

# SMARTH SALARIA

SENIOR ENGINEER - AUTOMATION & EMS



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## PROFESSIONAL OVERVIEW

Industrial Automation/EMS Systems Engineer with over 3.5 years of experience in the solution delivery of Energy Management Systems (EMS), Power Plant Controllers (PPC), and SCADA solutions. Specialized in grid-scale renewable and battery storage projects, with expertise spanning system architecture, control logic development, and comprehensive validation (HIL, FAT, SAT) including compliance with the Indian Grid Code.

## WORK EXPERIENCE

### Senior Engineer

Premier Energies Storage Solutions Pvt. Ltd. - Premier Energies Limited, Pune | Jun 2025 – Present

A subsidiary of Premier Energies Limited Group, PESSPL specializes in Battery Energy Storage Systems (BESS) and EMS product development for renewable energy projects.

- Led EMS product development initiatives through competitor benchmarking and stakeholder-driven requirement alignment.
- Coordinated with vendors for technical evaluation and approval of EMS components.
- Applied IEEE 1547 and IEEE 2800 standards to control system development using MATLAB/Simulink.
- Acted as the technical interface between outsourced software teams and the in-house MATLAB application modelling team to ensure project readiness.
- Designed preliminary control-state logic and operational mode transitions for the EMS product in MATLAB.

### Senior Engineer

Anvi Power Industries Pvt. Ltd. - Gensol Group, Pune | Jan 2025 – April 2025

A subsidiary of Gensol Group, Anvi Power specializes in Battery Energy Storage Systems (BESS) and EPC for BESS renewable power plant.

- Contributed to the **70MW/140MWh Standalone BESS** project by designing system architecture encompassing control strategies, safety interlocks, and I/O signal mapping across EMS, PCS, and BMS.
- Prepared and maintained core engineering documents including Scope of Requirements (SoR) and Functional Design Specifications (FDS).
- Coordinated technical reviews, approvals, and vendor interactions for SCADA and EMS systems to ensure full compliance with project specifications and grid code compliance.
- Renewable Energy Projects:
  - 70MW/140MWh Standalone BESS (Bachunda, Gujarat): Performed engineering activities for the EMS and SCADA systems.

## EDUCATION

Bachelor's degree | 7.32 CGPA

B.E. – CSE – IOT

Chandigarh University, Mohali  
2018-2022

## SKILLS

### Core Power & Control Systems:

- EMS, PPC, HEMS, SCADA
- BESS, Solar PV, Indian Grid Code Compliance

### Communication & Standards

- IEEE 1547, IEEE 2800
- Modbus TCP/IP, IEC 104, IEC 61850

### Simulation & Validation

- MATLAB/Simulink
- HIL/FAT/SAT

### Automation & Scripting

- Python, Linux, MySQL
- Azure Cloud
- React/Nextjs

## PROFESSIONAL DEVELOPMENT

### AZ 900

Microsoft – 2024

### AZ 104

Microsoft – 2024

### Internet of Things

Verzeo - 2021

### Web Development

Bolt IoT - 2020

## Associate Engineer

Digital Energy Solutions – Power Transmission and Distribution (PT&D), Larsen & Toubro – Chennai, India | July 2022 – Dec 2024

L&T's Digital Energy Solution Business Unit under PT&D, delivers advanced SCADA Integration and plant automation solutions with inhouse built Power Plant Controllers, ESS and HEMS for solar, BESS, and hybrid power plants.

- Engineered and commissioned SCADA and controller systems for large-scale Solar + BESS projects, integrating PPC and HEMS with plant SCADA and RTUs to ensure real-time grid compliance and reliable remote operation.
- Hands-on expertise on Industrial Communication protocols with IEC 61850, Modbus TCP/IP, and IEC 60870-5-104, with practical experience in Linux-based network configuration, cron-jobs, port binding, and related system tuning.
- Led Factory Acceptance Tests (FAT), Site Acceptance Tests (SAT), and Hardware-in-the-Loop (HIL) testing using Opal-RT simulators, SCADA, Inverter Simulator and Ubuntu-based EMS/PPC/HEMS controllers to verify system functionalities and performance under dynamic conditions.
- Tested and troubleshooted control logic functionalities including active/reactive power control, PV smoothing, black start sequences, redundancy, energy time-shift, soc management, and voltage/frequency control, while performing network and protocol analysis using Wireshark to integrate custom software solutions.
- Renewable Energy Projects:
  - **35MW Solar and 12MWh BESS (Kutch, Gujarat):** Engineered and performed onsite and remote commissioning of HEMS and SCADA systems.
  - **230MW Solar PV and 30MVar Capacitor Bank (Ettaiyapuram, Tamil Nadu):** Executed engineering and onsite commissioning activities for the PPC system.
  - **700MW Solar PV (AR-Rass, Saudi Arabia):** Executed Engineering for PPC till FAT activities.
  - **0.3MWh and 0.6MWh BESS Pilot Project (Telangana):** Completed SCADA and ESS engineering and FAT activities.
- Internal Self-Initiated Projects:
  - Built using Python to **generate in-house PPC-compliant JSON** configurations from Signal List Excel files, significantly reducing configuration time and manual errors.
  - Automated deployment of in-house full-stack application (Apache web server, service files, MySQL, etc.) on bare-metal Ubuntu using Python.
  - Developed a logic-driven Python generator to convert equipment signal lists into **IEC 60870-5-104 mappings** based on plant inputs, minimizing manual protocol configuration effort.