



# Muhammad Haroon Tariq

Mesogeion 61,  
Maroussi, 15126, Athens, Greece  
+92-344-5423823 | +30-6996083423

[haroontariq.awan@seecs.edu.pk](mailto:haroontariq.awan@seecs.edu.pk) | [mtariq@acg.edu](mailto:mtariq@acg.edu)

## Experience

---

March 2020 – Present

### Research Scientist

Smart Wireless Future Technologies (SWIFT) Lab  
Research Technology and Innovation Network (RTIN),  
Alba – The American College of Greece (ACG), Athens, Greece

- *Analysis of Mutual coupling on Parasitic Antenna Arrays.*
- *Channel modeling and Measurements for mmWaves.*
- *Channel modeling for portable access points.*

May 2019 – Feb 2020

### Research Scientist

Broadband Wireless and Sensor Networks (B-WiSE) Lab  
Athens Information Technology (AIT), Athens, Greece

- *Design guidelines for Parasitic Antenna Arrays.*
- *Channel modeling and Measurements for mmWaves.*
- *Mobile backhauling for portable access points.*

April 2017 – Sep 2018

### Assistant Administrative Manager

Capital Chemical Industries, Rawat Industrial Estate, Islamabad, Pakistan

- *Provide general administrative support to a department or a group of professionals.*
- *Prepare correspondence including reports, presentations and other documents.*
- *Develops and maintains a detailed project schedule. Also Track the progress and quality of work being performed by project members.*
- *Effectively and accurately communicate relevant project information to the client and team members.*
- *Maintain Project calendars and ensure adherence to deadlines. Also Communicate ideas for improving processes with a positive and constructive attitude.*

Nov 2015 – Dec 2016

### Post Graduate Researcher

Frederick University, Nicosia, Cyprus

- *Dynamically reconfigurable RF devices: RF energy harvesting and rectification to formulate baseband voltage signal. Actuation of FET and PIN diode switches to dynamically modifying the behaviour of RF devices in real time.*
- *RF component modelling for simultaneous wireless information and power transfer (SWIPT) system: Development of RF power splitting network for the ratios from 1:1 to 1:16.*
- *Design and implementation of reconfigurable power splitter for maximum RF power harvesting at a given SNR level.*

Dec 2014 – June 2015

### Project Coordinator

NUST School of Electrical Engineering and Computer Science (SEECS), Islamabad, Pakistan

- *Team Supervision*
- *Logistics & Procurement*
- *Budgeting & Finance*
- *Coordination between Home University and Funding Agency*
- *Preparing Minute sheets & Work plans*

July 2014 – Jan 2015

### Engineer (Network Operations Center)

Telenor Pakistan, Technical Headquarters, Islamabad

- *Nationwide Network Monitoring*
- *Escalations and followups*
- *Approvals for Site activities*
- *Work orders evaluations and closures*

Nov 2012 – Sep 2013      **Research Assistant**  
MDIC Lab, SM-RIMMS NUST School of Electrical Engineering and Computer Science  
(SEECs), Islamabad, Pakistan

- *Trainer Boards Manufacturing*
- *Research and Development*
- *Circuit and Layout Designing*
- *Hardware implementation and Testing*

## **Educational Qualifications**

---

2019 – Present      **PhD Wireless Communications**  
Dept. of Electronic Engineering, Aalborg University Denmark  
[www.aau.dk](http://www.aau.dk)

- **PhD Title:** Adaptive Mobile Backhauling for Portable Access Points
- **Major Subjects:**
- Channel Modeling, Radiating Systems and Antennas, Wireless Communications

2011 – 2014      **MS Electrical (Telecommunication) Engineering**  
NUST-Military College of Signals (MCS) Rawalpindi, Pakistan  
[www.mcs.nust.edu.pk](http://www.mcs.nust.edu.pk)

- **MS Thesis:** Microwave Beamforming Using Frequency Selective Surfaces
- **Major Subjects:**
- Advance Electromagnetics, Radiating Systems and Antennas, Wireless Communications

2007 – 2011      **BS Electrical (Telecommunication) Engineering**  
COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan  
[www.comsats.edu.pk](http://www.comsats.edu.pk)

- **Pakistan Engineering Council (PEC) REG. No:** ELECT-32414

2005 –2007      **Higher Secondary School Certificate (Pre-Engineering)**  
Army Public School and College Jhelum Cantt

2003 –2005      **Secondary School Certificate (Science)**  
Govt. Comprehensive High School Jhelum

## **Internships/Trainings**

---

June 2012 – June 2014      **International Relations Representative**  
NUST School of Electrical Engineering and Computer Science, Islamabad, Pakistan

- *Internal and External Students Affairs Management, Correspondence and Communication*

19 – 23 July 2010      **Antenna Designing Workshop**  
COMSATS Institute of Information Technology, Islamabad, Pakistan

- *Antenna designing using CST Microwave Studio*

11 – 13 Aug 2010      **Graphic Designing**  
COMSATS Institute of Information Technology, Islamabad, Pakistan

- *Graphic designing using Photoshop and CorelDraw*

## **Concluded Academic Projects**

---

Master's Thesis      **Microwave Beamforming Using Frequency Selective Surfaces**

The concept is based on beam forming and beam steering techniques using antenna arrays and phase shifters. The performance of phased array and microwave beamformer is realized in the design approach presented in this dissertation. A low loss one-to-four ports power splitter is designed in order to feed each antenna element. Targeted region can be illuminated by varying angles and precise contour of signal's energy by use of 4-bit phase shifters in between power divider and antenna array in order to form a beam.

Undergrad  
Final Year Project      **A compact wideband LTE antenna**

The report considers the designing of a Microstrip patch antenna, its simulation results from the HFSS and other related discussion. The antenna design process is explained step by step and at the end, the parametric analyses along with the specifications of the final antenna are presented.

Programming Project	<b>Six sorting techniques were implemented</b>
Microprocessor project	<b>Line tracking robot using Microcontrollers</b>
Antenna Design & paper	<b>Multiband Antenna for GSM and WiMAX Applications</b>
Digital Design project	<b>Automatic Light Switching System using IR Sensors</b>
Electronics-I project	<b>Invention of automatic car wipers.</b>
Electronics-II project	<b>TTL-Based optical fiber communication system</b>
Antenna Design	<b>Penta-band bow tie antenna(designing and fabrication)</b>
Antenna Design	<b>2X2mm Microstrip Patch Antenna Design</b>
Communications Skills project	<b>Survey Report of Pakistan State Oil (PSO)</b>
MATLAB project	<b>QAM Performance over Noiseless and AWGN Channel</b>

## Publications

---

- **Muhammad Haroon Tariq**, Ioannis Chondroulis, Panagiotis Skartsilas, Nithin Babu, Constantinos B. Papadias, “mm Wave Massive MIMO Channel Measurements for Fixed Wireless and Smart City Applications”, *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, August 2020
- **Muhammad Haroon Tariq**, Dimitrios D. Ntaikos, Constantinos B. Papadias, “Design Guidelines for Multi-Active / Multi-Passive Parasitic Antenna Arrays”, *IEEE Antennas and Wireless Propagation Letters (AWPL)*, September 2020
- **Muhammad Haroon Tariq**, Abdul Quddious, M. Ali Babar Abbasi, Symeon Nikolaou, " On the Use of Tunable Power Splitter (PS) for Simultaneous Wireless Information and Power Transmission (SWIPT) Receivers," *International Journal of Antennas and Propagation (IJAP)*, 2018
- **Muhammad Haroon Tariq**, Saba Rashid, Farooq A. Bhatti, “Dual Band Microstrip Patch Antenna for WiMAX and WLAN Applications” *International journal of Multidisciplinary and Current Research (IJMCR)*, ISSUE Feb 2014, ISSN: 2321-3124.
- Aqeela Saghir , S. Muzahir Abbas, M. Usman Afzal, **Muhammad Haroon Tariq**, Tauseef Tauqeer, “Compact Dual Band Microstrip Antenna Design Using Slits” *3rd IEEE International Conference on Computer, Control & Communication (IC4)*, 2013
- Saleem Shahid, M. Ali Babar Abbasi, M. Rizwan and Sabaina Rafique, **Muhammad Haroon Tariq** “A Compact Multiband Antenna for GSM and WiMAX Applications”, *2nd International Multi Topic Conference (IMTIC 2012)*, Springer Communications in Computer and Information Science, Vol-281, 2012, pp. 20-30

## Awards & Achievements

---

- Marie Curie Fellowship Award under H2020 project PAINLESS 2019.
- Erasmus Mundus Scholarship under INTACT project Euro 1500/month.
- Merit Based Punjab Educational Benevolent Fund Scholarship for 8 years, 2006-2013.
- Merit Based Financial Assistance and Tuition Waiver Scholarship at COMSATS IIT, 2007-2011.
- Judge Open House School of Electrical Engineering and Computer Science (SEECS) 2013.
- Best Student of the Year Award for years; 1996, 1999-2005 & 2010-2011.
- 1st position in Explore A Vision in all Pakistan Electronix Olympiad held at GIKI from 4-6 FEB 2011.
- 2nd position in Entrepreneurship Forum in all Pakistan CEPEX held at CIIT Islamabad from 13-14 April 2011.
- Won Antenna Design Competition in all Pakistan Electronix Olympiad held at GIKI from 4-6 FEB 2011.
- Participated in Antenna Design Competition in Open House organized at CIIT Islamabad, 2010.
- Participated in Mobile Monday organized in CIIT Islamabad 2010-2011.
- Headed for all technical competitions held in CEPEX 2011 organized in CIIT Islamabad.
- Headed Industrial Liaison held in CEPEX 2011 organized in CIIT Islamabad.
- Organized a seminar on Youth Motivation as a semester project for course entrepreneurship.
- Winner youth carnival held at Open Air Theater Islamabad, 2011.
- Participated as an Urdu Debater in Youth Carnival held at Open Air Theater Islamabad.
- Participated in Poetry Competition in Youth Carnival held at Open Air Theater Islamabad.

## Technological Skills

---

### Programming

MATLAB, Simulink, C++, VMLab

### Microwave and Electronics

Ansoft HFSS, CST Microwave Studio, Keysight – Advanced Design System (ADS)  
Proteus, Electronics Workbench

### Arts & Design Networking

AutoCAD, Coral Draw, Adobe Photoshop, Packet Tracer (Switching)

**RF/Microwave Circuits Designing** – Familiar with the RF/microwave circuit modeling which include antennas, filters, RFIDs, sensors, microstrip, metamaterial loaded transmission line, and RF performance characterization of commercial substrate materials

### RF/Microwave Circuits fabrication:

Hands-on experience on standard photolithography technique and milling machine LPKF Protomat H100.

### Job Related Skills

**RF /Microwave Circuits Performance Characterization** – Hands on experience of S-parameters measurements on Agilent vector network analyzer and radiation pattern measurements on NSI Anechoic Chamber system and conformity testing.

SNR measurements using Spectrum analyzer and Signal generator.

**Electromagnetic field analysis** – hands on experience on RF products design, very familiar with the EM simulation tools such as CST Microwave and Design studio, Ansoft HFSS and Keysight ADS/Momentum.

## Volunteer Work

---

Dec 2012-Jun 2015

### Project Supervisor (Indian Students Summer Internship - ISSI Project)

Athens Information Technology (AIT), Athens, Greece

- Channel Sounding: Channel measurements and modeling at 60GHz
- Planar antenna design in High Frequency Simulation Software HFSS

Dec 2012-Jun 2015

### President (Internal & External Affairs)

Graduates and Professional Students Government (GPSG) NUST-SEECS

- Events, Seminars, workshops
- IAESTE (International Association of Exchange of Students for Technical Experience)
- Trips and Tours

June 2012 – June 2014

### International Relations Representative

Student Affairs Office, NUST School of Electrical Engineering and Computer Science (SEECS), Islamabad, Pakistan

- Communications and hosting foreign delegates
- Events Management

May 2009 – July 2014

### Event Manager

Exploring Northern Heights of Pakistan (ENHP)

- Event Management
- Organizing trips and tours towards historic and scenic places of Pakistan
- Marketing and Financial Management in Organization

Jan 2010-Present

### Organizer

- Human For Human (H4H)
- Blood Donation
- Support Orphans and deserving families
- Rehabilitation and Relief Community

Jan 2010-May 2011

### Vice President

COMSATS Engineers Society (CESO)

- Head Technical Competitions Committees (Circuit designing, Antenna Designing, Speed wiring, Speed programming, CAD designing, etc.)
- Industry Academia Liaison
- Results analysis and announcements for all competitions

Aug 2009-May 2011

### Member

IDEAS COMSATS Society

- Head Industry academia Liaison
- Member of the decoration Team
- Head technical competitions

- Participation in Extra/Co-curricular activities (Debates, Sketching, Poetry)
- Participation in Conferences, seminars and workshops (Projects presentation, open house, poster presentations, etc.)

## Extra/Co-Curricular Activities

---

- Gold Medal; Athletics Race 100m, 400m, 100x4m, Futsal and Badminton (doubles) SEECs Sports Gala 2014.
- Silver Medal; Race 200m, Badminton (singles), High Jump, Long Jump, SEECs Sports Gala 2014.
- Gold Medal; Athletics Race 200m, 400m, 100x4m, 1600m, Volleyball, Bake and Sale, SEECs Sports Gala 2013.
- Silver Medal; Athletics Race 100m, futsal, Badminton (doubles) SEECs Sports Gala 2013.
- Bronze Medal: High Jump, Long Jump, SEECs Sports Gala 2013
- Winner youth carnival held at Open Air Theater Islamabad, 2011.
- Winner All district Debates Competition held in years 2007, 2005, 2004, 2002.
- Winner Zonal Declamation Competition held in years 2007, 2005, 2004, 2003, 2002.
- Runners-up District Debates Competition 2003.
- Winner All district Science quiz held in years 2004 and 2005.
- Winner All district General Knowledge Competition held in years 2004 and 2005.
- Winner Zonal Science quiz held in years 2004 and 2005.
- Winner Zonal General Knowledge Competition held in years 2004 and 2005.
- Runners-up Divisional General Knowledge Competition held in years 2005.

## References

---

### **Dr. Constantinos B. Papadias**

Professor & Head  
Smart Wireless Future Technologies (SWIFT)  
Lab, Research Technology and Innovation  
Network (RTIN),  
Alba – The American College of Greece  
(ACG), Athens, Greece  
[cpapadias@acg.edu](mailto:cpapadias@acg.edu)  
+30-694-7428689

### **Dr. Tauseef Tauqeer**

Associate Professor “Head of Department”  
for Electrical Engineering, Information  
Technology University (ITU), Arfa  
Software Technology Park, Lahore,  
Pakistan  
[tauseef.tauqeer@seecs.edu.pk](mailto:tauseef.tauqeer@seecs.edu.pk)  
[tauseef.tauqeer@itu.edu.pk](mailto:tauseef.tauqeer@itu.edu.pk) |  
+92-321-8410248

### **Dr. Symeon Nikolaou**

Assistant Professor  
Department of Electrical Engineering,  
Frederick University, Cyprus  
[simos.nikolaou@gmail.com](mailto:simos.nikolaou@gmail.com)  
+357-99802733

### **Dr. Farooq Ahmed Bhatti**

Associate Professor  
Department of Electrical Engineering,  
NUST – Military College of Signals  
(MCS), Rawalpindi, Pakistan  
[fabhatti@mcs.edu.pk](mailto:fabhatti@mcs.edu.pk)  
+92-333-5177375