SYED UZAIR GHOUS ALI

Electrical Engineer

Skilled in microcontrollers, digital system design, SoC design, Linux, and FPGA programming with a focus on practical solutions. Experienced in leading teams and working together to meet project goals. Eager to continue the career in hardware design and verification.

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Lahore, Pakistan

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EDUCATION

BS Electrical Engineering
Namal University Mianwali

11/2021 - 06/2025

Major Courses

- Digital Logic Design, Computer Architecture, Digital System Design, Embedded Systems, Machine Learning

WORK EXPERIENCE

Lead Jr. Research Assistant
CAID: Centre for AI and Big Data

03/2023 - Present *Mianwali, Pakistan*

Technical and Paractical Skills

- Leading a team of 10 junior RAs for various technical and administrative projects for the past 2 years. Worked on Xilinx and Open-FPGAs, including iCE-Sugar Pro and Colorlight i9.
- Organized 5 national-level summer/spring schools for professionals. Launched Tech Talks with ORIC as team lead.

Contact: Dr. Tassadaq – Director (tassadaq.hussain@namal.edu.pk)

Jr. Research Assistant
Pakistan Supercomputing Centre

09/2023 - 11/2024 *Islamabad, Pakistan*

Practical Skills

- Worked on PSC collaboration with CAID, Barcelona Supercomputing Centre, and New Zealand College of Chiropractic for health related digital solutions.

Technical Support Engineer, Lead Operations
TechoHub SCI Supplies

11/2023 - 02/2025 *Lahore, Pakistan*

Practical and Management Skills

- Worked as a support engr. & lead operations for supplying electronic lab equipment & instruments in Pakistan.

Linux Fundamentals & RTL Training
CESD, 10x Engineers

07/2023 - 09/2023 *Remote*

Technical and Practical Skills

- Learned about Linux fundamentals and verilog HDL.
- Practiced and learned basic Linux commands.

Tech & Partnership Associate
Bookme.pk

07/2024 - 09/2024 *Lahore, Pakistan*

Technical and Practical Skills

- Contributed to the technical team for the vector embeddings tasks.
- Worked in the partnership team and collaborated with the KSA embassy.

SKILLS

Python | FGPA Programming | Verilog | GCC | Assembly | Project Management | Questa Sim | Embedded C | RISC-V Architecture | SoC Design | Processor Design | Network Analysis (Electrical)

PROJECTS

- Development of a RISC-V based SoC Architecture using Open-Source Tools for FPGA Deployment (FYP)

-10/2024 - 05/2025
-Framework: LiteX
-FPGAs: Lattice iCE Sugar Pro, Colorlight i9
-Cores: PicoRV32, VexRISC-V

- Design & Implementation of RISC-V Single Cycle and Pipelined Processor (with GCC Compatibility)

- Line Follower and Obstacle Detection Robotic Car using motor driver L293D & AVR controller

- Design and Implementation of a Variable Gain Audio Amplifier

-Buck-Boost Converter Design & Implementation

- DC Motor Control via PWM

- Namal University Power Load Analysis and Management

PUBLICATION

FOSSSC: A Free, Open-Source Software Stack Cluster for Digital System Design (IEEE ICET'24) (11/2024)

FOSSSC (Free Open Source Software Stack Cluster) is an HPC-powered open-source digital system design software stack. This research aims to enhance semiconductor design by providing an accessible, cost-effective, and efficient platform for chip design, verification, simulation, and programming.

TOOLS & TECHNOLOGIES

Tools/Toolchains: LiteX, Yosys, NextPNR, ModelSim, Logisim, Gvim , GTK-Wave, Xilinx (Vivado & ISE 14.7), Pspice, VS Code, Proteus, QuestaSim, ETAP

Hardware: FPGAs, Camera Sensors, and Microcontrollers

CONTRIBUTIONS

President of Namal Society for Social Impact (NSSI)

Lead the team of 150 students, professionals of NSSI, worked for the social welfare of community in surroundings of Namal specifically for the free education, career development and blood donations.

Associate membership holder of Pakistan Nuclear Society (PNS).

Working on Nuclear Society Campaigns and Awareness.

IEEE-NSB Secretory

Worked as an IEEE-NSB secretary for IEEE activities at Namal.