

Mohammad Abdul Azim

20/A M. M. Ali Road, Chattogram 4000
Email: azim@ieee.org,
mohammad.azim@auw.edu.bd
Cell: +88 013 118 11125



Employment (Current)

**Assistant professor of computer science
Asian University for Women (AUW)**

(February 2020-till date)

Teaching: (i) Introduction to computing and programming (ii) Artificial intelligence and machine learning
(iii) Software engineering and mobile apps development

Research: AI and ML

Administrative: misc.

Employment (Research)

Researcher

Network and avionic software lab

Gyeongsang National University (GNU), South Korea

(June 2014-June 2015)

Flying ad-hoc networks, delay tolerant networks, and wireless sensor networks

Post-Doctoral Fellow

Masdar Institute of Science and Technology (MIST), Abu Dhabi, UAE

(November 2011-November 2013)

Wireless sensor network localization and cooperative communications.

Post-Doctoral Fellow

Memorial University Newfoundland (MUN), St John's, Canada

(October 2010-September 2011)

Wireless sensor networks - Energy efficiency, connectivity and coverage, cooperative relaying, and dependability.

Post-Doctoral Fellow

**National Institute for Research in Computer and Control Sciences (INRIA) – Bretagne Atlantique,
Rennes, France**

(December 2008-December 2009)

Wireless sensor networks - clustering, routing, and aggregation techniques.

Senior Researcher
Malaysian Institute of Microelectronic Systems (MIMOS) Berhad, Kuala Lumpur (April 2008-November 2008)

Wireless network protocol especially on WiWi (a MIMOS product that combines WiMAX and WiFi).

Research Assistant (Casual)
Wireless Networking Group (WiNG), University of Sydney
(December 2006-August 2007)

Assisting Professor Abbas Jamalipour in the supervision of the research group, providing guidance and help new research students.

Education
Diploma in Software development
TAFE NSW, Petersham,
Feb 2017-Dec2017

Ph.D. in Electrical and Information Engineering (Supervised by Professor Abbas Jamalipour) University of Sydney, Australia

Title: Energy-efficient routing protocols for wireless sensor networks
(Conferred: May 2008 Thesis submission: August 2007)

M. Sc (Engineering) in Computer and Telecommunications Engineering
University of Wollongong, Australia
(December 2000)

B. Sc (Engineering) in Electrical and Electronic Engineering
CUET, Bangladesh
(April 1996)

In-house trainings: (i) CCNA Instructor Training (ii) WiMAX (iii) QualNet and (iv) Six-sigma

Research Areas

Artificial intelligence and machine learning, wireless sensor networks, flying ad hoc networks, delay-tolerant networking, localization, resource allocation, energy efficiency, routing, MAC, aggregation and clustering, network security and cooperative communications, and network coding

Subjects Taught

1. Introduction to computing and programming
2. Artificial intelligence and machine learning
3. Software engineering and mobile apps development

Teaching Interests

Range of undergraduate and graduate courses in the general areas of artificial intelligence and machine

learning, information systems, wireless communications, network security, and optimization techniques, numerical methods and Matlab, software developments.

Scholarships, Awards, and projects I worked for

Brilliant Korea (BK) 21+, MIT-Masdar flagship, Siemens, Govt. of Abu Dhabi, Mitacs Canada fellowship, Newfoundland and Labrador government funding, INRIA fellowship, Norman I. Price (NIP) Scholarship, Postgraduate Research Support Scheme (PRSS), Australian Research Council (ARC) funding, Australian Research Council communication research network (ACoRN)

Researcher listed on the grants

1. Communication Protocol for Health Monitoring over Wireless Body Area Networks in UAE (Zayed University, UAE, 2018)
2. Monitoring and optimization of renewable energy generation using wireless sensor data analytics (Siemens, 2011)
3. Monitoring forests in Newfoundland and Labrador by wireless sensor networks (Newfoundland and Labrador government, Canada, 2010)
4. Clustering and aggregations for wireless sensor systems (DIONYSOS Team INRIA, France, 2008)

Student supervisions

(Co-supervise postgraduate and undergraduate thesis students)

(a) Undergraduate thesis:

- (i) WLAN security: technology, challenges and future direction (USYD: 2006)
- (ii) Fixing the WAP security vulnerability of WLAN (USYD: 2006)
- (iii) Routing protocols in wireless sensor networks (USYD: 2007)
- (iv) Simulating OFFIS protocol in network simulator (USYD: 2007)

(b) Graduate thesis:

- (i) Clustering in wireless sensor networking (INRIA: 2009)
- (ii) Cooperative communication in wireless sensor networks (MUN: 2010)
- (iii) Delay tolerant networks (GNU: 2014)
- (iv) Real-time communications in wireless sensor networks (GNU: 2015)

Publications

Google Scholar: <http://scholar.google.ca/citations?user=qdVasEgAAAAJ&hl=en>

(H-index: 7, H-9 index: 6, Citations: 292)

Book Chapters

Mohammad A. Azim, Fatemeh M. Kiaie, and Mohamed H. Ahmed, "Environmental Forest Monitoring Using Wireless Sensor Networks: A Survey" Wireless Sensor Networks: Current Status and Future Trends, CRC Press, Taylor & Francis Group, USA, November 2012.

A. Jamalipour and Mohammad Abdul Azim, Wireless Sensor Networks: Routing Protocols, Chapter 9, pp. 219-255, in "Encyclopedia on Ad Hoc and Ubiquitous Computing," D. P. Agrawal and B. Xie, Editors, World Scientific Press, Singapore, 2010 (ISBN: 978-981-283-348-8).

Journal Papers

Zulfikar Alom, Bikash Chandra Singh, Zeyar Aung, Mohammad Abdul Azim, “Knapsack Graph-based Privacy Checking for Smart Environments,” Elsevier Computers & Security, February 2021, ISSN 0167-4048.

Mohammad Abdul Azim, Babar Shah, Beom-Su Kim, Kyong Hoon Kim, and Ki-II Kim, “Variants of Spray and Forwarding Scheme in Delay Tolerant Networks,” IEICE Transactions on Communications, Article ID: 2016EBP3387, March 2017.

Mohammad Abdul Azim, Beom-Su Kim, Kyong Hoon Kim, and Ki-II Kim, “Simulation-Based Performance Comparison for Variants of Spray and Wait in Delay Tolerant Networks,” International Journal of Engineering and Technology Innovation, vol. 2, no. 2, 2017.

Mohammad Abdul Azim, Beom-Su Kim, Babar Shah, and Ki-II Kim, “Real-Time Routing Protocols for (m, k)-firm Streams Based on Multi-Criteria in Wireless Sensor Networks,” Springer Wireless Networks, DOI: 10.1007/s11276-016-1222-2, February 2016.

Mohammad Abdul Azim, Zeyar Aung, Weidong Xiao, Vinod Khadkikar, and Abbas Jamalipour, “SPSA NC: Simultaneous Perturbation Stochastic Approximation Localization based on Neighbor Confidence,” Wireless communications and mobile computing, Wiley, DOI: 10.1002/wcm.2634, 2015.

Mohammad Abdul Azim, Zeyar Aung, “Power Allocation in Cooperative Sensor Networks: A Stochastic Approximation Approach,” IET Journal of Engineering, January 2015.

Mohammad Abdul Azim, Zeyar Aung, Weidong Xiao, and Vinod Khadkikar, “Constrained Cross-Entropy Localization Technique in Wireless Sensor Networks,” Hindawi Distributed Sensor Networks, Article ID 267369, 2014.

Mohammad Abdul Azim, Sofiane Moad, Mario E. Rivero-Angeles, Israel Leyva-Mayorga, Zeyar Aung and Nizar Bouabdallah, “Energy-Efficient Methods for Highly Correlated Spatio-temporal Environments in Wireless Sensor Network Communications,” in Scientific Research Publishing Wireless Sensor Network, vol. 6, no. 5, pp. 67-92, May 2014.

Mohammad Abdul Azim, M. Rubaiyat Kibria and Abbas Jamalipour, “An Optimized Forwarding Protocol for Lifetime Extension of Wireless Sensor Networks,” in Wiley Wireless Communications and Mobile Computing, vol. 9, no. 1, January 2009.

Conference Papers

Mohammad Abdul Azim, Zeyar Aung, and Mario E. Rivero-Angeles, “Bacterial Foraging based Cooperative Communications in Wireless Sensor Networks,” International Conference on Information Science and Applications (ICISA), Pattaya, Thailand, February 2015.

Mohammad Abdul Azim and Zeyar Aung, “Simultaneous Perturbation Stochastic Approximation-based Localization Algorithms for Mobile Devices,” IEEE International Conference on Developments in eSystems Engineering (DeSE), Abu Dhabi, 2013.

Mohammad Abdul Azim, Zeyar Aung, Weidong Michael Xiao, Vinod Khadkikar and Abbas Jamalipour, “Localization in Wireless Sensor Networks by Constrained Simultaneous Perturbation Stochastic Approximation Technique,” IEEE International Conference on Signal Processing and Communication

Systems (ICSPCS), Gold Coast, Australia, December 2012.

Mohammad Abdul Azim, Zeyar Aung, Weidong Michael Xiao, and Vinod Khadkikar, "Localization in Wireless Sensor Networks by Cross-Entropy Method," Springer International Conference on Ad Hoc Networks (ADHOCNETS), Paris, France, October 2012.

Sofiane Moad, Mohammad Abdul Azim, Nizar Bouabdallah and Rami Langar, "CDEEC: A Connectivity Degree-Based Energy Efficient Clustering Protocol for Wireless Sensor Networks," IEEE/IFIP Wireless Days, Niagara Falls, Ontario, Canada, October 2011.

Sofiane Moad, Mohammad Abdul Azim, and Nizar Bouabdallah, "ADEEC: A Novel Adaptive Energy Efficient Clustering Protocol in Wireless Sensor Network," IEEE Global Communications Conference (GLOBECOM), Miami, USA, December 2010.

Mohammad Abdul Azim, Sofiane Moad, and Nizar Bouabdallah, "SAG: Smart Aggregation Technique for Continuous-Monitoring in Wireless Sensor Networks," in IEEE International Conference on Communications (ICC), Cape Town, South Africa, May 2010.

Mohammad Abdul Azim, M. Rubaiyat Kibria and Abbas Jamalipour, "Designing an Application-Aware Routing Protocol for Wireless Sensor Networks," in IEEE Global Communications Conference (GLOBECOM), New Orleans, USA, December 2008.

Mohammad Abdul Azim and Abbas Jamalipour, "Performance Evaluation of Optimized Forwarding Strategy for Flat Sensor Networks," in IEEE Global Communications Conference (GLOBECOM), Washington D.C., USA, November 2007.

Abbas Jamalipour and Mohammad Abdul Azim, "Two-Layer Optimized Forwarding for Cluster-Based Sensor Networks," in IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Helsinki, Finland, September 2006.

Mohammad Abdul Azim and Abbas Jamalipour, "Optimized Forwarding for Wireless Sensor Networks by Fuzzy Inference System," in IEEE International Conference on Wireless Broadband and Ultra Wideband Communications (AusWireless), Sydney, Australia, March 2006.

Mohammad Abdul Azim and Abbas Jamalipour, "An Efficient Elliptic Curve Cryptography based Authenticated Key Agreement Protocol for Wireless LAN Security," in IEEE High-Performance Switching and Routing (HPSR), pp. 376-380, Hong Kong, May 2005.

Editorial board member

International journal of advanced computer research 2014-present.

Technical program committee (TPC) member (IEEE only):

1. IEEE Wireless Communication & Networking Conference (WCNC) 2010-14
2. IEEE Annual Symposium on Personal, Indoor & Mobile Radio Communications (PIMRC) 2012- 2013
3. IEEE International Conference on Connected Vehicles (ICCVE) 2013-2014
4. IEEE Asia-Pacific Conference on Applied Electromagnetics (APACE) 2012
5. IEEE Symposium on Wireless Technology & Applications (ISWTA) 2012-2013
6. IEEE International Conference on Information Technology & e-Services (ICITeS) 2013
7. IEEE International Conference on Information Science & Applications (ICISA) 2013- 2014
8. IEEE Symposium on Industrial Electronics Applications (ISIEA) 2014

9. IEEE International Conference on Electrical Engineering, Computing Science & Automatic Control (CCE) 2014
10. IEEE Asia-Pacific Conference on Wireless & Mobile (APWiMob) 2014-2015
11. IEEE International Conference on Industrial & Information Systems (ICIIS) 2014
12. IEEE International Conference on Communication & Computer Engineering (ICOCOE) • 2015
13. IEEE International Conference on Innovations in Information Technology (IIT 2020)

Teaching Philosophy

Top priority: High-quality education to each student in the class.

Disseminating the state-of-the-art is the first step. The simplest possible description along with examples is necessary to make the content clear and understandable to everyone in the class. Challenging the class with a creative and fun way of modification and/or possible modifications of the systems/ concepts with simulations and designs help the class understand the technology deeply rather than knowing the state-of-the-art superficially.

Acquiring knowledge is basic but not sufficiently helpful if the student does not have enough depth to utilize the knowledge. In the practical science and engineering career, the problem will be back in slightly / moderately / even drastically modified shape often needing to redesign and reshape the existing solutions.

Making students inquisitive about knowledge of new techniques/ systems/ algorithms is important. Making them excited about solving new problems is vital. The lectures should be conducted with interactive and vibrant participation of the class.

Be fair and clear throughout.