

**ACADEMIC QUALIFICATION:**

PhD, Electronic Engineering                      NED University of Engineering and Technology                      CGPA: 3.9/4.00  
December 2019

Title: Uplink Performance of Decoupled Heterogeneous Networks in varying Pathloss Environment

Research Discipline: Wireless Communication

M.Engg. Telecommunication                      Hamdard University                      CGPA: 4.00/4.00  
Engineering, October 2010                      (Usman Institute of Technology)

**Gold Medal Recipient**

B.S. Telecommunication                      NUCES-FAST, Karachi                      CGPA: 3.77/4.00  
Engineering, July, 2008

**Bronze Medal Recipient**

**RESEARCH INTERESTS:** Wireless Communication, Communication Networks, Analytical Modelling, Simulation, Research and Academic Management

**RESEARCH EXPERIENCE:**

- ▶ Track Chair, IEEE Smart Cities Conference 2021 workshop on “**5G enabled Smart Cities**”, 7<sup>th</sup> September 2021
- ▶ PhD research project grant from NEDUET, **PKR 1.0 Million**
- ▶ Worked as PhD scholar on HEC funded NRPU-6054 project titled: “**Flexible testbed for D2D communication in 5G cellular networks**” (PKR. 6,590,206/-)
- ▶ Aisha Danish, Sundus Ali, Muhammad Imran Aslam, Irfan Ahmed, “**Future prospects and challenges associated with intelligent reflecting surfaces enabled wireless communication**”, 18th International IEEE HONET Conference, October 11-13 2021, (Accepted)
- ▶ Sundus Ali et al., “**Performance Analysis of Single-Hop Device to Device Communication**,” International Bhurban Conference on Applied Sciences and Technologies (IBCAST), 2021, pp. 974-978, doi: 10.1109/IBCAST51254.2021.9393266.
- ▶ Sundus Ali, Muhammad Imran Aslam, Irfan Ahmed and Tayyaba Khurshid, “**Analysis of the Decoupled Uplink Downlink Technique for Varying PLE in Multi-Tier HetNet**”, *Telecommunication Systems*, 74, 497–510 (2020). <https://doi.org/10.1007/s11235-020-00661-1> (IF:1.707)
- ▶ Sundus Ali, Muhammad Imran Aslam, Irfan Ahmed and Hira Mariam, “**Device-to-Device Communication Prototyping using Software Defined Radios**”, IEEEC, Karachi, Pakistan, February 2020
- ▶ Sundus Ali, Muhammad Imran Aslam, and Irfan Ahmed, “**Analysis of Downlink Uplink Decoupled Dense Heterogeneous Cellular Network based on User Association using Multi-Slope Pathloss Model**”, *Advances in Electrical and Computer Engineering*, vol. 19, no. 2, pp. 45-52, 2019. DOI:10.4316/AECE.2019.02006 (IF:0.65)
- ▶ Sundus Ali, Muhammad Imran Aslam, and Irfan Ahmed. “**Uplink Coverage Probability and Spectral Efficiency for Downlink Uplink Decoupled Dense Heterogeneous Cellular Network using multi-slope pathloss model**”, “*Telecommunication Systems*” (Springer), vol. 72, no. 4, pp. 505-516, 2019. DOI:10.1007/s11235-019-00587-3 (IF:1.707)
- ▶ Sundus Ali, M. Imran Aslam, Irfan Ahmed, **Analysis of Proportional Fairness Utility and Interference Mitigation in Heterogeneous Cellular Networks**, 31<sup>st</sup> IEEE International Multi-Topic Symposium, Karachi, March 2016
- ▶ Sundus Ali, M. Imran Aslam, Irfan Ahmed, **Multi-frequency MIMO channel modeling and capacity analysis using 3-D Spatial Statistical Channel Model for Millimeter Wave Outdoor Communication**, 14<sup>th</sup> International Bhurban Conference on Applied Sciences and Technology (IBCAST), Islamabad, 10<sup>th</sup>-14<sup>th</sup> January 2017
- ▶ Abdul Moiz, A.K.M. Shafaat Ali, Sundus Ali et al, “**Design & development of linearly polarized C-Band Phased Array Antenna for Air-borne & Space-borne SAR payloads**”, 11th International Bhurban Conference on Applied Sciences and Technology (IBCAST), 2011

## **PROFESSIONAL EXPERIENCE:**

- **Assistant Professor, Department of Telecommunications Engineering, NED UET (17<sup>th</sup> June 2021- to- date)**
- **Manager, Business Incubation Center, ORIC, NED UET (17<sup>th</sup> April 2021 to date)**
- **Assistant Professor, Department of Electronic Engineering (Telecommunications), NED UET (December 2019-to June 2021)**
- **Lecturer, Department of Electronic Engineering (Telecommunications), NED UET (April 2010 to date):**

### **Teaching Assignments:**

#### **Post-graduate/ Doctorate:**

1. Mobile Telephony Systems
2. Advance Communication systems
3. Co-supervising two PhD Scholars

#### **Undergraduate:**

1. Next Generation Networks (Final Year Telecommunications Engineering)
2. Telecommunication Switching Systems (Final Year Telecommunications Engineering)
3. Telecommunication Management Networks (Final Year Telecommunications Engineering)
4. Communication Systems (Third Year Electrical, Computer Systems and Electronic Engineering)
5. Signals and Systems (Second Year, Telecommunication and Electronic Engineering)

### **Administrative Assignments:**

1. Area/ISO Coordinator, Department of Telecommunications Engineering (17<sup>th</sup> June 2021 to date)
2. Learning Management System Facilitator Second Year Telecommunication Engineering (April 2020-30<sup>th</sup> June 2021)
3. Member Programme Team for development of SAR for MS Telecom Systems programme
4. Class Advisor, Second Year Telecommunication Engineering (November 2019-June 2021)
5. Member, Departmental Outcome Based Education Team (April 2017 to date)
6. LRCA Certified Lead Quality Auditor, Internal Auditor Team member for NED UET (2017 to date)
7. Head of Documentation and Content, International Conference on Emerging Trends in Telecommunication and Electronic Engineering 2018 (August 2017 to March 2018)
8. ISO/Area Coordinator for Telecom Engineering Programme (2014 till August 2017)
9. Faculty In-charge, Career Expo 2011 (August-September 2011)
10. Faculty Coordinator: TE-Links- Official Telecom Discussion Forum of NED UET (January 2011 to date)
11. In-charge SENTEC (Society for the Promotion of Science and Technology) (June-August 2010)

### **Trainings and Workshops:**

1. Risk Assessment and Management, June 2021
2. Learning Management System Training sessions, March 2020 onwards
3. OBE based student evaluation, 7<sup>th</sup> January 2020, QEC
4. Development of SAR as per PEC guidelines, January 2020, QEC
5. Examination Paper setting as per OBE system, 31<sup>st</sup> December 2019, QEC
6. Intellectual Property and Patents Laws in Pakistan, November 2019, QEC
7. OBE System Design, 29<sup>th</sup> Nov 2017, QEC
8. Awareness Session on Transition to ISO 9001: 2015, 18<sup>th</sup> Oct 2017, ISO
9. HEI Ranking QA through IPE, 25<sup>th</sup> July 2017, QEC
10. Quality Assurance in Education, 17<sup>th</sup> and 18<sup>th</sup> May, 2017, QEC
11. IRCA Registered Lead Assessor, LRQA, conducted by Mr. Raheel Ehsan, 24<sup>th</sup>-28<sup>th</sup> April 2017, ISO
12. Development of Self-Assessment Report (SAR), 01<sup>st</sup> February 2017, QEC
13. Supply Chain Management, 23<sup>th</sup> to 26<sup>th</sup> January 2017, ISO
14. Procedure of Assessment of SAR, 06<sup>th</sup> March 2017, QEC
15. Effective Teaching Methodologies and Outcome Based Education Trainings, QEC
16. Huawei Training on Advance GSM Equipment (NSS and BSS), UET Lahore, July 2010
17. 2-Day Training on FPGA Programming, Department of Electronic Engineering, June 2010

### **Project Activities:**

Worked as Idea Owner, Architect and Internal Advisor of several Final Year Projects. As Advisor and Idea Architect, my responsibilities included:

- Project Management
- Risk analysis and Management
- Timeline Management

- Step by step critical evaluation of the Project phases and testing for bugs
- Technical Guidance to the team members
- Technical assessment of all the documentation done regarding the project

**Lecturer at National University of Computer and Emerging Sciences, Karachi August'09-April'10**  
**Lab Engineer at National University of Computer and Emerging Sciences, Karachi Campus August'08-July'09**

- Conducted Laboratory Sessions of Various Telecommunication Engineering Courses
- Worked as Lab In-charge of two Laboratories over the tenure
- Invigilation duties in Semester Mid-Terms and Final Examinations, Students' Evaluation for Lab Courses

**TOOLS AND SOFTWARES:**

<b><u>Programming Skills</u></b>	<b><u>Application Software Skills</u></b>
<ul style="list-style-type: none"> <li>• LabView (Intermediate)</li> <li>• Communication Systems Design Suite (Advance)</li> <li>• C++ (Medium)</li> <li>• TCL Scripting (Basic)</li> <li>• MATLAB (Advanced)</li> </ul>	<ul style="list-style-type: none"> <li>• EndNote (Advance)</li> <li>• LaTEX (Advance)</li> <li>• MS Visio (Medium)</li> <li>• Wireshark Protocol Analyzer (Medium)</li> <li>• Cisco Packet Tracer (Medium)</li> <li>• MRTG (Basic)</li> <li>• MS Word, MS PowerPoint and MS Excel (Advance)</li> </ul>

**ACHIEVEMENTS:**

- First Position and Academic Excellence Award Recipient, M.Engg. Telecommunications Engineering (2010)
- Worked as an external examiner in Theory/Practical Exam of NEDUET Electrical Engineering Department (2009)
- Third Position in BS Telecommunication Engineering (2008)
- Member of the Dean's List since 2005
- Member of Software, Information Books and Seminar Society (SIBSS) of FAST-NUCES (2004-2005)
- Member of PROCOM'05 Marketing Team (2005)

**FINAL YEAR PROJECT:**

Commissioning of Mobile Switching Centre (MSC) using Huawei CSOFTX3000 and UMG8900 in V-Wireless WLL Network

**Salient Features:**

The project was regarding the arrival of R4 Network Architecture in Pakistan. It involved:

- Complete deployment of Huawei Mobile Softswitch and Media Gateway in the V-Wireless PTCL Pak-Capital Exchange
- Performance and comparative analysis involving the vendor's equipment and Operator's deployment strategies
- Recommended solution for deployment for better network performance

**Project Based Learning:**

• Core Network Technologies and Evolution	• Hardware Setup and configuration
• Bearer and Signaling Protocols	• Software configuration
• Signaling and Bearer Network configuration	• Troubleshooting Scenarios
• TDM/IP conversion of Voice and SS7 messages	• Work on Local Maintenance Terminal Software

**OTHER TRAININGS:**

- WLL Systems and Technologies (From: PTCL Telecom Foundation)
- GSM (Architecture, BSS, NSS, SS7 Signaling Suite, RF Planning) and CDMA (From: Interface-a Telco Resource Firm)

**INTERNSHIPS:**

1. Pakistan Telecommunications Limited (PTCL), 2008 in WLL department, Pak Capital Exchange  
This Internship was a part of the Final Year Project which involved working on the Softswitch equipment, its configuration and other tasks.
2. PIA (July 2007)  
This internship involved learning at various sections in the Engineering Department of the organization including Instrument Overhaul Shop, Radio Overhaul Shop, Communication Section, Electrical Overhaul Shop, Boeing and Airbus Line Maintenance Hangars