

Shagufta Kanwal

Electrical Engineer

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📍 Mianwali, Pakistan

🌐 shagufta-kanwal-a6602b352

Electrical Engineering student at Namal University having knowledge of computer architecture, embedded systems, Power system and Machine Learning. Proficient in Verilog, MATLAB, Python, and C++, with experience in RTL design, RISC-V processor implementation, IC design flows, and ML-based data analysis. Passionate about solving engineering problems and seeking opportunities to grow in hardware and intelligent systems development.

EDUCATION

○ Bachelor of Electrical Engineering

Namal University, Mianwali

Oct 2022 - Present | Mianwali, Pakistan

Courses

- Computer Architecture
- Digital Logic Design
- Wireless Communication
- Embedded Systems
- Machine Learning
- Power Electronics
- IoT systems
- Digital Signal Processing

WORK EXPERIENCE

○ IC Design Intern

GF Metric Fast – ICD Lab, Islamabad

Jul 2025 - Aug 2025 | Islamabad, Pakistan

Accomplishments / Tasks

- Explored end-to-end digital and analog IC design using industry EDA tools.

○ Embedded Systems Intern

NRTC, Haripur

Jul 2024 - Aug 2024 | Haripur, Pakistan

Accomplishments / Tasks

- Integrated GPS module and DF Robot sensor for realtime data.
- Programmed 3D digital compass for orientation data (pitch, roll, yaw).

○ Remote Trainee

Roshan Kal Academy

2023 | Pakistan

Accomplishments / Tasks

- Completed 10 telecom training modules in technology, marketing, and professional development.

ORGANIZATIONS

Namal Dramatics Club

Member

SKILLS

Verilog

Python

C++

MATLAB

Linux

Cadence Virtuoso

Data structures

Machine Learning

PROJECTS

Final Year Project

Group

Integrated a cache prefetcher into the SweRV EH1 RISC-V core to improve instruction fetch efficiency and reduce CPI.

32-bit Pipelined RISC-V Processor (RV32I)

Group

Designed a 5-stage pipelined Verilog processor with GCC support, data forwarding, and hazard handling.

Crop Yield Prediction Analysis

Group

Built an ML pipeline using regression models and feature engineering on weather, soil, and farming data.

Residential Solar Power System

Group

Designed a residential solar power system with DC-DC conversion, battery storage, and stable 220 V AC output.

Voting Machine & Digital Hotel Management System

Group

Voting machine implemented in C++; Hotel management network designed and simulated in Cisco Packet Tracer.

CERTIFICATES

Certificate of Participation Namal Tech expo 2024

Robotics Category

PEC Generative AI Application Developer

Cohort 2

ACHIEVEMENTS

Winner – RISC-V Category, Namal Tech Expo 2026

Namal University Mianwali