Muhammad Waqas

c/o Muhammad waqas,
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Objective:

To be part of a dynamic challenging environment where I will enable me to apply my current knowledge and learn new skills.

Work Experience:

1. **Electrical Engineering Services, Lahore Pakistan**
   Electrical Engineer (In charge LabVIEW Development for Electrical/Mechanical Apparatus)
   1st September 2016- to till date.

2. **Institute of Avionics & Aeronautics (In Collaboration with CAE Risalpur & Kamra by PAF), Air University, Islamabad & Air University Interdisciplinary Research Center Pvt Ltd (National Instruments Arabia, Alliance member)**

   Application Engineer/Research Assistant/ Manager Research Development
   1st June 2011- 30th August 2016

   ### NI Hardware & NI LabVIEW Experience:

   - NI LabVIEW 2014.
   - NI LabVIEW FPGA/ RealTime.
   - NI Vision Assistant / NI Vision Builder / NI IMAQ.
   - Making DLLs and using in LabVIEW and VxWorks.
   - NI Web UI Builder.
   - Data Acquisition using LabVIEW.
   - LabVIEW interfacing and development with:

     - e-PAL, c-PAL, NI ELVIS-II.
     - Compact Vision System.
     - Thermal camera, IEEE-1394 camera, NI Smart camera.
     - Serial Communication.
     - NI Speedy-33 Kit, Spartan FPGA Boards.
     - NI cDAQ, NI cRIO, NI My RIO, NI PXI, SCXI.
     - LabVIEW interface with Other Languages using dlls.

   ### LabVIEW Workshops and Trainings Courses I Have Delivered:

   - 5-day LabVIEW Core I & II Course at IAA, Air University.
   - LabVIEW hands on training workshop to faculty of CECOS Peshawer, Gandhara University Peshawer, and COMSATS Attock.
   - LabVIEW & Image Processing workshops at SMME NUST Islamabad, NUST College of E&ME Rawalpindi.
   - LabVIEW & Image Processing workshop for faculty of Air University.

- LabVIEW FPGA training to many Companies.
- LabVIEW Workshop in University of Lahore.

Education:

2014 – 2016 **Bahria University, Islamabad With CGPA 3.6 with distinction (Cum laude).**
MS (Electronics Engineering)

2006 – 2010 **University Of Engineering & Technology, Taxila**
BE Major in Electronics & Embedded System

2004 – 2006 **FBISE Islamabad**
Higher Secondary School Certificate (HSSC)

Projects:

- **MS Thesis "Flexible Implementation of Multi-Standard Universal De-mapper Using ASIP".**
- **Flight Data Logger (Final Year Project).**
  To Log data from 32 digital channel and 2 analog channels in onboard 2 Gb memory card with real time clock and GUI interfaced with USB interface.
- **Telemedicine Systems (National Instruments Projects) using NI LabVIEW.**
  To acquire signals from biomedical sensor like ECG, Heart Rate, SpO2, Blood Pressure at patient's end and to transmit at any Doctors Cell Phone, Computer or to any Hospital.
- **Adaptive Noise Rejection (for Avionics and Industrial Applications) using Hardware implementation**
  To design hardware which acquire noise and amplify it to the level for cancellation
- **F-7 Air Craft Thermal Profiling & Analysis Using NI equipment & LabVIEW, NI DiaDem (Instrumentation, Project by ARC Kamra).**
  To install thermocouple and log temperature from air craft on different sorties to acquire temperature from 5 locations on engine and there analysis in NI DiaDem and comparison with ACMI logger.
- **Helicopter Track and Balance in LabVIEW (Instrumentation).**
  Measuring the vibrations in Heli Blades with Velometer to make the vibrations less than 0.5 IPS for better structural health.
  And NI Smart Camera to acquire picture of Blades to check the out of Track between them.
- **Automated Mass Spring Damper with GUI in LabVIEW (Instrumentation Product).**
  A Vernier Force sensor is used to measure the attached mass and IR sensor for displacement of spring so by getting Mass we get Force and X is acquired then K is computed automatically also it plot the frequency response of system. At the end automatically a lab Report is generated by labVIEW which contains all the readings.
- **Falcon DA 20 Thermal Analysis (In collaboration with ARC, PAC Kamra, IAA)**
- **Direction Finding an EW National Level Project also presented in Defence Expo 2013**

- **As a team member in production of DLP for Mirage Air Craft**
- **Remote monitoring of power plant for Company in USA. Using NI LabVIEW.**
- **FPGA Based 8-bit processor.**
- **Viterbi & MAP Decoder of LTE Encoder in C & FPGA**
- **Color Sorting Machine using NI MyRIO and LabVIEW**
- **OFDM transceiver Implementation on USRP RIO**
- **Creep Testing Software using LabVIEW**
- **Two Shaft Gas Turbine Analysis software using DAQ and LabVIEW**
- **Torsion Testing Analysis Software**
- **Process Control using PID with LabVIEW**
- **SCADA and Remote monitoring using PLC with LabVIEW**

Publications:

1. *High-Throughput and Area-Efficient Rotated and Cyclic Q Delayed Constellations Demapper For Future Wireless Standards,* IEEE Access, A.R Jafri, **Waqas. M,** A. Baghdadi, I. Najam. **(Accepted). (I.F =2.6)**
2. *ASIC Rapid Prototyping Flow: Case Study of Rotated Cyclic Q Delayed Constellations Demapper,* IEEE Design & Test, **Waqas. M**, A.R Jafri, I. Najam, A. Bhagdadi. **(Submitted)**

Certifications:

1. Internal Compliance certification by HEC at FC college
2. Intellectual property and Patent filing by HEC at LUMS
3. PCB Designing by MICRO PAK
4. On Campus Indigenous Training at IAA

References:

Air Commodore (R) Afzaal Ahmed Khan,
Director ORIC,
Air University, E-9, Islamabad.

Group Captain Dr. Israr Hussain,
Chairman, Avionics Engineering Department,
IAA, Air University, E-9, Islamabad.

Dr. Nadeem Lehrasab,
Director, Inter Disciplinary Research Centre (National Instruments Alliance Member),
Air University, E-9, Islamabad.