Joseph R. Pokuta

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Objective

Robotics Engineer (graduating Dec 2026) with hands-on experience in mechanical design, rapid prototyping, embedded systems, and computer vision. Seeking a Spring 2027 R&D, mechatronics, or prototyping role developing next-generation hardware.

Skills ***Prototyping:*** SolidWorks, Fusion 360, 3D Printing, Kinematics, Pneumatics
Instrumentation: Digital Oscilloscopes, Waveform Analysis, I2C Communications, Soldering
Controls: C (STM32), PID Tuning, MATLAB/Simulink, RSLogix 5000, Siemens PLCs
Robotics & Software: Python, R, SQL, ROS 2, Siemens NX, OpenCV, Computer Vision

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Education

Michigan Technological University - Houghton, MI ***Graduating December 2026***

B.S. Robotics Engineering, 3.71 / 4.00 GPA

Courses Control Systems, Adv. PLCs, Robotics & Mechatronics, Sensing & Processing for Robotics, Mechanism Synthesis, Robot Operating Systems, Embedded Microcontrollers

Projects

Pick and Place Machine (Robotics Lead) | Mechatronics, Fusion 360, Open-Source

- Designed a custom CoreXY motion system and 3D-printable open-source gantry in Fusion 360, integrating belt-driven architectures, custom stepper mounts, and modular toolhead assemblies.

Ultrasonic Parking Assistant | Bare-metal C, STM32

- Programmed an STM32 microcontroller using embedded C with PWM, interrupts, and timers to process ultrasonic sensor data for real-time distance feedback.

Autonomous Maze-Solver | ROS 2, LiDAR, Linux

- Developed ROS nodes in a Linux environment to bridge LiDAR sensor data with navigation algorithms for obstacle avoidance.

Professional Experience

Electro-Mechanical Engineering Intern ***05/2026 - 08/2026***

BW Converting - Green Bay, WI

- Developed OpenCV and Python computer vision systems paired with custom SolidWorks hardware mounts to optically analyze flexographic print plates and improve machine calibration.
- Designed PLC bag-rejection routines and updated AutoCAD Electrical schematics for industrial bag converting machines, coordinating directly with optical sensor vendors.

Automation Engineering Intern ***06/2025 - 08/2025***

Vickers Engineering - New Troy, MI

- Programmed ladder logic in Studio 5000 for robotic cells, integrating I/O, safety interlocks, and C-more HMI status tracking.
- Executed physical system integration of FANUC robot cells, including 80/20 framing, pneumatic systems, and complex signal wiring for sensors and communication devices.

Laundry Engineering Intern ***06/2023 - 08/2023***

Whirlpool Corporation - St. Joseph, MI

- Conducted root-cause failure analysis and validated mechanical reliability through stress and durability testing on washer balance subsystems and fluid components.