Sourabh Joshi

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 sourabhjoshi01

Education

Visvesvaraya National Institute of Technology (NIT Nagpur) July 2024–June 2026
M.Tech in Electrical Engineering
- **CGPA:** 7.27 (till 3rd semester)
- **Relevant Coursework:** Power Electronics, Electrical Machine Drives, Digital Control Systems, Battery Management Systems

Maulana Azad National Institute of Technology (NIT Bhopal) July 2017–May 2021
*B.Tech in Electrical Engineering, **CGPA - 6.91/10***

Experience

Graduate Engineering Trainee *Raigarh, CG*
MSP Steel and Power Limited *Jan 2022 – Jan 2023*
- Worked in Pellet Division, Electrical Department
- Assisted in the maintenance, troubleshooting, and operation of electrical systems in the Pellet Plant, including MCC (Motor Control Centres), Transformers, and Automation

Certifications/Achievements

Supervised Machine Learning: Regression and Classification May 2025
Completed a foundational ML course focused on regression and classification using Python
from DeepLearning.AI
[Certificate Link ↗]

Introduction to Power Electronics March 2025
Completed the basics of DC-DC converters and simulation methods *from University of Colorado Boulder*
[Certificate Link ↗]

Arena FIDE Master: *Chess Title from FIDE* December 2021

Projects

AI-Based State-of-Charge (SoC) and State-of-Health (SoH) Estimation in Li-Ion Batteries July 2025—Present
- Currently developing a deep learning-based framework using LSTM and hybrid machine learning models for accurate estimation of battery State of Charge (SoC) and State of Health (SoH).
- Focused on integrating NASA and CALCE battery datasets and evaluating multiple architectures for SoC/SoH prediction.

Bidirectional Buck-Boost Converter for Battery Management Systems June 2020–April 2021
- Designed a 5 kW bidirectional buck-boost converter achieving $> 92\%$ efficiency for battery energy storage systems
- Tools used: MATLAB, Simulink, Hardware Implementation.

BLDC Motor Speed Control Using MATLAB/Simulink Jan 2020—May 2020
- Developed a closed-loop speed control system for a BLDC motor using a PID controller in MATLAB/Simulink.
- Reduced Steady-state error and settling time

Publications

A Comparative Analysis of Various Deep Learning Models for State-of-Charge Estimation in Lithium-Ion Batteries
- Presented at the **IEEE 4th International Conference on Smart Technologies for Power, Energy, and Control (STPEC 2025)**, hosted by **NIT Goa** (Dec 10–13, 2025).

Technologies/Skills

Programming Languages: Python, MATLAB

Domains and Concepts: Power Electronics, DC-DC Converters, Inverters, Battery Energy Storage Systems (BESS), Battery Management Systems (BMS), Control Systems, Control, PLC Programming Basics, SCADA Fundamentals, Industrial Automation