Shreyan Naik

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SUMMARY

Results-driven Electrical and Electronics Engineer with strong expertise in power systems, electrical machines, and intelligent energy solutions. Experienced in advanced signal processing and AI/ML techniques for predictive modeling, condition monitoring, and fault analysis. Skilled in developing cross-platform workflows by integrating MATLAB/Simulink with Python for real-time simulation, automated fault detection, and hybrid system evaluation. Adept at bridging theoretical knowledge with practical implementation through simulation-driven validation, hardware interfacing, and data-driven optimization.

EDUCATION

Vellore Institute of Technology Chennai *2023 – PRESENT*
Bachelor of Technology in Electrical and Electronics Engineering (EEE)
CGPA : 8.47

EXPERIENCE

Vocational Training Program Intern (Electrical Maintenance) *June–July 2025*
Mahanadi Coalfields Limited (MCL)
Gained hands-on exposure to substation operations and transformer maintenance, with observations of 33/11 kV and 11 kV/410 V substations and switchyard components. Acquired knowledge of grid stability, voltage regulation, and fault protection mechanisms in large-scale electrical systems.

Performance Evaluation of Hybrid Power Generation System *May–Aug 2025*
VIT Chennai
Conducted performance assessment of a hybrid power generation framework integrating renewable sources with grid supply. Implemented DWT for feature extraction and applied ANN and LSTM for predictive fault detection. Utilized advanced AI methods, including CEWGT and DB-WPCNet, for robust classification under dynamic conditions, and established MATLAB–Python workflows for automated validation.

PROJECTS

Fault Detection in Transmission Line
Developed simulation-based models to analyze and detect electrical faults in transmission lines, including short circuits, line breaks, and ground faults, ensuring power system stability and reliability.
Tools Used: MATLAB, Simulink

Condition Monitoring of PMSM Motor
Performed diagnostic modeling and fault analysis of PMSMs, emphasizing detection of electrical, mechanical, and dynamic deviations, with advanced monitoring for predictive maintenance and lifecycle optimization.
Tools Used: LabVIEW, MATLAB

Arduino-Based Hand Gesture Control System for PC
Designed and implemented an intuitive human–machine interface using ultrasonic sensors and Arduino, with a Python-based interface for real-time gesture recognition.
Tools Used: VS Code (Python), Arduino IDE

Predictive Maintenance System using Vibration Sensors
Built a vibration-sensor-based predictive maintenance system for rotating machinery, enabling real-time diagnostics and early anomaly detection for fault avoidance.
Tools Used: Arduino IDE

Hamming Code Encoder and Decoder
Implemented a Hamming (7,4) error-control coding scheme in Verilog HDL with parity generation and syndrome calculation for single-bit error detection and correction, validated through testbench simulations.
Tools Used: ModelSim

SKILLS

Core Concepts: Power Systems, Electrical Machines, Transmission Lines, Motor Diagnostics, Control Systems, Analog Electronics, Circuit Analysis

AI/ML for Power Systems: DWT, ANN, LSTM, CEWGT, DB-WPCNet

Tools & Software: MATLAB, Simulink, LabVIEW, Ansys (Electronics), VS Code, Arduino IDE, ModelSim, Google Colab

Programming Languages: Python, Java, Assembly, Verilog HDL

Hardware/Domains: Microcontrollers, Sensors, BLDC Motor Setup

CERTIFICATIONS

- PLC Training Program – VIT Chennai
- Deep Learning with TensorFlow – Cognitive Class