Samara Holmes

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EDUCATION

Worcester Polytechnic Institute, *Worcester MA*   Aug 2020 – Present
BS in Robotics Engineering and Computer Science, WPI Presidential Scholarship

RELATED COURSES

Mathematics: Multivariable Calculus, Linear Algebra, Applied Statistics
Computer Science: Machine Organization and Assembly, Object-Oriented Design, Systems Programming, Algorithms, Operating Systems, Embedded Computing in Engineering, Webware
Robotics: Electrical and Computer Engineering, Robotic Processes, Robotics Manipulation/Controls, Controls Engineering

TECHNICAL SKILLS

Project Management: Scrum/Agile, Kanban, GrabCAD Workbench, Jira, GitLab
Software: SolidWorks, VM VirtualBox, Visual Studio, Brackets, IntelliJ, MATLAB
Languages: Java, C/C++, Linux command line, Python, C#/.NET, HTML/CSS, JavaScript, R
Certifications: FAA Part 107b Remote Drone Pilot, Autodesk Inventor Certified User, MATLAB Onramp Certification
Miscellaneous: Arduino, robotic processes, SLA printing, soldering, drafting, aerial cinematography, video editing

EXPERIENCE

Software Engineering Intern, *AeroVironment*   May 2022 – Aug 2022
- Worked on additional software capabilities for a VTOL aircraft
- Edited software, integrated into vehicle, and flew to view telemetry

HighTech Bound Intern, *University of New Hampshire*   Jul 2019 - Aug 2019
- Programmed new features and fixed bugs for a DSL testing software in an agile environment

Lead Server, *RiverWoods Exeter*   Sept 2017 - July 2019
- Supervised and directed servers within the dining room to provide an efficient service

PROJECTS

3-DOF Pick and Place Manipulator, *Worcester Polytechnic Institute*   Aug 2022 – Oct 2022
- Programmed a 3-DOF manipulator in MATLAB to sort assorted colored objects
- Created functions to calculate forward and inverse kinematics, along with joint velocities and trajectories
- Used calculations along with vision functionalities within MATLAB to detect objects and map them to the robot's workspace for autonomous sorting

Robotic Navigation and Mapping, *Worcester Polytechnic Institute*   Mar 2022 – May 2022
- Worked collaboratively to program a mobile robot to autonomously map the shape of an obstacle within a workspace
- Programmed ultrasonic, infrared, and line sensors, to assist in traversing the workspace
- Mapped obstacle to grid using ESP32, publish/subscribe methods, distance calculations, and APRILTAGS

Panel Placer, *Worcester Polytechnic Institute*   Jan 2022 – Mar 2022
- Developed and 3D printed two different four-bar mechanisms that would allow a robot to pick and place panels at different orientations
- Programmed ultrasonic and line sensors for navigation
- Performed four-bar calculations to determine linkage lengths and positions

Partial Prosthetic Hand – Modular Finger, *Worcester Polytechnic Institute*   Jun 2021 – Oct 2021
- Led a team of individuals through scrum and Zoom meetings to design a final product
- Used SolidWorks to design the swappable fingertip and fabricated all parts using an SLA 3D printer