Jayson Tilley
Southfield, MI 48033 | (734) 377-2135 | Jtilley@ltu.edu | Open to relocation / 75% travel

Robotics Engineering graduate with hands-on experience in automation, systems integration, and process optimization. Skilled in Python, C++, and electrical/mechanical troubleshooting. Combines engineering fundamentals with leadership of a 30-person production team to improve reliability, throughput, and quality in robotics/automation environments.

Core Competencies:

Automation · Robotics Systems · Python · C++ · OpenCV · PID Control · Sensors · Mechatronics · Calibration · Allen-Bradley PLC Programming · Control Systems Design

Education

Lawrence Technological University, Southfield, MI
Bachelor of Science in Robotics Engineering (ABET-accredited) | August 2019 – May 2024

- **Relevant Coursework:** System Modeling and Control · Robotics Systems · Control Systems · Embedded Systems · Machine Learning · Sensors and Actuators · Advanced Programming (C++, Python)

Engineering Projects

Unified Robotics 1 – Line Tracking Robot: Designed and built an autonomous line-following robot with IR sensors and Arduino control.
Unified Robotics 2 – Vision-Based Line Tracking Robot: Programmed a C++ motor controller with OpenCV for real-time vision tracking and navigation.
Unified Robotics 3 – Autonomous Pick-and-Place Sorting Robot Arm: Built a PD-controlled robotic arm with magnetic end-effector and OpenCV camera vision to identify and sort shapes by geometry.
Unified Robotics 4 – Consumer Product Prototype: Designed and prototyped a new consumer device from concept through fabrication, emphasizing mechatronic design and usability.
IGVC (Intelligent Ground Vehicle Competition): Led electrical and safety sub-teams; designed and tuned PD controller; integrated sensors and actuators for autonomous navigation using Robot Operating System (ROS). Implemented ROS nodes for LiDAR and camera input, enabling real-time obstacle detection and feedback control loops. Applied system modeling and MATLAB simulation to test control stability via eigenvalue analysis.
FIRST Robotics Competition: Designed and built robots; led mechanical design and drive-train teams using Siemens NX and Python control scripts.
Robofest: Developed and presented innovative robotic solutions, earning multiple awards for autonomous design.

Professional Experience

EDSI Cables, Auburn Hills, MI

Production Supervisor | June 2023 – Present

- Lead a 30-member production team supporting ~$12 million in annual output while ensuring IPC, ISO, and AS9100 compliance.
- Manage maintenance and set up for 50+ machines and IT systems (pneumatic, mechanical, digital). Introduced Python-based calibration and data-tracking automation increasing reliability and reducing both downtime and setup time.
- Coordinate workflow between sales, warehouse, and shipping teams to eliminate bottlenecks and minimize downtime.
- Train and mentor team members in IPC and AS9100 standards, effectively bridging language barriers between English and Spanish-speaking staff.
- Currently developing an automated purchasing system to accelerate part identification and reduce production stoppages due to material holds.

Quality Control Specialist | October 2022 – June 2023

- Designed and implemented adapter-board testing solutions that cut inspection time by 50% and reduced labor requirements by half.
- Conducted continuity, hi-pot, and label inspections to maintain 100% compliance with ISO and IPC standards across 500+ assemblies.

Whirlyball Novi, Michigan – Shift Manager / Maintenance Tech | 2017 – Present

- Oversee facility operations and maintenance while training staff in equipment care and safety.
- Strengthened leadership and problem-solving through multitasking across technical and customer roles.

Technical Skills

Programming: Python · C/C++ · MATLAB · HTML
Robotics & Automation: Sensors/Actuators · PID and PD Control · OpenCV (vision) · PLC basics · 3D Scanning · Pneumatics
Software Tools: Siemens NX · Tinkercad · SolidWorks · MS Office 365
Fabrication & Maintenance: 3D Printing · Machine Setup · Calibration · Troubleshooting (Electrical/Mechanical)
Modeling & Simulation: MATLAB · Simulink · System Modeling · Eigenvalue Analysis · Robotics Simulation

Certifications & Activities

- IPC/WHMA-A-620 Certified IPC Trainer – Certified in cable and wire harness fabrication and inspection standards.
- HTML Programming Certification; Academic Excellence in Electronics & Robotics
- Robotics Summer Camp Mentor (taught fundamentals and teamwork)