

Katla Indu

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Embedded Hardware Engineer with hands-on experience in **hardware development**, **circuit design**, and **embedded systems testing**. Skilled in designing and optimizing **electronics hardware systems** using tools like **KiCad**, **MATLAB**, and **FPGA platforms**, ensuring high **performance**, **reliability**, and **signal integrity**.

Skills

- **Hardware Development:** Circuit Design, PCB Design, Embedded Hardware Design, Hardware Testing, System Integration
- **Embedded Systems:** Microcontrollers, ARM Systems, Hardware Debugging, Signal Integrity Analysis
- **Electronics:** Analog & Digital Circuits, Hardware Troubleshooting, Performance Optimization Techniques
- **Tools & Programming:** KiCad, MATLAB, Xilinx ISE, AMD Vivado, Embedded C Programming

Professional Experience

Embedded Hardware Developer | PAT IoT Solutions

Jun 2025 — Present

- Designed **electronic circuits** and **multi-layer PCBs** ensuring compact layout and high signal integrity standards.
- Performed **hardware testing and validation** improving system reliability and reducing hardware failures by **20%**.
- Troubleshoot **circuit-level hardware issues** enhancing performance consistency and minimizing system downtime effectively.
- Collaborated with **cross-functional teams** ensuring seamless hardware-software integration and optimized system performance.

Internship

VLSI Intern | LearnFlu

2024

- Designed and analyzed **digital circuits** for high-speed and low-power VLSI applications.
- Optimized circuit architecture reducing **power consumption** while improving overall system performance efficiency.
- Performed **hardware simulation and validation** ensuring accurate and reliable circuit design outputs.
- Applied **VLSI design concepts** to improve speed, efficiency, and hardware performance in implementations.

Telecom Intern | BSNL

2023

- Studied **telecom hardware systems** focusing on reliability, performance, and troubleshooting techniques.
- Analyzed communication system issues improving understanding of real-world hardware and network environments.
- Developed strong **problem-solving skills** through exposure to network hardware operations and diagnostics.
- Gained practical knowledge of **telecommunication systems** and hardware infrastructure in real-time environments.

Projects

PWM Dimming and Phasecut Dimming Prototyping

- Designed and tested **PWM dimming circuits** ensuring stable output and consistent hardware performance.
- Developed schematics and **PCB layouts in KiCad** for accurate and efficient hardware implementation.
- Assembled **SMD and through-hole components** ensuring proper circuit functionality and reliability.
- Validated hardware performance through testing ensuring efficient operation under varying load conditions.

Optimised Reversible Multiplier for High-Speed DSP Applications

- Designed high-speed multiplier circuits using reversible logic to improve processing efficiency.
- Reduced **power consumption** and enhanced circuit reliability for DSP-based hardware applications.
- Validated hardware design through testing and analysis ensuring accurate and stable system operation.
- Improved computational efficiency by optimizing multiplier architecture for high-speed performance.

FPGA Implementation of High-Speed VLSI Multiplier

- Implemented high-speed multiplier on FPGA improving computational efficiency and processing performance.
- Performed **hardware validation and testing** ensuring reliable and consistent system behavior.
- Optimized hardware architecture to support high-speed processing requirements in FPGA environments.
- Applied FPGA design techniques to enhance performance and reduce latency in computation tasks.

Education

B.Tech in Electronics and Communication Engineering

2021 — 2025

Kakatiya Institute of Technology and Science, Warangal

CGPA: 8.28