Dr. Muhammad Mubashir Khan

Associate Professor (HEC Approved PhD Supervisor)

Department of Computer Science & IT, NED University of Engineering & Technology, University Road Karachi, 75270, Pakistan
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Objective

To contribute my knowledge and to continue research and teaching in the area of Network and Information Security with special emphasis on modern security applications and the cutting-edge technologies.

Professional Experience

Associate Professor   August 2011 to date

Department of Computer Science & IT NED University of Engineering & Technology, Karachi Pakistan.

Postdoctoral Fellow & Associate Professor (Visiting)   November 2015 to August 2016

Postdoctoral Researcher, Quantum Information Group, University of Leeds, United Kingdom.

Assistant Professor   August 2005 to August 2011

Department of Computer Science & IT NED University of Engineering & Technology, Karachi Pakistan.

Lecturer   August 2002 to August 2005

Department of Computer Science & IT NED University of Engineering & Technology, Karachi Pakistan.

Education

Post-doctorate (Quantum Information)   November 2016

From Quantum Information Group, University of Leeds, UK,

PhD in Computer Science   April 2011

From School of Computing, University of Leeds, UK
Thesis title: High Error-Rate Quantum Key Distribution: Novel Protocols with Improved Eavesdropping Detection.

Masters (by research) in Computer Science & IT   December 2005

From Department of Computer Science & IT, NED University of Engineering & Technology, Karachi, with the thesis title: Effects of Quantum Computing on Cryptographic Hash Functions.

M.Sc. Hons (Telecommunications)   August 2001   (2nd Position, 3.75 CGPA)

Institute of Information Technology, University of Sindh, Jamshoro, Pakistan.

B.Sc. Hons (Telecommunications)   December 1999 (3rd Position, 3.49 CGPA)

Institute of Information Technology, University of Sindh, Jamshoro, Pakistan.

Selected Publications

Journal Papers

1. Muhammad Mubashir KHAN, Asad ARFEEN, Usama AHSAN, "Analysis of achievable distances of BB84 and KMB09 QKD protocols" International Journal of Quantum Information, Vol. 18, Issue 06, Article No. 2050033, 26 Nov. 2020.
2. Muhammad KAMRAN, Muhammad Mubashir KHAN, Tahir MALIK, Asad ARFEEN "Quantum key distribution over free space optic (FSO) channel using higher order Gaussian beam spatial modes" Turk J Elec Eng & Comp Sci, Vol. 28 No. 6, (2020), 3335-3351.
3. M. Najam-ul-Islam Farooqui, Muhammad Mubashir Khan, Junaid Arshad, Omair Shafiq "An empirical investigation of performance challenges within context–aware content sharing for vehicular ad hoc networks", Special Issue: Recent Advances on the Emerging Technologies for Connected Vehicles in Smart Cities, Transactions on Emerging Telecommunications Technologies. 24 October 2020.
4. Kashif Mehboob Khan, Junaid Arshad, Muhammad Mubashir Khan, "Empirical Analysis of Transaction Malleability within Blockchain-based e-Voting", Computers & Security. JCR, IF 3.062. October 2020.
5. Kashif Mehboob Khan, Junaid Arshad, Muhammad Mubashir Khan, "A Simulation and Analysis of Transaction Malleability Attack in Blockchain", Computers and Electrical Engineering, Volume 83, May 2020, 106583.
6. Kashif Mehboob Khan, Junaid Arshad, Muhammad Mubashir Khan, "Investigating Performance Constraints for Blockchain Based Secure e-Voting System", Future Generation Computer Systems (FGCS) Vol. 105, Page 13-26, April 2020.
7. H Jawed, Z Ziad, MM Khan, M Asrar, "Anomaly Detection through Keystroke and Tap Dynamics implemented via Machine Learning Algorithms" Turk J Elec Eng & Comp Sci, Vol. 26 No. 4: 1698 – 1709, July 2018.
8. KHAN, M. M., MURPHY, M. & BEIGE, A. High error-rate quantum key distribution for long-distance communication. New Journal of Physics, 11, 063043, 2009.

Book Chapter

1. Aryba Aslam, Muhammad Mubashir Khan, Junaid Arshad. A Comparative Study of Distributed Ledger Technologies - Blockchain vs. Hashgraph book chapter in *Blockchain for Cybersecurity and Privacy: Architectures, Challenges, and Applications*. CRC Press Taylor & Francis Group, June 8, 2020 (Forthcoming). ISBN 9780367343101.

Conference Papers

1. Junaid Arshad, Mohammad Abdellatif, Muhammad Khan and Muhammad Azad, "A Novel Framework for Collaborative Intrusion Detection for M2M Networks" The International Conference on Information and Communication Systems (ICICS 2018) April 3-5 2018.
2. CLARK, L. A., STOKES, A., KHAN, M. M., WANG, G. and BEIGE, A., Quantum-Enhanced Metrology without Entanglement based on Optical Cavities with Feedback, The 5th International Conference on Photonics, Optics and Laser Technology (PHOTOPTICS 2017). Porto, Portugal, 27th Feb to 1st March 2017.
3. J. A. SHAMSI, R. H. NIAZI, T. WASEEM; KHAN, M. M., Signature-based detection of privilege-escalation attacks on Android, 2015 Conference on Information Assurance and Cyber Security (CIACS), pp. 44--49, 2015, Published by IEEE.

Other Responsibilities

- CoPI National Center for Cyber Security, NED UET.
- Focal person of NED Huawei Authorized Information and Network Academy (HAINA).
- Postgraduate Coordinator, Department of Computer Science & IT, NEDUET.
- Supervising several PhD and MS research projects.

Expert Reviewer of Journals / Conferences

Program Committee (PC) Member:

- Conference on Information Assurance and Cyber Security 2015 (CIACS-2015), technically co-sponsorship of IEEE Computer Society and IEEE Communications Society, Organised by Military College of Signals (MCS), National University of Science & Technology (NUST). 18 December 2015.
- 2nd National Conference on Information Assurance 2013 (NCIA-2013), technically co-sponsorship of IEEE Computer Society and IEEE Communications Society, Organised by Military College of Signals (MCS), National University of Science & Technology (NUST). 11-12 December 2013.

Reviewer (Journals)

- Security and Communication Networks.
- Computer Communications (Elsevier).
- NED University Journal of Research - Applied Sciences. Recognized by HEC in "X" Category.
- Turkish Journal of Electrical Engineering & Computer Sciences.

Reviewer (Conferences)

- Conference on Information Assurance and Cyber Security 2014 (CIACS-2014) to be held on 12-13 June 2014 at the Military College of Signals (MCS), Rawalpindi, Pakistan. 12-14 June 2014
- 3rd IEEE International Conference on Computer, Control & Communication (IEEE-IC4) organised by Pakistan Navy Engineering College (NUST), Karachi, in the collaboration with IEEE and Pakistan Council of Scientific and Industrial Research (PCSIR).
- 1st International Conference on Modern Communication & Computing Technologies (MCCT-2014), Sponsored by Pakistan Science Foundation & Higher Education Commission Pakistan, Organized by Quaid-e-Awam University of Engineering Science & Technology (QUEST).

Workshops (Invited talks / Presentations)

- Organized Seminar on ATM Threats and its Countermeasures in NED University in collaboration with Digital Arrays Pvt. Ltd. February 2, 2018.
- Conducted a workshop on 'Web Technologies for Academic Professionals' organized by QEC - NEDUET.
- Presentation at the Seventh Annual Canadian Quantum Information Students' Conference 2010 (CQISC'10), July 12-16, 2010, University of Calgary, Alberta, Canada.
- The Workshop on Quantum Algorithms, Computational Models, and Foundations of Quantum Mechanics, held from July 23 to July 25, 2010 at the University of British Columbia, Vancouver, Canada.
- The 10th Canadian Summer School on quantum information, held from July 17 to July 30, 2010 at the University of British Columbia, Vancouver, Canada.
- M. M. Khan, A. Beige, J. Xu. Quantum Key Distribution with High Eavesdropping Error-rate using Two-Dimensional Photon States. Fifth Conference on the Theory of Quantum Computation, Communication and Cryptography, Leeds, UK April 2010.
- M. M. Khan, Jie Xu, Applications of QKD Networks for High Performance Distributed Computing, SECOQC, Vienna, October 2008.
- M. M. Khan, Jie Xu, Applications of Quantum Key Distribution, PhD Students Workshop, School of Computing, University of Leeds, UK. (First Prize)

Courses Taught

- Cybercrimes and Security (Postgraduate level course)
- Cryptography and Network Security (Postgraduate level course)
- Wireless & Mobile Communication (Postgraduate level course)
- Scientific Computing (Using MATLAB) (Postgraduate level course)
- Software Engineering (Undergrad level course)
- Network and Information Security (Undergrad level course)
- Wireless Networks & Mobile Computing (Undergrad level course)
- Assembly Language programming (Undergrad level course)
- Object Oriented Programming (Undergrad level course)

Professional Memberships

- ISACA Academic Advocate Membership
- IBM Academic Initiative Membership

Achievements

- Best Researcher Award 2020 NEDUET
- Best Teacher Award of 2015 and 2017 from NED University Alumni Association USA.
- Received Postdoctoral Fellowship from HEC Pakistan for Fall 2015.
- Collaboration with Microsoft under Curriculum Integration Program.

Projects

- Team Lead for the development of Blockchain-based Degree Verification System of NED UET.
- Developed software for Admission System of NED University of Engineering & Technology, Karachi.
- Developed software for Medical Center of NED University of Engineering & Technology, Karachi.
- Developed Campus Message System for NED University of Engineering & Technology, Karachi.
- Comparison among LINUX, WIN-2000 & Novell Netware Specific to network architecture. (B.Sc. (H) Thesis Project)
- Developed software (Global PC & Mobile Access Server) as M.Sc. (H) final year project. A web-based solution for accessing PCs remotely via Internet Web-Browsers & WAP Enabled Mobile Phones.

Personal Details

- Date of Birth: 22nd August 1978
- Marital Status: Married
- Languages: English & Urdu (fluent), French (Novice)
- Hobbies: Travelling, Reading & Writing