

HEMABALAN J

Transformer Testing Engineer · B.E. Electrical & Electronics Engineering · EV Specialist

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PROFESSIONAL SUMMARY

Final-year EEE graduate with 4+ months of hands-on experience as a Transformer Testing Engineer at Magnetic & Controls (transformer manufacturing). Skilled in transformer testing, fault diagnosis, and predictive maintenance. Completed a 6-course EV Technology Specialization (7.83 CGPA) and delivered an AI-Based Transformer Predictive Maintenance System as a final-year project. Passionate about core engineering roles in power equipment, EV, and industrial automation.

WORK EXPERIENCE

Magnetic & Controls, Coimbatore

Dec 2024 – Present (5th Month Ongoing)

Transformer Testing Engineer – Internship

- Perform routine and type tests (turns ratio, insulation resistance, winding resistance, no-load/full-load losses) per IS/IEC standards.
- Conduct high-voltage withstand (HV) tests; analyse test data to detect insulation degradation and winding faults.
- Prepare transformer test reports and support quality assurance for dispatch clearance.
- Gained exposure to core assembly, coil winding and end-to-end manufacturing workflow.

BSNL Telecommunication Exchange, Cuddalore

Summer 2024 (2 Weeks Industrial Training)

Industrial Trainee

- Observed live telecom switching systems, OFC network infrastructure.

EDUCATION

Sri Ramakrishna Institute of Technology, Coimbatore

2022 – 2026

B.E. – Electrical & Electronics Engineering | CGPA: 8.3 | 8 Semesters Completed

- Specialization: Electric Vehicle Technology — 6 Courses, 18 Credits, CGPA 7.83 (awarded on degree certificate).
- Final Year Project: AI-Based Transformer Predictive Maintenance System — IoT sensors + AI anomaly detection + real-time dashboard.

Kamaraj Matriculation Higher Secondary School

2021 – 2022

Higher Secondary Education (HSC) | 73.17%

Secondary Education (SSLC)

2019 – 2020

Kamaraj Matriculation School | 70.2%

PROJECTS

1. AI-Based Transformer Predictive Maintenance System (Final Year Project)

- IoT-enabled real-time monitoring of temperature, Voltage, and load current on distribution transformers.
- ML anomaly detection (Isolation Forest) with threshold alerts to predict incipient faults before failure.
- Web dashboard for live monitoring, fault alerting, and maintenance scheduling.

2. Voice-Controlled Obstacle Avoidance Robot

- ▶ Integrated voice command recognition with ultrasonic obstacle avoidance logic for human-machine interaction in robotic control.

3. Line Follower Robot

- ▶ Autonomous IR-sensor + Arduino robot for path-following — awarded 1st Prize at ROBO EXPO, SRIT.

4. Obstacle Avoidance Robot

- ▶ Ultrasonic-sensor-driven robot with real-time obstacle detection and autonomous path correction using Arduino IDE.

TECHNICAL SKILLS

- ◆ Transformer Testing (IS/IEC)
- ◆ Python (Data Science)
- ◆ Power Systems Analysis
- ◆ Predictive Maintenance (AI)
- ◆ MATLAB & Simulink
- ◆ Arduino IDE / Microcontrollers
- ◆ Fault Diagnosis & HV Testing
- ◆ Renewable Energy Systems
- ◆ C Programming
- ◆ IoT Sensor Integration

CERTIFICATIONS & ACHIEVEMENTS

Transformer Testing Engineer Internship — Magnetic & Controls Pvt. Ltd., 5 Months (Ongoing)
EV Technology Specialization — 6 Courses · 18 Credits · CGPA 7.83 (on Degree Certificate)
NPTEL — Python for Data Science — IIT
NPTEL — Renewable Energy Engineering (Solar, Wind & Biomass) — IIT
MATLAB OnRamp & Simulink OnRamp — MathWorks
Business English Certificate (BEC) — Cambridge
1st Prize — ROBO EXPO (Line Following Robot) — SRIT
Autoclicker Award — RIVALS 2025 (Vehicle Handling) — Karpagam Institute of Technology
Paper Presentation — YUKTA 2025 — PSG Institute of Technology & Applied Research

AREAS OF INTEREST

- ◆ Transformer Design, Testing & Condition Monitoring
- ◆ Power Systems Protection & Switchgear
- ◆ Industrial Automation & Predictive Maintenance
- ◆ Electric Vehicle Powertrain & Battery Management
- ◆ Renewable Energy Integration & Smart Grid
- ◆ AI/IoT Applications in Electrical Engineering

LANGUAGES

- ▶ Tamil
- ▶ English

I hereby declare that all the information provided above is true and correct to the best of my knowledge and belief.

Hemabalan J

Chidambaram, TN | 21 April 2026