Arunesh E

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Profile Summary

Final-year B.Tech EEE student specialized in (Smart Grid & EV) with hands-on experience in power electronics, DC-DC converters, Li-ion battery modeling, and hardware testing. Strong exposure to MATLAB/Simulink, microcontroller-based prototyping, and field-level commissioning. Interested in EV systems, testing & validation, power electronics, and diagnostics-focused engineering roles.

Skills

Power Electronics & EV : DC-DC Converters (Buck/Boost/High-Gain), MPPT (P&O), Converter Modeling, EV Powertrain Basics
EV & Energy Systems: Li-ion Battery Modeling, SOC Estimation (EKF), Basic BMS Concepts
Circuit/Simulation & Tools: MATLAB/Simulink, ANSYS (Basic), Git
Soft Skills: Problem-Solving, Fast Learning, Documentation, Team Collaboration

Projects

Performance Analysis of High-Gain DC-DC Converter for EV Charging *2025*

- Simulated high-gain DC-DC converter for EV battery charging in MATLAB-SIMULINK.
- Derived state-space model and validated converter performance under varied conditions.

IoT-based Power Factor Monitoring and Correction System *2025*

- Designed ESP32-based system for real-time power factor monitoring and automatic correction.
- Integrated IoT cloud platform for live data visualization and remote monitoring.

Li-ion Battery SOC Estimation using Extended Kalman Filter (MATLAB) *2025*

- Developed MATLAB simulation to estimate Li-ion battery SOC using EKF and Thevenin RC model.
- Achieved ±1% SOC accuracy in first 3 hrs and robust performance against noisy input data.

Education

SASTRA Deemed University *2022 – 2026*
B.Tech in Electrical & Electronics Engineering (Specialization: Smart Grid & Electric Vehicles)

Blossom Public School (CBSE) *2022*
Senior School Certificate (HSC)

Blossom Public School (CBSE) *2020*
Secondary School Examination (SSE)

Professional Experience

Internship – Testing & Commissioning of Electrical Equipment *Dec. 2024 – Jan. 2025*
Larsen & Toubro Construction *Chennai*

- Assisted in testing and commissioning of substations, transformers, and diesel generator systems..
- Supported basic relay testing, equipment diagnostics, and site-level technical activities.
- Ensured adherence to EHS protocols and safety compliance across all operations.

Certifications

Semiconductor Characterization *Oct. 2023 – Dec. 2023*
Ministry of Heavy Industry, Govt. of India *SASTRA Deemed University*

- Completed practical training on semiconductor characterization and device testing.