

Dr. Nauman Aslam

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Department of Engineering Mathematics and
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Education

Ph.D. Engineering Mathematics, Dalhousie University, 2008.

Master of Engineering in Internetworking, Dalhousie University, 2003.

B.Sc. Mechanical Engineering, University of Engineering and Technology Lahore, 1993.

Research Interests

Energy efficient communication protocols in Wireless Sensor Networks

Clustering algorithms, topology control and medium access control

Security in Wireless Sensor Networks

Health-care and Industrial Control applications of Wireless Sensor Networks

Employment

Assistant Professor, Dalhousie University, August 2008 - Present

Instructor, Dalhousie University, Jan 2006 - July 2008

Research Associate, Internetworking Program, Dalhousie University, Sept. 2003 - Dec 2005

Publications

Refereed Journal Articles

Nauman Aslam, W. Robertson, W. Phillips and S. Sivakumar, "A Multi-Criterion Optimization Technique for Energy Efficient Cluster Formation in Wireless Sensor Networks", Information Fusion Journal ISI/SCIE, JCR (Elsevier Publication on Multi-Sensor Multi-Source Information Fusion), 2010, Article in Press

Nauman Aslam, W. Phillips and W. Robertson, "Algorithms for Relay Node Selection in Randomly Deployed Homogeneous Clustered Wireless Sensor Networks", Ad hoc and Sensor Wireless Networks (AHSWN) ISI/SCIE, JCR, Volume 8, No. 1-2, July 2009, Page(s): 5-20

Nauman Aslam, W. Robertson and W. Phillips, "Effective Location Management of Mobile Actors in Wireless Sensor Actor Networks", Journal of Networks INSPEC/DBLP, Volume 4, No. 1, February 2009, Page(s): 1-8

Nauman Aslam, W. Robertson and W. Phillips, "Performance Analysis of WSN Clustering Algorithms using Discrete Power Control", IPSI Transactions on Internet Research, Volume 5, No. 1, ISSN 1820-4503. January 2009, Page(s): 10-15

Nauman Aslam, W. Phillips and W. Robertson, "Unified Clustering and Communication Protocol for Wireless Sensor Networks", International Journal of Computer Science (IJCS), Volume 35, Issue 3, 2008, Page(s): 249 - 258

Shyamala Sivakumar, W. Robertson M. Artimy, and N. Aslam, "A web-based remote interactive laboratory for Internetworking education", IEEE Transactions on Education, Volume 48, Issue 4, November 2005 Page(s):586 - 598

Refereed Book Chapters

Nauman Aslam, "Optimizing Connectivity in 3D Wireless Sensor Networks", Smart Wireless Sensor Networks, INTECH Publishers, ISBN No. 978-953-307-261-6 (To be Published, Jan. 2011)

Refereed Conference Proceedings

Jason Kenney, Nauman Aslam, W. Robertson and W. Phillips, "Experimental Evaluation of Timing Bounds for Clustering Protocols in Wireless Sensor Networks ", Accepted in IEEE Wireless Communication and Networking Conference (WCNC), March 28 - 31, Cancun, Mexico, 2011

Ali A. Abid, Abduladhem A. Ali and Nauman Aslam "Building an HMI and Demo Application of WSN-based Industrial Control Systems ", 1st International Conference on (Energy ,Power and Control) EPC-IQ'01, Basrah, Iraq, November 30 - December 02, 2010.

Abidalrahman Mohammad, H. Marzi, Nauman Aslam and L. Tawalbeh "Hardware Implementation of Secure hashing Functions on FPGAs for WSNs ", Third International Conference on the Applications of Digital Information and Web Technologies (ICADIWT), Turkey, July 12 - 14, 2010.

Nauman Aslam and W. Robertson, "Distributed Coverage and Connectivity in Three Dimensional Wireless Sensor Networks ", Sixth International Wireless Communication and Mobile Computing? Conference (IWCMC 2010), Caen France, June 28 - July 02, 2010

Nauman Aslam, W. Robertson and W. Phillips, "Clustering with Discrete Power Control in Wireless Sensor Networks ", The Third International Conference on Sensor Technologies and Applications, SENSORCOMM, Athens, Greece, June 18 - 23, 2009

Nauman Aslam, W. Robertson, W. Phillips and S. Sivakumar, "Extending Network Life Using Mobile Actors in Cluster-based Wireless Sensor Networks ", IFIP Conference on Wireless Sensor and Actor Networks (WSAN'08), Ottawa, Ontario, Canada, July 14-15, 2008

Nauman Aslam and W. Robertson "Secure Communication in the Next Generation Internet ", Communication Networks and Services Research (CNSR) Conference, Halifax, May 2008

Nauman Aslam, W. Robertson, W. Phillips and S. Sivakumar, "Relay Node Selection in Randomly Deployed homogeneous Clustered Wireless Sensor Networks ", International Conference on Sensor Technologies and Applications, SENSORCOMM, October 2007, Page(s):418 - 423. (Best Paper Award)

Nauman Aslam, W. Robertson, W. Phillips and S. Sivakumar, "Balancing Energy Dissipation in Clustered Wireless Sensor Networks", Lecture Notes in Computer Science, LNCS 4743, Frontiers of High Performance Computing and Networking - ISPA 2007 Workshops, Page(s): 465-474.

Nauman Aslam, W. Robertson, W. Phillips and S. Sivakumar, "Energy Efficient Cluster Formation Using Multi-Criterion Optimization for Wireless Sensor Networks", IEEE Consumer Communications and Networking Conference CCNC 07, Las Vegas, Jan 2007

Nauman Aslam, W. Robertson, S. Sivakumar and W. Phillips, "Reservation based Medium Access Control Protocol for Wireless Sensor Networks", IEEE Consumer Communications and Networking Conference CCNC 06, Las Vegas, Jan 2006

Nauman Aslam, W. Robertson, W. Phillips, and S. Sivakumar, "Modeling Reservation-based Medium Access Control Protocol in Clustered TDMA Wireless Sensor Networks using Network Calculus " VIPSI Italy, August 2006

Nauman Aslam, J. Ilow, W. Robertson, and S. Sivakumar, "Establishing an Advanced Internetworking Research Laboratory at Dalhousie University", Communication Networks and Services Research Conference, 24-25 May 2006 Page(s):314 - 314

Nauman Aslam, W. Robertson and W. Phillips, "Composite Metric for Quality of Service Routing in OLSR", IEEE Canadian Conference on Electrical and Computer Engineering, 2-5 May 2004, Vol.2, Page(s):759 - 762

Demos/Posters

Trevor Pace and Nauman Aslam, "Remote Monitoring of Diabetic Patients using Wireless Sensor Networks," CMC Microsystems Sensor Network Workshop, October 6 2010.

Nauman Aslam, "Prolonging Network Life Time with Energy Efficient Clustering In Wireless Sensor Networks for Environmental Sensing Applications", 3rd Annual Environmental Research Symposium November 8, 2006, Dalhousie University, Halifax, Nova Scotia, Canada

Invited Talks

Nauman Aslam, Invited talk on "Wireless Sensor Networks for Industrial Control Systems: Research Challenges and Training Opportunities", CMC Microsystems Sensor Network Workshop, October 6 2010

Nauman Aslam, Invited Talk on, "Energy efficient Communication in Wireless Sensor Networks", Graduate Research Academy, Tripoli, Libya. June 16 2009, 1:00 p.m. to 14:30 p.m.

Nauman Aslam, Conference Tutorial on, "Secure Communication in Next Generation Internet", 6th Annual Communication Networks and Services Research Conference, CNSR 2008, 5 May 2008, 1:30 p.m. to 4:30 p.m.

Professional Services

Conference/Workshop Organization Activities

Co-Organizer - The 2nd International Conference on Ambient Systems, Networks and Technologies (ANTS 2011)

Program Co-Chair - Third International Workshop for Smart Homes in Tele-Health (IEEE GLOBECOM 2010 Workshop)

Program Committee Member, CMC Microsystems Sensor Network Workshop, October 6 2010

Program Co-Chair - Second International Workshop for Smart Homes in Tele-Health (PICom-2009)

Technical Program Committees

Technical Program Committee Member - Seventh International Wireless Communication and Mobile Computing Conference (IWCMC 2011)

Technical Program Committee Member - IEEE GLOBECOM 2010 Workshop on Ubiquitous Computing and Networks (UBICoNet 2010)

Program Committee Member, CMC Microsystems Sensor Network Workshop, October 6 2010

Technical Program Committee Member -Conference on Communication Networks and Services Research (CNSR2008,CNSR2009, CNSR2010, CNSR2011)

Technical Program Committee Member - (SENSORCOMM 2009, 2010, 2011) Workshop on U-Healthcare Technologies and Services (2010)

Technical Program Committees

Technical Program Committee Member - Seventh International Wireless Communication and Mobile Computing Conference (IWCMC 2011)

Technical Program Committee Member - IEEE GLOBECOM 2010 Workshop on Ubiquitous Computing and Networks (UBICoNet 2010)

Program Committee Member, CMC Microsystems Sensor Network Workshop, October 6 2010

Technical Program Committee Member -Conference on Communication Networks and Services Research (CNSR2008,CNSR2009, CNSR2010, CNSR2011)

Technical Program Committee Member - (SENSORCOMM 2009, 2010, 2011) Workshop on U-Healthcare Technologies and Services (2010)

Teaching Experience

INWK6112 - Physical and Datalink Control Protocols and Standards (2010 Fall Term)

INWK6115 - Network Architectures - Part II (2010 Fall Term)

INWK6912 - Network Design (2010 Summer Term)

INWK6115 - Network Architectures (2010 Winter Term)

INWK6112 - Physical and Datalink Control Protocols and Standards (2010 Winter Term)

INWK6112 - Physical and Datalink Control Protocols and Standards (2009 Fall Term)

INWK6912 - Network Design (2009 Summer Term)

INWK6112 - Physical and Datalink Control Protocols and Standards (2009 Winter Term)

INWK6112 - Physical and Datalink Control Protocols and Standards (2008 Fall Term)

INWK6912 - Network Design - Part II (2008 Summer Term)

INWK6112 - Physical and Datalink Control Protocols and Standards - Part II (2008 Winter Term)

INWK6112 - Physical and Datalink Control Protocols and Standards (2007 Fall Term)

INWK6112 - Physical and Datalink Control Protocols and Standards (2006 Fall Term)

Technical Expertise

Languages and Tools

- C, C++, nesC
- HTML, XML
- Latex

Protocols

- IP, TCP, UDP, IPSec, IGMP, 802.11, 802.15.4, 6LowPAN, AODV, DSDV

Simulation Tools

- MATLAB, OPNET, NS-2, TOSSIM

Operating Systems

- Windows, Linux, TinyOS, Cisco IOS

Last updated: December 16, 2010
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