

CIRICULLUM VITAE

Waqar Ahmad Malik

D.O.B June 22nd, 1981

M.Sc Radio Systems Engineering (UK)

B.Sc Communication & Electronics Engineering (PAK)

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Objective:

To attain such a position in academia where I can serve educational institute by perusing research level work utilizing my academic experience and research skills.

Personal Profile:

- I am an Electrical Engineer with specialization in field of Antennas, wave propagation and Microwave Engineering.
- I perform my duties with confidence, at the same time to seek appropriate and timely help and advice from my senior colleagues.
- I have the ability to establish good working relationship with other members of the multi-cultural team and I am a fun loving character.
- I set my personal realistic goals and deadlines with a view of effectively accomplishing the tasks given to me with good organisation and project management skills.

Academic Qualifications:

Postgraduate Course: Master of Science (M.Sc), Radio Systems Engineering at University of Hull UK. 2005-2006
Date of completion: August 2006 (1st class)

Module description of the postgraduate course:

- Radio Technology, Spectrum Management and EMC. (72%)
- Mobile Radio Propagation and Antennas. (70%)
- Low power/Low Voltage design, VHDL and Project management. (73%)
- Radio Systems Laboratory & Microwave Design. (77%)

Undergraduate Course: Bachelors of Science, Electrical Engineering (B.Sc), specialization in Telecommunications from NWFP University of Engineering & Technology Peshawar Pakistan. 2000-2004 (1st division with honors)

Module description of the undergraduate course:

- Project Module: Study & Implementation of Fuzzy Logic Systems (92%)
- Control Systems (86%)
- Microprocessor Systems (81%)
- Digital Electronics (79%)
- Basic Electronics (78%)
- Principles of Communication Systems (76%)
- Basic Electrical Engineering (76%)
- Communication Systems (74%)
- Power & Opto Electronics (74%)
- Project planning & Management & Engineering Economics (71%)

Employment History:

- 1) Position:** Assistant Professor in Department of Electrical Engineering at National University of Computer & Emerging Sciences Peshawar, NWFP, Pakistan. (www.nu.edu.pk/PwrCamp.aspx)

Duration: From 1st August to Date

Responsibilities: To teach undergraduate courses and conduct research work. Courses taught are;

- Antennas & wave propagation
- Microwave Engineering
- Electromagnetics
- Electronics

Moreover, supervised and handled;

- (i) Electronics Lab
- (ii) Final year projects

- 2) Position:** Lecturer in Department of Electrical Engineering at CECOS University of IT and Emerging Sciences, NWFP, Pakistan. (www.cecocos.edu.pk)

Duration: 3 Months: From May 2008 to July 2008

Responsibilities: Establishment of Microwave and Antennas Lab.

- 3) Position:** Lecturer in Department of Telecommunication Department at University of Engineering and Technology UET Mardan Campus, NWFP Pakistan. (www.nwfpuet.edu.pk)

Duration: 18 Months: From November 2006 to May 2008

Responsibilities: To teach 'Microwave engineering' and 'Electromagnetics II' to undergraduate Telecom engineering students. Taught advanced topics in wireless communication such as MIMO Antenna systems and MIMO techniques as a part of Antennas and Wave propagation course.

Courses taught: (Core courses for Telecommunication Engineering)

- Antennas & wave propagation
- Radar Systems
- Microwave Engineering
- Electromagnetics II

Moreover, supervised and handled;

- (iii) Antennas Lab
- (iv) Radar Systems Lab
- (v) Microwave Engineering

Detail of Lab contents can be provided on request.

- 4) Position:** Lecturer in Department of Electrical Engineering at Peshawar College of Engineering (PCE), NWFP Pakistan. (www.pce.edu.pk)

Duration: 6 Months, February 2005 to July 2005

Responsibilities: Taught Electronics to undergraduate Electrical Engineering students and supervised Electronics Laboratory & Workshop as a full time faculty member. The labs included both analog and digital electronics workshop labs.

Academic Projects:

Undergraduate Project:

Study & Implementation of Fuzzy Logic Systems: The project was based on research study in order to understand the basic concepts of Fuzzy Logic. Using those concepts I designed two Fuzzy Logic controllers. One of the controllers was designed for Washing Machine. This controller allowed variable timings per operation for e.g. drying, spinning etc based on the various inputs. The second one was a coupled tank water level controller. This maintained different preset levels of two coupled tanks whilst the controller was installed at the input.

Postgraduate Projects:

1: Radio systems Lab & Microwave design: This is a laboratory project forming part of postgraduate course I have completed. I have done five introductory labs which were the foundation for the RF/Microwave design lab. Formal Lab reports for all the five Labs were well appreciated by the teachers:

1. Amplitude modulation & mixing. (72%)
2. Pulsed waveforms on transmission lines. (70%)
3. Signals, systems and spectrum analysis. (70%)
4. Digital signal processing and communication systems design. (59%)
5. Microwave measurement techniques & characterization of antennas. (60%)

Moreover, I have designed, simulated and built the following circuits in Radio Systems & Microwave Design Lab at University of Hull UK:

1. Wilkinson power splitter-2.5, 4 GHz.
2. Low pass 3 pole Butterworth filter - cut-off 18, 20 MHz & 2, 2.5 GHz.
3. Broad band RF/microwave amplifier centered at 2.5 GHz.

The simulator used for the simulation of circuits was PUFF. All the circuits were finally tested on Vector Network Analyzer (**VNA**) and the shortcomings were overcome by rebuilding the circuit or by making minor changes to the circuit. The documentation for this Lab was well appreciated in the Engineering department and I secured highest marks (88%) in Lab report.

2: Postgraduate Research Project The project description is as follow:

Opportunistic Multi-user Beam forming: It is highly desirable in wireless communication not to serve a user when the state of its channel is in deep fade. This increases the probability for a user unable to access the network forever being in faded state. However, this problem can be alleviated considerably by introducing sufficient fluctuations of the channels among users. To this end, recently, an approach called opportunistic beam-forming is proposed to employ multiple transmit antennas to intentionally introduce "more" channel fluctuations to users so that they can have more or less the same opportunity on average to access the channel. The aim of this project was to study the potential of opportunistic beam-forming technique and investigate how it can be used in combination of conventional frequency planning.

Publications:

1. Waqar Ahmad Malik, Sardar Ali, "*Opportunistic Multiuser Beamforming for Wireless Networks*", 6th International Workshop on Frontiers of Information Technology FIT-2008, December 18-19 2008, PC Bhurban Pakistan. **{International Workshop}**
2. Waqar Ahmad Malik, "*Opportunistic Communication for Wireless Networks*", LAP Lambert Academic Publishing GmbH & Co. KG (Saarbrücken, Germany), May 2011 **{BOOK}**

Supervised Projects:

1. RFID Proximity security system: Designed **LOOP Antenna** in this project.
2. Surveillance Eye Ball
3. Assisted in Design of mini UAV
4. ECG Acquisition Circuit
5. Driver Drowsiness Detection and Alarm System through EEG signal acquisition
6. Supervised the design and testing of **20 different Microwave Circuits** for different application as semester projects
7. Supervised the design and build of **20 different Antennas** for different applications as semester projects.

Academic Activities:

- Participated in **International Workshop of Frontiers of Information Technology FIT 2008** as a presenter of published paper.
- Arranged a **Hand on Workshop on Simulation and Design of Microstrip** at National University FAST Peshawar Campus.
- Arranged a **Hand on Workshop on Design and Built of Microstrip Antenna** at National University FAST Peshawar Campus.
- Attended a training **Workshop on CDMA 2000 engineering basics** held at NWFP UET Peshawar Pakistan, arranged by Pakistan CDMA Forum.
- Attended **2nd International IEEE conference on Emerging Technologies (ICET)** held at University of Engineering & Technology Peshawar Pakistan 13-14 Nov 2006.

Computer & Professional Skills:

- **Engineering Tools:** MATLAB®, Electronic work bench 5.0, PUFF (RF/Microwave circuit simulator), HFSS, Mstrip40.
- **Test Equipments:** Spectrum analyzer & Vector Network Analyzer (VNA).
- **Lab Demonstration Equipments:** Antennas with NEC Software simulator, Lab Pulse Radar System, waveguide trainer.

Awards:

- Awarded **1/3rd Fee waiver** by the University of HULL UK, for the course of MSc Radio System Engineering.
- Won **1st prize** in badminton tournament held at Peshawar college of Engineering, Pakistan in 2002.
- Scored highest marks in computer science (SSC) at Peshawar Board of intermediate and secondary education.

References:

1: Name: **Dr. Fazli-Qayyum**

Professor National University of Computer & Emerging Sciences

Relation: Head of the Department.

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2: Name: **Dr. Asmatullah Khan**

Professor National University of Computer & Emerging Sciences

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