Muhammad Umar Farooq

Date of Birth	22nd June 1993	**Mobile Phone**	+92 333 3004198
Nationality	Pakistani	**Email**	mufarooqq@gmail.com
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Education

2016-date **PAF-Karachi Institute of Economics and Technology, Pakistan** *(In Progress)*
MS, Electronics Engineering

Current Coursework:

-Simulation and Modeling   -Reconfigurable Computing

2012-2015 **PAF-Karachi Institute of Economics and Technology, Pakistan**
BE, Electronics Engineering
Major - Electronics, **CGPA** - 3.35/4.00

Elective Courses:

-Data Communication   -Industrial Control Electronics
-Power Electronics and Drives   -FPGA Based Systems
-Embedded Systems Design   -Navigation Guidance and Control

Final Year Project:
"Automatic Tomato Sorting through Image Processing"
Advisor: *Dr. S.M. Ghazanfar Monir*
Grade: *A (88/100)*

Research Interests

- Digital Signal Processing (DSP)
- Wireless Sensor Network (WSN)
- Internet of Things (IoT)

Projects

- **A 3x3 FPGA Overlay Architecture**
A course project in Master's degree program that involved the use of VHSIC Hardware Description Language (VHDL) to implement an FPGA overlay architecture. This 3x3 FPGA had 9 Configurable Logic Blocks (CLBs) and a full adder was mapped on 2 of the logic blocks. Generally, it could map any logic on its K-LUTs; where K could be 1-4.

- **A Statistical model for prediction of ODI stats of a cricket player**
A course project in Master's degree program that implemented some statistical methods like Hypothesis Testing and Monte Carlo method on 3/4th of the given ODI data of a cricket player to predict the

runs, centuries, ducks and other stats for the remaining 1/4th of the data. The data for this project was obtained from some online websites that provide detailed cricket statistics.

- **Automatic Tomato Sorting through Image Processing**
  The final year project in Bachelor's degree program that involved the implementation of some image processing and machine learning algorithms using C++ to sort tomatoes on the basis of their attributes like colors and sizes. The sorting accuracy was more than 80 percent with a speed of around 48 sorted tomatoes per minute. The research paper of this work will soon be submitted to any related conference.

Publications

1. **M.U. Farooq**, Muhammad Waseem, Anjum Khairi and Sadia Mazhar, "A Critical Analysis on the Security Concerns of Internet of Things (IoT)", International Journal of Computer Applications 111(7): 1-6, February 2015, DOI: 10.5120/19547-1280

2. **M.U. Farooq**, Muhammad Waseem, Sadia Mazhar, Anjum Khairi and Talha Kamal, "A Review on Internet of Things (IoT)", International Journal of Computer Applications 113(1): 1-7, March 2015 , DOI: 10.5120/19787-1571

3. **M.U. Farooq**, Muhammad Waseem, M.T. Qadri and Muhammad Waqar, "A Review on 5G Wireless Cellular Communication", Wireless Personal Communications - Springer *(Pending for Review)*

Skills and Expertise

- *Programming Languages* - C/C++ , MATLAB, Octave, VHDL
- *Libraries* - OpenCV
- *Hardwares* - Microcontrollers, PLC S7200, FPGA Board Spartan 3E
- *Operating Systems* - Linux, Windows
- *Miscellaneous* - LaTeX, Visual Studio, Xilinx, Siemens LOGO!Soft Comfort, ModelSim, ISIS Proteus, LabVIEW, Multisim, PIC C, OrCAD, SolidWorks, Packet Tracer

- *Language Skills* - English (Fluent), Urdu (Native)

Work Experience

Dec 2015 -
Jan 2016
Pakistan Aeronautical Complex (PAC)
www.pac.org.pk

-Received basic knowledge about different navigational instruments being used in fighter planes.
-Got introduced to different elements of the aircraft production lifecycle - evaluating design and performing tests.
-Had a one day field experience with the manufacture of sub-assemblies for the JF-17 and its composite structure repair and maintenance.

Aug 2015 -
Sep 2015
Precision Engineering Complex (PEC) - PIAC
www.precisionengg.com.pk

-Received basic knowledge about different defense related equipment, the test sets of the aircraft, PCB manufacturing process and different CNC machines being used in Machine Shop and Optics department for mass productions.
-Had a field experience with the manufacture of parts for Aircrafts and Tanks at Investment Casting Plant (ICP) and Machine Shop departments for two days.

Jun 2014 -
Jul 2014
Pakistan Telecommunication Company Limited (PTCL)
www.ptcl.com.pk

-Received training at different telephone exchanges of PTCL and got acquainted with the soft switches and different kinds of switching networks like Packet switched and Circuit switched networks.
-Got introduced to the basic elements of the whole wireless system like BSC, MSC, BTS etc. and different multiplexing schemes like TDM, FDM and others.

Honors and Awards

2016   Peer Reviewed a Research paper for an ISI-indexed journal
2016   Received a merit scholarship for Master's degree at PAF-KIET
2016   Named in College's Honor List for good academic record at PAF-KIET
2015   Selection in the list of top 40 students for internship at PAC-Kamra
2015   Course Grader for two different courses during bachelor's degree program
2015   Participation in SUPARCO Space Week "University Project Competition"
2014   First Runner-up award in university level competition held at PAF-KIET
2012   Named in Director's Honor List for good academic record at PAF-KIET

Memberships

2015-date   **Institute of Electrical and Electronics Engineers (IEEE)**

- Member of the Karachi Section (Region 10)
- Member of the Signal Processing Society
- Member of the Internet of Things (IoT) Community