Peerzada Arsalan Masoodi

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EDUCATION

Shri Mata Vaishno Devi University   Katra, J&K
B.Tech. Electronics and Communication Engineering   *Nov 2022 – June 2026*
CGPA: 8.3 / 10

EXPERIENCE

Undergraduate Research Assistant   June 2020 – Present
National Institute of Technology   *Srinagar, J&K*
- Conducted hands-on research in semiconductor device physics under the guidance of Dr. Sheikh Amir Ahsan.
- Analyzed advanced electronic device characteristics using **LTspice**, including MOSFET I-V behavior, small-signal models, and transient response.
- Translated semiconductor device physics into practical insights for CMOS design, improving understanding of threshold tuning, leakage control, and device performance metrics relevant to VLSI workflows.

PROJECTS

Digital Soldering Station | *LTspice, KiCAD, OnShape*   July 2025
- Designed a full phase-locked loop for maintaining constant soldering temperature.
- Implemented the entire project on a PCB using Arduino Nano.
- Modeled and designed the 3D outer casing for the final product.

Ripple Carry Adder | *Cadence Virtuoso, Spectre, Linux*   April 2025
- Designed a full ripple-carry adder from scratch and verified its logic functionality through schematic simulation.
- Applied duality mirror principles to optimize transistor-level design and improve propagation characteristics.
- Generated the complete GDSII layout using Cadence Virtuoso following industry-style layout practices.

Audio Amplifier | *LTspice, KiCAD*   November 2024
- Designed an audio power amplifier using LTspice to validate gain, bandwidth, and frequency response.
- Plotted gain and output impedance characteristics for detailed analysis and optimization.
- Fabricated the circuit on a PCB designed in KiCAD and successfully tested its output on a speaker system.

Alarm Clock | *Proteus, Keil 5*   October 2024
- Built a simple digital alarm clock system using the 8085 microcontroller architecture.
- Programmed and deployed the firmware onto a microcontroller trainer kit for real-time functional testing.

Microstrip Patch Antenna | *CST Studio*   December 2024
- Designed a 2.4 GHz microstrip patch antenna with circular polarization using CST Microwave Studio.
- Fabricated the antenna on a PCB substrate and validated performance parameters against simulation results.

TECHNICAL SKILLS

Programming Languages: Python, C++, C, MATLAB, LaTeX, HTML

Hardware Description & Embedded Languages: Verilog, Embedded C, Assembly

VLSI & EDA Tools: LTspice, Vivado, Cadence Virtuoso, OpenROAD, Yosys, OpenSTA, Bambu-HLS, Icarus Verilog

Circuit & PCB Tools: KiCad, EagleCAD, Proteus, Multisim, CST Studio

Certifications: Digital IC Design, Computer Networks, Computer Architecture and Organization, VLSI RTL to GDS

LEADERSHIP / EXTRACURRICULAR

Tarang   December 2024 – Present
Member   *Shri Mata Vaishno Devi University*
- Managed two of the Events in University Technical Fest ,EKATVA-2025
- Organized a Boat Race for the Technical Fest, and designed circuits for a PCB Design Competition

Vikalp   April 2023 – Present
Member   *Shri Mata Vaishno Devi University*
- A student's initiative program of teaching the underprivileged children around the area.