HARSHAN S L

Electronics and Communication Student

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Summary

I am a 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. My interests lie in the telecom industry, particularly in 5G, IoT, and network optimization. I am eager to apply my skills to real-world projects and thrive as a fast learner and team player

Experience

National Institute of Technology Tiruchirappalli
Tiruchirappalli, India

Summer intern
05/2025 - 06/2025

An institution focused on engineering and technological research

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

IEEE Solid State Circuits Society
Not specified

Associate Technical Lead
01/2024 - 01/1970

An organization dedicated to advancing technology in solid-state circuits

- Focused on advancing circuit design knowledge and supporting technical projects
- Fostering innovation in solid-state circuit technologies through collaborative research and skill development

IEEE Photonics Society
Not specified

Member
01/2024 - 01/2025

An organization focused on the study and application of photonics

- Exploring photonics technologies and participating in technical discussions
- Supporting club research and development initiatives

Education

Vellore Institute of Technology Chennai
Chennai, India

B.Tech Electronics and Communication Engineering
08/2023 - 01/1970

Skills

ANSYS · C/C++ · Cadence Virtuoso · HFSS · IEEE · IoT · Java · Keil · LT Spice · MATLAB · ModelSim · Python · RStudio · TypeScript · VLSI · Gmail

Projects

Miniaturization of Patch Antenna
Not specified

05/2025 - 01/1970

Project on miniaturizing a patch antenna

- Achieved antenna miniaturization while maintaining stable resonance and efficient radiation performance
- Focused on size reduction techniques applicable for modern wireless communication systems and IoT devices

Cosmology Analysis(Supernova)
Not specified

06/2025 - 07/2025

Analyzed supernova data to understand cosmic expansion

- Analyzed the Pantheon+SHOES supernova dataset to plot the Hubble diagram and estimate the Hubble constant
- Studied the impact of matter density on cosmic expansion and age estimation using observational data
- Applied statistical modeling and data visualization to explore key concepts in modern cosmology

Projects

Smart Home Automation System

Not specified

01/2025 - 05/2025

Created a smart home automation system

- Developed a smart home system using the 8051 microcontroller, integrating sensors for real-time safety and monitoring
- Automated the control of home appliances to enhance energy efficiency, security, and convenience
- Implemented a temperature-controlled fan feature based on LM35D sensor input

Predictive Model for Student Expenditures

Not specified

06/2024 - 12/2024

Developed a model to predict student spending

- Built a predictive model to analyze and forecast student food expenditures in college
- Used statistical techniques and machine learning algorithms to identify influencing factors

Earthquake Detection and Monitoring System

Not specified

06/2024 - 12/2024

Designed a system for earthquake detection

- Created a MATLAB-based system to analyze seismograph waveforms and detect potential earthquake events
- Performed real-time signal analysis to estimate the presence and impact of seismic activities

Braun Array Multiplier

Not specified

01/2025 - 05/2025

Developed a Braun array multiplier for digital operations

- Implemented six different adder architectures combined with AND gate logic for digital arithmetic operations
- Measured propagation delay for each adder before and after gate sizing using standard VLSI tools
- Selected the adder with the least maximum delay for integration into the final design to optimize performance

Interests

- ⋆ Telecommunications and Network Optimization
  Interested in the telecom industry, 5G, IoT and network optimization