

RAKESH REDDY DEVARA

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Automation & Robotics Engineer with 2+ years of experience in PLC-controlled industrial automation, robotics systems, and SCADA-based monitoring. Hands-on expertise with Allen-Bradley and Siemens PLCs, industrial networks (Ethernet/IP, Modbus, Profibus), and HMI systems. Proven track record of improving equipment uptime (>95%), reducing downtime by 30%, and increasing throughput by 25%.

EDUCATION

Master of Science: Robotics, University at Buffalo, The State University of New York, May 2024

TECHNICAL SKILLS

- PLC & Controls: Allen-Bradley, Siemens, Ladder Logic, RSLogix 5000, Studio 5000, Direct Logix
- Industrial Networks: Ethernet/IP, Modbus, Profibus
- Automation: SCADA (Ignition), HMI, FANUC Robotics
- Programming: Python, C++
- Tools: Linux, MATLAB, Arduino, Emaint

EXPERIENCE

Robot Technician | Matheson Tri-Gas

- Commissioned industrial machines like FANUC, conveyers in collaboration with system integrators, gaining in-depth understanding of machine operation, control logic, and process flow.
- Modified and optimized **PLC source code** to improve system reliability, simplify operator interaction, and enhance maintainability.
- Installed and integrated **conveyor systems**, programming communication and synchronization between ice-making, packing, and downstream automation equipment.
- Contributed to **centralizing the entire plant into a unified control system**, enabling real-time monitoring of machine runtime, alarms, and fault diagnostics.
- Supported the complete **liquid CO₂ production process from natural gas**, troubleshooting process issues using centralized **Ignition SCADA** and custom-built control panels.
- Designed, wired, and commissioned control panels used for process monitoring, fault detection, and system interlocks.
- Worked extensively with industrial sensors (pressure, temperature, level, proximity, and safety sensors) supporting automated production of **liquid CO₂, dry ice, block pressing, packaging, boxing, and stretch wrapping**, with minimal human intervention.
- Led **preventive and corrective maintenance planning** for the entire plant, ensuring high equipment availability and reduced unplanned downtime.
- Managed **spare parts sourcing, inventory, and ordering** for a wide range of industrial machines and automation components.
- Installed and commissioned **FANUC robots**, ensuring compliance with company standards, OSHA regulations, and site-specific safety requirements.

RESEARCH EXPERIENCE

RESEARCH ASSISTANT, CRASH Lab, University at Buffalo: August 2023 – May 2024

- Prototyped and manufactured a diverse range of underwater robotic models, achieving a 50% reduction in production time, while ensuring compliance with industry standards to enhance safety and operational reliability in challenging environments.
- Executed coding strategies for an underwater robot using C++, overcoming critical hardware design obstacles; the final prototype utilized in over 30 field tests annually, demonstrating significant reliability.

PROJECTS

DEVELOPMENT OF A BIOMIMICING UNDERWATER EXPLORATION ROBOT(ROV): C++

- Spearheaded the design and development of a bio mimic robotic fish, employing innovative servo motor coordination and advanced mechanical design to achieve a 95% accuracy rate in emulating natural fish movements, enhancing exploration capabilities.
- Conducted comprehensive simulations and real-world testing to optimize the robot's power efficiency and maneuverability, extending operational duration by 15% and improving response to remote control inputs.

Automated Conveyor Belt System: PLC Programming

- Engineered a PLC-based control system for an automated conveyor belt that Optimized operational efficiency, achieving a 25% increase in throughput, and minimizing downtime to less than 5 hours monthly.
- Re-engineered conveyor layouts and sequences, which minimized delays in material transport; advanced coordination among production stations, achieving a reduction in assembly line downtime by 30% over a three-month period.
- Created interactive HMI interfaces that streamlined user interactions and increased control precision, resulting in a measurable decrease in operator errors by 20%, enhancing overall system integrity and reliability.

Automated Traffic Light Control System: PLC Programming

- Designed **PLC Logic** to automate a comprehensive traffic light control system for a 4way road, coupled with the development of an associate **SCADA** using Ignition.

JetMax 6-Axis Robot Project: Waste Classification, Object Tracking, Dataset Capture, Color Palletizing

- Designed and improved solutions for waste classification, object tracking, dataset capture, and color palletizing on the JetMax 6-axis robot over a six-month period.
- Modernized algorithms for waste classification, improving sorting efficiency by 30%, and enhanced the robot's real-time object tracking capabilities.

PUBLICATIONS & CERTIFICATIONS

Self-Driving Car Using Raspberry Pi, **World S4 Conference**, London, 2021.

- Presented pioneering research on developing a **self-driving car with Raspberry Pi**.

A Dual Extrusion 3D Printer Using Arduino MEGA 2560.

- Published in the esteemed **International Journal of Robotics and Control Automation Research**

Certificates

- Completed online courses on plc programming 1 and 2 in LinkedIn Learning.
- Certified Hazwoper, Arc Flash, Fork lift.