Asad Mehmood

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SUMMARY OF QUALIFICATIONS

- Electronics Engineer with strong research focus in Artificial Intelligence and Signal Processing.
- Proficient in MATLAB, Python, and LabVIEW for real-time data acquisition, DSP, and deep learning model development.
- Skilled in hardware–software integration, real-time data acquisition/control, and embedded optimization.
- Strong foundation in DSP, FPGA and biomedical signal processing.
- Collaborative communicator with hands-on experience building automation and monitoring systems.

EDUCATION

University of Engineering & Technology (UET) Taxila, Pakistan
Taxila, Department of Electronics Engineering July 2020 – June 2024

Bachelor of Science, Electronics Engineering — Major GPA: 3.6/4.0

RELEVANT COURSEWORK

Software/Hardware Co-Design, Digital Signal Processing, Digital Image Processing, FPGA Design, Control Systems, Digital Logic Design and Electronic Circuit Design

TECHNICAL SKILLS

• Programming & Tools: Python, MATLAB, C/C++, LabVIEW
• AI/ML Frameworks: MATLAB Deep Network Designer
• Signal & Image Processing: DSP Design, FIR/IIR Filter Design, Feature Extraction, Spectral Analysis
• Domains: Biomedical Signal Processing, Deep Learning, Computer Vision, Real-Time DSP Systems
• Communication Protocols: TTL, RS-232, RS-485, RS-422, Ethernet (TCP/UDP, COM/Serial, Modbus)

RELEVANT EXPERIENCE

Blue Surge (Pvt.) Ltd. — Embedded Design Engineer July 2024 – Present

- Develop hardware-integration solutions for ground station applications.
- Design LabVIEW automation for real-time data acquisition and control.
- Optimize embedded systems for efficient hardware–software synchronization.

SEED, ENCD, UET Taxila — Research Engineer June 2023 – August 2023

- Acquired and processed biomedical signals (ECG, EMG, PPG, PCG) using the BIOPAC MP36 data acquisition system.
- Performed signal filtering, feature extraction, and analysis for biomedical applications.
- Developed and tested embedded prototypes using Arduino, Raspberry Pi, BITalino, and NI Virtual Bench instruments.

PROJECT EXPERIENCE

- FYP — Advancing Multimodal Biometrics (MATLAB): Built a multimodal biometric pipeline (ECG+PCG), signal preprocessing, feature extraction, and model evaluation.
- FPGA-Based Real-Time Underground Mine Environment Monitoring & Warning System (Artix-7 XC7A100T-CSG324): Sensor interfacing and real-time alerting on FPGA fabric.
- Smart Power Management System (LabVIEW): Real-time monitoring/control dashboard for power usage.
- Multi-Elevator Control & Management System (LabVIEW): State-machine logic with priority handling.
- PLC-Based Sun-Tracking System (CX-Designer): Closed-loop control for panel orientation.
- Object-Follower Robot (Atmega32): Embedded control, motor drivers, and sensor fusion.

PUBLICATIONS

- Biofusion: Expanding Biometric Horizons with ECG and PCG Integration — IEEE ICoDT^2 (NUST Islamabad), Oct 2023 — DOI: 10.1109/ICoDT259378.2023.10325791
- Deep Learning-Based MRI Image Classification for Early-Stage Alzheimer's Disease Diagnosis — ICET 2024 (GIKI Peshawar), Nov 2024 — DOI: 10.1109/ICET63392.2024.10935026

REFERENCES

- Dr. Zohaib Hasan Naqvi, UET Taxila — zohaib.naqvi@uettaxila.edu.pk — (051) 9047724
- Dr. Muhammad Faraz, UET Taxila — muhammad.faraz@uettaxila.edu.pk — (051) 9047723