

Curriculum Vitae

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1 Personal & Qualifications

1.1 Contact Information

Name Sajid Hussain
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1.2 Academic Qualifications

- Ph.D. in Electrical Engineering
 - University of Manitoba, 2004
 - Advisor: Dr. Robert D. McLeod
 - Dissertation: Performance Evaluation of iSCSI for IP Storage and Transport Protocols
- Master of Science in Electrical Engineering
 - King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, K.S.A, 1995
 - Advisor: Dr. Gerhard F. Beckhoff
 - Thesis: Performance evaluation of runlength limited codes
- Bachelor of Science in Electrical Engineering
 - University of Engineering & Technology (UET) Lahore, Pakistan, 1991
 - Honors Thesis Supervisor: Dr. Tahir Izhar
 - Title: Simulation of Local Area Networks: Ethernet and Token Ring
- Diploma in Computer Sciences
 - National College of Computer Sciences, 1992

1.3 Academic Experience

- **Associate Professor**
 - August 2009 – to-date
 - Computer Science Department, Fisk University
 - Nashville, Tennessee, USA.
- **Associate Professor**
 - July 1, 2009 – July 31, 2009
 - Jodrey School of Computer Science, Acadia University
 - Wolfville, Nova Scotia, Canada.

- **Assistant Professor**
 - August 2005 – June 2009
 - Jodrey School of Computer Science, Acadia University
 - Wolfville, Nova Scotia, Canada.
- **Instructor II (full-time)**
 - August 2004 – July 2005
 - Computer Science Department, University of Manitoba
 - Winnipeg, Manitoba, Canada.
- **Instructor I (full-time)**
 - August 2000 – July 2004
 - Computer Science Department, University of Manitoba
 - Winnipeg, Manitoba, Canada.
- **Adjunct Professor**
 - August 2009 – July 2011
 - Jodrey School of Computer Science, Acadia University
 - Wolfville, Nova Scotia, Canada.
- **Adjunct Professor**
 - July 2007 – August 2011
 - Faculty of Computer Science, Dalhousie University
 - Halifax, Nova Scotia, Canada.
- **Visiting Lecturer**
 - February 2009 – to-date
 - SPIE International Society.
- **Sessional Instructor (part-time)**
 - January 2000 – July 2000
 - Computer Science Department, University of Manitoba
 - Winnipeg, Manitoba, Canada.

1.4 Industry Experience

- Consultant - Research Collaborator
 - August 2007 – July 2010
 - Petroleum Applications of Wireless Systems (PAWS), Cape Breton University (CBU)
 - Sydney, Nova Scotia, Canada.
- Consultant
 - January 2007 – April 2007
 - National Research Council (NRC) Contract, IRAP Program
 - Topic: *Remote Power Transmission via Fibre-optic Cable*
 - Wolfville, Nova Scotia, Canada.

1.5 Professional Membership

1. Member IEEE, Computer and Communication Societies
2. Member, Association for Computing Machinery (ACM), SIGMOD, SIGCOMM, and SIGOPS
3. Member, SPIE
4. Member, IET
5. Member, Sigma Xi
6. Member, Canadian Information Processing Society (CIPS)
7. Member, Canadian AI (CAIAC)
8. Member, Advisory Group, Science & Engineering Research Support Center (SERSC), Korea
9. Member, International Association of Engineers (IAENG)

1.6 Technical Expertise

1.6.1 Languages and Tools

- C, C++, Java, C#, nesC
- XML, XML Schema, XQuery
- Eclipse, Latex

1.6.2 Protocols

- HTTP, HTTPS, TCP, SCTP, UDP, IP, IPsec, iSCSI, 802.11, WiFi, Bluetooth, 802.15.4, 6LowPAN, ZigBee, UPnP, SOAP, HL7

1.6.3 Simulation Tools

- MATLAB, ns-2, jsim, WEKA

1.6.4 Databases

- DB2, Sybase, SQL Server, MySQL

1.6.5 Development Environments

- Linux, Windows, Mac, Solaris, TinyOS, J2EE, J2ME, .NET

2 Research Grants

Amount	Year	Source
\$99,588	2007–10	Research contract with Petroleum Applications of Wireless Systems (PAWS), Sydney, Nova Scotia, <i>Energy-Efficient Multi-hop Communication for Data Dissemination in Wireless Sensor Networks</i> . I am the only PI.
\$15,000	2009–10	Natural Sciences and Engineering Research Council (NSERC) Discovery Grant, <i>Energy Efficient, Secure, and Trusted Middleware for Wireless Sensor Networks</i> . I am the only PI.
\$45,000	2006–09	Natural Sciences and Engineering Research Council (NSERC) Discovery Grant, <i>Middleware for Wireless Sensor Networks</i> . I am the only PI.
\$22,059	2007	NSERC Research Tools and Instruments (RTI). The grant is used to purchase ZigBee compliant sensors for my research in energy efficient data dissemination in sensor networks. I am the only PI.
\$3,433	2007	Audio Stream over Sensor Networks, NS/Summer Employment
\$2,000	2007	Nova Scotia Health Research Foundation (NSHRF) Capacity Research Award
\$3,100	2007	National Research Council (NRC) Contract, IRAP Program, <i>Remote Power Transmission via Fibre-optic Cable</i>
\$12,000	2006	Research Contract - National Research Council, <i>Middleware Database Management Framework for Wireless Sensor Networks</i>
\$2,000	2006	Nova Scotia Health Research Foundation (NSHRF) Capacity Research Award
\$1,253	2006	Summer student job, Human Resources and Skills Development Canada (HRSDC), <i>Energy-efficient Routing for Sensor Networks</i>
\$1,253	2006	Summer student job, HRSDC, Internet Developer: <i>Web-based application for Wireless Sensor Networks</i>
\$2,264	2006	University Research Fund (Article 25.55), <i>Energy-efficient Data Acquisition Techniques to Monitor Environmental Conditions of a Building</i>
\$900	2006	Professional Development Fund (Article 25.10), Participation in Summer School for Wireless Sensor Networks, Ottawa
\$5,000	2005	Equipment Grant to purchase sensors, 40 TmoteSky sensors and 4 TmoteConnect Ethernet Gateways
\$1,500	2005	Department Equipment funds to purchase sensors
\$10,000	2005	Startup funds: Acadia University (Assistant Professor Position)
\$2,000	2004	Computer Science Department, University of Manitoba, for participation in IEEE Conference on Data Engineering (ICDE), Boston, April 2004 and International Conference on Very Large Data Bases (VLDB), Toronto
\$5,000	2000	Startup funds: University of Manitoba (Instructor I Position)

3 Research Contributions

My research contributions (2004–09) are as follows:

<i>Refereed Contribution</i>	before	2006	2007	2008	2009	Total
Edited Special Issues & Proc.	-	-	1	3	-	4
Journal Papers	-	1	2	2	4	9
Book Chapters	-	-	-	3	2	5
Conference and Workshop (archive)	4	15	18	6	5	48
Posters and Demos	1	1	2	-	-	4
Total	5	17	23	14	11	70

<i>Other Scholarly Activities</i>	before	2006	2007	2008	2009	Total
Posters in Pedagogy	-	2	1	-	-	3
Invited Talks and Presentations	-	1	4	3	-	11
Presentations at Intl. Conferences	-	11	6	4	-	21
Short Presentations and Posters	-	2	2	2	-	6

In the following bibliography, the names of **my students** are in **bold** font.

References

3.1 Edited Special Issues and Proceedings

- [1] P. K. Biswas and S. Hussain, “Special issue on information fusion in distributed sensor networks,” *Information Fusion, Elsevier Journal*, **9(3)**, 2008.
- [2] S. Hussain, L. T. Yang, F. Laforest, and C. Verdier, “Special issue on pervasive health care services and technologies,” *International Journal of Telemedicine and Applications (IJTA)*, Hindawi Journal, 2008.
- [3] D. G. Lee, K. P. Arnett, and S. Hussain, “Conference Proceedings,” *International Conference on Information Security Assurance (ISA)*, IEEE, 2008.
- [4] A. B. Waluyo, S. Hussain, and Z. Yu, “Workshop Proceedings,” *International Conference on Intelligent Pervasive Computing (IPC)*, IEEE, 2007.

3.2 Refereed Journals

- [5] S. Hussain, **F. Kausar**, A. Masood, and J. H. Park, “An efficient collusion resistant security mechanism for heterogeneous sensor networks,” *Internet Research Journal (ISI/SCIE)*, Emerald, **19(2)**, 29 pages, accepted Oct. 18, 2008, *Funds*: HEC/Pak. and NSERC/DG, 2009.
- [6] S. Hussain, **A. Azim**, and J. H. Park, “Energy efficient virtual MIMO communication for wireless sensor networks,” *Telecommunication Systems (ISI/SCIE)*, Springer, 21 pages, accepted Oct. 26, 2008, *Funds*: NSERC/DG and CBU, 2009.

- [7] L. T. Yang, L. Xu, J. H. Park, and S. Hussain, “A parallel GNFS algorithm with the improved linbox montgomery block lanczos method for integer factorization,” *Journal of Intelligent Manufacturing* (ISI/SCIE), Springer, 11 pages, accepted Oct. 7, 2008, *Funds*: Dr. Yang, 2009.
- [8] C. Lee, S. Lee, H. G. Kim, and S. Hussain, “Security Analysis of Pure DDP-Based Cipher proper for Multimedia and Ubiquitous Device,” in *Telecommunication Systems*, Springer (SCIE), 2009, *Funds*: Dr. Lee.
- [9] **F. Kausar**, S. Hussain, L. T. Yang, and A. Masood, “Scalable and efficient key management for heterogeneous sensor networks,” *Journal of Supercomputing* (ISI/SCI), Springer, **45(1)**, pp. 44–65, *Funds*: HEC/Pak. and NSERC/DG, 2008.
- [10] S. Hussain, **S. Z. Erdogan**, and J. H. Park, “Monitoring user activities in smart home environments,” *Information Systems Frontiers* (ISI/SCIE), Springer, 11 pages, published online June 21, 2008, *Funds*: Maltepe/Turkey and NSERC/DG, 2008.
- [11] S. Hussain, **A. W. Matin**, and **O. Islam**, “Genetic algorithm for hierarchical wireless sensor networks,” *Journal of Networks (JNW)*, **2(7)**, pp. 87–97, *Funds*: NSERC/DG, 2007.
- [12] S. Hussain and **M. A. Rahman**, “Energy efficient data dissemination for uniform coverage in wireless sensor networks,” *Journal of Interconnection Networks (JOIN)*, **8(4)**, pp. 355 – 367, *Funds*: NSERC/DG, 2007.
- [13] R. D. McLeod, S. Hussain, S. Huang, and M. Laskowski, “Communication issues within HPC grids,” *Intl. Journal of High Performance Computing and Networking*, **4(5-6)**, pp. 248–255, *Funds*: Dr. McLeod, 2006.

3.3 Refereed Book Chapters

- [14] S. Hussain and **O. Islam**, “Genetic algorithm for energy efficient trees in wireless sensor networks,” *Advanced Intelligent Environments*, Springer, **4(1)**, 36 pages, accepted Oct. 2, 2008, *Funds*: NSERC/DG and CBU, 2009.
- [15] S. Hussain and **M. Mallinson**, “Design of wireless sensor network applications, hardware, and software,” *The Handbook of Modern TeleCommunication, 2nd Edition*,, accepted April 18, 2008, *Funds*: NSERC/DG and CBU, 2009.
- [16] S. Hussain and **M. F. Kaleem**, “Multimedia applications for cognitive radio networks,” *The Handbook of Modern TeleCommunication, 2nd Edition*, accepted April 18, 2008, *Funds*: NSERC/DG, 2009.
- [17] S. Hussain and S. M. Dar, “Monitoring and management of congestive heart failure patients,” *Mobile Telemedicine: A Computing and Networking Perspective*, pp. 85–102, *Funds*: NSERC/DG, 2008.
- [18] **F. Kausar**, A. Masood, and S. Hussain, “An authenticated key management scheme for hierarchical wireless sensor networks,” *Recent Advances in Communication Systems and Electrical Engineering (CSEE)*, Springer, **4(1)**, pp. 85–98, *Funds*: HEC/Pak. and NSERC/DG, 2008.

3.4 Refereed Conference and Workshop Proceedings

- [19] **A. Gagarin**, S. Hussain, and L.T. Yang, “Distributed search for balanced energy consumption spanning trees in Wireless Sensor Networks,” in *Proceedings of the the Third International Symposium on Security and Multimodality in Pervasive Environments (SMPE)*, in conjunction with IEEE 23rd International Conference on Advanced Information Networking and Applications (AINA), May 2009, *Funds*: NSERC/DG, CBU, and Dr. Yang.
- [20] S. Hussain, **S. Schaffner**, and **D. Moseychuck**, “Smart Home Telehealth Applications using Wireless Sensor Networks and RFIDs,” in *Proceedings of the Seventh IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2009, *Funds*: NSERC/DG.
- [21] S. Hussain and **M. Shafique**, “Energy Efficient Routing in Wireless Sensor Networks through Virtual Backbone,” in *Proceedings of the Seventh IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2009, *Funds*: NSERC/DG and CBU.
- [22] S. Hussain and **M.S. Rahman**, “Using Received Signal Strength Indicator to Detect Node Replacement and Replication Attacks in Wireless Sensor Networks,” in *SPIE Proceedings on Data Mining, Intrusion Detection, Information Assurance, and Data Networks Security*, Orlando, April 13-17, 2009, *Funds*: NSERC/DG and CBU.
- [23] S. Hussain, **M.S. Rahman**, and L.T. Yang, “Key Predistribution Scheme using Keyed-Hash Chain and Multipath Key Reinforcement for Wireless Sensor Networks, ,” in *Proceedings of the 3rd IEEE International Workshop on Web and Pervasive Security (WPS)*, in conjunction with the Seventh Annual IEEE International Conference on Pervasive Computing and Communications (PerCom), Galveston, Texas, March 9-13, 2009, *Funds*: NSERC/DG and CBU.
- [24] S. Hussain, **M. Mallinson**, J. H. Park, D. G. Lee, and S.-E. Cho, “Discrete radio communication model for energy efficient data dissemination in wireless sensor networks,” in *Proceedings of the Fourth IET International Conference on Intelligent Environments(IE)*. Seattle: IEEE/IET/AAAI, July 2008, *Funds*: NSERC/DG and CBU.
- [25] D.-G. Lee, J.-W. Han, J. H. Park, I.-Y. Lee, and S. Hussain, “Time stamp protocol for smart environment services,” in *Proceedings of the 5th International Conference on Ubiquitous Intelligence and Computing(UIC)*, Norway, June 2008, *Funds*: Dr. Lee.
- [26] S. Hussain, **P. Drane**, and **M. Mallinson**, “Discrete model to estimate lifetime of a wireless sensor network for audio storage,” in *Proceedings of the Sixth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2008, *Funds*: NSERC/DG and NS/SEP.
- [27] J. Slipp, C. Ma, M. Murillo, J. Nicholson, N. Polu, and S. Hussain, “Winter: Architecture and applications of a wireless industrial sensor network testbed for radio-harsh environments,” in *Proceedings of the Sixth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2008, *Funds*: CBU.

- [28] **M. Mallinson**, S. Hussain, and J. H. Park, “Investigating wireless sensor network lifetime using a realistic radio communication model,” in *Proceedings of the International Conference on Multimedia and Ubiquitous Engineering (MUE-08)*. IEEE Computer Society, April 2008, 6 pages, *Funds*: NSERC/DG and CBU.
- [29] S. Hussain, **R. Peters**, and D. L. Silver, “Using received signal strength variation for surveillance in residential areas,” in *Proceedings of the SPIE Conference on Data Mining, Intrusion Detection, Information Assurance, and Data Networks Security*, March 2008, *Funds*: NSERC/DG.
- [30] **S. Z. Erdogan**, S. Hussain, and J. H. Park, “Intelligent monitoring using wireless sensor networks,” in *Proceedings of the 3rd IFIP International Symposium on Network Centric Ubiquitous Systems (NCUS)*. Springer LNCS, December 2007, pp. 389–400, *Funds*: Maltepe/Turkey and NSERC/DG.
- [31] **F. Kausar**, S. Hussain, T. Kim, and A. Masood, “Attack-resilient random key distribution scheme for distributed sensor networks,” in *Proceedings of the 2nd International Workshop on Trustworthiness, Reliability and services in Ubiquitous and Sensor neTworks (TRUST)*. Springer LNCS, December 2007, pp. 1–11, *Funds*: HEC/Pak. and NSERC/DG.
- [32] **F. Kausar**, S. Hussain, J. H. Park, and A. Masood, “A key distribution scheme preventing collusion attacks in heterogeneous sensor networks,” in *Proceedings of the The Third International Symposium on Security in Ubiquitous Computing (SecUbiq)*. Springer LNCS, December 2007, pp. 745–757, *Funds*: HEC/Pak. and NSERC/DG.
- [33] **F. Kausar**, S. Hussain, J. H. Park, and A. Masood, “Secure group communication with self-healing and rekeying in wireless sensor networks,” in *Proceedings of the 3rd International Conference on Mobile Ad-hoc and Sensor Networks (MSN)*. Springer LNCS, December 2007, pp. 737–748 (75/302, 25% acceptance ratio), *Funds*: HEC/Pak. and NSERC/DG, 2007.
- [34] **M. Mallinson**, **P. Drane**, and S. Hussain, “Discrete radio power level consumption model in wireless sensor networks,” in *Workshop Proceedings of the 4th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*. IEEE Computer Society, October 2007, 6 pages, *Funds*: NSERC/DG and CBU.
- [35] **O. Islam**, S. Hussain, and H. Zhang, “Genetic algorithm for data aggregation trees in wireless sensor networks,” in *Proceedings of the Third International Conference on Intelligent Environments (IE)*. IEEE Computer Society, September 2007, 5 pages, *Funds*: NSERC/DG and CBU.
- [36] **S. Erdogan** and S. Hussain, “Using received signal strength variation for energy efficient data dissemination in wireless sensor networks,” in *Workshop Proceedings of 18th International Conference on Database and Expert Systems Applications (DEXA)*. IEEE Computer Society, September 2007, pp. 620–624, *Funds*: NSERC/DG and CBU.
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- [39] —, “Energy efficient query processing in wireless sensor network,” in *Workshop Proceedings of the IEEE 21st International Conference on Advanced Information Networking and Applications (AINA)*. IEEE Computer Society, May 2007, pp. 696–700, *Funds*: NSERC/DG and Acadia-25.55.
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- [41] —, “Energy efficient data routing in wireless sensor network: A mixed approach,” in *Proceedings of the Fifth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2007, pp. 71–75, *Funds*: NSERC/DG and Acadia-25.55, 2007.
- [42] **G. Jaman** and S. Hussain, “Structural monitoring using wireless sensors and controller area network,” in *Proceedings of the Fifth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2007, pp. 26–34, *Funds*: NSERC/DG and SMT Corp.
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- [44] **R. Peters**, **O. Islam**, and S. Hussain, “A quick and energy efficient algorithm to maximize lifetime of wireless sensor networks,” in *Proceedings of the 4th International Conference on Information Technology: New Generations (ITNG)*. IEEE Computer Society, April 2007, pp. 874–875, *Funds*: NSERC/DG and CBU.
- [45] S. Hussain and **O. Islam**, “An energy efficient spanning tree based multi-hop routing in wireless sensor networks,” in *Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC)*. IEEE Communication Society, March 2007, pp. 4383–4388, *Funds*: NSERC/DG.
- [46] **O. Islam** and S. Hussain, “Effect of layers on simulation of wireless sensor networks,” in *Proceedings of the Third International Conference on Wireless and Mobile Communications (ICWMC)*. IEEE Computer Society, March 2007, 5 pages, *Funds*: NSERC/DG.
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- [50] E. Shakshuki, S. Hussain, A. R. Matin, and **A. W. Matin**, “P2P multi-agent data transfer and aggregation in wireless sensor networks,” in *Workshop Proceedings of the 3rd IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*. IEEE Computer Society, October 2006, pp. 645–649, *Funds*: NSERC/DG and NRC.
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- [61] S. Hussain and **A. W. Matin**, “Hierarchical cluster-based routing in wireless sensor networks,” in *IEEE/ACM International Conference on Information Processing in Sensor Networks (IPSN), Work-in-progress*, April 2006, *Funds*: NSERC/DG and Startup.
- [62] S. Hussain, E. Shakshuki, and **A. W. Matin**, “Agent based system architecture for wireless sensor networks,” in *Workshop Proceedings of the 20th IEEE International Conference on Advanced Information Networking and Applications (AINA)*. IEEE Computer Society, April 2006, pp. 296–302, *Funds*: NSERC/DG and Startup.
- [63] R. Eskicioglu, **S. Ahmed**, and S. Hussain, “A querying processing architecture for sensor networks,” in *Workshop Proceedings of the IEEE Wireless Internet Conference (WICON)*. IEEE Computer Society, July 2005, 7 pages, *Funds*: Dr. Eskicioglu.
- [64] **S. Ahmed**, R. Eskicioglu, and S. Hussain, “Querying sensor networks: Techniques, evaluation, and new directions,” in *Proceedings of the International Conference on Computer Communications and Networks (ICCCN) Poster*. IEEE Computer Society, October 2004, *Funds*: Dr. Eskicioglu.
- [65] S. Hussain, D. Zhang, and R. D. McLeod, “iSCSI simulation for the Internet applications,” in *Proceedings of the International Conference on Internet Computing*. IEEE Computer Society, June 2004, pp. 285–289, *Funds*: Dr. McLeod.
- [66] S. Hussain and R. D. McLeod, “Intelligent prefetching at a proxy server,” in *Proceedings of IEEE Canadian Conference in Electrical and Computer Engineering (CCECE)*. IEEE Computer Society, 2000, *Funds*: Dr. McLeod.

3.5 Posters and Demonstrations

- [67] **M. A. Rahman**, **M. Mallinson**, **O. Islam**, and S. Hussain, “Intelligent multi-hop routing for extended network lifetime,” in *Proceedings of the 4th IEEE Consumer Communications and Networking Conference, (CCNC), Demonstration*. IEEE Communication Society, January 2007, *Funds*: NSERC/DG.
- [68] **A. Anwarul**, **O. Islam**, **S. Erdogan**, and S. Hussain, “Energy efficient data dissemination for heterogeneous wireless sensor networks,” in *Poster Presentation in the Fifth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*, May 2007, *Funds*: NSERC/DG and CBU.

- [69] **M. A. Rahman** and S. Hussain, “Query processing in sensor networks with dynamic execution plan refinement,” in *IEEE International Conference on Distributed Computing in Sensor Networks (DCOSS), Poster*, June 2006, *Funds*: NSERC/DG and Startup.
- [70] S. Hussain, I. Khan, and C.-A. Gauthier, “Wireless sensor networks: New emerging technology fostering sustainable development,” in *Proceedings of the International Conference of the Greening of Industry Network (GIN)*, October 2005, *Funds*: Startup.

3.6 Pedagogical Contributions

- [71] S. Hussain, M. Leiter, N. Clarke, and B. Wilson, “Striking a balance between academic and non-academic commitments,” in *Engaged Learning Symposium, Acadia University*, March 2007.
- [72] S. Hussain, “Enhanced learning using physical objects in classroom lectures,” in *The Association of Atlantic Universities (AAU) Teaching Showcase*, October 2006.
- [73] S. Hussain and E. Shakshuki, “Block diagrams to palpable objects,” in *Dalhousie Conference on University Teaching and Learning (DCUTL)*, May 2006.

3.7 Invited Talks and Presentations

- [74] S. Hussain, Invited Talk on “Key Management in Heterogeneous Wireless Sensor Networks,” *Department of Computer Science, St. Francis Xavier University, Antigonish, Canada*, November 28, 2008, 2:00 pm–5:00pm.
- [75] —, Jodrey School of Computer Science Seminar, “Key Management for Security in Wireless Sensor Networks,” in *Jodrey School of Computer Science, Acadia University*, October 17, 2008, CAR 113, 2:30 pm – 3:30pm.
- [76] —, Jodrey School of Computer Science Seminar, “Secure Energy Efficient Data Dissemination in Wireless Sensor Networks,” in *Jodrey School of Computer Science, Acadia University*, October 3, 2008, CAR 113, 3:30 pm – 4:30pm.
- [77] —, Invited Talk on “Energy Efficient Data Dissemination in Wireless Sensor Networks,” in *IEEE International Networking and Communications Conference (INCC)*, Lahore, Pakistan, May 1-3, 2008, 2:15pm–4:15pm.
- [78] —, Dalhousie Computer Science Seminar, “Remote Monitoring using Wireless Sensor Networks,” in *Faculty of Computer Science, Dalhousie University*, May 15, 2008, Auditorium, Computer Science Building, 1st Floor (Room 127), 6050 University Ave., Halifax, 11:30 am - 1:00 pm.
- [79] —, Jodrey School of Computer Science Seminar, “Intelligent Environment Monitoring using Wireless Sensor Networks,” in *Jodrey School of Computer Science, Acadia University*, March 28, 2008, CAR 113, 2:30 pm – 3:30pm.

- [80] —, IEEE Canadian Atlantic Section Communications Society Event, “Energy Efficient Data dissemination in wireless sensor networks,” in *Dalhousie University*, December 3, 2007, 6:00 pm - 7:30 pm, Sexton Campus, DalTech, Room B310.
- [81] —, Jodrey School of Computer Science Seminar, “Energy Efficient Spanning Trees for Data Dissemination in Wireless Sensor Networks,” in *Jodrey School of Computer Science*, Acadia University, October 19, 2007, CAR 113, 2:30 pm – 3:30pm.
- [82] —, “Ubiquitous and Pervasive Computing using Wireless Sensor Networks,” in *High Performance Computing in the Mathematical Sciences*, Acadia University, Wolfville, KCIC Auditorium, July 2007.
- [83] —, Jodrey School of Computer Science Seminar, “Energy-efficient Data Gathering for Wireless Sensor Networks,” in *Jodrey School of Computer Science*, Acadia University, March 2007, CAR 113, 2:30 pm – 3:30pm.
- [84] —, “Wireless sensor network applications,” in *Science Cafe Seminar, Faculty of Science, Acadia University*, September 2006.

3.8 Presentations at International Conferences

- [85] —, “Using Received Signal Strength Indicator to Detect Node Replacement and Replication Attacks in Wireless Sensor Networks,” in *SPIE Conference on Data Mining, Intrusion Detection, Information Assurance, and Data Networks Security*, Orlando, April 13-17, 2009, *Funds*: NSERC/DG and CBU.
- [86] —, “Key Predistribution Scheme using Keyed-Hash Chain and Multipath Key Reinforcement for Wireless Sensor Networks,” in *the 3rd IEEE International Workshop on Web and Pervasive Security (WPS)*, in conjunction with the Seventh Annual IEEE International Conference on Pervasive Computing and Communications (PerCom), Galveston, Texas, March 9-13, 2009, *Funds*: NSERC/DG and CBU.
- [87] —, “Discrete radio communication model for energy efficient data dissemination in wireless sensor networks,” in *the Fourth IET International Conference on Intelligent Environments(IE)*. Seattle: IEEE/IET/AAAI, July 2008.
- [88] —, “Discrete model to estimate lifetime of a wireless sensor network for audio storage,” in *the Sixth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2008.
- [89] —, “Investigating wireless sensor network lifetime using a realistic radio communication model,” in *the International Conference on Multimedia and Ubiquitous Engineering (MUE-08)*. IEEE Computer Society, April 2008.
- [90] —, “Using received signal strength variation for surveillance in residential areas,” in *the SPIE Conference on Data Mining, Intrusion Detection, Information Assurance, and Data Networks Security*, March 2008.

- [91] —, “Discrete radio power level consumption model in wireless sensor networks,” in *SensorFusion Workshop in the 4th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*. IEEE Computer Society, October 2007.
- [92] —, “Genetic algorithm for data aggregation trees in wireless sensor networks,” in *The Third International Conference on Intelligent Environments (IE)*, September 2007.
- [93] —, “Using received signal strength variation for energy efficient data dissemination in wireless sensor networks,” in *Workshop of 18th International Conference on Database and Expert Systems Applications (DEXA)*. IEEE Computer Society, September 2007.
- [94] —, “Energy efficient data routing in wireless sensor network: A mixed approach,” in *The Fifth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR)*. IEEE Communication Society, May 2007.
- [95] —, “An energy efficient spanning tree based multi-hop routing in wireless sensor networks,” in *The IEEE Wireless Communications and Networking Conference (WCNC)*. IEEE Communication Society, March 2007.
- [96] —, “Optimizing a data routing protocol’s influence on communication connectivity,” in *The 4th IEEE Consumer Communications and Networking Conference, (CCNC)*. IEEE Communication Society, January 2007.
- [97] —, “An intelligent multi-hop routing for wireless sensor networks,” in *Intelligent Agents for Wireless Sensor Networks (IA-WSN) Workshop in the IEEE/WIC/ACM International Conference on Intelligent Agent Technology, (IAT)*. IEEE Computer Society, December 2006.
- [98] —, “MITECRO: a protocol for sensor networks to MINimize Total Energy consumption during each ROUND of sensed data gathering,” in *Intelligent Systems Techniques for Wireless Sensor Networks (IST-WSN) Workshop in the Third IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*. IEEE Computer Society, October 2006.
- [99] —, “P2P multi-agent data transfer and aggregation in wireless sensor networks,” in *Intelligent Systems Techniques for Wireless Sensor Networks (IST-WSN) Workshop in the Third IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS)*. IEEE Computer Society, October 2006.
- [100] —, “Design of a web-based application for wireless sensor networks,” in *Web Based Collaboration Workshop in the 17th International Conference on Database and Expert Systems Applications (DEXA)*, September 2006, pp. 319–323.
- [101] —, “Agent-based petroleum offshore monitoring using sensor networks,” in *International Workshop on Self-Adaptable and Autonomic Computing Systems in the 17th International Conference on Database and Expert Systems Applications (DEXA)*, September 2006, pp. 103–107.
- [102] —, “Base station assisted hierarchical cluster-based routing,” in *The International Conference on Wireless and Mobile Communications (ICWMC)*, July 2006.
- [103] —, “Quality of coverage of a wireless sensor network using energy efficient routing with genetic algorithms,” in *The Sixth International Conference on Recent Advances in Soft Computing (RASC)*, July 2006.

- [104] —, “Simulation of energy efficient data dissemination in wireless sensor networks,” in *The Second International Conference on Intelligent Environments (IE)*. IET, July 2006.
- [105] —, “Architecture for smart sensors system for tele-health,” in *Workshop on Health Care and Pervasive Services in the IEEE International Conference on Pervasive Services (ICPS)*. IEEE Computer Society, June 2006.
- [106] —, “Intelligent hierarchical cluster-based routing,” in *Workshop on Mobility and Scalability in Wireless Sensor Networks (MSWSN) in the IEEE International Conference on Distributed Computing in Sensor Networks (DCOSS)*, June 2006.
- [107] —, “Agent-based peer-to-peer layered architecture for data transfer in wireless sensor networks,” in *The IEEE International Conference on Granular Computing (GrC)*. IEEE Computational Intelligence Society, May 2006.

3.9 Short Presentations and Posters

- [108] S. Hussain, “Intelligent and Remote Monitoring for Elderly,” in *Acadia Life Long Learning (ALL)*, Acadia University, April 3, 2008.
- [109] —, “Pervasive and Ubiquitous Computing,” in *Faculty Research Showcase*, Acadia University, February 7, 2008.
- [110] S. Hussain, S. Erdogan and F. Kausar, “Ubiquitous Monitoring Wireless Sensor Networks,” in *Earth Day*, organized by Arthur Irving Academy for the Environment, Acadia University, Poster and Demonstration, April, 2007.
- [111] S. Hussain, “Sensor Network Applications,” in *Faculty Research Showcase*, Acadia University, January 28, 2007.
- [112] S. Hussain and N. Schofield, “Wireless Sensor Networks for Environmental Monitoring,” in *Earth Day*, organized by Arthur Irving Academy for the Environment, Acadia University, Poster and Demonstration, April 21, 2006.
- [113] S. Hussain, “Wireless Sensor Networks,” in *Faculty Research Showcase*, Acadia University, January 12, 2006.

3.10 Dissertation and Thesis

- [114] S. Hussain, “Performance evaluation of iSCSI for IP storage and transport protocols,” *Ph.D. Dissertation, University of Manitoba*, 2004, *Funds*: Dr. McLeod.
- [115] S. Hussain, “Sajid Hussain, Runlength Limited Codes with Error Correction Capabilities” *M.Sc. Thesis*, Electrical Engineering, King Fahd University of Petroleum and Minerals (KFUPM), 1995.

4 Summer Schools and Short Courses

I regularly attend summer schools and short courses to learn new techniques and research directions, which can be used in my courses and research.

4.1 Applied RFID Workshop

I participated in Applied RFID workshop, organized by IEEE Central Indiana Section at IUPUI, Indianapolis, February 21, 2009. I received a certificate of attendance and 5.5 Professional Development Hours (PDHs) for continuing educational requirements associated with Professional Engineering License Continuing Education requirements.

Description: RFID has taken the supply industry by storm. As the dust begins to settle, companies are left with questions on how they can practically use the technology internally. Whether you are using RFID as a part of a compliance mandate or to improve your internal ROI, an in-depth understanding of the technologies capabilities and limitations is vital. This one day workshop discussed and investigated the capabilities of standard, off the shelf RFID solutions at both the HF and UHF levels. The topics covered were as follows: Introduction to AIDC technologies; Basics of RFID; Basic RFID Physics; Tag Placement, Interference, and Range Testing; Programming, Data Comms, Metal Mount, and Antenna Placement; and Sample product testing.

4.2 Health Informatics

I participated in **Applied Health Informatics Bootcamp**, organized by the University of Waterloo Health Informatics at Dalhousie University, Halifax, November 21-23, 2008. It is equivalent to a total of 18 Continuing Education hours.

The bootcamp covered the following topics: Health Informatics Infrastructure; Health Information Management; Intelligent Health Systems; Atlantic Canada e-Health Strategy; Health Informatics Core Competencies; Mathematical Computing in Health; Translational Bioinformatics; Adaptive Games; Community Health Informatics; Digital Imaging, Image Processing and Management; Health Communications; User Interaction and the Human Computer Interface; The Methods and Tools of the Health Informatician; Data Standards and Terminologies; Human Aspects of Health Informatics; Geographical Information Systems and Chronic Disease Planning; and Case Studies.

4.3 Security

As I would like to investigate security issues with respect to energy efficient data dissemination, the following courses were very valuable for my latest research, as shown in my security related publications of 2007 and 2008.

1. 1-Day Tutorial on Computer and Network Security, given by Partha Dasgupta (Arizona State University), organized in conjunction with the 27th IEEE International Conference on Distributed Computing Systems (ICDCS) Toronto, June 2007. The tutorial provided in-depth coverage of current issues and challenges in security systems.

2. Attended an undergraduate course in Security and E-commerce, given by Dr Andre Trudel (Acadia University), in Winter 2007. This course was useful in refreshing the basics of security systems and applications.

4.4 Sensor Networks

My research in sensor networks started in 2004, after attending the 1-Day tutorial on Queries in Sensor Networks. Then, to remain up-to-date, I attended a 3-day workshop in 2005 and a summer school in 2006. As my PhD research was in transport protocols for storage area networks, these tutorials were very valuable in refining my research in sensor networks, which is now supported by several National research grants and research contracts.

1. MITACS Summer School in Wireless Sensor Networks, Ottawa, August 14 – 16, 2006. The summer school was given by leading researchers in sensor networks such as Ivan Stojmenovic (University of Ottawa), Wendi Heinzelman (University of Rochester, famous for her seminal work of LEACH), Jens Palsberg (UCLA), Luis R. Pereira (ZigBee, Industry), and Michel Barbeau (Carlton University). The course provided an in-depth coverage of my research area, and the contents were very valuable for my graduate course in sensor networks.
2. 3-Day Crossbow Training Workshop, San Jose, CA, July 2005. This workshop was very useful in learning sensor network development tools and techniques from the staff of the leading manufacturer in sensor networks. These development techniques and tools were in my research and teaching courses.

4.5 High Performance Computing

AARMS/ACENet/MITACS Summer Workshop on High Performance Computing in the Mathematical Sciences, Acadia University, Wolfville, July 9 – 14, 2007. The workshop was given by leading researchers such as Virendra Bhavsar (UNB, ACENet), Greg Lukeman (Chief Technology Officer ACENet), Hugh Chipman (Acadia University), Jim Himer (Chief Technologist: HPTC/Grid, Sun Microsystems), Phil Bording (Memorial University), Ruth Shaw (UNB), and Duane Currie (Acadia University).

4.6 Participation in Non-technical Sessions

I actively participate in general professional development programs because these programs assist in maintaining a balance in teaching, scholarly, and service related activities.

4.6.1 Acadia University, 2006 – to-date

2008

1. Good Neck and Back Health, Apr. 2, 2008, Darren Booth
2. Organizing Your Space, Mar. 26, 2008, Julie Hilchie
3. The Art of Power Eating, Mar. 12, 2008, Sherry Veinotte, EKM Community Health Center

4. Goals and their relation to emotional problems, Feb. 27, 2008, Peter Horvath
5. Dance, Feb. 13, 2008, Courtney Smith
6. Dealing with difficult people, Feb. 6, 2008, Steve Hassapis
7. Positive Attitudes, Jan. 30, 2008, Scott Rausch
8. Food Choices that make us better “fit” for our environment, Jan. 23, 2008, Matt Durant
9. Understanding Food Labels, Jan. 9, 2008, Sherry Veinotte, EKM Community Health Center

2007

1. Retirement: You’ve looked at the dollars but what about the sense? Nov. 21, 2007, Terry Lane
2. Why Music Matters in your Life: Strategies from Music Therapy , Nov. 14, 2007, Paul Lauzon
3. Stand Up and Be Heard: Control Your Nerves During Public Speaking, Nov. 7, 2007, Greg Deveau
4. MBTI (Myers Briggs Type Inventory) categories for collaborative working, Oct. 3, 2007, Terry Lane

2006

1. Stress Busters, 2006
2. Wikis in Education, 2006
3. Managing the Electronic Classroom, 2006
4. Personalities and Learning, 2006

4.6.2 University of Manitoba, 2000 – 2005

1. Teaching Techniques
2. Course Construction & Organization
3. Teaching Philosophies Reconsidered
4. Creating Teaching
5. Accent Modification
6. EndNote: Plugin & Publish
7. Conflict Resolution in the Classroom
8. Developing your Curriculum Vitae

9. Effective Questioning within the classroom
10. Introduction to Critical Thinking
11. Creating iMovies with a Message
12. Teaching Workshop - Computer Science Department

5 Teaching

Since January 2000, I have taught **16** distinct courses and **41** lecture sections. During my three years at Acadia University, I have received very good teaching evaluations from my students, for “overall instructor” question my average score is **4.0/5.0** for all courses. I am always enthusiastic and available for my courses, as shown in my student evaluations: knowledge 4.2/5.0, enthusiasm 4.6/5.0, approachability 4.5/5.0, openness 4.5/5.0, and availability 4.4/5.0. Similarly, at the University of Manitoba, my average score was 3.18/4.0, based on 750 students in 23 courses, where department average was 2.72/4.0 (1997 – 2004). My class sizes have varied from 4 students (graduate courses) to 100 students (introductory and service courses). I have taught courses at all levels: graduate, special topics, senior year, core, elective, introductory, and service courses. The details of my courses are as follows:

Level	Course	Lectures
Graduate	Distributed Databases	2
	Wireless Sensor Networks	2
Fourth Year	Database Implementation	3
	Advanced Computer Architecture	3
	Computer Networks	2
Third Year	Software Engineering	5
	Database Concepts and Usage	4
	Operating Systems	1
	Distributed Computing	1
	Data and Computer Communication	1
	Analysis of Algorithms	2
Second Year	Object Orientation	2
	Data Structures and Algorithms	1
First Year	Introductory Programming II	4
	Introductory Programming I	4
Non-major	Computer Usage II	4

5.1 Courses at Acadia University

Since September 2005, I have taught 8 distinct courses and 12 lecture sections in the Jodrey School of Computer Science, Acadia University.

1. COMP 5113 – **Graduate Course - Wireless Sensor Networks** (Sep. 2006, Sep. 2008)
2. COMP 4343 – Computer Networks and Distributed Systems (Jan. 2008)
3. COMP 4223 – Advanced Computer Architecture (Jan. 2006, Jan. 2007, Jan. 2008)
4. COMP 3713 – Operating Systems (Jan. 2006)
5. COMP 3403 – Analysis of Algorithms (Sep. 2007, Sep. 2008)
6. COMP 3343 – Data Communications and Computer Networks (Sep. 2007)
7. COMP 1123 – Computer Programming 2 (Sep. 2006)
8. COMP 1113 – Computer Programming 1 (Jan. 2007)

5.2 Courses at the University of Manitoba

August 2000 – August 2005, I taught 11 distinct courses and 29 lecture sections in the Computer Science Department at the University of Manitoba, Winnipeg, Manitoba, Canada.

1. 074.783 – **Graduate Course - Distributed Database Systems** (Sep. 2004 and Jan. 2004)
2. 074.438 – Database Implementation (Jan. 2004, Jan. 2003, and Jan. 2002)
3. 074.430 – Computer Networks (Sep. 2001)
4. 074.338 – Database Concepts & Usage (Sep. 2003, Sep. 2002, Sep. 2001, and Sep. 2000)
5. 074.335 – Software Engineering I (Jan. 2004, May 2003, Jan. 2002, May 2001, Jan. 2001)
6. 074.301 – Distributed Computing (Jan. 2005)
7. 074.215 – Object Orientation (Jan. 2005 and Jan. 2004)
8. 074.214 – Data Structures and Algorithms (Sep. 2003)
9. 074.127 – Introductory Computer Usage II (Jun. 2001, Jan. 2001, Jun. 2000, Jan. 2000)
10. 074.102 – Introductory Java Programming II (Jan. 2003, Jan. 2002, and Jan. 2001)
11. 074.101 – Introductory Java Programming I (Sep. 2004, Sep. 2000, May 2000)

5.3 Teaching Experience

As I have taught various courses, my teaching experience can be very valuable to the department. There are usually a few instructors who are comfortable in teaching these diverse types of courses, as given below:

- Wireless Sensor Networks; Mobile and *Ad hoc* Networks
- Distributed Systems; Distributed Computing; Computer Networks; Data Communication; Telecommunication Systems
- Pervasive and Ubiquitous Computing; Mobile Computing
- Internet Applications; Web Applications; Mobile Applications
- Security for Wireless Networks; Internet and Network Security
- Database Design; Database Implementation; and Distributed Databases
- Algorithms 1; Algorithms 2; Data Structures
- Software Engineering 1; Software Engineering 2; Object Oriented Programming & Design
- Artificial Intelligence 1; Artificial Intelligence 2

- Computer Architecture 1; Computer Architecture 2; Embedded Systems
- Introduction to Programming 1; Introduction to Programming 2.
- Service related courses for non-computer science major

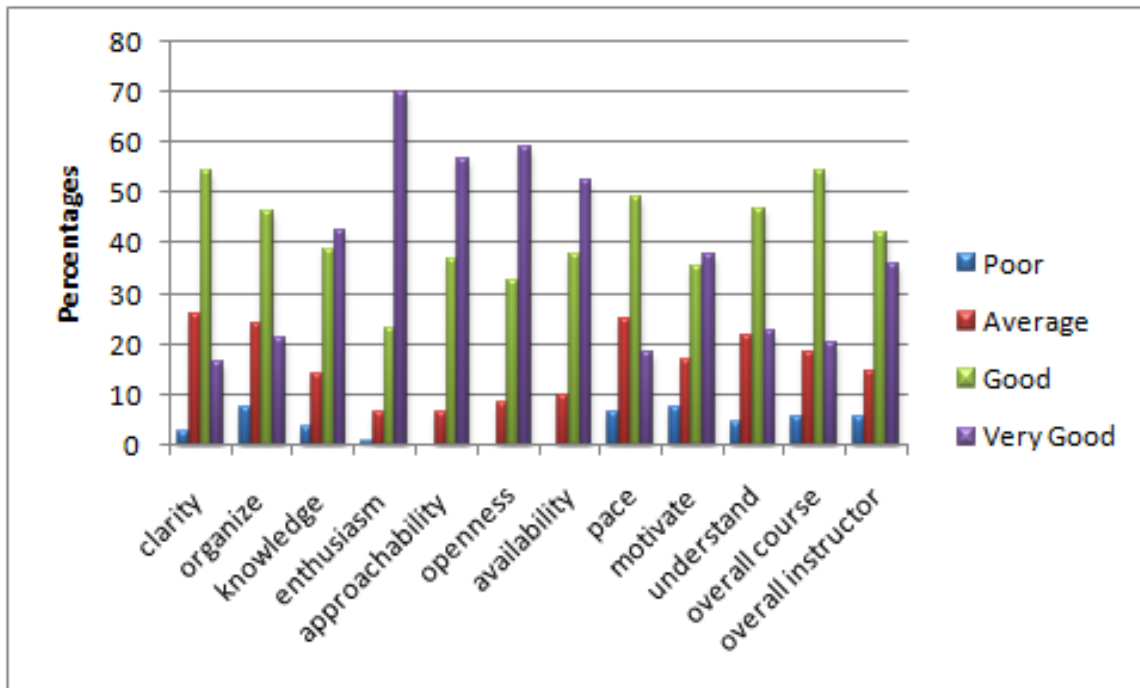
5.4 Teaching Activity Assessment

5.4.1 Course Evaluations 2005-08

I have received 4.0/5.0 (average) for “overall instructor” for all the courses. These results show my passion for teaching: knowledge 4.2/5.0, enthusiasm 4.6/5.0, approachability 4.5/5.0, openness 4.5/5.0, and availability 4.4/5.0, as they are very good scores with respect to Computer Science Department average¹.

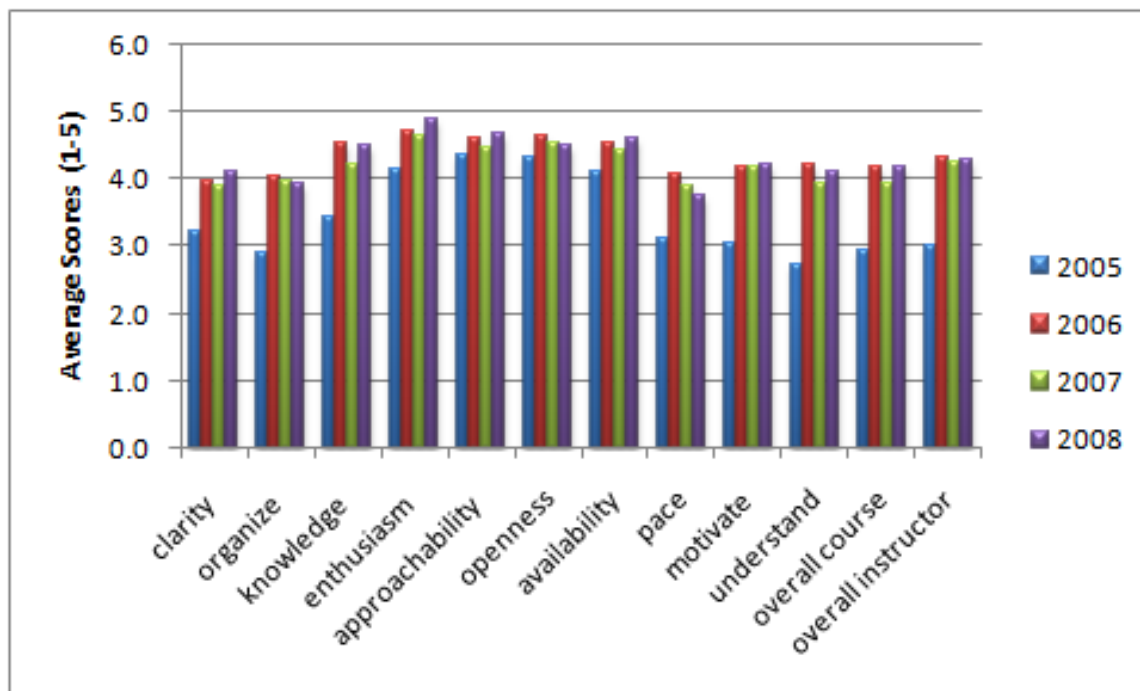
	very poor (1)	poor (2)	average (3)	good (4)	very good (5)	Average (1-5)
clarity	1 (0.9%)	3 (2.8%)	28 (25.7%)	59 (54.1%)	18 (16.5%)	3.8
organize	1 (0.9%)	8 (7.4%)	26 (24.1%)	50 (46.3%)	23 (21.3%)	3.8
knowledge	1 (0.9%)	4 (3.7%)	15 (13.9%)	42 (38.9%)	46 (42.6%)	4.2
enthusiasm	0	1 (0.9%)	7 (6.4%)	25 (22.9%)	76 (69.7%)	4.6
approachability	0	0	7 (6.4%)	40 (36.7%)	62 (56.9%)	4.5
openness	0	0	9 (8.3%)	35 (32.4%)	64 (59.3%)	4.5
availability	0	0	10 (9.9%)	38 (37.6%)	53 (52.5%)	4.4
pace	1 (0.9%)	7 (6.5%)	27 (25.0%)	53 (49.1%)	20 (18.5%)	3.8
motivate	3 (2.8%)	8 (7.4%)	18 (16.7%)	38 (35.2%)	41 (38.0%)	4.0
understand	5 (4.5%)	5 (4.5%)	24 (21.6%)	52 (46.8%)	25 (22.5%)	3.8
overall course	2 (1.8%)	6 (5.5%)	20 (18.3%)	59 (54.1%)	22 (20.2%)	3.9
overall instructor	2 (1.8%)	6 (5.5%)	16 (14.7%)	46 (42.2%)	39 (35.8%)	4.0

¹Although in tabular data I include all five options (*very poor*, *poor*, *average*, *good*, and *very good*), the *very poor* option is ignored in bar charts in order to avoid unnecessary tiny bars.



5.4.2 Course Evaluations on Yearly Basis

	2005-06	2006-07	2007-08	2008-09	Average
clarity	3.2	4.0	3.9	4.1	3.8
organize	2.9	4.0	4.0	3.9	3.8
knowledge	3.4	4.5	4.2	4.5	4.2
enthusiasm	4.2	4.7	4.6	4.9	4.6
approachability	4.4	4.6	4.5	4.7	4.5
openess	4.3	4.6	4.5	4.5	4.5
availability	4.1	4.5	4.4	4.6	4.4
pace	3.1	4.1	3.9	3.8	3.8
motivate	3.1	4.2	4.2	4.2	4.0
understand	2.7	4.2	3.9	4.1	3.8
overall course	2.9	4.2	3.9	4.2	3.9
overall instructor	3.0	4.3	4.2	4.3	4.0



5.5 Teaching Awards or Nominations

In 2005, I was nominated for University 1 Teaching Excellence Award at the University of Manitoba. I received letters of appreciation from the Dean, Faculty of Science and the Director of University 1 Studies.

5.6 Pedagogical Conferences and Seminars

In order to acquire excellence in teaching, I actively take part in teachers' development and training programs, where we learn and refresh effective teaching and learning techniques. Further, we get an opportunity to meet colleagues from different disciplines, which could bring new ideas and innovative techniques for effective teaching.

1. Member Adjudication Committee, the Association of Atlantic Universities (AAU) Teaching Showcase, Learning in a Global Society, Wolfville, October 20, 2007, reviewed 30 applications on the following themes: 1) Cultural Awareness, 2) The First Year Experience, 3) Embracing Diversity, and 4) Learning Technologies.
2. Organized a session on "Striking a balance between academic and non-academic commitments," in *Engaged Learning Symposium*, Acadia University, Wolfville, March 15–16, 2007, participants: Michael Leiter, Nancy Clarke, and Brian Wilson.

In academics we are expected to excel in teaching, research, and service. Whereas our non-academic commitments include giving some time to us, to our immediate and extended family members, and to our community at large. Although it is relatively easy (or tempting) to focus on a few responsibilities, the struggle in keeping a balance between all of these commitments is very rewarding. If we keep a proper

balance between teaching, research, and service, these academic commitments reinforce one another; in other words, they become complementing to one another rather than competing. Similarly, giving proper time to oneself - body, mind, and spirit, to our family members and close friends, and to our neighbors and community at large, we enjoy high quality living. As we need a village to raise a child, we need a community to achieve our objectives.

In this workshop, we shared ideas and practices to enhance teaching and learning in our lectures and courses, as well as maintaining high quality publications and research grants. Further, we discussed how to enjoy healthy eating and active lifestyle, and also how to celebrate achievements with our family members, colleagues, and community.

3. Poster presentation on “Enhanced learning using physical objects in classroom lectures,” in *The Association of Atlantic Universities (AAU) Teaching Showcase*, October 2006.
4. Organized a workshop session on “Block diagrams to palpable objects,” in *Dalhousie Conference on University Teaching and Learning (DCUTL)*, May 2006.

6 Supervision

I have supervised students for doctoral dissertations, graduate theses, undergraduate honors theses, and summer projects; the summary is as follows:

Type of Supervision	Completed	In progress	Total
Ph.D. Students	-	2	2
M.Sc. Students	2	6	8
Visiting Scholars/Scientists	3	-	3
B.Sc. Honors Thesis	-	1	1
Coop Students	2	-	2
Project Students	4	-	4
Summer Projects	6	-	6

6.1 Ph.D. Students

1. *Firdous Kausar* (expected graduation 2009), Key Management and Secure Group Communication in Wireless Sensor Networks, co-supervision with Dr. Ashraf Masood; degree granting institution is National University of Science and Technology (NUST) Pakistan; research is partly supported by Scholarship of Higher Education Commission (HEC) Pakistan, contributions: [9, 18, 33, 37, 31, 32].
2. *Musfiq Rahman* (expected graduation 2012), Middleware for Secure Aggregation in Wireless Sensor Networks, co-supervision with Dr. Srinivas Sampalli; degree granting institution is Dalhousie University, Canada; research is partly supported by NSERC Discovery grants of Dr. Hussain (50%) and Dr. Sampalli (50%), as well as Dalhousie Graduate Fellowship.

6.2 M.Sc. Students

1. *Obidul Islam* (graduated March 2008), Energy Efficient Data Gathering Using Spanning Trees for Wireless Sensor Networks, the thesis was nominated for *Governor General Award*, partly supported by NSERC/DG and CBU contract, contributions: [14, 35, 45, 46, 48], working at IBM Ottawa (August 2008).
2. *Abdul W. Matin* (graduated May 2006), Energy-Efficient Intelligent Hierarchical Cluster-based Routing for Wireless Sensor Networks (WSNs), the thesis was nominated for *Governor General Award*, partly supported by NRC contract and Acadia Startup funds, contributions: [11, 43, 53, 58, 61, 62], working at Statistics Canada (August 2008).
3. *Azim Anwarul* (expected graduation 2009), Energy Efficient Virtual MIMO Communication for Wireless Sensor Networks, partly supported by NSERC/DG and CBU contract, contributions: [6], co-op student, completing the first work term at RIM, Waterloo (September - December 2008).
4. *Mubashsharul I. Shafique* (expected graduation 2010), Robust Energy Efficient Communication in Wireless Sensor Networks using Fuzzy Logic and k-connected dominating set, partly supported by NSERC/DG and CBU contract, and contributions: [21].

5. *Md Shafayat Rahman* (expected graduation 2010), Key Management in Wireless Sensor Networks, partly supported by NSERC/DG and CBU contract, and contributions: [23, 22].
6. *Ashif Yousuf* (expected graduation 2010), Intrusion Detection and Surveillance using Wireless Sensor Networks, partly supported by NSERC/DG and CBU contract.
7. *Scott Schaffner* (expected graduation 2009), co-supervision with Dr. Haiyi Zhang, Telehealth for Assisted Living, and contributions: [20].
8. *Yifei Jiang* (expected graduation 2010), co-supervision with Dr. Haiyi Zhang, Water Stream Monitoring using WSNs, partly supported by NSERC/DG.

6.3 Visiting Scholars and Scientists

1. *Dr. Andrei Gagarin* (September 2007 - August 2008), Distributed Spanning Trees for Energy Efficient Communication in Wireless Sensor Networks, contributions: [19].
2. *Senol Z. Erdogan* (February – June 2007), Energy-efficient Data Gathering in Sensor Networks, Ph.D. Student, Turkey, contributions: [10, 30, 36], working as Assistant Professor in Maltepe University, Turkey.
3. *Firdous Kausar*² (March – August 2007), Security and Key Management in Sensor Networks, Ph.D. Student, National University of Science and Technology (NUST), Pakistan, contributions: see under Ph.D. students category, working as Lecturer at NUST Pakistan.

6.4 B.Sc. Honors Thesis

1. *Md Ashiqur Rahman*, Energy Efficient Query Processing in Wireless Sensor Networks.

6.5 Coop Students

1. *Patrick Drane* (May 1 – Aug. 31, 2007), Funds: CBU/PAWS, contributions: [34].
2. *Gabriel Rigg* (May 1 – Aug. 31, 2007), Funds: NS/SEP (50%) and CBU/PAWS (50%).

6.6 Undergraduate Summer Students

1. *Richard Peters* (2006, 2007), Energy-Efficient Flow-based Centralized Networks for WSNs, Funds: HRSDC and NSERC-DG, contributions: [44].
2. *Mike Mallinson* (2006, 2007), Localization and Web-based Network Management, Funds: HRSDC and NSERC-DG, contributions: [28, 34, 67].
3. *Md Ashiqur Rahman* (2006, 2007), Routing, Coverage, Connectivity, and Query Processing in WSNs, Funds: NSERC/DG, Acadia Research Award 25.55, and Acadia Startup funds, contributions: [12, 38, 39, 40, 41, 47, 49].

²After the departure of Ms. Kausar in August 2007, I continue to supervise her Ph.D. dissertation (September 2007 – to date) as a **co-supervisor**, Dr. Ashraf Masood (NUST, Pakistan) is primary supervisor.

4. *Alexis Morris* (2006), Web-based Environmental Monitoring Using Sensor Networks, Funds: NSERC-DG and NRC contract.
5. *Yadi Tang* (2006), Using J-Sim for Energy-Efficient Routing in WSNs, Funds: NSERC-DG.
6. *Nick Schofield* (2006), Web-based Monitoring for WSNs, Funds: NRC contract, contributions: [51].

6.7 Project Course

1. *Bi Chen* (2008), Smart Applications using gPhone
2. *Richard Peters* (2007–08), Surveillance and Monitoring using Wireless Sensor Networks.
3. *Mike Mallinson* (2007–08), Web-based Monitoring Application for Smart Village.
4. *Guodong Chen* (2006–07), Web-based Application for Query Streams.

6.8 External Reader - Ph.D. Students

1. Francis Adipoju, *Design and Implementation of Algorithm for Tracking Ingestible Telemetry Capsule in Real Time*, College of Informatics & Electronics, University of Limerick, Ireland, November 2007. I was invited to Limerick, Ireland to conduct the oral examination.
2. Piya Techateerawatt, *Key distribution and distributed intrusion detection systems in wireless sensor networks*, Computer Science, RMIT University, Australia, October 2007.

6.9 Ph.D. Examining Committee

1. M. E. Hossain (graduated 2008), Experimental and Numerical Investigation of Complex Rheology and Rock/Fluid Interaction, Dalhousie University.
2. S. Mustafiz (graduated 2006), Modeling Certain Complex Phenomena that occur within Reservoir Fluid Movements, Dalhousie University.
3. M. S. Zaman (started 2006), Petroleum and Reservoirs, Dalhousie University.

6.10 M.Sc. Thesis Examining Committee

1. Huaying Men, *Duplicate Java Source Code Detection*, Supervisor Dr. Rick Giles, April 2008.
2. Greg Jaman, *Energy-Efficient Data Dissemination for Controller Area Networks Using Wireless Sensors*, Supervisor Dr. Robert McLeod, University of Manitoba, April 2007.
3. S. Vafaei, *Integrated Energy Solution*, Supervisor Dr. Rafiqul Islam, Dalhousie University, in-progress.

6.11 B.Sc. Honors Thesis Examining Committee

1. Stephen Finch, *Embedded Databases*, Acadia University, Supervisor Dr. Darcy Benoit, March 2006.

6.12 M.Sc. Defense chair

1. An Analysis of the Effects of Mitochondrial DNA Polymorphisms on Sperm Motility and the Evolution of a Male Associated Sperm Protein, Lysin, in Marine Mussels, Biology, August 24, 2007.
2. Attacking the Elliptic Curve Discrete Logarithm Problem, Matthew Musson, Statistics Department, Supervisor: Dr. Jeff Hooper, March 28, 2006.
3. Analysis of Mitochondrial DNA sequence of two aggregations of leatherback Turtles, *Dermochelys coriacea* (Linnaeus 1766), from Nova Scotia, Canada and Barbados, West Indies, Kimberley K. Woody, Biology Department, Supervisor: Dr. Tom Herman, November 24, 2005.

6.13 University of Manitoba

In 2002 – 2005, I supervised 5 students: Monirul Khan, Usman Malik, Linda Wong, Tanvire Elhai, and Fengkai Zhang at the University of Manitoba.

7 Professional Service

7.1 Summary

- Associate Editor, Member Editorial Board (4)
- Guest Editor - Journal Special Issues (12)
- Conference Organization (12)
- Special Session and Workshop Organization (14)
- Reviewer, Journals and Transactions (34)
- Member Program Committee - Conferences and Workshops (56)
- Reviewer - Conferences and Workshops (8)
- External Reviewer - Grants (7)
- Participation as an Event Organizer (7)
- Session Chair (8)
- Participation - Research Conferences and Workshops (4)
- Pedagogical Conferences and Seminars (3)

7.2 Journal Associate Editor, Member Editorial Board

1. International Journal of Telemedicine and Applications (IJTA), Hindawi Journal, Editor-in-Chief: Yang Xiao, indexed in PubMed.
2. International Journal of Smart Home, SERSC Journal, Editor-in-Chief: Sajal K. Das.
3. International Journal of u- and e- Service, Science and Technology (IJUNESST), Editors-in-Chief: Hangbae Chang and Jianhua Ma.
4. International Journal of Communication Networks and Distributed Systems (IJCND), Editors-in-Chief: Sudip Misra and Isaac Woungang.

7.3 Co-Guest Editor - Journal Special Issues

1. Special issue on *Advances in Intelligent Computing and its Applications* in Knowledge Engineering Review (KER), Cambridge University Press (SCI-E), Guest Editors: Tai-hoon Kim, Ching Hsien Hsu, and Sajid Hussain, 2010.
2. Special issue on *Advances in Cryptography, Security and Applications for Future Computer Science* in the Journal of Computers & Mathematics with Applications (CAM), Elsevier Journal (SCI), Guest Editors: Jong Hyuk Park, Sajid Hussain, Guilin Wang, and Yi Mu, 2010.

3. Special issue on *Information Fusion in Future Generation Communication Environments* in Information Fusion, Elsevier (SCI-E), Guest Editors: Sajid Hussain, Jong Hyuk Park, Anind K. Dey, Laurence T. Yang, and Pratik K. Biswas, 2009.
4. Special issue on *Multimedia Services and Applications* in the Journal of Universal Computer Science(JUCS), Springer (SCI-E), Guest Editors: Geyong Min, Jianhua Ma, Jong-Hyuk Park, and Sajid Hussain, 2009.
5. Special issue on *Emerging Multimedia Applications* in the Journal of Multimedia Tools and Application, Springer (SCI-E), Guest Editors: Han-Chieh Chao, Sajid Hussain, Shu-Ching Chen, and William I. Grosky, 2009.
6. Special issue on *Security for Multimedia and Ubiquitous Applications* in the Journal of Telecommunication Systems, Springer (SCI-E), Guest Editors: Jong Hyuk Park, Laurence T. Yang, Sajid Hussain, and Yang Xiao, 2009.
7. Special issue on *Context-aware Services for Ubiquitous Applications* in the Journal of Cybernetics and Systems, Taylor & Francis Journal (SCI-E), Guest Editors: Jong Hyuk Park, Anind K. Dey, Ching-Hsien Hsu, and Sajid Hussain, 2009.
8. Special issue on *Security and Multimodality in Pervasive Environments* in the International Journal of Wireless Personal Communications (SCI-E), Guest Editors: Deok Gyu Lee, Sajid Hussain, George Roussos, and Yan Zhang, 2009.
9. Special issue on *Social Awareness in Smart Spaces* in the Journal of Cybernetics and Systems, Taylor & Francis Journal (SCI-E), Guest Editors: Zhiwen Yu, Chris Nugent, Sajid Hussain, Jianhua Ma, and Fabio Pianesi, 2009.
10. Special issue on *Intelligent Systems for Future Generation Communications* in the Journal of Supercomputing, Springer Journal (SCI), Guest Editors: Deok Gyu Lee, Sajid Hussain, and Alan Chin-Chen Chang, 2009.
11. Special issue on *Information Fusion in Distributed Sensor Networks* in Information Fusion Journal, Elsevier (SCI-E)³ 2008, Guest Editors: Pratik K. Biswas and Sajid Hussain, Volume 9, issue 3, July 2008.
12. Special issue on *Pervasive Health Care Services and Technologies* in International Journal of Telemedicine and Applications (IJTA), April 2008, Guest Editors: Sajid Hussain, Laurence T. Yang, Frederique Laforest, and Christine Verdier (press).

7.4 Conference Organization

1. International Journals Coordinator Co-chair, The 2nd International Conference on Computer Science and its Applications (CSA), Jeju, Korea, December, 2009.

³SCI-E means that the journal is included in Thomson's Science Citation Index Expanded. It is one the main criteria to evaluate the importance of a journal in Computer Science research. At many universities, it is a Ph.D. requirement to publish in SCI-E journal.

2. Publicity Chair, 3rd IEEE International Conference on Network and System Security (NSS), Australia, October, 2009.
3. Vice General co-chair, Seventh IEEE/IFIP International Conference on Embedded Ubiquitous Computing (EUC), Vancouver, Canada, August, 2009.
4. International Liaison Chair, the Sixth International Conference on Autonomic Computing (ATC), Australia, July, 2009.
5. Workshops co-chair, International Conference on Information Security and Assurance (ISA), Seoul, Korea, 2009.
6. Program co-chair, International Conference on Intelligent Pervasive Computing (IPC), Sydney, Australia, 2008.
7. Publication co-chair, International Conference on Embedded Ubiquitous Computing (EUC), Shanghai, China, 2008.
8. Publication co-chair, International Conference on Future Generation Communication and Networking (FGCN), China, 2008.
9. Journals Coordinating Co-chair of the 2nd International Conference on Multimedia and Ubiquitous Engineering, Busan, Korea, April, 2008.
10. Program co-chair of the International Conference on Information Security and Assurance, Busan, Korea, April, 2008.
11. Program Vice-chair, Agent and Intelligent Computing track, the International Conference on Intelligent Pervasive Computing (IPC), Jeju, Korea, October 2007.
12. Co-chair workshops organization, the International Conference on Intelligent Pervasive Computing (IPC), October 2007, Korea - 3 workshops are organized: International Workshop on Intelligent Healthcare Systems (IHS), International Workshop on Intelligent Pervasive Middleware, Embedded System Architectures, and RFID Applications (IPM/ESA/RFID), and International Symposium on Intelligent and Ubiquitous Computing in Education (IUCE).

7.5 Special Session and Workshop Organization

1. Co-Organizer of the Third International Workshop on Smart Homes of Telehealth (SmarTel-10), in conjunction with The IEEE International Global Communications Conference (GLOBECOM 2010), Miami, Florida, December 6-10, 2010.
2. Co-Organizer of the Second International Workshop on Smart Homes of Telehealth (SmarTel-09), in conjunction with The 8th International Conference on Pervasive Intelligence and Computing (PICOM 2009), Chengdu, China, December 12-14, 2009.
3. Co-organizer of the Fourth International Symposium on Smart Home (SH-09), in conjunction with the Sixth Annual International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), Toronto, July 2009.

4. Co-organizer of the Third International Workshop on Information Fusion and Dissemination in Wireless Sensor Networks (SensorFusion-09), in conjunction with the Sixth Annual International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous), Toronto, July 2009.
5. Co-general chair, International Workshop on Information Assurance in Wireless Sensor Networks (IAWSN-09), Korea University, Seoul, Korea June 25-27, 2009.
6. Publicity co-chair, Third International Symposium on Security and Multimodality in Pervasive Environments (SMPE), in conjunction with AINA, Bradford, UK, 2009.
7. Program Co-chair, The 1st International Workshop on Sensor Networks and Applications (SNA), Sanya, Hainan Island, China, 2008.
8. Program co-chair, Second International Symposium on Security and Multimodality in Pervasive Environments (SMPE), in conjunction with MOBIQUITOUS, Dublin, Ireland, 2008.
9. Co-organizer of the Symposium on Ubiquitous Multimedia Service (UMS-08) in conjunction with the 2nd International Conference on Multimedia and Ubiquitous Engineering (MUE-2008), Busan, Korea, April 24 - 26, 2008.
10. Co-organizer of a Special Session on Data Dissemination and Communication Protocols in Sensor Networks, 4th IET International Conference on Intelligent Environments, University of Washington, Seattle, 2008.
11. Co-organizer of the second International Workshop on Information Fusion and Dissemination in Wireless Sensor Networks (SensorFusion), in conjunction with the The Fourth IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS), Pisa, Italy, October 2007. The workshop is co-organized with Laurence T. Yang (St. Francis Xavier University, Canada) and Pratik Biswas (Telcordia Technologies, USA).
12. Co-organizer of a special Session, Data Dissemination and Communication Protocols in Sensor Networks, in IET International Conference on Intelligent Environments, Ulm, Germany, September 2007. The session is co-organized with Peter Graham (University of Manitoba, Canada).
13. Co-organizer of a workshop on Knowledge Management and Discovery for Ubiquitous and Pervasive Applications (KUPA), in conjunction with the 18th International Conference on Database and Expert Systems Applications (DEXA), Regensburg, Germany, September 2007. The workshop is co-organized with Christel Kemke (University of Manitoba, Canada) and Carson K. Leung (University of Manitoba, Canada).
14. Co-organizer of a workshop on Smart Homes for TeleHealth (SmarTel), in conjunction with IEEE International Conference on Advanced Information and Networking Applications (AINA), Toronto, Canada, May 2007. The workshop is co-organized with Laurence T. Yang (St. Francis Xavier University, Canada), Rasit Eskicioglu (University of Manitoba, Canada), and Zhiwen Yu (Nagoya University, Japan).

15. Co-organizer of a workshop on Intelligent Agents and Wireless Sensor Networks (IA-WSN) and Data Mining and Wireless Sensor Networks (DM-WSN), in conjunction with IEEE/ACM/WIC International Conference on Intelligent Agent Technology (IAT), Hong Kong, December 2006, 7 papers, 30% acceptance ratio. IA-WSN is organized with Elhadi Shakshuki (Acadia University, Canada) and DM-WSN is organized with Qiang Yang (Hong Kong University of Science and Technology) and Danny Silver (Acadia University, Canada).
16. Co-organizer of a workshop on Intelligent Systems Techniques and Wireless Sensor Networks (IST-WSN), in conjunction with IEEE International Conference on Mobile Adhoc and Sensor Systems (MASS), Vancouver, Canada, October 2006, 12 papers, 50% acceptance ratio. The workshop is co-organized with Elhadi Shakshuki (Acadia University, Canada).

7.6 Reviewer Journals

7.6.1 IEEE

1. IEEE Transactions on Computers
2. IEEE Transactions Knowledge and Data Engineering (TKDE)
3. IEEE Transactions on Vehicular Technology (TVT)
4. IEEE Transactions on Mobile Computing (TMC)
5. IEEE Transactions on Systems, Man, and Cybernetics
6. IEEE Network Magazine
7. IEEE Communications Magazine
8. IEEE Communications Letters

7.6.2 Elsevier

9. Ad Hoc Networks
10. Data & Knowledge Engineering
11. Information Fusion
12. Journal of Systems and Software
13. Computer Communications

7.6.3 Springer

14. Annals of Telecommunications
15. Journal of Telecommunication Systems
16. Journal of Intelligent Manufacturing Systems
17. Journal of Multimedia Tools and Application
18. Journal of Internet Technology (JIT)
19. Journal of Personal and Ubiquitous Computing (JPUC)
20. Journal of Information Systems Frontiers
21. Journal of Supercomputing

7.6.4 Wiley

22. Journal of Communication Systems
23. Wireless Communications & Mobile Computing (WCM)

7.6.5 Other Journal indexed in SCI-E

24. Intelligent Automation & Soft Computing (AutoSoft)
25. Journal of Universal Computer Science (JUICS)
26. Journal of Cybernetics and Systems, Taylor & Francis Journal
27. The Computer Journal, Oxford University Press
28. SENSORS, MDPI

7.6.6 Other Journals

29. International Journal of Telemedicine and Applications (IJTA)
30. Electronics and Telecommunications Research Institute(ETRI)
31. Journal of High Speed Networks
32. International Journal of Parallel, Emergent and Distributed Systems, Taylor & Francis
33. International Journal of Computers and Their Applications (IJCA)
34. Contributions in Military-Technology, Swedish National Defence College's Annual Publication

7.7 Member Program Committee

1. IEEE Advanced Information Networking and Applications (AINA'10)
2. IEEE Symposium on Emerging Scientific Methods and Technologies (TIC-STH'09)
3. The 8th ACM International Workshop on Mobility Management and Wireless Access (MobiWac'09)
4. The International Conference on Networks & Communications (NetCoM'09)
5. IEEE International Workshop on Middleware Engineering (ME'09)
6. The 7th International Conference on Privacy, Security and Trust (PST'09)
7. Poster Committee, 11th International Conference on Ubiquitous Computing (UbiComp'09)
8. Situation Recognition and Medical Data Analysis in Pervasive Health Environments (PerVaSense'09)
9. IEEE Workshop on Mobility and its Applications, 2009
10. International Conference of Mathematical Sciences, Istanbul, 2009
11. International Conference on Complex, Intelligent and Software Intensive Systems (CISIS'09)
12. The International Workshop on Next Generation Security (WNGS '09)
13. The International Conference on Wireless Information Networks and Systems (WINSYS'09)
14. The Fourth International Conference on Systems and Networks Communications (ICSNC'09)
15. ACM/IEEE International Workshop on Services Integration in Pervasive Environments (SIPE'09)
16. International Conference on Grid and Pervasive Computing (GPC'09)
17. IEEE/ACM Communication Networks and Services Research Conference (CNSR'09)
18. International Conference on Ubiquitous Intelligence and Computing (UIC'09)
19. International Conference on Internet Monitoring and Protection (ICIMP'09).
20. IEEE Advanced Information Networking and Applications (AINA'09)
21. IEEE/ACM Communication Networks and Services Research Conference (CNSR'08)
22. IEEE Canadian Conference on Electrical and Computer Engineering (CCECE'08)
23. ACM International Workshop on Mobility Management and Wireless Access (MobiWac'08)
24. The International Networking and Communications Conference (INCC'08)
25. International Conference on Advanced Computing and Communications (ADCOM'08)
26. The IEEE International Workshop on Ubiquitous Network Computing (UNC'08)

27. IEEE International Workshop on Services Integration in Pervasive Environments (SIPE'08)
28. International Workshop on Intelligent Systems Techniques for Ad hoc and Wireless Sensor Networks (IST-AWSN'08)
29. International Conference on Grid and Pervasive Computing (GPC'08)
30. SPIE Defence/Security, Session on Data Mining, Intrusion Detection, Information Assurance, and Data Networks Security, 2008
31. International Conference on Systems and Networks Communications (ICSNC'08)
32. International Conference on Wireless and Mobile Communications (ICWMC'08)
33. International Workshop on Sensor Networks and Applications (SNA'08)
34. International Workshop on Design and Integration Principles for Smart Objects (DIPSO'08)
35. International Conference on Internet Monitoring and Protection (ICIMP'08)
36. Workshop on Adaptation in Pervasive Information Systems, International Conference on Advanced Information Systems Engineering (CaiSE'08)
37. ACM Symposium on Applied Computing, Special Track on Middleware Engineering (SAC'08)
38. IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC'08)
39. IEEE Advanced Information Networking and Applications (AINA'08)
40. International Conference on Complex, Intelligent and Software Intensive Systems (CISIS'08)
41. IEE Intelligent Environments (IE'08)
42. International Conference on Future Generation Communication and Networking (FGCN'07)
43. IEEE International Conference on Computer and Information Technology (CIT'07)
44. Health Pervasive Services, IEEE International Conference on Pervasive Services (HPS'07)
45. IEEE International Workshop on Services Integration in Pervasive Environments (SIPE'07)
46. IEEE/ACM International Workshop on Methods and Design Models for Health Information Systems (MeDeHIS'07)
47. The 2007 International Symposium on Technologies and Applications of Radio Frequency Identification (TARFID'07)
48. IEEE International Workshop on Heterogeneous Multi-Hop Wireless and Mobile Networks (MHWMN'07)
49. IEEE Advanced Information Networking and Applications (AINA'07)

50. IEE Intelligent Environments (IE'07)
51. International Conference on Wireless and Mobile Communications (ICWMC'07)
52. International Conference on Internet Monitoring and Protection (ICIMP'07)
53. International Conference on Complex, Intelligent and Software Intensive Systems (CISIS'07)
54. International Workshop on Learning in Multi-agent Systems (LMAS'07)
55. IEEE International Conference on Computer and Information Technology (CIT'06)
56. International Conference on Systems and Networks Communications (ICSNC'06)

7.8 Reviewer Conferences/Workshops

1. IEEE International Conference on Communications (ICC'08)
2. IEEE Wireless Communications and Networking Conference (WCNC'07)
3. IEEE International Symposium on Intelligent Control (ISIC'07)
4. International Conference on Information Technology: New Generations (ITNG'07)
5. IEEE Global Telecommunications Conference (GLOBECOM'06)
6. IEEE Conference on Computer Communications (INFOCOM'06)
7. International Conference on Information Technology: New Generations (ITNG'06)
8. International Workshop on Web and Mobile Information Systems (WAMIS'06)

7.9 External Grants Reviewer

1. Reviewer, NSERC Discovery grant proposals (Committee 330), 2008.
2. Reviewer, NSERC CREATE, 2008
3. Reviewer, NSERC Discovery grant proposals (Committee 330), 2007.
4. Reviewer, NSERC Strategic Projects Grant (SPG), 2007.
5. Reviewer, NSERC Discovery grant proposals (Committee 330), 2006.
6. External (Computer Science) consultant for NSERC Research Tools and Instruments (RTI) Grants, Mathematics/Statistics, 2006. I reviewed 9 applications, which included more than 70 Personal Data Forms (Form 100s).
7. Reviewer, NSERC Strategic Projects Grant (SPG), 2006.

7.10 Participation as an Event Organizer

As a main organizer, I have attended the following workshops, special sessions, and conferences.

1. Special Session on Data Dissemination and Communication Protocols in Sensor Networks, the Fourth IET International Conference on Intelligent Environments (IE), Seattle, July 2008.
2. SensorFusion Workshop in the 4th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS), Pisa, Italy, October 2007.
3. Special Session on Data Dissemination and Communication Protocols in Sensor Networks, the Third International Conference on Intelligent Environments (IE), Ulm Germany, September 2007.
4. International Workshop on Knowledge Management and Discovery for Ubiquitous and Pervasive Applications (KUPA), the 18th International Conference on Database and Expert Systems Applications (DEXA), Regensburg, Germany, September 2007.
5. International Workshop on Smart Homes for Tele-health, the 21st IEEE International Conference on Advanced Information Networking and Applications (AINA), Niagara Falls, Canada, May 2007.
6. International Workshop on Intelligent Agents and Wireless Sensor Networks (IA-WSN), in IEEE/WIC/ACM International Conference on Intelligent Agent Technology, (IAT), IEEE Computer Society, Hong Kong, China, December 18, 2006.
7. International Workshop on Intelligent Systems and Techniques (IST-WSN), in IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS), IEEE Computer Society, Vancouver, Canada, October 9-12, 2006.

7.11 Session Chair

I have served as a session chair in the following conferences.

1. The Fourth IET International Conference on Intelligent Environments(IE), Seattle, July 2008
2. The Sixth IEEE/ACM International Conference on Communication Networks and Services Research (CNSR), Halifax, May 2008.
3. The Second International Conference on Multimedia and Ubiquitous Engineering (MUE), Busan, Korea, April 2008.
4. SPIE International Conference on Data Mining, Intrusion Detection, Information Assurance, and Data Networks Security, March 2008.
5. The International Conference on Future Generation Communication and Networking (FGCN), Jeju-Island, Korea, December 2007.
6. The Third International Conference on Intelligent Environments (IE), Ulm Germany, September 2007.

7. The 21st IEEE International Conference on Advanced Information Networking and Applications (AINA), Niagara Falls, Canada, May 2007.
8. The IEEE Wireless Communications and Networking Conference (WCNC), IEEE Communication Society, Hong Kong, March 2007.

7.12 Participation - Research Conferences and Workshops

I attended the following conferences as a general participant.

1. The 27th IEEE International Conference on Distributed Computing Systems (ICDCS), Toronto, Canada, June 2007 (participation).
2. IEEE/ACM International Conference on Information Processing in Sensor Networks (IPSN), IEEE Computer Society, Nashville, TN, April 19-21, 2006 (Poster Paper).
3. The 20th IEEE International Conference on Data Engineering (ICDE), Boston, March 30 - April 2, 2004 (participation).
4. The 30th International Conference on Very Large Data Bases, Toronto, Canada, August 31 - September 3, 2004 (participation).

8 Institutional Services

8.1 Faculty of Science

1. Faculty of Science Scholarships and Awards Committee, Acadia University, 2006-09.
2. Senate Research Committee, Acadia University, 2006-09.
3. Member Hiring Committee, Canadian Research Chair (CRC) Tier 2 Environment, 2007.

8.2 School of Computer Science

1. Computer Science Committee for AGA awards distribution to graduate students, 2007-09.
2. Member Graduate Studies Committee (GSC), Jodrey School of Computer Science, 2008-09.
3. Member Curriculum Committee, 2007-09
 - Investigated Nova Scotia Community College (NSCC) curriculum of programming, networking, and database diplomas for transfer credits (NSCC 2+2).
 - Analyzed courses for specialized streams in health informatics, mobile and pervasive computing, and security streams.
4. Member Halifax *Meet & Greet* Committee, recruitment and meeting of new students.
5. Member Renovation Committee for Students Lounge and Lab, 2007-08, performed the leading role in coordinating the activities such as placing orders with physical plant, planning requirements, designing layouts, and contacting vendors for quotes.

6. Member of a temporary committee (Daniel Silver, Darcy Benoit, and Sajid Hussain) 2007, prepared and documented department services: types of services, time needed for each service, tasks associated with each service. I performed the leading role in preparing the document, which was revised by Dr. Silver and Dr. Benoit.
7. Member hiring committee for non-tenure appointment of Assistant Professor Position, 2007-08, prepared the advertisement document (poster), participated in the reviewing process, reviewed the research and publication records of the applicants.
8. Computer Science Seminars Coordinator, Acadia University, 2006-07, organized 15 seminars and a students' research showcase.
9. IEEE Coordinator: 2005-06 and 2007-08.
10. Acadia's High School Robot Programming Competition (RPC), Wolfville, Canada, 2005-08, served for following positions: RPC Coordinator, Referee, Coach, and Workshop organizer to arrange training workshops for the participant teams.

8.3 Arthur Irving Academy for Environment

Executive Member, 2006 - to date, **Arthur Irving Academy for Environment**, KCIC, Wolfville, Nova Scotia, Canada. The Academy intends to bring together researchers from different disciplines to focus on environment related projects. Further, I am a member of research and education committees.

9 General

9.1 Scouts Canada

1. Club leader, First Wolfville Cub Pack, Nova Scotia, 2007-08.
2. 1-day training for outdoor camping for scout leaders, 2008.
3. 1-day core training for cub scouts, 2008.
4. 1-day cub specific training, 2008.
5. CPR training course of 2 days, St. Johns Ambulance, 2008.

9.2 Running

1. Half Marathon, Valley Harvest Marathon, Wolfville, Nova Scotia, October 12, 2008 - completion time 1:57:29, distance 21.1 km, bib 558, pace 5:35/km.
2. Half Marathon, Blue Nose International, Halifax, Nova Scotia, May 18, 2008 - completion time 2:15:32, distance 21.1 km, bib 110, pace 6:30/km.
3. **Full Marathon**, Toronto International Marathon, Toronto, Ontario, October 14, 2007 completion time 5:38:10, distance 26 miles (42.2 km), bib 608, pace 8:01/km.

4. 10Km, Run for Canada, July 1, 2007 - completion time 54:09, distance 10 km, bib 20180, pace 5:25/km.
5. Half Marathon, Johnny Miles, June 17, 2007 - completion time 1:56:18, distance 21.1 km, bib 58, pace 5:31/km.
6. Half Marathon, Blue Nose International, May 20, 2007 - completion time 2:03:17, distance 21.1 km, bib 1514, pace 5:51/km.
7. **Full Marathon**, Okanagan International Marathon, Kelowna, British Columbia, October 8, 2006 completion time 5:50, distance 26 miles (42.2 km), bib 44, pace 8:17/km.
8. Half Marathon, Blue Nose International, Halifax, May 21, 2006 completion time 2:14, distance 13 miles (21.1 km).
9. Half Marathon, Manitoba International Marathon, Winnipeg, Manitoba, June 19, 2005 completion time 2:26, distance 13 miles (21.1 km).
10. Member of Faculty of Science team for CIBC Run for the Cure, October 2005.

9.3 Travel and Leisure

I like to visit different cities and places. Some of the places I have visited are as follows (the order of cities is from East to West):

1. Asia: South Korea (Busan, Jeju, Seoul), Hong Kong, India, Pakistan, Dubai Abu Dhabi, Bahrain, and Saudi Arabia.
2. Europe: Cyprus, Poland (Krakow and Warsaw), Romania (Bucharest), Greece (Athens and Patras), Italy (Pisa, Florence, Rome and Bari), Germany (Regensburg, Munich, Ulm), Spain (Barcelona), France (Paris, Lyon, and Montpellier), England (London and Canterbury), and Ireland (Limerick).
3. Canada: St John's, Halifax, Sydney, Antigonish, Annapolis Valley, Moncton, Fredericton, Toronto, Ottawa, Niagara Falls, Windsor, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Banff Jasper, Kelowna, Vancouver, and Victoria.
4. United States: New York, New Jersey, Washington D.C., Orlando, Atlanta, Nashville, Gatlinburg (Smoky Mountains, TN), Detroit, Indianapolis, Kokomo, Chicago, Fort Worth-Dallas, Minneapolis St.Pauls, Fargo, Grand Forks, Las Vegas, Seattle, San Francisco Bay Area, Los Angeles, and San Diego.

In order to get a closer look of the culture and environment, I usually go for extended runs (20-30 km), where I explore less famous routes and pathways. For instance, Winnipeg: University of Manitoba to Assiniboine Park (2 way), Toronto: CN Tower to Mississauga (1 way), London (England): Surrey to Waterloo Station, via A3 (1 way), Ottawa: Capital Hill to Hoggs Bay (2 way), Seattle: Airport to Pier 70 – Edward Myrtle Park (1-way), Annapolis Valley (Nova Scotia): Wolfville to Coldbrooks (2 way).

9.4 Miscellaneous

Some of my leisure time activities are as follows:

1. Participated in International Refugee Day Presentation, May 2007.
2. Participated in Canada Day Celebrations to support Canadian Olympic Team, July 2007.
3. Taste and cook different cuisines: Sub-continent, Thai, Chinese, Japanese, and Mediterranean.
4. Swimming: front crawl, breaststroke, and backstroke.
5. Obtained lessons for salsa, yoga, and hang-gliding.
6. Toastmasters: I have served on all positions of a club (President, VP Education, VP Membership, Secretary, Treasurer etc) as well as an Area Governor; I won the International Humorous Speech Contest for Area 15 (District 64).