# JOE BARCHANOWICZ

## Systems Engineer

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Accomplished engineering professional with 20+ years' experience in RF communications, software development, and electronics for defense, government, and commercial clients. Expert in designing, deploying, and maintaining mission-critical systems, driving operational reliability, interoperability, and regulatory compliance. Proven leader in cross-functional collaboration, team mentorship, and project delivery, contributing to multimillion-dollar revenue growth and enhanced system uptime. Adept at translating complex technical requirements into scalable, high-impact solutions that optimize performance and exceed client expectations.

## Technical Skills

- Programming: Python, C/C++, Bash, MATLAB, ROS2
- Embedded Systems: Microcontrollers, IoT, FPGA
- Networking: TCP/IP, Modbus, MQTT
- Tools: Linux, Git, Simulink, SQL

## Professional Experience

### RF Systems Engineer

June 2023 – January 2025

*National Wireless - Beresfield, NSW Australia*

- Engineered and deployed two-way radio and digital communication systems (DMR, TETRA, P25), ensuring 100% operational reliability and uninterrupted network performance.
- Integrated systems with IT/OT, SCADA, and dispatch platforms, achieving seamless interoperability across multi-vendor environments.
- Conducted RF analysis, coverage testing, and system validation, automating workflows with custom Python scripts to optimize voice, data, and location services.
- Led project execution and client support, troubleshooting hardware/software issues, maintaining ACMA compliance, and generating $2.0M in new business with record annual sales.

### Software Engineer

May 2022 – June 2023

*SwitchDin - Newcastle, NSW Australia*

- Developed Python software for SwitchDin's edge gateway device, improving orchestration of distributed energy resources and boosting system efficiency.
- Engineered drivers and integrations for inverters, batteries, and smart loads, achieving reliable cross-vendor interoperability and robust real-time communication.
- Implemented and optimized communication protocols (Modbus, SunSpec, CANbus, MQTT, proprietary APIs), enhancing data accuracy and connectivity across heterogeneous systems.
- Partnered with engineers and data scientists to translate grid requirements into software features, accelerating VPP and microgrid deployment while ensuring compliance with energy market and cybersecurity standards.

### Career Break
October 2016 – May 2022

*Student*

- Returned to school to complete Computer Engineering Degree from California State University Northridge
- Managed household and family responsibilities full-time, developing skills in organization, time management, multitasking, and budgeting

### Senior Technician
October 2015 – October 2016

*Steris AST – Ontario, CA*

- Performed preventive and corrective maintenance on sterilization systems and conveyors, reducing unplanned downtime by 20%**.**
- Calibrated and validated machinery to ensure 100% compliance with FDA and ISO standards**.**
- Maintained accurate logs and maintenance documentation, supporting audit readiness with zero non-conformances**.**
- Led and trained a team of four junior technicians**,** boosting efficiency and reducing onboarding time.

### Logistics Specialist
December 2013 – October 2015

*Vector CSP-Baltimore, MD*

- Authored and maintained technical manuals, parts breakdowns, and engineering drawings, improving clarity and accessibility for the U.S. Coast Guard Small Boat Product Line.
- Verified and updated asset records and logistics documentation, streamlining maintenance tracking and ensuring fleet sustainment compliance.
- Evaluated and approved engineering change proposals, maintaining configuration control and supporting lifecycle efficiency across all assigned platforms.

### Electronics Technician
October 2003 – September 2013

*United States Coast Guard -USA and Bahrain*

- Performed preventive, corrective, and predictive maintenance on electronic systems and subsystems, ensuring mission readiness and minimizing downtime.
- Troubleshot, repaired, and integrated navigation, radar, sonar, GPS, and communications equipment, maintaining 100% operational capability.
- Collaborated with engineers and contractors on system upgrades and modifications, enhancing overall system reliability and efficiency.

## Education

### B.S. Computer Engineering
2017 – 2021

*California State University, Northridge*

- Relevant Coursework: Embedded Systems, Digital Logic Design, Computer Architecture, Algorithms, Networking, IoT, Robotics
- Capstone Project: Designed and programmed the JPL CleanBot autonomous robot, integrating sensors, control algorithms, and path-planning in Python, C++ and ROS2 to achieve efficient, fully autonomous navigation and cleaning.