

Muhammad Shoaib, Ph.D.

Assistant Professor, Information System Department
College of Computer and Information Sciences
King Saud University, Saudi Arabia

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Qualifications

Ph.D. (Major in Communication & Information System) in July 2010
Dissertation title: "**Error resilience in scalable video coding extension of H.264/AVC standard.**"
Beijing University of Posts & Telecommunications, Beijing, China

Master of Engineering (Major in Telecommunication) in July 2005
NED University of Engineering & Technology, Karachi, Pakistan

Bachelor of Engineering (Major in Electrical) in October 1995
NED University of Engineering & Technology, Karachi, Pakistan

Work Experience

January 2012 to date (College of Comp. & Info. Sciences - King Saud University)
As **Assistant Professor**, responsible for:

- Explore new research approach incorporating multimedia services in mobile computing and healthcare.
- Supervised graduate students with their research and thesis works at Information System Department.
- Teaching undergraduate courses.

August 2011 to January 2012 (Pakistan Telecommunication Company)
As **Senior Manager (IP Operations Core Karachi-II)**, responsible for:

- Supervising a team responsible for provisioning for managed services in the first and the largest PTCL Commercial Data Centre in Pakistan.
- Supervising a team responsible for Data Centre's facilities (shell), network and security of I.T. fabric, and IBM blade centre system & storage.
- Support up-gradation of network infrastructure plan for IP Operations Core.
- Supervising a team responsible for configuration of core routers, core & access switches, security firewall NSMXpress equipment in IP Core network.

April 2011 to August 2011 (Pakistan Telecommunication Company)
As **Senior Engineer (Broadband Tech Support South - MMBB Core)**, responsible for:

- Member of team responsible for installation & commissioning of Metro Ethernet project at Multimedia & Broadband IP Core Infrastructure in PTCL-South region.
- Support up-gradation of BB network infrastructure plan such as DSLAM, BRAS, VLAN, routing engine, switches and network management / monitoring system.
- Supervising commissioning and troubleshooting activities with Transmission Wing for Corporate CIR / static IPs cases of MMBB South zone Karachi.

May 2005 to February 2007 & August 2010 to March 2011 (IP Operations Core - Karachi Region in PTCL)

As **Assistant Director Engineering**, responsible for:

- As an operational in charge, responsible for O&M, level II support, network security, planning, and executing network expansion at IP Ops Core
- Support expansion, up-gradation of network infrastructure such as routers, switches with associated software, network monitoring and management systems
- Develop service restoration strategy to reduce the impact of network node failure at PIE
- Conduct analysis of global and domestic IP network traffic with performance and take necessary preventive actions at Information Technology Infrastructure (ITI)

June 2001 to April 2005 (Pakistan Internet Exchange - Karachi Region in PTCL)

As **Assistant Divisional Engineer**, responsible for:

- Look after routing and media issues at Pakistan Internet Exchange (PIE)
- Multi Routes Traffic Graphs (MRTG), smoke ping, PIE route server configuration
- PIX firewall, router and switch administration / configuration
- Circuit activation of PIE customers as per Service Level Agreement (SLA)

February 1996 to March 2001 (R. M. International)

- Responsible for networking, maintenance and configuration of PC hardware

Scholarship and Award

- Chinese Government Scholarship for full funded PhD program from 2007 to 2010

Student Supervising and Teaching Experience

- Supervising students for MS thesis/proposal and BS project report at Information Systems Department, CCIS, King Saud University
- Teaching BS courses at Information Systems Department, CCIS, King Saud University
- Supervised graduate students with their research works and thesis at Beijing University of Posts & Telecommunications from 2009 to 2010
- Part time teaching at Adamjee Coaching Centre from 1997 to 1999

Teaching Interest

- eHealth, communication network, fundamental and ethics of information system
- Logic design and switching theory
- Network security

Research Activities

Area of Specialization

- Error resilience and error concealment in video communication
- Establishment of Commercial Data Centre facilities
- Compression techniques for video encoding
- Multi-layer video coding : as scalable video coding
- IP packet based network, infrastructure and network security

Research Interest

- Video communication over IP networks
- Error resilience in video coding
- Multimedia services over IMS.
- Multimedia framework with eHealth application

Reviewer of Technical Paper

- 2nd IEEE Intl Workshop on Multimedia Services and Technologies for E-health (MUST-EH 2012) to be held with IEEE ICME 2012, Melbourne, Australia
- IEEE Transactions on Instrumentations and Measurements (IEEE TIM)
- KSII Transactions on Internet and Information Systems
- ACM Multimedia Workshop
- Springer - Multimedia Tools and Application

Research Publications

- **M. Shoaib, M. Waheed, C. Annie, Streaming Video in Cellular Networks Using Scalable Video Coding Extension of H.264/AVC**, in 4th IEEE International Conference on Wireless Communications, networking and mobile computing, (WiCOM'08), Dalian, China, 2008
- **M. Shoaib, C. Annie, Key Picture Error Concealment Using Residual Motion Copy in Scalable Video Coding**, in IEEE International Conference on Computer Science and Information Engineering (CSIE'09), Los Angeles-California, USA, 2009
- **M. Shoaib, C. Annie, Redundant-Key-Picture Error Resilient Coding with Motion-Copy Error Concealment in Scalable Video Coding**, in 2nd IEEE International Conference on Computer Science and Information Technology (ICCSIT'09), Beijing, China, 2009
- **M. Shoaib, C. Annie, LA-RDO Based Error Resilient Coding Using Multi-Layer Lagrange Multiplier Selection in SVC**, in 12th IEEE International Conference on Advanced Communication Technology (ICACT'10), Phoenix Park, Korea, 2010
- **M. Shoaib, C. Annie, Efficient Residual Prediction with Error Concealment in Extended Spatial Scalability**, in 15th IEEE Symposium on Computers and Communications (ISCC'10), Riccione, Italy, 2010
- **M. Shoaib, C. Annie, Improved MB Mode Prediction in Extended Spatial Scalability with Error Resilient Coding**, in 6th IEEE International Conference on Wireless Communications, networking and mobile computing, (WiCOM'10), Chengdu, China, 2010
- **M. Shoaib, U. Ahmed, A. Alamri, Multimedia Framework to Support eHealth Application**, in Multimedia Tools and Applications, Springer 2013
- F. Aldosri, **M. Shoaib, A. Alamri, A Social Network Framework to Support Relatives of Hospitalized Patients**, IEEE Intl' Symposium on Medical Measurements and Applications, Canada, 2013
- W. Wallayat, M. S. Younis, M. Imran, **M. Shoaib, Performance analysis of Automatic Modulation Classification in multipath fading environment**, 5th IEEE Intl' Conference on Intelligent and Advanced Systems (ICIAS), 2014

Professional Trainings

- May - June 2011, **Establishment of Network and Security Layer of Active IT Fabric for PTCL Managed Data Centre** course by Premier Systems, Pakistan
- March - April 2011, **Data Centre Infrastructure & Facilities, Operations and Troubleshooting** course by Emircom, Pakistan

- February 2007, **Voice over IP (VoIP)** course at Institute of Communication Technologies, Pakistan
- March to April 2006, **Emerging Technologies** course at Karachi Telecommunication College, Pakistan
- October 2005, **Multilayered Switching, Internet Routing & Network Security** course at BITS Communications, Pakistan
- March 2004, **Advance Network Security** course at Institute of Communication Technologies, Pakistan
- February 2004, **Network Security** course at Institute of Communication Technologies, Pakistan
- May 2002, **Cisco PIX Firewall and Network Security** course at SYSNET Education Karachi, Pakistan
- May 2002, **Solaris System Administration and Cisco WAN Manager** course at SYSNET Education Karachi, Pakistan
- May 2002, **ATM Technologies and WAN Switches (BPX and MGX)** course at SYSNET Education Karachi, Pakistan
- April 2002, **Advanced Routing Protocol (BGP and OSPF)** course at SYSNET Education Karachi, Pakistan
- March 2002, **Internetworking (Router Technologies)** course at National Post Graduate Institute of Telecommunication & Informatics, Islamabad, Pakistan

Management Certification

- Excellent performance in **PTCL ADE Management Program in Telecom Management** at Excellence Pakistan in January 2002

Professional Affiliations

- **Pakistan Engineering Council (PEC)** since January 1996 – life time membership
- **Institution of Electrical & Electronics Engineers Pakistan (IEEEP)** since May 1996
- **International Telecommunication Union (ITU)** as TIES member since March 2006
- Member of **VCEG, JCT, JVT** and **MPEG** reflectors since June 2007
- **Senior Member** of International Association of Computer Science and Information Technology (IACSIT) since September 2010