

John K. Hall

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Graduate student studying robotics engineering with experience developing automated solutions. Looking to employ my extensive programming and mechanical design knowledge to tackle unique and challenging tasks. Eager to collaborate in a team environment and apply strong communication and presentation skills.

Education

Worcester Polytechnic Institute (WPI), Worcester, MA

Bachelor's of Science in Robotics Engineering, Minor in Mechanical Engineering, 4.0 GPA *May 2025*

Pursuing a Master's of Science in Robotics Engineering, 4.0 GPA *May 2026*

Skills

Programming Languages/Packages: C++, C, Java, Python, MATLAB, ROS, OpenCV

Software: SolidWorks CSWA Certified, Fusion 360, Git, Linux, WSL, Microsoft Suite, VS Code

Work Experience

PAR Systems, St. Paul, MN – Software Engineer Intern *June 2025 – Present*

- Employ Agile methods to collaborate with a team of eight to develop R&D software solutions.
- Created service modules and UI elements to support Fanuc robot control and RGB-D camera streams.
- Built autonomous image collection pipeline to train machine learning models for part inspection.

Trane Technologies, St. Paul, MN – Operations Intern *May 2023 – Aug. 2024*

- Prototyped a work cell to autonomously transfer a surface mounted component from packaging to production tray. Utilized OpenCV to identify components and G-code to control a hobby robot.
- Completed research to buy an automated thermal paste dispenser to increase productivity and reduce material costs. Developed workflow and began integrating robot into production for PCB assemblies.

WPI Admissions, Worcester, MA – Tour Guide, Admissions Associate *Jan. 2022 – Present*

- Co-present informational sessions for prospective students and families visiting WPI's campus.
- Attend college fairs and open houses to represent and promote WPI to a wider audience.

Relevant Projects

FuTURE Lab *Aug. 2025 – Present*

- Conduct research alongside medical device company to advance vision capabilities of endoscopy.
- Collaborate with other researchers in weekly lab meetings along with corporate sponsors on-site.

Major Qualifying Project – Cleaning Ocean Plastics *Aug. 2024 – May 2025*

- Worked with a team of six to design, manufacture, and program an aquatic robot to identify and collect floating plastic waste along shorelines. Wrote a comprehensive report detailing the full year's work.
- Modeled robot assembly in SolidWorks before using low-cost and reproducible construction methods.
- Created an Extended Kalman Filter to localize the robot from GPS and sensor data shared in ROS2.

Unified Robotics Series I – IV *Aug. 2022 – Dec 2023*

- Implemented simultaneous location and mapping (SLAM) on a small robot with a lidar scanner using ROS. Developed frontier exploration algorithms and obstacle avoidance procedures to navigate maze.
- Developed pick and place robotic arm control systems including forward and inverse position kinematics, trajectory planning, torque control and an image processing pipeline to sort various objects.

Activities & Leadership

WPI Men's Ultimate Frisbee Club – President

Phi Kappa Theta Fraternity – Vice President of Membership

Tau Beta Pi Engineering Honors Society