# BRYCE MCKINLEY

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Groton, MA
LinkedIn Profile

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## SKILLS

**Programming**: Python, Java, MATLAB, C++, C, Robot-C, Racket

**Software:** SolidWorks, Mathcad, Jira, Robot Operating System (ROS), Ubuntu Linux, Git, Gazebo Simulator, RViz, Scene Builder, Artificial Intelligence, Machine Learning

**Robotics:** Actuation, Manipulation, Sensing, Navigation

**General:** Scrum Workflow, Front-End GUI Development, Embedded Application Development, 3D Printing, Laser Cutting

## EDUCATION

**Worcester Polytechnic Institute (WPI),** Worcester MA — May 2025
Bachelor of Science in Robotics Engineering — GPA 3.76/4.0
Bachelor of Science in Computer Science

## ACADEMIC PROJECTS

**Autonomous Mapping**, Worcester MA — Oct. - Dec. 2023

- Utilizing Python and ROS Noetic mapped an unknown field with LiDAR by identifying frontiers, calculating c-space, and navigating with A*.
- Employed Monte Carlo localization to locate the robot after it was moved to a random location.

**Finding Purpose, Backpacking in Panama,** Panama City Panama — Aug. - Oct. 2023

- Investigated the connection between backpacking and developing a sense of purpose by conducting archival research, surveys, interviews, and an ethnography in Panama.

**Kiosk Application**, Worcester MA — Mar. - May. 2023

- Specialized in front-end in a group of ten software engineers designing a prospective informational kiosk application for use at Brigham and Women's Hospital.
- Utilized software engineering practices such as Jira, Scrum, and weekly sprints to ensure efficient workflow.

**Robotic Sensors**, Worcester MA — Nov. - Dec. 2022

- Designed, built, and coded in C++ three coordinated robots that communicated via an MQTT Broker to navigate a randomized field.
- Used PID control, ICC kinematics, inverse kinematics, IMU sensors, and vision processing of AprilTags.

**Pizza Delivery Robots**, Worcester MA — Sept. - Oct. 2022

- Designed in SolidWorks and 3D printed two distinct four-bar mechanism and grabber robots.
- Performed mechanical analysis of the systems, including linkage synthesis, force analysis, and cost.
- Coded in C++ a dynamic state machine that could adapt to changing starting conditions.

## WORK EXPERIENCE

**Lowe's:** Outside Lawn & Garden Sales Associate**,** Lowell MA — 5/22 - 8/22

## ACTIVITIES AND INTERESTS

Mechanical Team Lead for Team 1277, FIRST Robotics — 2020 - 2021
Competitive Climbing Club, WPI — 2021 - Present

## AWARDS AND ACCOMPLISHMENTS

WPI Dean's List — 2023 - 2024
National Honor Society — May 2020
BSA Eagle Scout Award — Sept. 2020