Punit Sharma

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Education

Indian Institute of Information Technology, Jabalpur **2022 – 2026**
B.Tech in Electronics and Communication Engineering ***CGPA: 8.1*** *Jabalpur, Madhya Pradesh*

Surevin International School **2019 – 2021**
Class 12: 97.3%, Class 10: 94.6% *Ghaziabad, Uttar Pradesh*

Core SKILLS

Coursework: Digital Signal and Systems, Network Theory, Electromagnetic Theory, Control System, Fiber Optics, Analog Circuits, Digital Microprocessor
Languages: C, C++, Python, Verilog, SystemVerilog, MATLAB
Technologies/Frameworks: Embedded C, VHDL, Digital Signal Processing (DSP), RTL Design, CST, Vivado, PCB Design, FPGA, Sentaurus TCAD, 8085 Microprocessor, 8086 Microprocessor
Developer Tools: Cadence Virtuoso, Synopsys Design, Xilinx Vivado, LTSpice

PROJECTS

Accident Detection and Emergency Alert System (2023-24)

- Engineered a microcontroller-based system leveraging MPU6050 IMU for real-time crash detection via inertial threshold monitoring.
- Integrated Neo-6M GPS for geolocation tracking and SIM800L GSM module for automated SMS dispatch to emergency responders.
- Implemented local alerting through actuators (buzzer/LED); optimized for embedded safety applications in vehicular environments.

Analog Circuit Layout and Simulation using Cadence Virtuoso (2024–25)

- Designed and verified analog IP blocks including Two-Stage CMOS Op-Amps, Differential Amplifiers, and Comparators using **Cadence Virtuoso** with 180nm CMOS technology node.
- Performed pre-layout and post-layout simulations in **Spectre** to extract gain, unity-gain bandwidth, PSRR, and phase margin. Conducted Monte Carlo and Corner Analysis for process-voltage-temperature (PVT) robustness.
- Implemented **common-centroid**, **interdigitated**, and **symmetrical layout techniques** to minimize systematic mismatch and enhance CMRR. Integrated **guard rings**, **dummy devices**, and proper shielding to mitigate substrate noise and latch-up.

Sonic vision:A wearable tool for blind people (2024-25)

- Designed an intelligent wearable prototype using Raspberry Pi 5, integrating YOLOv5 + MediaPipe for object localization and EasyOCR for environmental text decoding.
- Implemented ultrasonic sensors for spatial mapping, GPIO-controlled haptic feedback, and LLM-based voice interface for natural language interaction.
- Optimized for low-latency signal processing, sensor fusion, and wireless communication for seamless interaction in real-time environments.

ACHIEVEMENTS

* Selected for the Amazon FFE Scholar Program for talented IIT JEE Advanced qualified students.
* Cleared Round 1 of NTSE, a highly competitive national-level scholarship exam.
* Selected by the Ministry of Environment, Forest and Climate Change (MOEFCC), Government of India, for a project on piezoelectric substance electricity. Presented the project to the Additional Secretary of MOEFCC, along with several Indian Forest Service (IFS) officers and retired officials, competing against bachelor's, master's students, and professors.

EXTRACURRICULAR

* Performed in Saaz Club, showcasing singing talents in various cultural events.
* Hall Executive Committee (HEC) Member - Hostel H4, contributing to hostel management and student welfare activities.
* Mentored IIT-JEE and 12th-grade Math students while also guiding juniors in the FFE Scholarship Foundation with academic support and career advice.
* Played in intra-college cricket tournaments like 45 Yards.