**Mike Gilardi**

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**SUMMARY**Performance-driven Electrical & Automation Engineer with 15+ years of experience delivering automation design, PLC/HMI programming, SCADA integration, and power/control systems across manufacturing, packaging, infrastructure, and product development. Proven expertise leading full project lifecycles from concept through commissioning, FAT, and service for multimillion-dollar systems. Skilled in Python scripting, CAD/3D prototyping, and system integration to accelerate development, reduce costs, and enhance reliability. Adept at driving automation innovation, process optimization, and cross-functional leadership, with a track record of delivering results for clients such as Nestlé, Anheuser-Busch, Kraft, and state infrastructure projects.

**Education & Certifications**

**B.S**., Electrical Engineering – University of Massachusetts, Amherst – May 2009

**Certifications**

* Siemens TIA Portal Programming Level 2
* Allen-Bradley Advanced Programming Concepts
* OSHA 10 Certified
* Balluff I/O Link, Bosch Rexroth Field Service

**Professional Experience**

**Evolution Motion Solutions**

**Product Manager / Automation Engineer**  
Jan 2024 – Jan 2025

* Spearheaded the launch of Bosch Rexroth CtrlX automation platform in New England, acting as the regional product and integration expert.
* Delivered multi-vendor automation solutions (Yaskawa VFDs, Kassow cobots, Balluff I/O Link) tailored for research-driven clients.
* Drove $1–4M annual opportunities by combining technical fluency with commissioning support to outperform larger competitors.
* Built Python-based demo scripts to showcase machine-to-machine connectivity, data collection, and control logic simulation.
* Integrated CAD/3D-printed custom components into demo platforms for proof-of-concept systems and client showcases.
* Bosch Rexroth Expertise: Extensive hands-on experience with Bosch Rexroth ctrlX Core X7 multi-axis synchronized motion platform (256 motion axes). Proficient in integrating legacy Indradrive Inverters and modular Regen Power Supply units producing 750VDC rails, managing AC output, and encoder closed-loop control. Skilled with Servoamplifier Converter types (240–500VAC input), optimizing systems with varying axis counts.
* CtrlX App-Based Automation: Expert in Bosch Rexroth’s open automation environment, programming soft PLCs in CodeSys with IEC 61131-3 languages (Ladder, Structured Text, FBD) and Python.
* Robotics Integration: Implemented Kassow (7-axis) and Yaskawa (6-axis) robots with Modbus and EtherCAT protocols. Experienced in commissioning/setup (homing, manual axis calibration, workflow programming).
* Troubleshooting Leadership: Known as the “go-to” problem solver for diagnosing and repairing live 480VAC enclosures with Fluke 789 ProcessMeter and 87 Multimeter. Consistently resolved electrical and controls issues faster than peers across organizations.
* Fluid Systems & Refrigeration: Applied thermodynamic analysis for troubleshooting liquid handling and refrigerant systems (R22, R134a, R1234yf). Proficient in contamination/leak detection, system evacuation, positive pressure holding tests, and recharging by weight. Experienced with SCADA monitoring, anomaly reproduction, and P/T chart analysis to validate refrigerant quality.

**Angelus (Pneumatic Scale Angelus – Barry-Wehmiller Packaging)**

**Electrical Engineer IV / Lead Electrical Engineer / Automation Engineer Angelus (Pneumatic Scale Angelus – Barry-Wehmiller Packaging)**  
Mar 2023 – Jan 2024

* Sole Electrical/Controls & Automation Engineer for automation design, programming, and SCADA plant integration for fillers and labellers.
* Led projects end-to-end: options scoping, electrical design (UL/PLd/PLe), component selection, schematics, HMI/logic programming, FAT, and service.
* Boosted margins 10% (32% → 47%) on $6.5M of sales for flagship product line, contributing to record FY23 revenue.
* Designed modular control boxes, reducing assembly labor by 60%, enabling bulk outsourcing, and mitigating industry-wide supply chain delays.
* Utilized Python scripts for automated test sequences and data validation, reducing debugging time and FAT cycles.
* Applied CAD design and 3D printing for quick-turn prototyping of machine-specific components.
* Supported top-tier clients including Nestlé, Anheuser-Busch, Kraft, and other global leaders.

**Columbia Tech Engineering**  
Senior Staff Electrical Engineer, Power & Controls / Automation Engineer  
Oct 2021 – Mar 2022

* Led Power & Controls team, developing automation and power distribution solutions from concept to fabrication.
* Designed PLC-based control systems (Rockwell SLC500, WAGO) and integrated automation into capital equipment builds.
* Produced detailed electrical documentation: schematics, layouts, BOMs, wiring diagrams, and compliance validation (UL, NEC, CSA, CE).
* Transitioned prototype designs to scalable production-ready systems.
* Designed and prototyped custom control enclosures and fixtures using SolidWorks 2023 and 3D printing.
* Developed Python utilities for I/O simulation and power load verification during prototype testing.

**Massachusetts Dept. of Transportation – Senior Project Manager / Drawbridge Control Engineer**  
Nov 2009 – Jan 2022

* Supervised 15+ employees while overseeing automation, electrical power, and control systems for drawbridges across Northern Coastal MA.
* Modernized relay-based circuits by upgrading to Allen-Bradley Micrologix PLCs and FactoryTalk HMI interfaces.
* Designed and commissioned 480–600VAC motor systems, VFDs, servo drives, and conveyor automation to reduce failures and delays.
* Created Python models for motor sizing and load balancing to improve accuracy and minimize field rework.
* Managed multiple $10M+ bridge construction projects, pioneering modular off-site construction to minimize traffic disruption.
* Oversaw budgets and compliance for $130M in state infrastructure projects.

**Independent Projects (CAD, UAV & Python Applications)**

* Designed and built custom drones and rotorcraft, operated over multi-channel RC systems on FAA-reserved 900MHz & 2.4GHz bands.
* Created Python-based flight data logging tools for thrust, torque, and stability analysis.
* Designed and manufactured custom UAV parts using SolidWorks 2023 and FDM 3D printing (Cartesian and CoreXY).
* Applied MATLAB and Python for hardware calculations (structural load, thrust/torque balancing, power distribution).
* Produced electrical schematics and wiring diagrams with AutoCAD Electrical to support UAV builds sold commercially.

**Core Technical Competencies**

**PLCs & Programming** – Allen-Bradley Logix5000, Micrologix, Siemens S7/TIA Portal, Bosch Rexroth CtrlX/IndraWorks, WAGO, CodeSys, Ignition, IEC 61131-3 (Ladder, ST, FBD), **Python**, JavaScript, HTML

**CAD & Prototyping** – SolidWorks 2023, AutoCAD Electrical, 3D printing (FDM, Cartesian, CoreXY), UAV/drone hardware prototyping

**HMI & SCADA** – FactoryTalk View SE/ME, WinCC, Wonderware InTouch, Ignition SCADA

**Electrical Design** – Control panel design, load/SCCR analysis (MATLAB & Python models), UL508A, NEC/NFPA, SiL/PL safety standards

**Networking & Protocols** – Ethernet/IP, Profinet, Modbus TCP, OPC/UA

**Safety Systems** – GuardLogix, Bosch, Beckhoff Safety PLCs, light curtains, e-stops, interlocks, risk assessments

**Tools & Platforms** – MATLAB/Simulink, Python automation scripts, MS Project, Jira, Git, MS Office, Adobe Suite, Windows/Linux