

# Hafsa Tanveer

Electrical Engineer

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Mianwali, Pakistan

Electrical Engineering student with strong hands-on experience in embedded systems, microcontroller programming, and circuit design. Skilled in MATLAB/Simulink and Proteus for modeling and simulation. Currently working on Final Year Project titled Heart Sound Classification using Digital Stethoscope, focusing on a machine learning-based diagnostic system with hardware integration. Interested in embedded AI and innovative engineering solutions.

## EDUCATION

### BSc Electrical Engineering

Namal University, Mianwali

09/2022 – Present

Mianwali, Pakistan

#### Courses

- Database Engineering
- Internet of Things
- Machine Learning
- Renewable Energy Resources
- Embedded Systems
- Digital Signal Processing

## WORK EXPERIENCE

### Intern

Hydel Power Plant Chashma

Chashma, Pakistan

#### Achievements/Tasks

- Gained practical exposure to power generation systems and plant operations.
- Observed turbine control, maintenance, and electrical distribution systems.

### Intern

NRTC Haripur

Haripur, Pakistan

#### Achievements/Tasks

- Worked on industrial communication and electronic systems.
- Learned about embedded and defense-related electronic technologies.

## ORGANIZATIONS

### Namal Tech Expo

SUMO War Robot Development

### IEEE Society

Decoration Wing

### Character Building Society

Social Worker

## LANGUAGES

### English

Full Professional Proficiency

### Urdu

Native / Bilingual Proficiency

## SKILLS

Python

C++

Arduino

MATLAB

Proteus

ModelSim

Linux

MySQL

Cisco Packet Tracer

Streamlit

Circuit Design

STM32

ESP32

## PROJECTS

### Heart Sound Classification (FYP)

- Developed ML model for heart sound classification using digital stethoscope.
- Integrated system hardware with Raspberry Pi 4 for real-time diagnostics.

### Blood Group Detection using Machine Learning

- Developed ML-based system to predict blood groups from data.
- Applied data preprocessing and classification techniques.

### Password Management System

- Developed secure system with encryption techniques for credential management.

### 5-Stage Pipelined RISC-V Processor

- Designed and simulated pipelined processor architecture in hardware description language.

## TECHNICAL EXPERIENCE

- Model deployment on Raspberry Pi 4 and RISC-V VisionFive 2.
- Worked on STM32-based embedded systems and ESP32 microcontroller projects.
- DocLight system development and hardware integration.
- Dashboard development using Streamlit.
- Collected heart sound data using digital stethoscope.

## INTERESTS

Baking

Cooking

Novel Reading

Story Writing