HAMZA TAHIR
Email: hamzatahiir65@gmail.com

Education

Pakistan Institute of Engineering and Applied Sciences, Islamabad
Bachelor of Science (BS), Electrical Engineering
June, 2020   CGPA: 3.47/4.00

- Major: Electronics
- Thesis: Implementation of Gigabit Transceiver on FPGA

Experience

Avant Labs PVT, Limited, Islamabad   *(avantlabstech.com)*
Assistant Manager   Aug 20 – Present

- Responsible for RTL design and implementation for Multiple FPGA Projects, ensuring high quality deliverables within given timelines.
- Responsible for GUI development in QT creator for embedded Linux Operating System running on FPGA SOC.
- Responsible for complete Embedded Systems solution including the hardware (Altium Designer) and the software (Verilog) design.
- Responsible for qualification, troubleshooting and fault diagnosis through Functional Testing and Electronic Component Testing.
- Responsible for preparation of Project plans, SOPs and user manuals to assist end-users in performing routine tasks.
- Responsible for conduct of RTL design training for interns and staff.
- Responsible for leading the training initiatives for new team members on Altium Designer schematics design, resulting in increased efficiency and proficiency within the team.

Freelance Programmer

May 18 – Present
- Verilog Programming along with Test Bench Development.
- Various FPGA related Projects.
- Design of Hardware on Altium Designer and PCB designing.

Projects

Design of a Heterogeneous Accelerometer Test Equipment using FPGA SoC (De10-Nano)

Aug 22- Feb 23
- RTL Design of Configurable (Quad, Dual, Simple) SPI Protocol to communicate with Analog to Digital Converter (ADC).
- RTL Design of Generic I2C controller to communicate with Real time clock (RTC).
- RTL Design to capture and process the data from different channels of Accelerometer.
- Hardware Design to convert the Analog Pulses into Digital Pulses to be processed by FPGA.
- Added Avalon memory mapped wrapper with the modules to communicate with HPS.
- Compiled customized Linux Environment for HPS (ARM-Cortex A9).
- Designed GUI (Using QT creator) which displays Accelerometer Pulse parameters (Frequency, Pulse Width, Pulse Amplitude etc.) in runtime and saves the data in a report with time and date stamp.

Design of a 5-Channel Data Logger

Apr 22- Oct 22

- RTL Design of UART for serial communication with different sensors.
- Hardware Design to power up the sensors and receive the data in 1x RS422 and 4x RS232 channels.
- RTL Design of Configurable (Quad, Dual, Simple) SPI Protocol to save the data in multiple NOR Flashes.
- Qualification and Testing of the complete system for delivery.

Implementation of Gigabit Transceiver on FPGA (Final Year Project)
Supervisor: Dr. Haroon

Sep 19- May 20

- Understanding of the Ethernet Protocol.
- RTL design of the Data Link Layer, which includes the implementation of Ethernet Frame Structure and CRC-32 for Error Detection.
- Simulation of the design using Modelsim.
- Hardware Implementation on FPGA ARRIA V device.

Design and Development of FPGA based control system for Smart Pipeline Inspection Pig

Apr 23- Apr 23

Design and Development of Temperature Controller using PID

Sep 18- Dec 18

Development of Fire Fighting Robot on Arduino

Feb 18- May 18

Design and Development of 5-band Audio Equalizer

Feb 18- Apr 18

Design of Real-Time traffic monitoring and flow optimization on Xilinx FPGA

Oct 17- Dec 17

Design and Development of Class AB Sound Amplifier

Oct 17- Dec 17

Distinctions	**Scholarships/Awards**

- Merit Based Scholarship for Intermediate education   Jun 14
- Laptop awarded under Prime Minister Pakistan Laptop Scheme   Jan 14

Leadership Skills   **Society Work in University**

- Joint Secretary, IEEE PIEAS Student Branch   Sep 19 – May 20
- General Secretary, IEEE PIEAS Student Branch   Feb 19 – Aug 20
- Head, PIEAS Performing Arts Society   Feb 20 – Jun 20
- Co-Advisor, PIEAS Volunteer Society   Sep 18 – Jan 20
- Head Photography, PIEAS Media Club   Sep 17 – Jan 20

Technical Skills

Languages: Verilog, C, C++, Matlab, HTML, Latex.
Softwares: Quartus, Vivado, QT Creator, Altium Designer, Modelsim, NI-Multisim, Simulink, OrCAD, Proteus, MS Office, Adobe Premiere Pro, Adobe Illustrator.
Platforms: Windows, Linux (Ubuntu).
Hardware: FPGAs (Altera, Arria, Cyclone), Micro-processors (8088), Micro-controllers (SAM series, ATmega, STM32). Raspberry Pi.

Languages:

Urdu (*Native*)
English (*Fluent*)
IELTS Overall Band 7.0
Listening: **8.0**   *Reading:* **7.0**   *Writing:* **6.5**   *Speaking:* **7.0**

Hobbies

Networking, Travelling, Hiking, Video Editing, Graphic Designing, Football.

References

Available on Request.