CHARLES PYRCE

Automation & Controls | Manufacturing Systems | Robotics | SCADA Engineering
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PROFESSIONAL SUMMARY

Elite self-taught engineer operating at a full engineering level without formal education. Rapidly advanced from temp to Operations Technician at SpaceX's Starlink production facility by solving problems faster and more accurately than anyone else on the line. Known for first-principles reasoning, system-level thinking, and an ability to absorb entire engineering domains intuitively. Delivers robust automation and controls solutions, diagnoses complex failures under extreme pressure, and builds production-critical SCADA systems used daily by leads, engineers, and operators. Trusted technical leader, high-output contributor, and the go-to troubleshooter for robotics, controls, and manufacturing systems. Directly contributed to double-digit throughput increases and major reductions in unplanned downtime. Functioned at a controls/manufacturing engineer level in day-to-day responsibilities.

CORE SKILLS

Automation & Controls Engineering

- Ignition/SCADA system architecture
- Beckhoff PLC & ladder-logic troubleshooting
- Real-time dashboards, alarms, fault detection
- Dynamic tag binding, OPC-UA, device comms
- Sensors, actuators, I/O, fieldbus networks
- Control loop tuning, root-cause diagnostics

Software & Engineering Tools

- Ignition (expert-level)
- Data visualization & SCADA UI design
- IoT & automation integration
- NX 2406 & Onshape

Manufacturing, Robotics & Systems

- High-speed automation troubleshooting
- Pick-and-place systems, heat-stakers, ultrasonic welders
- Gantries, Beckhoff ActiveMover, end-effectors, robotic cell diagnostics
- Process optimization & EMI sealant dispense tuning
- Fast mechanical/electrical fault isolation
- Custom tooling, fixtures, workflow optimization

General Engineering Strengths

- Extreme learning speed
- Systems-level intuition
- Rapid prototyping & process development
- Calm high-pressure decision-making

ACCOMPLISHMENTS

- Two-time recipient of SpaceX's Kick-Ass Award for extraordinary performance.
- Selected to meet Gwynne Shotwell for outstanding technical impact and leadership.
- Designed the full SCADA control interface for an entire Starlink production line.
- Implemented complete OPC-UA/PLC tag integration in Ignition without documentation, enabling real-time data flow across the facility.
- Increased line throughput by 150%, cut troubleshooting-related downtime by 87.5%, and raised FPY from 85% to 98%, eliminating the majority of first-pass defects.
- Primary troubleshooter for all robotic, automation, and controls systems; routinely solved failures engineers could not diagnose.
- Regularly handled 10–15 hour shifts resolving time-critical failures across mechanical, electrical, and controls domains.
- Built tooling, fixtures, dashboards, procedures, and process improvements that directly improved yield, quality, and autonomy.
- Trained associates, operators, and technicians in troubleshooting, best practices, and process stability.

PROFESSIONAL EXPERIENCE

SpaceX – Starlink Manufacturing | Hawthorne, CA - Operations Technician (Engineer-Level Responsibilities) *2023 – 2025*

- Designed, developed, and deployed a complete Ignition/SCADA control system for the Starlink Mini production line, integrating real-time visualization, alarm logic, device communication, and operator interfaces.
- Diagnosed and repaired high-speed robotic cells including gantries, pick-and-place robots, ultrasonic welders, heat-stakers, and alignment systems.
- Troubleshot Beckhoff PLCs, ladder logic, and I/O faults across multiple platforms, reducing downtime and improving diagnostic accuracy.
- Built custom fault-detection logic that accelerated root-cause analysis and eliminated recurring failures.
- Resolved sensor/actuator faults, dispense inconsistencies, EMI feed issues, end-effector misalignments, and robotic pathing errors.
- Created dashboards that improved engineering visibility, operator efficiency, and decision-making speed.
- Led process optimizations that increased throughput, stabilized quality, and reduced manual intervention.
- Served as the line's technical authority, frequently resolving issues before engineering could respond.
- Built custom fixtures, jigs, and tools to reduce variability and improve ergonomics.
- Mentored associates, operators, and technicians on troubleshooting and system understanding.
- Executed high-pressure recoveries during critical production windows using first-principles mechanical/electrical intuition.

EDUCATION

Self-Taught Engineer - Advanced independent study of automation, controls, robotics, physics, fluid dynamics, RF systems, and SCADA development.

High School Diploma - Murrieta Mesa High school

TARGET ROLES

Automation Engineer, Controls Engineer, Manufacturing Engineer, SCADA Engineer, Robotics Engineer/Technician, Test Engineer, Process Engineer, Industrial Engineering Technician, Electromechanical/Mechatronics Technician