

# Dr. Syed Talib Abbas Jafri

**Research Interests:** IoT, Computer networks, 5G

<b>Summary</b>	Researcher and teacher with more than ten years of research and teaching experience in an engineering and computer networks, and four years of experience telecom industry. Outgoing and detail-oriented, organized and driven with the innate ability to stay on task. Uses effective and efficient methods of teaching while focusing on the individual needs of each student. Past experience involves managing service provider network of Hybrid Fiber Coaxial as Executive Engineer.	
<b>Education &amp; Certifications</b>	<b>Doctor of Philosophy (Electronic, Faculty of Electrical and Computer Engineering)</b>	3.82/4.0 GPA N.E.D University (2022) <b>Thesis Title:</b> Routing Reliability Improvement in IoT-based MANET
	<b>Masters of Engineering (Telecom)</b>	3.81/4.0 GPA N.E.D University (2013)
	<b>Bachelors of Engineering (Electronics)</b>	3.4/4.0 GPA PAF-KIET (2009)
	<b>Cisco Certified Network Associate (CCNA)</b>	920/1000 Marks Cisco (2011 - 2015)
<b>Current Project</b>	<b>Enabling Proximity Services (ProSe) in NB-IoT LTE networks</b> Working as Consultant to provide technical support for establishing network using USRP as eNodeB/gNodeB and vendor specific COTS UE to establish LTE/5G network and enabling NB-IoT with Relay node working to provide proximity services for the COTS UE	
<b>Experience</b>	<b>N.E.D University, Karachi</b>	Mar 2023 till date Working as Assistant Professor (Contract) in Department of Physics. Responsibilities includes teaching courses in Bachelors and Master's program, supervising and co-supervising postgraduate thesis and performing assigned duties.
	<b>Iqra University, Karachi</b>	Nov 2022 till Mar 2023 Worked as visiting faculty member in Faculty of Engineering, Sciences and Technology (FEST) teaching computer and network related courses in bachelor program of the university.
	<b>N.E.D University, Karachi</b>	August 2017 till Mar 2023 Worked as visiting faculty member in Electronic Engineering department teaching courses in Bachelors and Master's program and constantly engaged in counseling students for their career options.
	<b>SZABIST Karachi</b>	2019 Worked as Visiting faculty member in Computer Science department for teaching course Advanced Computer Networks in MS(CS) program
	<b>Iqra University Karachi</b>	Nov 2013 – May 2022 Worked as Lecturer in “Faculty of Engineering, Sciences and Technology” (FEST) with following responsibilities <ul style="list-style-type: none"><li>Teaching technical courses to bachelor students of engineering and computer science.</li><li>Worked on implementation of OBE for PEC program in coordination with HoD.</li><li>Assisted Editor “Asian Journal of Engineering, Sciences and Technology” in routine tasks for publishing scholarly work, and coordination with HEC officials, authors and universities.</li><li>Supervised final year projects with focus on computer networks.</li></ul>

**Worldcall Telecom Ltd**

Aug 2009 – Nov 2013

Working as Executive Engineer in Technical Operations department, my position is to assist manager in smooth execution of operations, maintenance, testing and commissioning of HFC & Fiber Optic Network. I am assigned as Project Execution Engineer for any new projects related to HFC/FTTx network.

- Funding** 3 Million funding received for Ph.D. from Ministry of Science and Technology (MoST), Govt. of Pakistan
- Publications** 5 international journals, 1 submitted  
4 international conferences, 1 submitted  
2 local conferences  
(See attached sheet “Research Publications”)
- Abilities**
- Networking**  
Switching, Routing on Cisco Devices, hands on experience and Simulation using Cisco Packet Tracer, Dynamips, NS-2, Opnet, Omnet++ and Python
- Computer Languages**  
C, C++, VB, PHP, Python and MATLAB
- Graphics, Publications & Web**  
Photoshop, Corel Draw, Illustrator, Flash, MS Expression Web, Office, LaTeX, Project, Visio
- PLC**  
Programming of Siemens S7-300 & Siemens Logo! using Ladder Logic Diagram
- Network Administration**  
Active Directory, Exchange Server on Windows Platform and Apache, Samba on Red Hat Linux, Ubuntu and Centos
- Professional Projects**
- The Ocean Mall Fixed Network Deployment (HFC)**  
Assign as Project Engineer for new network deployment in Sofitel Tower to offer Internet, Cable TV and VoIP services. Performed Installation, testing and commissioning of HFC outside plant, consulting with Sofitel Management and meeting with CBC/DHA authorities to acquire RoW for trenching and deployment of fiber/coaxial cable beneath the ground
- Plastec Auto Safe & Arif Habib Bank Voice Solution**  
Arif Habib Bank & Plastech Autosafe both provided a extendable Avaya IP Office 500 solutions with 200+ analog and 10 digital extensions with IP Office 402 extendable units. The solution provides both (Executive Office & Production environment) with a greater availability of communication network throughout the Office.
- Academic Projects**
- Designing and Implementing I/O Card for Unmanned Remote Vehicle (FYP)**  
The designing and programming of I/O card using ATmega8 microcontroller for the UGV, which is capable of moving independently from PAF-KIET to Korangi zero point. The I/O card uses shift registers to interface with the sensors and actuators of the vehicle, including steering, wheels and proximity sensors.
- Customizing and applying current available image filters in MATLAB**  
A program is written in MATLAB with complete GUI to perform some basic operations like crop, resize, edit, enhance, change color format, color balance, HSV filtering, different noise and blur filters. A custom filter is also available of grid 5x5 to create desired results.
- Paper on Rain Attenuation in Microwave**  
Discussed and compared 2 different methods of minimizing rain attenuation (Crane Model and ITU-R Model) at different frequencies using MATLAB simulation and depicted results in the paper.

## **Research Publications**

### **In ascending order**

#### **International Journals:**

- [1] F. Qamar, M. N. Hindia, **S. Talib Abbas**, B. D. Kaharudin, and I. S. Amiri, "Investigation of QoS Performance Evaluation over 5G Network for Indoor Environment at millimeter wave Bands," *International Journal of Engineering and Technology*, 2017.
- [2] Hindia, M. N., Qamar, F., **Abbas, T.**, Dimiyati, K., Abu Talip, M. S., & Amiri, I. S. (2019). Interference cancelation for high-density fifth-generation relaying network using stochastic geometrical approach. *International Journal of Distributed Sensor Networks*, 15(7), 1550147719855879.
- [3] **Jafri, STA**, Irfan Ahmed, and Sundus Ali. "Queue-Buffer Optimization Based on Aggressive Random Early Detection in Massive NB-IoT MANET for 5G Applications." *Electronics* 11.18 (2022): 2955.
- [4] Wenhua Z, Qamar F, Abdali T-AN, Hassan R, **Jafri STA**, Nguyen QN. Blockchain Technology: Security Issues, Healthcare Applications, Challenges and Future Trends. *Electronics*. 2023; 12(3):546. <https://doi.org/10.3390/electronics12030546>
- [5] **Jafri, STA**, Irfan Ahmed, Sundus Ali, Jamaiah Yahaya, Faizan Qamar, and Zuriani Hayati Abdullah. 2023. "Split Hop Penalty for Transmission Quality Metrics in a Better Approach to Mobile Ad Hoc Networking (BATMAN) for IoT-Based MANET" *Symmetry* 15, no. 5: 969. <https://doi.org/10.3390/sym15050969>
- [6] Sundus Ali, **S. Talib Abbas**, Ghulam Fiza, Cezar Anicai, Yingbo Zhu, Muhammad Imran Aslam, Muhammad Zeeshan Shakir, et. al., "IoT-enabled, real-time, remote, outdoor environment monitoring system", *Environmental Monitoring and Assessment*, Springer, 2024 (Submitted)

#### **International Conferences:**

- [7] **S. Talib Abbas**, F. Qamar, A. Irfan, B. D. Kaharudin, and M. B. Majed, "Propagation Channel Characterization for 28 and 73 GHz Millimeter-Wave 5G Frequency Band," presented at the IEEE Student Conference on Research and Development (SCORED), Malaysia, 13-14 December, 2017.
- [8] F. Qamar, **S. Talib Abbas**, B. D. Kaharudin, M. N. Hindia, A. B. N. Kamarul, and A. Irfan, "Characterization of MIMO Propagation Channel at 15 GHz for the 5G Spectrum," presented at the IEEE Malaysian International Conference on Communications (MICC2017), Malaysia, 28-30 November, 2017.
- [9] **Abbas, T.**, Qamar, F., Hindia, M. N., Hassan, R., Ahmed, I., & Aslam, M. I. (2020, September). Performance analysis of ad hoc on-demand distance vector routing protocol for MANET. In 2020 IEEE student conference on research and development (SCORED) (pp. 194-199). IEEE.
- [10] **Jafri, S. T. A.**, Ahmed, I., Ali, S., & Qamar, F. (2023). Analysis of AgRED Performance in LR-WPAN Dense Ad-Hoc Networks. *Engineering Proceedings*, 32(1), 5.
- [11] Sundus Ali, **S. Talib Abbas**, M. Imran Aslam, Irfan A., Shoaib Ayob, Zegarra Rodriguez, "Development and analysis of NB-IoT uplink network framework using OMNET++", 19th International Symposium on Wireless Communication Systems, 2024 (Submitted)

#### **Local Conferences:**

- [12] S. Arsalan, **S. Talib Abbas**, and R. Hassan, "Implementation of Ad-hoc on Demand Distance Vector (AODV) routing protocol on End Devices," presented at the International Conference on Computing, Electronics and Electrical Engineering (ICCEEE), Karachi, 2-3 August, 2017.
- [13] S. M. Zia Uddin, **S. Talib Abbas**, S. Aimen Naseem, and Mehr-Un-Nisa, "Recognition of License Plate For Vehicle Identification," presented at the International Conference on Computing, Electronics and Electrical Engineering (ICCEEE), Karachi, 2-3 August, 2017.