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SUMMARY

- Currently working as
 - Associate Professor & Head of the Computer Systems Engineering Department, QUEST Pakistan
 - Director Continuing Education QUEST to organize and conduct different workshops, seminars, conferences and hands-on activities particularly for the engineering students and graduates
 - Coordinator Students Attendance Monitoring Cell, QUEST Pakistan, where we have developed a state of the art online attendance & monitoring system for admin, teachers and students
 - Member of several academic and administrative committees such as Advanced Studies & Research Board, Academic Council, Board of Studies and Board of Faculty for postgraduate and undergraduate programs at QUEST and other universities in Pakistan
 - Member / focal person of several HEC and PEC committees / programs
- Completed PhD from Free University of Berlin, Germany in May, 2012
- Higher Education Commission (HEC) Pakistan's approved PhD supervisor
- 40+ research publications with 150+ citations
- Research supervision of several PhD, master and undergraduate students
- Head of the Organizing Committee, MCCT International Conference
- Workshop Coordinator for the Indigenous On-Campus Training (IOT) workshops for the officers of management and administration cadre at QUEST Nawabshah
- Session chair, keynote, reviewer & TPC member for several international conferences & journals
- Visited several countries including Germany, France, Australia, Italy, Switzerland, Czech Republic, Egypt, Slovenia, Pakistan, etc.
- Worked with several European Union's research projects including WiseBed, FeuerWhere, DES Testbed & Zesan building commissioning project

EDUCATION

Apr 2008–May 2012

PhD (Computer Engineering / Computer Science)

- Institute of Computer Science, Free University of Berlin, Berlin (Germany)
- Thesis Title: Medium Access Control Protocols for Energy and Delay Efficient Applications of Wireless Sensor Networks

Jan 2002–Dec 2004

Master of Engineering (Communication Systems & Networks)

- Mehran University of Engineering & Technology, Jamshoro (Pakistan)
- Thesis Topic: Simulation and Performance Evaluation of Mobile Ad Hoc Network Routing Protocols
- Grade: 4.0 / 4.0 CPGA

Jan 1997–Dec 2001

Bachelor of Engineering (Computer Systems Engineering)

- Mehran University of Engineering & Technology, Jamshoro (Pakistan)
- Final Year Thesis Topic: Implementing MS Exchange Server 2000 on MS Windows Server
- Grade: 1st Division

EXPERIENCE

May 2013–Present

Associate Professor

Department of Computer Systems Engineering, Quaid-e-Awam University of Engineering, Science & Technology, Nawabshah (Pakistan)

- Teaching, research & curriculum design for graduate and undergraduate schemes

Jun 2006–May 2013

Assistant Professor

Department of Computer Systems Engineering, Quaid-e-Awam University of Engineering, Science & Technology, Nawabshah (Pakistan)

- Teaching, conducting research, lab configuration and assessment of undergraduate students

Apr 2008–May 2012 **Research Assistant (to pursue PhD degree)**

Free University of Berlin, Berlin (Germany)

- State of art studies of wireless sensor networks and their MAC protocols and designing and implementation the AREA-MAC protocol, a novel MAC protocol for WSNs
- Enhancing IEEE 802.15.4 MAC protocol for time and energy critical medical applications
- Part of the European Commission's WISEBED project, a joint effort of nine academic and research institutes across Europe

Aug 2011–Dec 2011 **System Specialist**

MACH Connectivity GmbH, Wurzburg (Germany)

- Linux and Windows based servers configuration and administration of multiple data centres spanning across several countries
- Resource high availability, clustering, virtualization with Blade-Centre, VMware, ESX servers, VLANs, load balancers, storage, firewalls, etc.
- 24x7 based monitoring, analysing, automating, backing up and bug fixing
- Planning, conceptualization and implementation of new IT-Systems
- Customer data management with Oracle, Postgres and MySQL

Oct 2006–Mar 2008 **Research Assistant**

Telecommunication Networks Group, Technical University of Berlin, Berlin (Germany)

- State of art studies of wireless sensor networks and their deployments
- Formulating a QoS oriented deployment scheme for in-building sensor deployment
- Part of the German Government's Commissioning project for in-building deployment of sensor nodes

Jan 2004–Jun 2006 **Lecturer**

Department of Computer Systems Engineering, Quaid-e-Awam University of Engineering, Science & Technology, Nawabshah (Pakistan)

- Teaching, conducting research, lab configuration and assessment of undergraduate students

Jan 2003–Jan 2004 **Network Engineer**

Indus Dolphin Internet Service Provider, Hyderabad (Pakistan)

- Configuring, securing, and monitoring Linux and Sun Solaris based servers such as BIND, MRTG, Squid, Apache, mail, RADIUS, Samba, NFS, Firewall, etc.
- Automating the mentioned services via bash scripting
- Configuring and maintaining Cisco routers and switches

Jan 2002–Jan 2003 **Network Engineer & Instructor**

NetBug Internet Service Providers, Karachi (Pakistan)

- Configuring and monitoring Linux and Sun Solaris based servers such as BIND, MRTG, Squid, Apache, RADIUS, Samba, etc.
- Configuring and maintaining Cisco routers and switches
- Conducting ISP training courses for professional trainers

RESEARCH INTERESTS

- Computer Communication & Network
- Wireless Sensor and Ad Hoc Networks
- Internet of Things (IoT)
- MAC & Routing Protocols
- QoS, Energy & Delay Bounded Networks
- IEEE 802.15.4 / ZigBee

SUBJECTS TAUGHT

- Wireless & Mobile Communication
- Computer Communication & Networks
- Wireless Sensor Networks
- Internet of Things (IoT)
- Database and Data Warehouse & Mining
- Network Security
- Computer Architecture & Design
- Microprocessors & Microcontrollers
- Embedded & Distributed Systems
- System Administration
- Digital Signal Processing
- Operations Research

PUBLICATIONS

Book Chapter

- Pardeep Kumar & Mesut Guenes, "*Medium Access Control Protocols in Wireless Sensor Networks: Design Space, Challenges, and Future Directions*", Wireless Sensor Networks and Energy Efficiency: Protocols, Routing and Management, IGI Global Publisher, January 2012.

Journal Publications

- Mushtaque Ahmed Rahu, Pardeep Kumar, Sarang Karim & Azeem Ayaz Mirani, "Agricultural Environmental Monitoring: A WSN Perspective", published in the University of Sindh Journal of Information and Communication Technology (USJICT), 2(1), pp 17-24, January 2018
- Ali Raza Bhangwar, Pardeep Kumar, Adnan Ahmed & Muhammad Ibrahim Channa, "Trust and Thermal Aware Routing Protocol (TTRP) for Wireless Body Area Networks", published in the Springer Wireless Personal Communications Journal, 97(1), pp 349-364, Nov 2017
- Rafia Naz Memon, Shah Zaman Nizamani, Farida Memon, Irfana Memon & Pardeep Kumar, "*A Problem Analysis Method on Soft System Methodology in Requirements Engineering Process*", published in the Quaid-e-Awam University Research Journal 15 (1), 81-90, Jan - July 2016
- Sajida Parveen, Sharifah Mumtazah, Nadeem Naeem, Intesab Hussain and Pardeep Kumar, "*Complete Local Binary Pattern and Spatial Structure of Live Faces*", published in the Science International Journal Lahore Pakistan, 28(6), Page 5219-5222, ISSN 1013-5316, Nov-Dec, 2016.
- Shahzana Memon, Pardeep Kumar, Umair Ali Khan & Tanesh Kumar, "*Performance Evaluation of Mobile Ad-hoc Routing Mechanisms*", published in the Springer Wireless Personal Communications Journal, Volume 85, Issue 2, Page 377-392, November, 2015.
- Rafia Naz Memon, Irfana Memon, Shah Zaman Nizamani, Fiza Siyal & Pardeep Kumar, "*ALL-RE: A Model for Teaching and Learning Requirements Engineering*", published in the Quaid-e-Awam University Research Journal 14 (2), 45-52, July-Dec 2015
- Pardeep Kumar, Irfana Memon, Bhawani S Chowdhry & Mesut Guenes, "*Implementation and Evaluation of AREA-MAC Protocol on the DES-Testbed Platform*", published in the Springer Wireless Personal Communications Journal, Volume 82, Issue 1, pp 595-609, May 2015.
- Irfana Memon, Pardeep Kumar, Nisar A. Memon & Bhawani S Chowdhry, "*Secure Coverage Tree Construction Scheme for Wireless Sensor Networks*", published in the Springer Wireless Personal Communications Journal, December 2014, Volume 82, Issue 1, pp 659-674, May 2015.
- Zakria, Tanesh Kumar, Pardeep Kumar, S.H.A Musavi, Agha Shahriyar & Abdul Khaliq, "*PIC Microcontroller Based Control and Automation of a Poultry Farm*", The New Horizon Journal of the Institute of Electrical and Electronics Engineers Pakistan (IEEEEP) Lahore, Volume 84-85, 2014-15
- Shahzana Memon, Pardeep Kumar & Intesab H. Sadhayo, "*The Classification and Analysis of MANET Routing Protocols*", published in the Quaid-e-Awam University Research Journal of Engineering, Science & Technology, Volume 13, No. 2, Jul-Dec. 2014.
- Tanesh Kumar, Pardeep Kumar, K R Dayo, B S Chowdhry & B Pandey, "*LVTTL IO Standards and Capacitance Scaling Based Energy Efficient AKU Design on FPGA*", published in the NED University Research Journal, Karachi, Pakistan, December 2014.
- Abd Albasset Almamou & Pardeep Kumar, "*Self-Organization Schemes in Different Wireless Networks*", published in the NED University Research Journal, Karachi, Pakistan, December 2014.
- Tanesh Kumar, K R Dayo, Pardeep Kumar, B S Chowdhry & B Pandey, "*Thermal Aware Energy Efficient ALU Design on Different FPGA*", published in the NED University Research Journal, Karachi, Pakistan, December 2014.
- Intesab H Sadhayo, Fareed A Jokhio, Umair A Khan, Pardeep Kumar & Nisar A Memon, "*Preventing Spit with Naive Bayes in VoIP Communication*", published in the QUEST Research Journal 13 (1), 29-35, Jan-Jul 2014
- Pardeep Kumar, Sadia Marwat, M. Ibrahim Channa, Akhtar H. Jalbani & Nisar A. Memon, "*Performance Evaluation of Wireless Sensor Networks with Varying Radio Properties*", published in the Sindh University Research Journal, Page# 91-98, Volume 45, Number A-1, March 2013
- Sadia Marwat, M. Ibrahim Channa, Pardeep Kumar, Akhtar H. Jalbani & Nisar A. Memon, "*Load Balancing Handovers through Femto Cell Cooperation (FCC)*", published in the Sindh University Research Journal, Page# 99-104, Volume 45, Number A-1, March 2013
- Wanod Kumar, Pardeep Kumar and Irfan A. Halepoto, "*Performance Analysis of an Energy Efficient Femtocell Network Using Queuing Theory*", published in the Mehran University Research Journal of Engineering & Technology, Page# 535-542, Volume 32, Number 3, July 2013
- Pardeep Kumar, Iftikhar A. Koondhar, Akhtar H. Jalbani, Agha Shiraz A. Khan, & M. Aamir Bhutto, "*A Study Related to Protocol and Ports Usage for the ISA Server*", published in the Quaid-e-Awam University of Engineering, Science & Technology Research Journal, Volume 11, Number 2, 2012

- Akhtar H. Jalbani, Pardeep Kumar, M. Ibrahim Channa, Anees A. Soomro & Chee Wai Mak, "*Coin Recognition based on Heuristic Segmentation and Image Fusion via Bayesian Approach*", published in the Quaid-e-Awam University of Engineering, Science & Technology Research Journal, Volume 11, Number 2, 2012
- Ali Raza Bhangwar, Pardeep Kumar & Adnan Ahmed, "*Web Susceptibilities and their Prevention in Pakistan*", published in the Quaid-e-Awam University of Engineering, Science & Technology Research Journal, Volume 11, Number 2, 2012
- Pardeep Kumar, Akhtar H. Jalbani, M. Ibrahim Channa, Anees A. Soomro & Iftikhar A. Koondhar, "*Design, Challenges and Future Research Aspects of MAC Protocols for Wireless Sensor Networks*", published in the Quaid-e-Awam University of Engineering, Science & Technology Research Journal, Volume 11, Number 2, 2012
- Anees A. Soomro, Akhtar Hussain, Pardeep Kumar, M. Ibrahim Channa & Nisar A. Memon, "*An Intelligent Assessment Tool for IT Professional*", published in the Quaid-e-Awam University of Engineering, Science & Technology Research Journal, Volume 11, Number 1, 2012
- M. Ibrahim Channa, Akhtar Hussain Jalbani & Pardeep Kumar, "*A Survey of Power Aware Routing Schemes for Mobile Ad Hoc Networks*", published in the International Journal of Computer Applications 58(11):48-50, November 2012, Published by Foundation of Computer Science, New York, USA.
- Pardeep Kumar, Mesut Guenes, Qasim Mushtaq & Bastian Blywis, "*A Real-Time and Energy-Efficient MAC Protocol for Wireless Sensor Networks*", published in the International Journal of Ultra-Wideband Communications and Systems (IJUWBCS), Volume 1, Issue 2, pp 128-142, 2009.

Conference Publications

- Adnan Ahmed, Pardeep Kumar, Ali Raza Bhangwar & M Ibrahim Channa, "*A secure and QoS aware routing protocol for Wireless Sensor Network*", 11th International Conference for Internet Technology and Secured Transactions (ICITST), Dec 5 -7, 2016, Barcelona, Spain
- Ahmed Mujtaba Chang, Wanod Kumar, Bhawani Shankar Chowdhry & Pardeep Kumar, "*Design of Low Cost Mechanomyogram Device for Gesture Detection*", 2nd International Conference on Information and Communication Technologies for Ageing Well and e-Health, ICT4AWE'16, Rome, Italy, April, 2016
- Muhammad Hunain Memon, Wanod Kumar, Azam Rafique Memon, Bhawani S. Chowdhry, Muhammad Aamir & Pardeep Kumar, "*Internet of Things (IoT) Enabled Smart Animal Farm*", 10th IEEE INDIACom Conference on Computing for Sustainable Global Development, New Delhi, India, 16- 18 March, 2016
- M. F. L Abdullah, Bhagwan Das, Mohd Shah Nor Shahida, Siti Nurul Sharina Mat Yaccob, Nurul Nadiyah Shamsuddin & Pardeep Kumar, "*High Performance and High Range Design of 100Gb/s Optical Differential Phase Shift keying Transmitter*", International Conference on Recent Trends in Computer Science and Electronics, Kuala Lumpur, Malaysia, 02 - 03 January, 2016
- Zakria, Tanesh Kumar, Pardeep Kumar, S.H.A Musavi, Agha Shahriyar & Abdul Khaliq, "*PIC Microcontroller Based Control and Automation of a Poultry Farm*", 30th IEEE International Multi-Topic Symposium, Karachi, Pakistan, 25 - 26 March, 2015
- Pardeep Kumar, Mir Saleemullah, Tanesh Kumar & Bishwajeet Panday, "*An Architectural Approach towards the Integration of Different IoT Technologies*", 9th INDIACom Conference on Computing for Sustainable Global Development, New Delhi, India, 11 - 13 March, 2015
- Tanesh Kumar, Bishwajeet Pandey, K R Dayo, B S Chowdhry & Pardeep Kumar, "*Thermal Aware Energy Efficient ALU Design on Ultra Scale FPGA*", 1st International Conference on Modern Communication & Computing Technologies, MCCT'14, Nawabshah, Pakistan, 26 - 28 February, 2014
- Mir Saleemullah Jamali, Pardeep Kumar & Umair Ali Khan, "*Internet of Things: Architecture & Integration with Other Networks*", 1st International Conference on Modern Communication & Computing Technologies, MCCT'14, Nawabshah, Pakistan, 26th to 28th February, 2014
- Tanesh Kumar, Bishwajeet Pandey, K R Dayo, B S Chowdhry & Pardeep Kumar, "*LVTTL Based High Performance Energy Efficient 64-bit ALU Design on FPGA*", 1st International Conference on Modern Communication & Computing Technologies, MCCT'14, Nawabshah, Pakistan, 26-28 February, 2014
- Abd Albasset Almamou & Pardeep Kumar, "*Survey: Self-Organization in Wireless Networks*", 1st International Conference on Modern Communication & Computing Technologies, MCCT'14, Nawabshah, Pakistan, 26-28 February, 2014
- Pardeep Kumar, Sadia Marwat, M. Ibrahim Channa, Akhtar H. Jalbani & Nisar A. Memon, "*Duty Cycle Effect on Wireless Sensor Networks*", 3rd International Conference on Computer & Emerging Technologies, Shah Abdul Latif University, Khairpur Mirus, Sindh, Pakistan, March, 2013
- Sadia Marwat, M. Ibrahim Channa, Pardeep Kumar, Akhtar H. Jalbani & Nisar A. Memon, "*Femto Cell Cooperation for Always Best Connected*", 3rd International Conference on Computer & Emerging Technologies, Shah Abdul Latif University, Khairpur Mirus, Sindh, Pakistan, March, 2013
- Pardeep Kumar, Mesut Guenes, Qasim Mushtaq & Jochen Schiller, "*Performance Evaluation of AREA-MAC: A Cross-Layer Perspective*", 5th International Conference on Mobile Computing and Ubiquitous Networking (ICMU 2010), Seattle, America, April 2010

- Pardeep Kumar, Mesut Guenes, Qasim Mushtaq & Jochen Schiller, "*Optimizing Duty-Cycle for Delay and Energy Bound WSN Applications*", 3rd International Symposium on Applications of Ad hoc and Sensor Networks (AASNET '10), Perth, Australia, April 2010
- Bastian Blywis, Mesut Guenes, Felix Juraschek, Philipp Schmidt & Pardeep Kumar, "*DES-SERT: A Framework for Structured Routing Protocol Implementation*", IFIP Wireless Days, Paris, France, December 2009
- Abd Al Basset Almamou, Raphaela Wrede, Pardeep Kumar, Houda Labiod & Jochen Schiller, "*Performance Evaluation of Routing Protocols in a Real-World WSN*", IEEE Global Information Infrastructure Symposium (IEEE GIIS 2009), Hammamet, Tunisia, June 2009
- Pardeep Kumar, Mesut Guenes, Qasim Mushtaq & Bastian Blywis, "*A Real-Time and Energy-Efficient MAC Protocol for Wireless Sensor Networks*", 6th IEEE International Conference on Wireless and Optical Communications Networks, Cairo, Egypt, April 2009
- Pardeep Kumar, Mesut Guenes, Abd Al Basset Almamou & Intesab Hussain, "*Enhancing IEEE 802.15.4 for Low-latency, Bandwidth, and Energy Critical WSN Applications*", 4th International IEEE Conference on Emerging Technologies, Rawalpindi, October 2008
- Pardeep Kumar, Mesut Guenes, Abd Al Basset Almamou & Jochen Schiller, "*Real-time, Bandwidth, and Energy Efficient IEEE 802.15.4 for Medical Applications*", 7. GI/ITG KuVS Fachgesprach Drahtlose Sensornetze, FU Berlin, Germany, September 2008
- Pardeep Kumar & Mesut Guenes, "*MAC Protocols for Low-latency and Energy-efficient WSN Applications*", Technical Report# TR-B-08-18, FU Berlin, Germany, December 2008

HONOURS

- Awarded PhD scholarship jointly by DAAD Germany and HEC Pakistan
- Obtained 4.0 / 4.0 CGPA in Master of Engineering (M. E.)
- Secured 4th position in B. E. with 84% marks
- Secured 1st position in intermediate with 73% marks in Tharparkar district, Pakistan and was awarded the best student of the college for the year 1995
- Secured 1st position in matriculation with 86% marks in Tharparkar district, Pakistan and was awarded the best student of the school for the year 1993
- Active role in sports, debates, and social activities including the organization of medical camps, cricket tournaments, book fairs, and quiz and debate competitions

REFERENCES

Prof. Dr. Mesut Güneş

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Prof. Dr. Bhawani S Chowdhry

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