Shubham Sachin Rathod

✉ shubhamrathod07@outlook.com | 📱 +91-82083-12560
🔗 linkedin.com/in/Shubhamr06

PROFESSIONAL SUMMARY

Industrial Automation Engineer with more than 2 years of experience in designing, programming, and commissioning automation systems for the automotive and pharmaceutical sectors. Skilled in PLC programming, SCADA integration, and HMI development, with practical expertise in Siemens SIMATIC Manager (V5.6), TIA Portal (V17–V19), S7-1500/1200/300 PLCs, WinCC, and Ignition SCADA. Experienced in taking projects from initial design through to on-site commissioning, ensuring reliable, efficient, and user-friendly systems. Recognized for strong troubleshooting ability, system optimization, and delivering seamless integration between automation systems and production processes. Passionate about applying automation technologies to support smarter manufacturing environments that drive productivity and sustainability.

SKILLS

Programming Languages:
- Ladder Logic: implemented in PLC programming for Tesla battery line offline development and commissioning, Tata Motors BIW line PLC migration (S7-300 to S7-1500) and model addition, and Cimbria automation test project.
- Structured Control Language (SCL) – applied in PLC programming for Tesla battery line offline development and commissioning, and Cimbria automation test project.
- Structured Text (STL) – used in Tata Motors BIW line PLC migration (S7-300 to S7-1500) and model addition.
- Graph Language – implemented in PLC programming for Tesla battery line offline development and commissioning.
- Function Block Diagram (FBD) – applied in BMW BIW project offline development and commissioning.

PLC Platforms & Software:
- Siemens PLCs: S7-300, S7-1200, S7-1500 (standard and safety PLCs)
- Siemens Software: SIMATIC Manager (V5.6), TIA Portal (V17–V19), WinCC Advanced, WinCC Explorer
- HMI/SCADA: SiVArc, WinCC Runtime, Ignition 8.1
– developed operator interfaces, SCADA dashboards, and diagnostic systems across automotive industries.

Core Competencies:
- PLC Programming, SCADA/HMI Development, and Safety Integration
- I/O Mapping, Control Philosophy, and Documentation Validation
- Hardware Commissioning
- System Optimization, Troubleshooting, and Lifecycle Support

Industry Applications:
- Automotive: Battery line hardware commissioning (Tesla, Wipro PARI), BIW line integration and migration (Tata Motors, BMW).
- Pharmaceutical: PLC documentation and backup (Serum Institute of India).
- Grain Handling: Cimbria automation project for process monitoring and material handling.

WORK EXPERIENCE

Ipac Automation Pvt. Ltd., Pune   July 2024 – Present

Project Engineer – Industrial Automation

- Executed automation projects for global clients including Tesla, Tata Motors, BMW, Serum Institute of India, and Cimbria.
- Developed and commissioned PLC programs in Siemens TIA Portal (V17–V19) and SIMATIC Manager (V5.6) for S7-300, S7-1200, and S7-1500 PLCs.
- Designed HMI/SCADA applications using WinCC, SiVArc, and Ignition 8.1 for real-time monitoring, diagnostics, and operator-friendly interfaces.
- Performed virtual commissioning using Process Simulate and hardware commissioning at client sites, ensuring reliable integration with production systems.
- Led I/O mapping, control philosophy validation, and system documentation for PLC migration, BIW line integration, and grain handling automation.
- Collaborated with cross-functional teams to align automation deliverables with safety, quality, and project timelines.

John Deere India Pvt. Ltd., Pune   June 2023 – July 2024
Maintenance Engineer

- Maintained and supported PLC-controlled systems and automation devices, ensuring high availability of production equipment.
- Handled SAP SD and MM modules for order fulfillment, dispatch planning, and documentation, including GST invoices, E-way bills, and delivery challans.
- Monitored part transfers, managed inventory sheets, and prepared daily reports on fill loss and backorders to streamline supply chain operations.
- Coordinated with Finance, Manufacturing Engineering, Quality, and Stores teams to ensure schedule adherence and inventory accuracy.

PROJECT WORK

- **Battery Line Programming & Virtual Commissioning – Tesla, Wipro PARI Pvt. Ltd. (Jun 2025)**
Developed PLC logic in TIA Portal V18 using Tesla's proprietary Lietheam (Codegen) platform for a large-scale battery assembly line. - Programmed and validated 38 Siemens S7-1518F PLCs and 68 HMIs across 5 independent zones and I've worked on Zone 5. - Designed and deployed HMI screens with SiVArc, ensuring user-friendly visualization and diagnostics. - Validated E-Plan electrical documentation, safety interlocks, and functional design against Tesla standards. - Conducted extensive simulation testing in Process Simulate for cycle time verification and safety logic validation. - Performed both virtual and on-site hardware commissioning, ensuring seamless transition from design to production.

- **Model Addition – Tata Motors, Jamshedpur (Apr 2025)**
Integrated the new Signa Truck AC Cowl model into the existing Front Wall BIW line. - Modified and enhanced PLC logic in TIA Portal to accommodate model-specific clamping and welding operations. - Updated SCADA/HMI screens for operator interface, fault diagnostics, and cycle monitoring. - Ensured robust integration with safety interlocks and synchronized cycle flow across multiple stations. - Prepared and updated I/O mapping, safety documentation, and test cases for validation.

- **BIW Line Integration & PLC Migration – Tata Motors, Jamshedpur (Feb 2025)**
Led a major migration project for Front Wall, Sub-Structure, and Main Framing stations. - Migrated hardware from Siemens S7-300 to S7-1500 PLCs and software from SIMATIC Manager to TIA Portal V19. - Redesigned and upgraded control logic to improve process efficiency and reliability. - Performed I/O reconfiguration, I/O testing, and commissioning with minimal production downtime. - Coordinated with plant engineering and maintenance teams to ensure smooth changeover and compliance with Tata Motors' standards.

- **BIW Line PLC Programming – BMW, EDAG India (Oct 2024)**
Programmed and commissioned PLC logic for BMW BIW line in alignment with SAS standards. - Developed PLC programs in TIA Portal V19 for 17 Siemens S7-1518F PLCs controlling multiple robotic stations. - Created HMI screens using SiVArc and BMW standard libraries for cycle monitoring, error handling, and production visualization. - Performed system validation using Line Simulator, reviewing function plans, safety plans, and job data. - Delivered reliable automation solutions while adhering to BMW's stringent global standards.

- **Commented PLC Backup – Serum Institute of India (Aug 2024)**
Developed a fully documented PLC backup of legacy Siemens automation systems. - Reverse-engineered and commented existing Siemens PLC programs to improve transparency and maintainability. - Standardized program documentation for easier troubleshooting and future audits. - Ensured compliance with pharmaceutical industry norms, enhancing traceability and system reliability.

- **Grain Handling Automation – Cimbria Test Project (Jul 2025)**
Designed and implemented PLC and SCADA system for a pilot automation project in grain handling. - Developed PLC logic in Siemens TIA Portal, including equipment sequencing, interlocks, and safety functions. Design the scada in wincc runtime. - Validated process flow, optimized cycle timings, and tested field I/O with simulation and hardware commissioning. - Delivered end-to-end documentation including I/O list, control philosophy, and system test reports.

EDUCATION

Jondhale College of Engineering, Dombivli (Mumbai University)   Nov 2023 - Present
Bachelor of Engineering in Electronics and Telecommunication (Pursuing – 2nd Year)   *Expected Graduation: 2028*
Relevant Coursework: Digital Electronics, Microprocessors and Microcontrollers, Communication Systems, Control Systems, Signals and Systems, VLSI Design, Industrial Automation, Data Communication Networks, Embedded Systems, Internet of Things (IoT)

MET Nashik   Jun 2020 - Jun 2023
Diploma in Electrical Engineering   *CGPA: 7.16/10*
Relevant Coursework: Electrical Circuit Design, Industrial Wiring, PLC Programming (Ladder Logic), HMI Basics, Sensor Integration, Motor Control, Relay Logic, Embedded Systems (Arduino), Troubleshooting, Industrial Automation, Basic SCADA Concepts, AutoCAD Electrical, MS Excel

Awards and Certificates

- **PLC Programming basics to advance at MET league of colleges:** ompleted hands-on training in Siemens PLC programming, covering ladder logic, I/O configuration, troubleshooting, and HMI integration.
- **Siemens and Rockwell PLC Programming – Basics to Advanced:** Completed professional training on Siemens (S7-300, S7-1200, S7-1500) and Rockwell Automation (ControlLogix, CompactLogix) PLCs. Covered Ladder Logic, safety programming, I/O mapping, and troubleshooting.
- **Ignition 8.1 Certification Training at Inductive Automation:** Completed certification training on Ignition 8.1 SCADA platform, covering tag configuration, UDTs, scripting, real-time visualization, and database integration.
- **Solar Energy Basics and System Design on State university of new york:** Completed foundational training on solar energy principles and system design, including photovoltaic technologies, system sizing, components, and performance analysis.
- Machine Learning and Deep Learning Specialization on Coursera