CURRICULUM VITAE

I. General Information

Name:	Dr. Samiullah Khan
Date & Place of Birth	February 22, 1982, Lakki Marwat (KPK)
Postal Address:	Institute of Business Management Sciences University of Agriculture, Peshawar, Pakistan.
Home Address:	House 74-C, Police Colony, Near Nasir Bagh Road, Peshawar, KPK, Pakistan
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Educational Qualification:	PhD (Computer Science) October 2017
	MSIT (Gold Medal) August 2008
	BSIT January 2006

II. Honor & Awards

- Awarded Gold Medal – MSIT
- Developed MS level research oriented Network Performance Evolution course at Department of computer Science, University of Peshawar.
- ICT R&D Project Competed (Funded 14.45 Million)
  - Dynamic Bandwidth Aggregation in Heterogeneous Wireless Networks for Mission Critical Applications
  - For Detail Plz visit
    http://ictrdf.org.pk/index.php/component/tprojects/project/79

III. **MS (CS/IT) Thesis Supervised**

A. **MS (CS/IT) Students (Research Completed)**

S/No	Student Name	Thesis Title
1.	Abdus Samad	Performance Analysis of Mobility Ratio Using Transport Layer Protocol in Hybrid Network.
2.	Sajid Anwar	Performance Analysis of SCTP Congestion Control Mechanism
3.	Mohammad Arif	Mobility aware analysis of TCP Variants
4.	Mohammad Saleem	Enhancing the performance of TCP Westwood Congestion Window Algorithm
5.	Abdul Aziz	Comparative Analysis of Real Transport Protocol (RTP) And Stream Control Transmission Protocol (SCTP) Over Motion Pictures Expert Group-4 (MPEG-4).
6.	Shah Faisal	Analysis Congestion Control Mechanism Of TCP Like Behavior Of DCCP With TCP.
7.	Marwan Khan	Performance Analysis Of TCP Like-Datagram Congestion Control Protocol (DCCP) And Stream Control Transmission Protocol (SCTP).
8.	Farooq Faisal	Performance Based Comparative Analysis Of Ad-hoc On demand Distance Vector (AODV), Ad-hoc On demand Multipath Distance Vector (AOMDV) And Dynamic Source Routing (DSR) MANETs Routing Protocols.
9.	Samiullah Khan	Performance Comparison Of Freeze-TCP And TCP-Westwood For Hand Off in Wired-Cum-Wireless Communication Model
10	Sadia Mustafa	Performance Comparison Of TCP-Friendly Rate Control-DCCP with SCTP
11	Miss Huma Ibrar	Quality of Service Assessment of Voice Over Internet Protocol(VoIP) Using Voice Codecs.
12	Aamir Habib	Performance Comparison of Freeze-TCP And TCP-Westwood For Hand-Off In Wired-Cum-Wireless Communication Model.
13	M. Ibrar Khan	Performance Analysis Of RTP Over UDP And DCCP Transport Layers Protocols
14	Shahid	A Performance Comparison of Energy Consumption Of TFRC & TCP_Like DCCP in MANETs.
15	M. Ilyas Khan	Scalability and Mobility Evolution Of M-Dart & AMDOV Routing Protocol in MANETs

16	M.Dawood Zaman	Performance Evaluation Of SMAC, CSMA/CA &TDMA Over AODV Routing Protocol
17	Tariq Habib	Performance Evaluation of Bandwidth Estimation Techniques
18	Hashim Ali	Comparative Analysis of Controlled Delay (Codel) With Deficit Round Robin (DRR) To Overcome Buffer Bloat Problem in Wired Network
19	Ihsanullah	Effect of Mobility Models on AOMDV and M-DART Multipath Routing Protocols in Manets
20	Shabir Ahmed	Cross Layer Contention Aware TCP in Manets
21	Fahiem Khan Khalil	Quality of Service Impact on Deficit Round Robin (DRR) and Stochastic Fair Queuing (SFQ) Mechanism in Wired-cum-wireless Network
22	Mohammad Qaid	Mobility Effects on DSR and M-DART Routing Protocol in Manets
23	Sana Salah din	Variable Buffer Size effect on AODV and DSR Routing protocol in Manets

B. **MS Students (Research in Progress)**

Mohammad Adnan Khattak

Mohammad Asim

Farhanda

Abid Khan

Mohammad Kashif

Noor Zaman

Kashif

IV. **Areas of Strength (MS Subjects)**

- Mobile & Wireless Communications

- Advanced Computer Networks

- Multimedia Services over IP Networks

- Network Security

- Advance Analysis of Algorithm

- Theory of Computation

- Mathematical Modeling & Simulation
- Advance Topic on Computer Networks
- Web Technologies
- Multimedia Communication
- Data Communication and Networks
- Data Structure and Algorithm

V. Course Developed

- **CS745   Network Performance Evaluation**

  I have developed and deliver MS course at the Department of computer science , University of Peshawar (***Mentioned in the Experience Certificate***).

- **Objectives:**

  In this course students will study Analytical, simulation and experimental methods to evaluate and design networks. Will also use and Investigate network management tools and techniques such as OPNET and NS-2.

- **Course Description:**

  This is an advance course in networks and protocols. Analytical simulation and experimental methods should be used to evaluate and design networks and protocols. Investigate network management tools and techniques. OPNET, NS2 .

- **Recommended Readings:**

  Art of Computer Systems Performance Analysis Techniques For Experimental Design Measurements Simulation And Modeling, by Raj Jain (Wiley Computer Publishing, John Wiley & Sons, Inc.)

VI. Courses Taught

- Computer Networks
- Advance Topics in Computer Networks (MS CS/IT)
- Advance Computer Networks (MS CS/IT)
- Data and Network Security
- Network Management and Security (MS CS/IT)
- Theory of Automata and Formal languages
- Broadband Networks (MS CS/IT)

- Introduction to Information Technology
- Data structure and Algorithm
- Advance Analysis of Algorithms (MS CS/IT)
- Data Communication and Networks
- Introduction to Computer
- Object Oriented Programming-1
- Computer Architecture
- Network Performance Evaluation. (MS Course)

VII. **Expertise in Network Simulation Tools (MS/PhD Level Research Tools)**

- **Network Simulator-2 (NS-2)**

  For detail: Please visit (www.isi.edu/nsnam/ns/)

- **Network Simulator-3 (NS-3)**

  For detail: Please visit (https://www.nsnam.org/)

- **OPNET**

  For detail: Please visit (www.opnet.com/)

- **MATLAB**

  For detail: Please visit (https://www.mathworks.com/products/matlab.html)

- **EstiNet Network Simulator and Emulator (NCTUns)**

  For detail: Please visit (www.nsl.cs.nctu.edu.tw/NSL/nctuns.html)

VIII. **Seminar and Training Workshop**

- Conduct Seminar on Topic of "Network Simulator (ns-2)" at Computer Science Department University of Peshawar at February 2011.
- Conduct Seminar on Topic of "NCTUNS" to MS & PhD Scholars at Computer Science Department, University of Peshawar March 2011.

IX. **List of Publications**

Journal Publication

J-1.   Khan, S., Qadir, M. A. (2015). Inter-Path OOS Packets Differentiation Based Congestion Control for Simultaneous Multipath Transmission,

Accepted in International Arab Journal of Information Technology, (Impact factor - 0.582).

J-2   Khan, S., Qadir, M. A, Khan F. A. and Rehman, E. (2017). Adaptive fast retransmission (AFR) with respect to receiver buffer (Rbuf) space in simultaneous multipath transmission (SMT) , Malaysian Journal of Computer Science, (Impact factor - 0.6).

J-3   Khan, S. and Qadir, M. A (2017). Deterministic Time Markov Chain Modeling of Simultaneous Multipath Transmission Schemes, IEEE Access, DOI: 10.1109/ACCESS.2017.2701769, (Impact factor - 3.244).

J-4   Ali, H., Khan, S., & Quaid, M. (2015). Comparative analysis of controlled delay (CoDel) with Deficit Round Robin (DRR) to overcome buffer bloat problem in wired network. International Journal of Current Engineering and Technology, 5(5), 3378-3386 (Global Impact Factor - 6.125)

J-5   Khan, F., Abbas, S., & Khan, S. (2016). An Efficient and Reliable Core-Assisted Multicast Routing Protocol in Mobile Ad-Hoc Network. International journal of advanced computer science and applications, 7(5), 231-242, (impact factor - 1.324).

J-6   Saman Shakir, Samiullah Khan, Liaq Hassain, Matiullah, QoS Based Evaluation of Multipath Routing Protocols in Manets, Advances in Networks. Vol. 5, No. 2, 2017, pp. 47-53. doi: 10.11648/j.net.20170502.13

X.   Conference Proceedings

C-1.   Ahmad, S. Z., Akbar, M. S., & Khan, S. (2012). Adaptive Path Ranking Technique for Maximization of Gains of Bandwidth Aggregation over Heterogeneous Wireless Links, IEEE Seventh International Conference on Broadband, Wireless Computing, Communication and Applications (BWCCA), (pp. 127-134).

C-2.   Khan, S., Ahmed, S. Z., & Qadir, M. A. (2011). Throughput Enhancement of Simultaneous Multipath Communication Using Modified Fast Retransmit (MFR) Scheme. International Conference on Computer

Networks and Information Technology 2011, Department of Computer Science, University of Peshawar-Pakistan, (pp. 9-12).

C-3.   Ahmad, S. Z., Akbar, M. S., & Khan, S. (2011). Scalable service guarantees through stochastic modeling for bandwidth aggregation of multiple wireless links during mobility. In IEEE 3rd International Congress on Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT),(pp. 1-6).

XI.   ICT Research and Development Project (HEC Research Project)

Dynamic Bandwidth Aggregation in Heterogeneous Wireless Networks for

Mission Critical Applications

Start Date	02-May-2011
Duration	24 months
Budget	PKR 14.09 million
Status	Project Successfully Completed
Thematic Area	Telecommunication
Website	http://ictrdf.org.pk/index.php/component/tprojects/project/79

Executive Summary

All over the world, companies are struggling to offer effective distance services (tele-services) with real-time interactivity and trying to come-up with complete domain specific solutions (for example for health and education) in order to reduce the gap between live and distance activity. Use of information and communication technology can play a pivotal role for the provision of tele-education and tele-health services to remote and rural areas. Out of many issues to be addressed for the realization of such tele-services, one of the issues is the provision of a data communication service which supports sustainable data rates, redundancy, and performance as per requirement of the service. There are multiple network interfaces available which can be used (aggregated bandwidth) to realize real-time interactivity for such applications. The project proposes to develop a software based product to be used for bandwidth aggregation as per required quality of the service (QoS). It will develop a system that, using the available wireless and wired network interfaces, provides a dynamically aggregated bandwidth which can be used to offer services requiring sustainable data rates, redundancy, and real time performance. The project will develop (design, optimize, implement- a research activity),

and test a system (a software module- a development activity) for optimal utilization of multiple network interfaces by aggregating the available bandwidth to achieve the required quality of service of the application. The overall system comprises of multiple software components for effective handling and modularization of proposed bandwidth aggregation. This research activity will include the formulation of a multi-constraint optimization of multi-service, multi-server scheduling algorithm with constraints of end to end delay, minimized re-order & buffering overhead. The optimization of the algorithm is planned to be carried out through simulation in Matlab/Simulink. The development portion includes the implementation of the optimized algorithm (a software system) to perform tasks like aggregation and flow state management, augmenting TCP/IP stack with new data structures to accommodate services proposed in the system, tunneling services, and capacity estimation. The developed system will be deployed on a test bed and shall be tested for real time live video and audio applications (distance services with interactivity) for e-Health and distance learning with interactivity. The test bed will be remotely located multi-media equipped PCs with multiple network interfaces to be used to show real-time interactive distance service. The key benefits of this project are given below: •It will develop a robust, maintainable, extendable system with all the standard documentations and open many opportunities for ICT industries to develop their product suite for multiple mode (networked) terminals (MMTs). • Bandwidth Aggregation Router for interactive distance services will be developed. •The system once developed will open numerous opportunities to offer services based on interactive voice and video connectivity for distance services such as interactive e-Health services providers for Patients; interactive distance learning service providers for students; and agriculture service providers for farmers. •The project will benefit all major sectors of industry including telecom, e-government, and health-care. It will also benefit remote branches of commercial banks.