Harshan S L

Electronics and Communication Student

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Summary

Motivated Electronics and Communication student with expertise in Antenna, Wireless Communication, and Signal Processing. Proficient in industry simulation software, including CST Studio Suite, MATLAB, and Cadence. Strong interest in the telecom industry, particularly in 5G, IoT, and network optimization. Eager to apply skills to real-world projects and thrive as a fast learner and team player.

Education

Vellore Institute of Technology **Chennai, India**

B.Tech Electronics and Communication Engineering *Aug 2023 - Expected 2027*

Experience

National Institute of Technology Tiruchirappalli **Tiruchirappalli, India**

Summer Intern *May 2025 - June 2025*

- Worked on variety of research projects and tasks related to modern RF circuits and antenna design
- Focused on CST Studio Suite and Ansys HFSS for achieving antenna miniaturization without sacrificing functionality
- Designed FSS filters and terahertz absorbers for advanced communication applications

IEEE Solid State Circuits Society

Associate Technical Lead *Jan 2024 - Present*

- Advanced circuit design knowledge and supported technical projects in solid-state circuits
- Fostered innovation in solid-state circuit technologies through collaborative research and skill development

Technical Skills

Programming Languages: C/C++, Java, Python,R
EDA & Simulation Tools: CST Studio Suite, ANSYS HFSS, Cadence Virtuoso, MATLAB, LT Spice, ModelSim
Hardware Description: VLSI Design, Verilog HDL
Embedded Systems: 8051 Microcontroller, Keil IDE
Technologies: IoT, 5G, Wireless Communication, Signal Processing, RF Circuit Design,Git

Projects

Miniaturization of Patch Antenna **May 2025**

- Achieved antenna miniaturization using CST Studio Suite while maintaining stable resonance and efficient radiation performance for IoT devices

Smart Home Automation System **Jan 2025 - May 2025**

- Developed 8051 microcontroller-based system with integrated sensors for real-time safety monitoring and automated appliance control including temperature-controlled fan using LM35D sensor

Braun Array Multiplier (VLSI) **Jan 2025 - May 2025**

- Implemented six adder architectures with AND gate logic for digital arithmetic operations and optimized propagation delay through gate sizing using VLSI tools

Cosmology Analysis (Supernova) **June 2025 - July 2025**

- Analyzed Pantheon+SHOES supernova dataset using statistical modeling to plot Hubble diagram, estimate Hubble constant, and study cosmic expansion

Earthquake Detection System **June 2024 - Dec 2024**

- Created MATLAB-based system for real-time seismograph waveform analysis and earthquake detection with signal processing algorithms