Mateo Vargas

Robotics Engineering Intern

Robotics engineering student at Worcester Polytechnic Institute, graduating in May 2027, on an industrial automation internship. Writes ROS 2 code in C++ and Python, adds computer vision and sensor integration to robot cells, and cut one cell's cycle time by 17%. Works daily in Linux and Git.

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Experience

Robotics Engineering Intern

Bay State Automation Systems • Marlborough, MA

06/2026 - Present

Internship with a 90-person integrator that builds robotic pick-and-place and packaging cells.

- Write C++ nodes in ROS 2 for a pick-and-place cell, cutting average cycle time from 9.2 to **7.6** seconds.
- Integrate a depth camera with a Python computer vision pipeline that reached 97% grasp success over 1,000 trials.
- Tune motion planning parameters in MoveIt to clear fixture collisions before 3 customer acceptance tests.
- Document Linux setup steps and code in Git so 2 field technicians can redeploy the cell on site.

Teaching Assistant, Introduction to Robotics

Worcester Polytechnic Institute • Worcester, MA

08/2025 - 05/2026

Part-time course assistant role, 10 hours a week.

- Led weekly lab sessions for **35** students building line-following robots with Arduino and C++.
- Debugged wiring and sensor integration problems during office hours, about 20 student visits a week.
- Graded 4 project milestones per term with written notes on PID control loop tuning.
- Wrote 3 lab handouts on encoder reading and motor drivers that the course still uses each term.

Skills

ROS 2 , C++ , Python

Computer Vision

Motion Planning

Sensor Integration , Linux

Git , SolidWorks

PID Control

Education

Bachelor of Science

Worcester Polytechnic Institute

Worcester, MA

05/2027

Robotics Engineering