

PRAJYOT BHUSARI

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SUMMARY

Electrical Engineering Final Year student at Government College of Engineering, Yavatmal, with a strong first-principles understanding of hardware engineering and PCB design. I have gained practical experience in maintaining large-scale power systems and diagnosing transformer faults through my internships at Akash Infrastructure and Vinit Transformer. Successfully applied skills in analog circuit design, simulation, and high-voltage safety to build projects like a Class-D amplifier and a wireless EV charger. Certified in Electronic Systems Design, German language, soft skills, and Project Management.

EDUCATION

B.Tech Electrical Engineering	2022 – 2026
Government College Of Engineering, Yavatmal	CGPA - 7.61

12th	2022
Siddheshwar Junior College, Nagpur	81.50%

10th	2020
Rashtriya Vidyalaya, Bhiwapur	93.20%

PROJECTS

Electric Vehicle With AI Based Fault Detection	Aug 2025 – Present
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- Developing a real-time fault detection system for EV powertrains using ESP32, ACS758, MPU-6050, and MAX6675 sensors to monitor current, vibration, and temperature parameters.
- Designing the complete vehicle electronics architecture, including the instrument cluster interface and custom body panels using CAD tools to ensure seamless integration of hardware components.
- Implementing preventive control logic to identify overload, overheating, and bearing vibration faults, aiming to enhance vehicle safety and component longevity.
- Integrating sensor data with the dashboard display for real-time diagnostics, demonstrating cross-disciplinary skills in embedded systems, sensor characterization, and hardware-software integration.

Class-D Amplifier	Aug 2024 – Nov 2024
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- Designed a high-efficiency PWM generation circuit utilizing 555 timers and LM358 operational amplifiers, focusing on signal fidelity and analog circuit fundamentals.
- Engineered the power stage using an IR2110 MOSFET driver and IRF640 MOSFETs, ensuring robust switching performance and thermal management.
- Designed and simulated a low-pass filter to match specific load requirements, effectively reducing Total Harmonic Distortion (THD) and optimizing audio output.

Electric Vehicle Wireless Charger	Aug 2023 – Nov 2023
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- Conducted R&D on coil materials and magnetic structures to maximize coupling efficiency for wireless power transmission.
- Designed and simulated a DC-to-AC converter and bridge rectifier circuit using multimeter & oscilloscope for validation, ensuring stable DC output.
- Optimized the regulation circuit for safe wireless power transfer, applying first principles of electromagnetics and power electronics.

INTERNSHIPS

Akash Infrastructure	June 2025 – July 2025
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- Gained hands-on experience in the operation and maintenance of large-scale power systems, including circuit breakers and transmission lines.
- Collaborated with technicians to troubleshoot heavy-duty electrical equipment, applying diagnostic tools to ensure grid reliability and safety.
- Analyzed electrical schematics and adhered to strict high-voltage safety protocols, developing a practical understanding of infrastructure maintenance.

Vinit Transformer	Aug 2024 – Sept 2024
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- Focused on the repair, maintenance, and testing of distribution transformers, gaining deep insight into magnetic components and insulation systems.
- Performed critical diagnostic tests, including oil insulation breakdown voltage and winding continuity checks, to identify electrical faults.
- Assisted in the complete disassembly and reassembly of units, replacing bushings and gaskets to restore transformers to operational standards.

CERTIFICATIONS

- Electronic Systems Design: Hands-on Circuits and PCB Design with CAD Software (IIT Delhi)
- Project Management: Planning, Execution, Evaluation and Control (IIT Kharagpur)
- Soft Skills (IIT Roorkee) | German - I (IIT Madras)

SKILLS

Technical: PCB/Hardware Design, Circuit Simulation, Analog & Digital Circuit Design, Embedded Systems, Diagnostics.

Tools: AutoCAD, Onshape 3D (CAD), MATLAB, C Programming, Python, Schematic Design Tools.

Soft Skills: Cross-functional Collaboration, First Principles Thinking, Problem Solving, Adaptability, Project Management.