

Dr Muhammad Asif

PhD (UK), BSc (Hons) UET Peshawar,
Assistant Professor,
Department of Electronics,
University of Peshawar, Pakistan
Email: m.asif@uop.edu.pk

BIOGRAPHY

Dr. Muhammad Asif, an esteemed researcher and educator, currently serves as an Assistant Professor in the Faculty of Numerical and Physical Sciences, at the University of Peshawar, Pakistan. He previously held the position of Director, Centre for IT Services, University of Peshawar. In this capacity, he oversees all the activities related to Internet availability to the University. He secured the grant from the Higher Education Commission for the establishment of one of the state-of-the-art data centers at the University. In addition to his role as an Assistant Professor, he has been an active member of the Advanced Study Research Board for the last 6 years, where he plays a vital role in advancing academic excellence at the university. He holds the position of coordinator of MS/MPhil and PhD studies at the department of Electronics, University of Peshawar. He has established well-equipped labs for MS and PhD students. Due to his Outstanding Research and Teaching skills, He has secured the top position in teachers' evaluation surveys in all the three-conducted by quality enhancement cell in this period.

Dr. Asif earned his PhD in Electronics and Computer Engineering from the University of Surrey, UK in 2012. He completed his bachelor's degree in computer systems engineering with Honors from UET Peshawar in 2006.

Dr. Asif's research interests span computer and wireless communication networks, with a focus on performance analysis and design. He explores diverse networks like WSNs, MANETs, IoT, and 5G. Additionally, his research delves into Routing, Network Traffic Estimation, Software-Defined Networks, M2M Communications, Network Security & privacy, Deep Learning, Smart Cities, Intelligent Transportation Systems, and the impact of digital inclusion on future technologies and society.

PROFESSIONAL SUMMARY

- Highly accomplished scholar with **exceptional leadership** skills and **20 years** of extensive experience in teaching, research, and development within the field of **computer and wireless communication networks and systems**.
- Demonstrated expertise in the design and performance analysis of cutting-edge **wireless communication networks**, along with a comprehensive understanding of wireless network deployment techniques and topologies.
- A dedicated educationist with a proven record of accomplishment of teaching a diverse range of courses in electronics and computer Science at both undergraduate and graduate levels. Innovates new learning methodologies and fosters knowledge transfer in classrooms, resulting in **effective and impactful learning** experiences for students.
- Module Coordinator, Worked as Module coordinator for different courses in MTC and University of Peshawar.

- Member of **National Curriculum design** for Electronics/Communication Courses.
- Renowned speaker, delivering lectures and tutorials on high-tech and emerging topics in **computer and wireless communication networks and systems** at prestigious workshops, and seminars.
- Prolific researcher with a remarkable publication record, having submitted over **50+ papers** to reputable international journals and conferences in the areas of computer and wireless communications and networking.
- Effective **communicator**, adept in **written and verbal communication, presentation, and research management**. Possesses exceptional **interpersonal and time management** skills, enhancing the efficiency and productivity of research projects.
- **Self-motivated, diligent, and analytical thinker** with a proven record of accomplishment of successful **problem solving**. A dedicated **team leader**, experienced in mentoring and managing multicultural and multinational individuals, fostering a collaborative and supportive work environment.

EDUCATIONAL QUALIFICATIONS

University of Surrey, Surrey, UK	Oct2008 – July 2012
Doctor of Philosophy (PhD) in Computer and Wireless Communication Networks and Systems	
Dissertation Title: Flow Aware Admission Control Protocol for QoS Provisioning in Mobile Ad Hoc Networks	
Supervisor: Prof. Zhili Sun, Professor and Dr. Haitham Cruickshank, reader, in EEE Dept.	
Funding: University Scholarship	

NWFP UET, Peshawar, Pakistan	Jan 2002 – April 2006
Bachelor of Science (BSc) in Computer Systems Engineering	
CGPA, First class with distinction	
Funding: Merit-based scholarship for 4 years	

EMPLOYMENT HISTORY

Lecturer, Systems Engineering Department, Military Technological College, Oman	October 2024---Present
Assistant Professor, Department of Electronics	July 2012 – October 2024
Member of Advanced Studies and Research Board (ASRB)	Sep 2017– October 2024
Graduate Advisor, Department of Electronics	May 2013 – Dec 2022
Director, Centre for IT Services, University of Peshawar	June 2014 – Mar 2016
Lecturer, Department of Electronics, University of Peshawar (study leave: PhD)	Sept. 2012 — July 2012
Lecturer, department of Computer Science	Dec 2006 – Aug 2008
University of Peshawar, Pakistan	

Key Responsibilities

As an educator, I have taught a wide array of undergraduate and graduate courses, pioneering new methods for transferring knowledge and promoting effective learning in the classroom. Specifically, I served as an instructor for a variety of undergraduate and graduate courses, delivering lectures,

facilitating tutorials, and creating comprehensive pre- and post-lecture materials. These courses include Computer Programming in C++, Data Communications, Computer Networks, Advanced Computer Networks, Computer Security, Wireless Communication, Mobile Networking, Wireless Networks, Performance Evaluation and Modelling of Communication Networks, Signals and Systems, Digital Image Processing, Distributed Systems, Digital Image Processing, Digital Logic Design, Next generation Networks, Cryptography, Control Systems and Communication Systems.

In addition to my teaching responsibilities, I have been actively engaged in impactful research initiatives. My research contributions have been published in premier peer-reviewed journals and presented at esteemed conferences and workshops, ensuring the dissemination of our findings to the scientific community and beyond. As a mentor and supervisor, I have guided postgraduate and undergraduate students, supporting them in their academic and professional pursuits.

Beyond my academic and research roles, I have actively contributed to the development of postgraduate and undergraduate course curricula, ensuring their relevance and rigor. Furthermore, I have evaluated and provided constructive feedback on postgraduate project proposals, ensuring adherence to academic standards.

Through these diverse roles and achievements, I remain committed to driving excellence in education, research, and professional development, making impactful contributions to academia and the advancement of knowledge in my field.

Additionally, I actively contribute to the academic assessment process by evaluating undergraduate and postgraduate dissertations; ensuring academic standards and quality are upheld within the department.

Furthermore, I actively contribute to the academic community by evaluating undergraduate and postgraduate project proposals and assessing theses, ensuring the maintenance of academic standards and quality within the department.

Moreover, my commitment to the academic community is evident through my participation in various committees, including the quality assurance and accreditation committee, and the curriculum development committee, where I ensure the alignment of courses with current educational trends and student needs.

Additionally, I am involved in the academic advising committee, providing guidance and support to students in making informed decisions about their academic and professional paths.

PhD Researcher
University of Surrey, UK

Oct 2008 – July 2012

Responsibilities / Project contributions

During my PhD research project, I focused on the design, simulation, and analysis of Admission Control Protocol for multipath routing and quality of service (QoS) support for mobile ad hoc networks. The project resulted in the following key contributions:

1. Developed a novel Admission Control and QoS-aware routing i.e. Flow Aware Admission Control (FAAC) protocol that provides guaranteed throughput services to the application in MANETs.

FAAC Protocol finds a satisfying throughput route, assesses the impact of new data session on existing data session, continuously tests how much the throughput is achieving each data session, and uses the information gathered in the route cache either during the route discovery process or opportunistically.

2. Designed and developed a second version of FAAC protocol that maintains multiple routes between source and destination for each data session. Multiple paths are maintained on a data session basis, not on a node basis. The uniqueness of the protocol is the overhead free testing of resources of multiple routes. The switching of data sessions is based on requirement, whether due to route failure, when the primary route is not fulfilling the requirements and when the secondary route offers greater throughput than the primary route.
 3. Designed and evaluated of a third version of FAAC protocol that finds the route based on multiple constraints such as throughput and delay requirements of the data session. The novelty includes route finding based on throughput requirement, and the testing of route delay with a dummy packet. The protocol also switches the data session based on achieved throughput and end-to-end delay.
- The PhD studies led to several publications (refer to publication list).

RESEARCH

RESEARCH INTERESTS

- Exploring mechanisms and protocols for end-to-end communication in the Internet of Things (IoT).
- Understanding the role of IoT technology in delivering real-time streaming data related to the natural environment.
- Investigating innovative IoT concepts like programmable networks, including Software Defined Networking and Network Function Virtualization.
- Examining channel estimation mechanisms for massive MIMO systems in 5G technology.
- Studying mechanisms and protocols for end-to-end communication in Mobile Ad Hoc Networks (MANETs) and Wireless Sensor Networks (WSN).
- Delving into the realm of digital inclusion and the enhancement of digital skills, understanding their impact on future technologies and society.
- QoS, Network Security, Information Security, Privacy, Artificial Intelligence and Deep Learning.
- Mobile Ad Hoc Networks and Delay Tolerant Networks (DTN) and its QoS, Routing, security and privacy issues.
- Intelligent Transport System (ITS) and its QoS, privacy, routing and security issues
- Renewable Energy and Energy Efficient Algorithm and Materials Fabrications.

INTERNATIONAL ACADEMIC PEER REVIEWED PUBLICATIONS

My scholarly contributions to research exceeded **50**, including 43 articles published in premier, peer-reviewed journals, 05 papers presented at conferences, and 2 additional journal articles currently under

the review process. Google Scholar Citations: 704, i10-index: 22, h-index: 16;
<https://scholar.google.com/citations?user=Um3BSoAAAAAJ&hl=en>

Journal Papers Recognized by (Web of Science Indexed)

1. Muhammad Zubair, **Muhammad Asif** et al. DFT Analysis of Sr_2GdMO_6 (M = Bi, Sb) Double Perovskites for Spintronics and UV Optoelectronics, 38, 269, 2025.
2. Muhammad Zubair, Muhammad Uzair, **Muhammad Asif**. Structural, electronic, optical, and elastic properties of $\text{Cs}_2\text{LiSbX}_6$ (X = F, I): Insights into their potential for technological applications. Computational Condensed Matter, 44, e01052, 2025.
3. Muhammad Zubair, **Muhammad Asif** et al. Insight into the structural, elastic, optoelectronic, magnetic and thermodynamic properties of Sr_2TbXO_6 (X = Bi, Sb) double perovskites employing DFT approach. Optical and Quantum Electronics, 57(4), 237, 2025.
4. Muhammad Rizwan, Samina Bibi, Sana Ul Haq, **Muhammad Asif**, Tariqullah Jan, Mohammad Haseeb Zafar. Automatic plant disease detection using computationally efficient convolutional neural network. Engineering Reports, 6(12), e12944, 2024.
5. Muhammad Amin, Khalil Ullah, **Muhammad Asif**, Habib Shah, Abdul Waheed, Irfanud Din. Fuzzy performance estimation of real-world driver's stress recognition models based on physiological signals and deep learning approach. Journal of Ambient Intelligence and Humanized Computing, 1-16, 2024.
6. Muhammad Rizwan, Sana Ul Haq, Noor Gul, **Muhammad Asif**, Syed Muslim Shah, Tariqullah Jan, Naveed Ahmad. Appearance Based Dynamic Hand Gesture Recognition Using 3D Separable Convolutional Neural Network. Computers, Materials & Continua, 76(1), 1213-1247, 2023.
7. Muhammad Amin, Khalil Ullah, **Muhammad Asif**, Habib Shah, Arshad Mehmood, Muhammad Attique Khan. Real-World Driver Stress Recognition and Diagnosis Based on Multimodal Deep Learning and Fuzzy EDAS Approaches. Diagnostics, 13(11):1897, 2023.
8. Ehsan Raza, Zubair Ahmad, Fakhra Aziz, **Muhammad Asif** et al. Design and optimization of four-terminal mechanically stacked and optically coupled silicon/perovskite tandem solar cells with over 28% efficiency. Heliyon, vol.9 (2), 2023.
9. Ehsan Raza, Jolly Bhadra, Muhammad Asif, Fakhra Aziz, Noora J. Al-Thani, Zubair Ahmad. A numerical approach to study the effect of bandgap and electron affinity in HTL-free perovskite solar cells and design of two-terminal silicon/perovskite tandem solar cell, 37, 1073,83,2023.
10. Muhammad Amin, Khalil Ullah, **Muhammad Asif** et al. ECG- Based Driver's Stress Detection Using Deep Transfer Learning and Fuzzy Logic Approaches. IEEE Access, vol. 10, pp. 29788-29809, 2022.
11. Muhammad Sadiq, Abdul Majid, **Muhammad Asif** et al. Effects of Nodes Mobility on the energy consumption of Routing Protocols (AODV, DSDV) in- Ad-Hoc Networks. Pakistan Journal of Scientific and Industrial Research, 65A (1), pp: 74-79, 2022.
12. Ehsan Raza, Zubair Ahmad, **Muhammad Asif** et al. Numerical modeling and performance optimization of carbon-based hole transport layer free perovskite solar cells. Optical Materials, vol. 125,112075, 2022.
13. Muhammad Arshad, **Muhammad Asif**, Sana Ul Haq et al. Spectroscopic and photoluminescence properties of praseodymium doped potassium aluminum phosphate ($\text{P}_2\text{O}_5\text{-K}_2\text{O-Al}_2\text{O}_3$) glasses for optoelectronics applications. Journal of Non-Crystalline Solids, vol. 586, 121570, 2022.

14. Muhammad Sadiq, Amir Naveed, **Muhammad Asif** et al. Geopolymerization: A Promising Technique for Membrane Synthesis. *Materials Research Express*, vol. 8(11), 112002, 2021.
15. Muhammad Sadiq, Muhammad Arif, **Muhammad Asif**, Amir Naveed et al. Synthesis of MnO₂ Carbon nanotubes catalyst with enhanced Oxygen Reduction Reaction for Polymer Electrolyte Membrane Fuel Cell. *Journal of the Pakistan Institute of Chemical Engineers*, Vol. 49(2), 2021.
16. Ehsan Raza, **Muhammad Asif**, Ayyaz Ahmed et al. Numerical simulation analysis towards the effect of charge transport layers electrical properties on cesium based ternary cation perovskite solar cells performance, *Solar Energy*, Vol.225, pp: 842-850,2021.
17. Muhammad Sadiq, Muhammad Humayun, **Muhammad Asif** et al. Effect of Organic Additives and Current Efficiency on Electrodeposition of Nickel from Sulfate Bath. *Journal of the Pakistan Institute of Chemical Engineers*, Vol. 49(2), 2021.
18. Shoaib Khan, **Muhammad Asif**, Amir Naveed et al. Designing and Simulation of Permanent Magnet Synchronous Generator for Wind Energy Hybrid System. *Journal of Engineering and Applied Sciences*, Vol. 40(1), pp. 52-59, 2021.
19. Muhammad Humayun, Muhammad Zeeshan, **Muhammad Asif** et al. Physical and mechanical characterization of sand replaced stone dust concrete. *Materials Research Express*, vol. 8(8) 085507, 2021.
20. Haroon-Ur Rashid, Muhammad Ali, **Muhammad Asif**, Sahar Shah et al. Synthesis, Characterization, and Applications of Silver Nano Fibers in Humidity, Ammonia, and Temperature Sensing. *Micromachines*, vol. 12(6), 682, 2021.
21. Muhammad Uzair Khan, Amir Naveed, **Muhammad Asif** et al. Experimental validation of bulk-graphene as a thermoelectric generator. *Materials Research Express*, vol. 8(5) 056302, 2021.
22. Khalil ur Rehman, **Muhammad Asif**, Muhammad Tahir et al. Improvement of capacitive humidity sensors using tris (8-hydroxyquinoline) gallium (Ga_q3) nanofibers as a dielectric layer. *Journal of Materials Science: Materials in Electronics*, vol. 31(23), pp: 21702-21710, 2020.
23. Gauhar Ali, Naveed Ahmad, Yue Cao, **Muhammad Asif** et al. Blockchain based Permission Delegation and Access Control in Internet of Things (BACI). *Elsevier Journal on Computer and Security*, vol. 86, pp: 318-334, 2019.
24. Qazi Ejaz Ali, Naveed Ahmad, **Muhammad Asif**, Muhammad Khalid et al. SPATA: Strong Pseudonym based Authentication in Intelligent Transport System. *IEEE Access*, vol. 6(1), pp: 79114- 79128, 2018.
25. Fazli Amin Khalil, Shahzad Anwar, **Muhammad Asif**, Sana Ul Haq et al. Energy management strategy for integrating photovoltaic energy in AC microgrid. *Journal of Renewable and Sustainable Energy*, vol. 10 (6), 065102, 2018.
26. Shahid Latif, Saeed Mahfooz, Bilal Jan, Naveed Ahmad, Yue Cao, **Muhammad Asif**. A comparative study of scenario-driven multi-hop broadcast protocols for VANETs. *Vehicular Communications*, vol. 12, pp: 88–109, 2018.
27. Sadiq Akbar, Fawad Zaman, **Muhammad Asif**, Ata Ur Rehman, Muhammad Asif Zahoor Raja. Novel application of FO DPSO for 2-D parameter estimation of electromagnetic plane waves. *Neural Computing and Applications* 31, pp: 3681–3690, 2019.
28. Fazli A. Khalil, **Muhammad Asif**, Shahzad Anwar, Sana ul Haq, and Farman Illahi. Solar Tracking Techniques and Implementation in Photovoltaic Power Plants: a Review. *Proceedings of the Pakistan Academy of Sciences* 54 (3), pp: 231– 241, 2017.

29. Taimur Khan, Naveed Ahmad, Yue Cao, Syed Asim Jalal, **Muhammad Asif**, Sana Ul Haq, Haitham Cruickshank. Certificate Revocation in Vehicular Ad hoc Networks Techniques and Protocols: A SURVEY. Springer SCIENCE CHINA Information Sciences, vol. 60,100301, 2017.
30. Naveed Ahmad, Haitham Cruickshank, Yue Cao, Fakhri Alam Khan, **Muhammad Asif**, Awais Ahmad, Gwanggil Jeon. Privacy by Architecture Pseudonym Framework for Delay Tolerant Network. Future Generation Computer Systems, vol. 93, pp: 979-992, 2017.
31. Hassan, A. Ali, F. Khan, S. Khan, S. Rahim, S. U. Haq, T. Jan, **M. Asif**. Using Series Capacitors for the Improvement and Evaluation of Transmission Line Utilization. Sindh University Research Journal (Science Series) 48(2): 257-260, 2016.
32. Haseeb Ashraf Malik, Fakhra Aziz, **Muhammad Asif**, Ehsan Raza et al. Enhancement of optical features and sensitivity of MEH-PPV/VOPcPhO photo detector using CdSe quantum dots. Journal of Luminescence, vol. 180, pp: 209-213, 2016.
33. Ehsan Raza, **Muhammad Asif**, Fakhra Aziz et al. Influence of thermal annealing on a capacitive humidity sensor based on newly synthesized macroporous PBObzT2. Sensors and Actuators B: Chemical, vol. 235, pp: 146-153, 2016.
34. Muhammad Amin, Ajmal Khan, **Muhammad Asif**, Sana Ul Haq, Imtiaz Rasool. A Survey of Routing Protocols for Delay Tolerant Networks in VANETs. Science International Lahore, vol. 28(2), pp: 1137-1143, 2016.
35. **Muhammad Asif**, Sana Ul Haq, Muhammad Arshad et al. Analysis of Solar Maximum Power Point Tracking Algorithms and Hardware Architectures", Sindh University Research Journal (Science Series) 48 (1), pp: 61–66, 2016.
36. **Muhammad Asif**, Muhammad Ali, Naveed Ahmad et al. Design and Development of a Data Logger Based on IEEE 802.15.4/ZigBee and GSM. Proceedings of the Pakistan Academy of Sciences, vol. 53 (1), pp: 37–48, 2016.
37. Amad Hamza, Tariqullah Jan, Asiya Jehangir, **Muhammad Asif** et al. A Novel Approach for Blind Estimation of Reverberation Time using Gamma Distribution Model. Journal of Electrical Engineering and Technology, vol. 11(2), pp: 529-536, 2016.
38. **Muhammad Asif**, Sohail Ahmad, Sana Ul Haq et al. Improved OLSR Protocol for VANETs and Comparison with State of Art DSR and AODV Protocols. Sindh University Research Journal (Science Series), vol. 47 (4), pp: 835–838, 2015.
39. **Muhammad Asif**, Sana Ul Haq, Naveed Ahmad et al. QoS Assurance in Higher Mobility Mobile Ad Hoc Networks using Multipath Admission Control Protocol. Proceedings of the Pakistan Academy of Sciences, vol. 52 (3), pp: 201–214, 2015.
40. Sana Ul Haq, **Muhammad Asif**, Tariq Ullah Jan et al. Audio-Visual Emotion Classification using Filter and Wrapper Feature Selection Approaches. Sindh University Research Journal (Science Series), Vol.47 (1), pp: 67-72, 2015.
41. S. HAQ, A. ALI, **M. ASIF**, T. JAN, Y. KHAN, Naveed AHMAD. Speaker-Independent Speech Emotion Recognition using Gaussian and SVM Classifiers. Sindh University Research Journal (Science Series), Vol.47 (1), pp: 103-106, 2015.
42. Sanaul Haq, Tariqullah Jan, **Muhammad Asif**, Amjad Ali, and Naveed Ahmad. Speaker dependent Human Emotion Recognition in Unimodal and Bimodal Scenarios. Pakistan Academy of Sciences, 52 (1), pp: 15–25, 2015.

43. Sana ul Haq, Tariq Ullah Jan, Asiya Jehangir, **Muhammad Asif** et al. Bimodal Human Emotion Classification in the Speaker-dependent Scenario. Pakistan Academy of Sciences, vol. 52 (1), pp: 27–38, 2015.

Peer-Reviewed Published Conference Papers

1. **Muhammad Asif**, Zhili Sun, Haitham Cruickshank and Naveed Ahmad. Flow Aware Admission Control– Multipath protocol with multiple Constraints (FAAC-MM) for assurance of multiple QoS metrics in MANETs. 18th IEEE Symposium on Communications and Vehicular Technology, Benelux Ghent, 22-23 November 2011, Belgium.
2. **Muhammad Asif**, Zhili Sun, Haitham Cruickshank and Naveed Ahmad. QoS Assurance in MANETs using Flow Aware Admission Control– Multipath (FAAC-Multipath) Protocol. 30th IEEE International Performance Computing and Communications Conference IPCCC 2011, 17-19 November 2011, Orlando, Florida, SA.
3. **Muhammad Asif**, Zhili Sun, Haitham Cruickshank and Naveed Ahmad. QoS Provisioning in contention aware MANETs using Flow Aware Admission Control (FAAC) protocol. IADIS International Conference Telecommunications, Networks and Systems 2011 Rome, 20-22 July 2011, Italy.
4. Naveed Ahmad, Haitham Cruickshank, Zhili Sun, **Muhammad Asif**. Pseudonymised Communication in Delay Tolerant Networks. Ninth Annual Conference on Privacy, Security and Trust, 19-21 July, 2011, Montreal, Québec, Canada.
5. **Muhammad Asif**, Zhili Sun and Haitham Cruickshank. Admission Control Protocol in Mobile Ad Hoc Networks Provisioning QoS. 7th ACM International Conference on Frontiers of Information Technology, December 2009, Pakistan.

Successful Research Degree Supervision

PHD SUPERVISION:

1. **Dr. Sadiq Akbar**, Parameter Estimation of Electromagnetic Plane Waves Using Novel Adaptive Metaheuristic Techniques
2. **Dr. Muhammad Amin**, ECG-Based Driver's Stress Detection Using Deep Transfer Learning and Fuzzy logic approaches Learning and Fuzzy Logic Approaches
3. **Dr. Muhammad Arshad**, Synthesis and Characterization of Selected Rare-Earth (Doped Glasses for Optoelectronics Applications)
4. **Dr. Ehsan Raza**, Designing of low cost, stable and highly efficient perovskite based single junction and tandem solar cells using numerical modelling

MPHIL SUPERVISION:

1. **Abdul Basit**, Suppression of Sidelobes with Improved Subcarrier Weighting in Orthogonal Frequency Division Multiplexing Based Cognitive Radio System
2. **Sohail Ahmad**, Improved OLSR Protocol for VANETs and Comparison with State of Art DSR and AODV protocols
3. **Fazli Amin Khalil**, Grid Connected Photovoltaic Power Synchronizing and Management System

4. **Shah Fahad**, An Efficient and Adaptive Energy Cooperation in Internet of Things Using Energy Harvesting
5. **Muhammad Arshad**, Cost and Efficiency Assessment of Solar Maximum Power Point Tracking Algorithms and Hardware Architectures
6. **Sonia Altaf**, A Comparative Study of the Routing Protocols in Wireless Sensor Networks with the Proposed Model of Energy Conservation
7. **Rehana Zeb**, Optimized Energy Aware Routing Protocol Based On Cooperation for Wireless Sensor Networks
8. **Haseeb Ashraf**, Fabrication and Characterization of Photo Detector based on Ternary Blend of MEH-PPV, VOPcPhO and CdSe Nanoparticles
9. **Ehsan Raza**, Investigating Humidity Sensing Properties of benzo[b]thiophene end-capped dioctyloxy-benzene Polymer (PBObzT2) Based Thin Film Sensor
10. **Khalil Ur Rehman**, Investigation and Characterization of Tris (8-Hydroxyquinoline) Gallium (Ga_{q3}) Based Capacitive Humidity Sensor
11. **Nayyera Saba**, Humidity Sensing Properties of Graphene Oxide Nanofibres
12. **Furqan Ullah**, Synthesis and Characterization of Bulk Graphene-Based Thermoelectric Generator

RESEARCH DEGREE EXAMINATION

I have had the privilege of serving as an examiner for above 100 MPhil Scholar, and about 6 PhD students. Below is the list of some of the PhD degree examinations and MPhil research evaluation, I have participated in:

- External examiner, **Dr. Rehmat Ullah**, “Centered Time Cartograms: Construction and Usability”, University of Engineering and Technology Peshawar, Pakistan, 2020.
- External examiner, Dr. Latif Jan (December 2021) - Thesis Title: “Evaluating Ergodic Capacity for MIMO-RF OFDM and Outage-Error Rate Analysis using a Hybrid MIMO-RF UOWC System”.
- External examiner, Dr. Zeeshan Shafiq (June 2018) - Thesis Title: “Physical Analysis and Link-Level Enhancements in IEEE 802.11p for Vehicular Ad Hoc Networks”.
- External examiner, Engr. Arsalan Qamar, “A robust Approach for Classification COVID-19 Cough Based on CNN Deep Learning Model”, Department of Computer Systems Engineering, University of Engineering and Technology Peshawar, Pakistan, 2023.
- External examiner, Engr. Mashood Kamil, “Performance of Wearable Antenna”, Department of Electrical Engineering, University of Engineering and Technology Peshawar, Pakistan, 2023.
- External examiner, Engr. Ishtiaque Ahmad, “Adaptive Multimedia Transmission Using Dynamic Multi-Level MIMO Schemes”, Department of Electrical Engineering, University of Engineering and Technology Peshawar, Pakistan, 2023.
- External examiner, Engr. Talhat Khan, “Explainability of Deep Learning Models using various Data Types”, Department of Computer Systems Engineering, University of Engineering and Technology Peshawar, Pakistan, 2022.
- External examiner, Engr. Maria Shaukat, “A Late Fusion Framework with Multiple Optimization Methods for Media Interestingness”, Department of Computer Systems Engineering, University of Engineering and Technology Peshawar, Pakistan, 2022.

- External examiner, Engr. Adrees Khan, "A machine learning based model predictive control of a variable-rate spraying system", Department of Mechatronics Engineering, University of Engineering and Technology Peshawar, Pakistan, 2022.
- External examiner, Engr. Muhammad Nauman Khan, "Development of a real-time vision system for map-based variable-rate agricultural spraying", Department of Mechatronics Engineering, University of Engineering and Technology Peshawar, Pakistan, 2022.
- External examiner, Engr. Muhammad Shoaib Jamal, "Analysis of Channel Modeling for 5G mm-wave Communication in NLOS UMI", Department of Computer Systems Engineering, University of Engineering and Technology Peshawar, Pakistan, 2020.
- External examiner, Engr. Hafiz Muneeb Ur Rahman, "IOT Based Systems for Real Time Structural Health Monitoring", Department of Computer Systems Engineering, University of Engineering and Technology Peshawar, Pakistan, 2020.
- External examiner, Engr. Muhammad Rizwan, "Wireless Sensor Networks Based Power Grid Monitoring and Control", Department of Electrical Engineering, University of Engineering and Technology Peshawar, Pakistan, 2019.
- External examiner, Engr. Syed Ali Zia, "Improving the Efficiency of Block Matching Algorithms using Optimization Techniques", Department of Computer Systems Engineering, University of Engineering and Technology Peshawar, Pakistan, 2019.
- External examiner, Engr. Sadiq Shah, "A hybrid Face Detection Approach Based on Facial Features and Skin Color Information", Department of Computer Systems Engineering, University of Engineering and Technology Peshawar, Pakistan, 2017.

AWARDS

- Received Shield for outstanding research, teaching, and organizing final year Project Exhibition for four years continuously.
- Fully funded scholarships for PhD
- Merit Scholarship for four years during B.Sc Engineering, UET Peshawar.

KEYNOTE AND INVITED PRESENTATIONS

- Talk: Current research trends in Electronics and Computer Engineering, University of Peshawar, 2023.
- Invited Talk: Computer Networking and Fiber Optic course, under NAVTTC Kamyab Jawan Project, Centre for IT Services, University of Peshawar, 2022.
- Resource Speaker: FYP Guide, Faculty of Numerical and Physical Sciences, University of Peshawar, 2022.
- Invited Seminar: Modelling and Simulation. Department of Electronics, 2021
- Invited Seminar: Latest trends in Wireless Networks, Department of Electronics, 2019
- Invited Speaker: Current and Future Trends in Wireless Technologies, SUIT, 2015.
- Invited Speaker: Short course on New Trends in Information Technology: Centre for IT Services, University of Peshawar 2014.
- Invited Seminar: Project Proposal Writing, SUIT, Peshawar, 2014.
- Invited Seminar: A successful Final Year Project, University of Peshawar, Peshawar, 2014.
- Talk: Quality of Service provisioning in MANETs, University of Peshawar, Peshawar, 2012.

EXTERNAL ASSOCIATIONS, BOARDS AND COMMITTEES

Professional Membership

- Life Time Member Pakistan Engineering Council (PEC)), since 2006.

LEARNING AND TEACHING

TEACHING PORTFOLIO

In my teaching roles at different institutions, including Ghandara Institute of Science and Technology (GIST) and UoP, I have led various undergraduate and graduate-level modules that cover a diverse range of topics. These modules incorporate innovative learning strategies and student-centered approaches to create efficient and impactful learning experiences. Some of the modules I have overseen include Digital Logic Design, Digital Signal Processing, Digital Image Processing, Analog and Digital Communications, Computer Programming in C++, Data Communications, Advanced Computer Networks, Wireless Communication, Network Security, Signal and Systems, Engineering Mathematics, Analog Electronics. Throughout my teaching responsibilities, I have emphasized inquiry-based teaching methodologies, encouraging critical thinking and problem-solving skills among students to promote a supportive and empowering learning environment.

ESTEEMED PEDAGOGIC PUBLICATIONS AND PRESENTATIONS

In the most favorable scenario for esteemed academic publishing and presentations, I have adeptly directed the theme of educational scholarship. In collaboration with my students, our research outcomes have been published at numerous distinguished Journals, (please refer to the conference papers list above).

My professional experience also includes the honor of serving as a Resource Speaker for the Final Year Project (FYP) Guide at University of Peshawar since 2012. Additionally, I had the privilege of being invited as a speaker at the Sarhad Institute of Science and Technology (SUIT) in 2015, where I discussed the current and prospective trends in wireless technologies.

CURRICULUM DESIGN

In the realm of curriculum design, I have actively participated in various educational institutions. I am part of the National curriculum committee for designing the course of BS Electronics at National Level. At UoP, I was involved in designing and validating the curriculum for of BS Electronics program. Prior to this, Kohat University of Science and Technology (KUST), I was part of a departmental committee where we worked diligently to validate and propose new curricula for both undergraduate and postgraduate programs in computer Science, aligning with the guidelines of National Computing Education Accreditation Council (NCEAC).

I served on both the Board of Studies and Board of Faculty, playing a significant role in designing the undergraduate and postgraduate curriculum for Electronics, ensuring compliance with the standards set by the Higher Education Commission of Pakistan.

Furthermore, at Iqra National University Peshawar and Sarhad University of Science and Technology Peshawar, I served as a member of the faculty board, responsible for assessing and approving the curriculum.

EXTERNAL EXPERIENCE OF EVALUATING LEARNING AND TEACHING

Moreover, my contributions extend beyond UoP, as I have been actively involved as a member of the Board of Studies and Board of Faculty at various external universities in Pakistan, including Iqra National University and Sarhad University, KUST, Peshawar. As a member of these esteemed bodies, I consistently participate in evaluating learning and teaching to uphold the highest standards of education and foster continuous improvement in academic delivery as per guidelines set by the Pakistan Engineering Council and Higher Education of Pakistan.

SIGNIFICANT LEADERSHIP AND ACADEMIC RELATED MANAGEMENT

PROFESSIONAL DOCTORATE AND PHD LEADERSHIP EXCELLENCE

My expertise in fostering academic excellence and guiding doctoral candidates towards successful research trajectories, I successfully supervised and mentored 5 PhD students, including Dr. Sadiq Akbar (2018), Dr. Muhammad Arshad (2022), Dr. Muhammad Amin (2023), and Dr. Ehsan Raza (2023) and Dr. Muhammad Zubair (2026).

Through my mentorship, these students achieved groundbreaking research outcomes and notable academic accomplishments, affirming my commitment to nurturing the next generation of scholars and contributing significantly to the field of higher education.

LEADERSHIP IN UNIVERSITY PROGRAM DEVELOPMENT

Throughout my academic career, I have been actively involved in shaping and enhancing computer science, Electronics engineering programs, showcasing my dedication to academic excellence and innovation. As a member of the Board of studies, board of faculty, I have had the privilege of contributing to the proposal of new pathways under the existing BS/MPhil and PhD programs. Drawing upon my expertise and passion for advancing education, I have actively participated in the development of undergraduate and graduate programs, as a valued member of the Board of Studies and Faculty from 2012 to 2024. My engagements in these roles have enabled me to make significant contributions to the development of BS, MS, and PhD programs in Electronics, and Robotics.

As an ASRB member, I had the privilege of advising authorities on promoting advanced studies and research within the university.

LEADERSHIP IN FACULTY SELECTION COMMITTEE FOR ACADEMIC APPOINTMENTS

I have had the privilege of serving as a member of the faculty selection committee for prestigious academic appointments at various renowned institutions and technical personnel appointments on various positions. These appointments have contributed significantly to the growth and advancement of the field of Computing and Engineering.

- Dr. Muhammad Arshad, appointed as a Lecturer, Bunir University, 2018.
- Project Director, Project of Implementation of Campus Management Systems, University of Peshawar.
- Manager IT (Hayatabad Medical Complex)

- Network Administration (Hayatabad Medical Complex)
- FM Engineer (Public Service Commission)

REFERENCES

1.	Name:	Prof. Zhili Sun Professor
	Relationship	Supervisor
	Address:	Institute for Communication Systems, University of Surrey, UK.
	Tel:	+44(0)1483 689493
	Email:	z.sun@surrey.ac.uk

2.	Name:	Dr. Haitham Cruickshank Reader
	Relationship	Supervisor
	Address:	Institute for Communication Systems, University of Surrey, UK.
	Tel:	+44(0)1483 686007
	Email:	h.cruickshank@surrey.ac.uk

3.	Name:	Dr. Sana Ul Haq Associate Professor
	Relationship	Colleague
	Address:	Faculty of Numerical and Physical Sciences, University of Peshawar, Pakistan
	Tel:	+92(0)91 9216734
	Email:	s.haq@uop.edu.pk

4.	Name:	Prof. Syed Waqar Shah Head of the Electrical Engineering Department
	Relationship	Teacher
	Address:	Faculty of Electrical and Computer Engineering, University of Engineering and Technology, Peshawar, Pakistan.
	Tel:	+92 345 9087206
	Email:	waqar.shah@uetpeshawar.edu.pk