

Atharvaa Rajendra Sawant

sawantatharvaa60@gmail.com | +1 (747)-836-7117 | Los Angeles, USA | [LinkedIn](#)

Profile

Accomplished Electrical and Electronics Engineer with 3 years of experience in power systems, electrical design, and embedded systems development. Skilled in designing and analyzing electrical networks, developing embedded solutions using C/C++ and microcontrollers (ARM, PIC), and creating efficient control systems with PLC/SCADA. Proficient in tools such as AutoCAD Electrical, ETAP, MATLAB/Simulink, and Altium Designer. Strong understanding of IEC, IEEE, and NEC standards, with a proven track record of delivering reliable, compliant, and cost-effective engineering solutions.

SKILLS

Power Systems & Electrical Design: Load flow and short circuit analysis, power distribution systems, relay coordination, switchgear design, electrical schematics, panel layouts, AutoCAD Electrical, EPLAN

Power Electronics & Motor Control: AC/DC converters, inverters, rectifiers, motor drives, battery management systems (BMS), PWM control, motor protection schemes

Embedded Systems & Control: Microcontroller programming (C, Embedded C, Verilog, and VHDL), ARM Cortex, PIC, AVR, RTOS, sensor interfacing, communication protocols (I2C, SPI, and UART), low-level driver development

Control & Automation Systems: PLC programming (Siemens, Allen Bradley), SCADA/HMI development, ladder logic, Modbus, CAN bus, industrial automation design

Simulation & Software Tools: ETAP, MATLAB/Simulink, PSCAD, LTspice, PSpice, Multisim, ANSYS Maxwell, Altium Designer, Eagle, PCB layout and prototyping

Standards, Compliance & Project Management: IEC 61000, IEEE, NEC, CE Marking, ISO 9001 quality standards, electrical safety regulations, technical documentation, root cause analysis, Agile methodologies, MS Project, JIRA

Work Experience

Electrical Engineering, General Electric

Aug 2024 - Present | USA

- Designed and developed embedded control firmware using Embedded C on ARM Cortex-M microcontrollers with RTOS, enabling real-time multitasking and reliable industrial automation performance.
- Performed power system analysis (load flow, short circuit, relay coordination) using ETAP and MATLAB/Simulink, optimizing power distribution and ensuring compliance with IEC and IEEE standards.
- Created detailed electrical schematics and panel layouts with AutoCAD Electrical and EPLAN, reducing design errors and facilitating efficient project implementation.
- Engineered motor control algorithms and BMS firmware; programmed Siemens PLC and integrated SCADA systems for enhanced automation, improving motor efficiency by 15% and operational uptime by 20%.
- Led PCB design and prototyping using Altium Designer; prepared comprehensive technical documentation adhering to ISO 9001 and electrical safety standards to support quality compliance and successful audits.

Electrical Engineering Trainee, Rashtriya Chemical Fertilizers Ltd

Aug 2021 - Jun 2022 | India

- Designed and implemented an embedded control system using ARM Cortex microcontrollers and Embedded C for real-time industrial process automation, enhancing data acquisition and system responsiveness.
- Developed detailed electrical schematics and PCB layouts with Altium Designer, ensuring signal integrity above 99% through comprehensive simulation and testing in Proteus.
- Created and optimized PLC programs (Siemens, Allen Bradley), reducing system response time by 30% and improving overall manufacturing automation efficiency.
- Performed power system analysis and monitoring using ETAP and MATLAB, implementing energy-saving strategies that lowered electrical losses by up to 10%.
- Conducted instrumentation calibration and maintenance, ensuring high precision and reliability of control systems, and collaborated with cross-functional teams to integrate embedded and power systems for improved operational performance.

Electrical Engineer, Suraj Electronics and Electrical

May 2017 – Jun 2018 | India

- Managed the development of an embedded sensor-based automation system for industrial machinery, utilizing ARM Cortex microcontrollers and Embedded C to enhance real-time data acquisition and control accuracy by 25%.
- Engineered PCB layouts for 10+ multi-layer circuit boards using Altium Designer, optimizing signal integrity and manufacturability, reducing production errors by 15%.
- Conducted functional testing, durability analysis, and performance evaluation on critical electrical components including connectors and terminal blocks, ensuring full compliance with IEC, IEEE, and industry quality standards.
- Executed preventive maintenance and troubleshooting of motor control circuits and industrial power distribution systems, employing diagnostic tools and oscilloscopes to minimize downtime by 30%.
- Collaborated with cross-functional teams to perform electrical system simulations and load flow analysis in ETAP and AutoCAD Electrical, streamlining design validation and ensuring adherence to safety regulations.

Education

Master of Science, California State University

Aug 2022 - May 2025 | Northridge, USA

Electrical Engineering

Bachelor in Engineering, Vivekanand Educational Society Institute of Technology

May 2018 - June 2021 | Mumbai, India

Electronics Engineering