**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**

• Leveraged deep Bosch Rexroth expertise in multi-axis synchronized motion (ctrlX Core X7 up to 256 axes). Integrated Indradrive Inverter with modular Regen Power Supply (750VDC bus) and converter-type servo amplifiers (240–500VAC). Programmed soft PLC in CodeSys (IEC languages, Python, etc.) within Bosch Rexroth’s open automation app ecosystem.

**Evolution Motion Solutions – Product Manager**  
*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.

• Implemented robotics solutions with Kassow (7-axis) and Yaskawa (6-axis) robots using Modbus and EtherCAT. Experienced in commissioning, homing, manual axis validation, and workflow programming for robotic automation.

**Angelus (Pneumatic Scale Angelus – Barry-Wehmiller Packaging)**  
*Electrical Engineer IV / Lead Electrical Engineer / Automation Engineer*  
*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**.

• Advanced troubleshooting expertise across liquid handlers, refrigerant systems (R22, R134a, R1234yf). Skilled in thermodynamic analysis, SCADA anomaly detection, and hands-on service using Fluke meters. Proficient in leak detection, pressure-temperature equilibrium checks, and system evacuation/recharge to rated specifications.

**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