Chandru Shanmugam,
System Engineer
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PROFILE

- A skilled and committed individual with 7 years of experience in Machine, Factory and Process Automation
- Extensive experience in the design, development, and implementation of PLC Automation solutions with a thorough understanding of the technical requirements
- Demonstrated programming skills in platforms, including CODESYS, Siemens, Rockwell, and using languages ST, FBD, LAD, VB Script, and C
- Followed IEC 61131-3 standards
- Demonstrated expertise in the various stages of the software development life cycle
- Knowledge of many industrial communication protocols, such as J1939, S comm, PROFINET, PROFIBUS and Ethernet IP, in addition to others
- Experience with design, network architecture, and code optimization for various migration projects

SKILLS & TOOLS

PLC Development	★★★★★	HMI UI /UX	★★★★
HMI/SCADA Development	★★★★★	MATLAB/Simulink	★★★
Structured Text, Ladder & FBD	★★★★★	Git	★★★
VB Script	★★★★	Embedded C	★★★★
Azure DEVOPS (Process Tracking – Agile)	★★★★	Virtual Machines	★★★★

Other Tools: Node Red (Open Source IOT Platform), AutoCAD, Python and C#

EMPLOYMENT HISTORY

Dec 2022 — Present

System Engineer, Zriya Digital Solutions AB — Vasteras, Sweden

- Software functionality and performance testing for various HMI driver Protocols utilizing various PLC and network tools like Wireshark.
- Create PLC projects for testing that use various software based on the driver protocol
- Comprehensive testing of all software components with various test cases
- Making certain that every work is documented according to departmental procedures.
- Interacting with developers and business users to communicate problems using DevOps, actively participating in bug replication and regression testing.
- Helping and enhancing to achieve the goal of test automation

Aug 2021 — Nov 2022

Senior Engineer, Caterpillar India Pvt Ltd — Chennai, India

- Responsible for developing and testing automation software for Electric Rope Shovels, Electric Rotary Drills, and Advanced Power Products
- Collaboration with various internal teams and international teams (from the USA, Canada, Australia, and India) during the requirement and development phases
- Responsible for aftermarket solutions - Dealer Service Network projects, New Program Initiative, New Technology Initiative, and Continuous Process Improvement

Nov 2019 — Jul 2021

Engineer - Trucks and Off highway Vehicles, L&T Technologies Service Pvt Ltd — Chennai, India

- Contracted through L&T to work with Caterpillar Inc to build design and develop PLC/ HMI/ SCADA applications
- Responsible for testing automation software using Hardware and software in the loop
- Responsible for aftermarket solutions - Dealer Service Network projects, New Program Initiative, New Technology Initiative, and Continuous Process Improvement

Jun 2016 — Nov 2019 | Project Engineer – Factory Automation Solution, Base Automation Technologies Pvt Ltd | Chennai, India

- Understand the requirements and objectives to provide End to End automation solution
- Programming the PLC, and developing the HMI and SCADA screens conducting the Factory Acceptance Test (FAT) for the Projects
- On-site commissioning and troubleshooting

KEY PROJECTS

Strip Winding System for OTR Tyre
(M/s MRF Tyres, Medak, India)

Key Technologies: AB Compact Logix-L320ERM, Power Flex 753 Drive, PanelViewPlus-7 1000 Standard HMI, Encoder, Kinetix-6500 Drive, Ethernet/IP communication

Languages used: Structured Text, Ladder, Function Block Diagram, C

- On board HMI conversion from a PC-based application.
- Created the PLC Program code entirely from scratch.
- Considering that the client chose the controller. Memory optimization was required to get around the memory limitations.
- Had discovered a bug when performing the Rockwell HMI development software development activity. and told the Rockwell about it.

MD6640 Electric Rotary Drills
(M/s Caterpillar Inc, USA)

Key Technologies: Siemens S7-400, WinCC 7.4, S7-Comm, TCP/IP and UPD communications, Profibus

Languages used: Structured Text, Ladder, Function Block Diagram, C, VB Script

- Part of the aftermarket support team.
- Develop the retro type of functionality to the existing machines
- Development of new functionality to the existing code (UDP connection to the third-party device with Multiple frequencies)
- Also developed some new HMI screens and did some R&D work to enhance the machine functionality

Electric Rope Shovels
(M/s Caterpillar Inc, USA)

Key Technologies: AB Compact Logix-L81E, PanelViewPlus-7 1500 Performance HMI, Encoder, Ethernet/IP communication, J1939 Protocol,

Languages used: Structured Text, Ladder, Function Block Diagram, C, VB Script

- Migration project from Siemens platform to Rockwell platform. The existing Siemens PLC and HMI were S7 300 and WINCC 7.0 SCADA with the IPC (Windows 7). Had taken care of HMI
- While I started working on this project had to carry over all the content from the existing Siemens HMI to the Rockwell HMI (Panel view - Windows CE)
- Since there were some limitations in the Rockwell development tool and the Panel view hardware. Faced with too many challenges during the migration work. Somehow, we had overcome all the hurdles and delivered the software to the customer on time

EDUCATION

Jul 2012 — May 2015 | B.E - Mechatronics, Kongu Engineering College | Tamil Nadu, India

Jun 2009 — Apr 2012 | Diploma in Electronics and Robotics, Swamy Abedhanandha Polytechnic College | Tamil Nadu, India