

# Peerzada Arsalan Masoodi

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## EDUCATION

### Shri Mata Vaishno Devi University

*B.Tech. Electronics and Communication Engineering*  
*CGPA: 8.3 / 10*

Katra, J&K

Nov 2022 – June 2026

## EXPERIENCE

### Undergraduate Research Intern

June 2024 – July 2024

*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.