelor of Science in Robotics Engineering, May 2022 - Worcester Polytechnic Institute (WPI), Worcester, MA
- Bachelor of Science in Mechanical Engineering, May 2022 - Worcester Polytechnic Institute (WPI), Worcester, MA

SKILLS

Software: Microsoft Office applications, MATLAB, Eclipse, SolidWorks, Fusion 360, Esprit., Amazon Web Services Suite, GitHub, Linux CLI

Programming languages: Java, Python, ROS, MATLAB, Racket, C++, C., JavaScript

Equipment: 3D Printing, CAM/CAD software, CNC Mills, Lathes, Waterjet cutters, Laser cutters.

Engineering: Robotics design, Software development, Laboratory Automation, Control systems, Project management, Technical documentation

PROFESSIONAL EXPERIENCE

Robotics Research Engineer, Samsung SSI, Cambridge, MA, 01/24 - 05/25

- Worked as a full-stack robotics engineer, developing automation solutions for experiment planning and equipment control, enhancing laboratory efficiency, and ensuring seamless integration of hardware and software components, contributing to the advancement of automated material synthesis processes.
- Created software in Python and C++ to automate experiment planning, furnace control, and powder dispensing for synthesizing sensitive materials in an inert atmosphere.
- Integrated advanced computer vision algorithms and inverse kinematics for self-guided navigation with a Franka Emika Panda 7-DoF robotic arm, enabling precise handling of equipment and materials.
- Led the research, procurement, and integration of a UR3 6-DoF robotic arm, expanding the system's automation capabilities.
- Automated backup of experimental data, ensuring data integrity and reliable access to experimental results.
- Collaborated with cross-functional teams to optimize laboratory throughput and contribute to new material patents and publications.

IoT Applications Engineering Intern, PTC, Boston, MA 06/21 - 09/21

- Completed a software developer internship at PTC, where I played a key role in creating technical demos for pre-sales applications.
- Collaborated with the sales and marketing team to create compelling technical demos for potential clients, showcasing the capabilities of the company's IoT products and services.
- Worked closely with other developers and designers to ensure that the demos and internal applications were user-friendly, functional, and met industry standards.
- Utilized a range of programming languages and tools, including Python, Java, and JavaScript, to create the applications and demos.

PROJECTS AND COURSEWORK

Capstone Project - Fully Modular Serial Manipulator, WPI, Spring 2023

- Collaborated with a team of four engineers to design and manufacture a modular serial robotic arm for educational use to reduce assembly and maintenance costs for classroom robotic infrastructure.
- Designed a versatile and cost effective platform that provides educators and students with hands-on experience in various serial manipulator configurations, including 3DoF, SCARA, and 6DoF spherical wrist.
- Developed a custom round robin communication system that allowed the main module to accurately detect the number and orientation of each link.
- Programmed a user-friendly GUI that enables users to send specific commands to the robot and visualize it in simulation.
- Implemented a robust feedback linearization controller for precise control of the robotic arm.

Major Qualifying Project - FSAE Electric Vehicle, WPI, Spring 2022

- Worked on a team of 22 to design, fabricate, and race a single seat FSAE electric race car.
- Managed a small interdisciplinary team of 4 over the course of the project to ensure deadlines were met and work was being conducted in an efficient and timely manner.
- Designed, manufactured, and integrated several components: drivetrain, suspension, custom battery, tractive system components, charger, and braking to satisfy design requirements and structural FEA.
- Gained proficiency in CNC machining, mechanical design, and how to organize and utilize members on a large scale project.

Robotics Controls, WPI, Fall 2022

- Completed a Master's level course in Robotics Controls, which included in-depth study and practical application of advanced control algorithms.
- Developed a strong understanding of modern robust control techniques, including Sliding Mode Control and its application in robotics.
- Acquired skills in modeling, designing, and implementing control systems for robotic systems with a focus on practical real-world applications.
- Completed a project that involved the design and implementation of a control system for a quadcopter using sliding mode control, resulting in improved accuracy and stability compared to traditional control techniques.