Curriculum Vitae

Mohamad Khattar Awad

Contact Information

web: http://www.MohamadAwad.com
Email: mohamad@ieee.org
R^{G}: https://www.researchgate.net/profile/Mohamad_Awad3

Address: P.O.Box 44129
Hawally, 32056, Kuwait
Tel: (+965) 6622-6122

Dr. Awad, earned the B.A.Sc. in electrical and computer engineering (communications option) from the University of Windsor, Ontario, Canada, in 2004 and the M.A.Sc. and Ph.D. in electrical and computer engineering from the University of Waterloo, Ontario, Canada, in 2006 and 2009, respectively. From 2004 to 2009 he was a research assistant in the Broadband Communications Research Group (BBCR), University of Waterloo. From 2009 to 2010, he was a Lecturer at the Australian College of Kuwait and Adjunct Professor at the American University of Kuwait (AUK). In 2010, he joined AUK as an Assistant Professor of Electrical and Computer Engineering. Since 2012, he has been with Kuwait University in the Computer Engineering Department, where he currently is an Associate Professor of Computer Engineering.

Dr. Awad's research interest includes wireless and wired communications, software-defined networks resource allocation, wireless networks resource allocation, and acoustic vector-sensor signal processing. He received a fellowship award from the Dartmouth College, Hanover, NH in 2011. He received the Kuwait University Teaching Excellence Award and The Best Young Researcher Award in 2015 and 2017, respectively. Dr. Awad served on the editorial board of the IEEE Transactions on Green Communications and Networking (TGCN) from 2016 to 2021.

Education

Year	Institution	Field of Study	Degree
2006–2009	**University of Waterloo** *Waterloo, ON, Canada*	Elec. and Comp. Engr.	Ph.D *Advisor: Prof. Xuemin (Sherman) Shen*
2007–2008	**University of Waterloo** Center for Teaching Excellence *Waterloo, ON, Canada*	Education	Certificate in University Teaching
2004–2006	**University of Waterloo** *Waterloo, ON, Canada*	Elec. and Comp. Engr.	M.A.Sc *Advisor: Prof. Kainam Thomas Wong*
2000–2004	**University of Windsor** *Windsor, ON, Canada*	Elec. and Comp. Engr.	B.A.Sc - Communications option with Co-op Education

Academic Employment History

Apr 2018 – Present	*Associate Professor of Computer Engineering*, College of Engineering and Petroleum, Kuwait University, Kuwait.
Sep 2018 – Sep 2021	*Director of Computer Engineering Graduate Program*, College of Engineering and Petroleum, Kuwait University, Kuwait.
Sep 2012 – Apr 2018	*Assistant Professor of Computer Engineering*, College of Engineering and Petroleum, Kuwait University, Kuwait.
Sep 2010 – Aug 2012	*Assistant Professor of Electrical and Computer Engineering*, Sciences & Engineering Division, American University of Kuwait, Kuwait.
Sep 2009 – Aug 2010	*Adjunct Professor of Electrical and Computer Engineering*, Sciences & Engineering Division, American University of Kuwait, Kuwait.

Honours and Awards

2020	The Funded Research Incentive Reward (Q1 Publication Award)
2017	The Best Young Researcher Award
2015	Kuwait University Teaching Excellence Award
2011	Dartmouth-AUK Research Fellowship Award
2009	Ontario Research & Development Challenge Fund Bell Scholarship
2009	University of Waterloo Graduate Scholarship
2008	Ontario Research & Development Challenge Fund Bell Scholarship
2002 & 2003	On Faculty of Engineering dean's list

Funded Projects

- Title: *"Energy Efficient and QoS-aware Routing for Software-defined Networks: A Reinforcement Learning Approach"*
  - Project Number: EO01/22, Status: Two external reviewers recommended funding. It is under processing by RS.
  - Duration: 2 years.
  - Funding Agency: **Kuwait University Research Sector**.
  - Budget: 10,000.00 K.D. ≃ U.S. $ 32,562.
- Title: *"Machine Learning-based Anti-Jamming Technique at the Physical Layer of Networks"*
  - Project Number: EO02/20, Status: Ongoing.
  - Duration: 1 years. (April 2021 to March 2022)
  - Funding Agency: **Kuwait University Research Sector**.
  - Budget: 3,850.00 K.D. ≃ U.S. $ 12,700.
- Title: *"Resource Allocation for D2D-Enabled NOMA Cellular Networks"*
  - Project Number: EO05/19, Status: Completed.
  - Duration: 1 years. (August 2020 to July 2021)
  - Funding Agency: **Kuwait University Research Sector**.
  - Budget: 3,750.00 K.D. ≃ U.S. $ 12,400.
- Title: *"A Machine Learning-based Routing Scheme for Software Defined Networks"*
  - Project Number: EO07/18, Status: Completed.
  - Duration: 1.5 years. (February 2019 to June 2020)
  - Funding Agency: **Kuwait University Research Sector**.
  - Budget: 4,000.00 K.D. ≃ U.S. $ 13,000.
- Title: *"Load balancing for Software-defined Radio Access Networks Powered by Hybrid Energy Sources: An H_∞ approach"*
  - Project Number: EO08/18, Status: Completed.
  - Duration: 1 years. (February 2019 to February 2020)
  - Funding Agency: **Kuwait University Research Sector**.
  - Budget: 3,750.00 K.D. ≃ U.S. $ 12,400.
- Title: *"Privacy Architecture for Location-based Services."*
  - Project Number: QE02/15, Status: Completed.
  - Duration: 1 years. (March 2016 - March 2017)
  - Funding Agency: **Kuwait University Research Sector**.
  - Budget: 3,600 K.D. ≃ U.S. $ 11,700.
- Title: *"Energy Efficient and Sustainable Communication Networks"*

  - Project Number: P314-35-EO01, Status: Completed.
  - Duration: 3 years. (February 2015 to February 2018)
  - Funding Agency: **Kuwait Foundation for Advancement of Science - KFAS**.
  - Budget: 71,590.00 K.D. ≃ U.S. $ 234,000.
  - Collaboration supported by Kuwait University Research Sector and University of Waterloo.
- Title: *"A Penalty Scheme for Securing Computer Networks based on Students Cheating Behavior in Academia"*
  - Project Number: EO05/19, Status: Completed.
  - Duration: 12 Months (June 2013 to June 2014)
  - Funding Agency: **Kuwait University Research Sector**.
  - Budget: 4,000.00 K.D. ≃ U.S. $ 13,000.00.

Publications

The details of all articles are available on my Website: www.mohamadawad.com.

Journal Papers

- **M. K. Awad**, Mohammed W. Baidas, Ahmad A. El-Amine, Nourah Al-Mubarak, "*A Matching-Theoretic Approach to Resource Allocation in D2D-Enabled Downlink NOMA Cellular Networks*", Elsevier Physical Communication, Submitted: Dec 2021, Under Review.
- Osamah S. Badarneh, **M. K. Awad**, Sami Muhaidat, and Fares S. Almehmadi "*Performance Analysis of Intelligent Reflecting Surface-Aided Decode-and-Forward UAV Communication Systems*", IEEE Systems Journal, Accepted on May 22, 2022.
- **M. K. Awad**, Ali A.M.R. Behiry, Mohammed W. Baidas, "*User association for load balancing in coordinated multipoint green HetNets: A Quasi-Newton-based approach*", Elsevier Physical Communication, Volume 49, 2021, DOI: (10.1016/j.phycom.2021.101464) [Q3, IF=1.810]
- **M. K. Awad**, Marwa Hassan Hafez Ahmed, Ali F. Almutairi, Imtiaz Ahmad, "*Machine Learning-Based Multipath Routing for Software Defined Networks*". Springer Journal of Network and Systems Management, 29, 18, 2021. DOI: (10.1007/s10922-020-09583-4) [Q3, IF=2.026]
- **M. K. Awad**, Mohammed W. Baidas, Ahmad A. El-Amine, *Resource allocation for downlink non-orthogonal multiple access in joint transmission coordinated multi-point networks*, Elsevier Computer Communications, Volume 173, 2021, Pages 134-149, DOI: (10.1016/j.comcom.2021.03.025). [Q2, IF=3.167]
- **M. K. Awad**, A. A. M. R. Behiry and E. A. Alrashed, "*A Robust and Resilient Load Balancing Framework for SoftRAN-based HetNets with Hybrid Energy Supplies*", in IEEE Transactions on Network and Service Management, vol. 17, no. 3, pp. 1403-1417, 2020, DOI: (10.1109/ TNSM. 2020. 2991339). [Q1, IF=3.878]
- M. W. Baidas, M. Al-Mubarak, E. Alsusa and **M. K. Awad**, "*Joint Subcarrier Assignment and Global Energy-Efficient Power Allocation for Energy-Harvesting Two-Tier Downlink NOMA Hetnets*" in IEEE Access, vol. 7, pp. 163556-163577, November 2019, DOI: (10.1109/ ACCESS. 2019. 2952293). [Q1, IF=3.745]
- Mohammed W. Baidas, **M. K. Awad** , Ahmad El-Amine, Omar A. Hassan, Xuemin Sherman Shen,"*Joint node selection, flow routing, and cell coverage optimisation for network sum-rate maximisation in wireless sensor networks*", IET Wireless Sensor Systems, Vol. 9, no. 6, Pages 424 437, December, 2019, DOI: (10.1049 / iet-wss.2019.0072). [Scopus, SiteScore=3.7]
- D. Zhang, J. R. L. Tan, **M. K. Awad**, S. Zhang, Y. Zhang, P. Wan, "*Near-optimal and Truthful Online Auction for Computation Offloading in Green Edge-Computing Systems*", IEEE Transactions on Mobile Computing, Vol. 19, no. 4, Pages 880 - 893, February, 2019, DOI: (10.1109/TMC.2019.2901474). [Q1, IF=3.822]
- Y. Wu, X. Yang, L. Qian, H. Zhou, x. Shen, **M. K. Awad**, "*Optimal Dual-Connectivity Traffic Offloading in Energy-Harvesting Small-Cell Networks*", IEEE Transactions on Green Communications

and Networking, Vol. 2, no.4, Pages 1041 - 1058, December 2018.

- Gi-Ren Liu, Phone Lin, **M. K. Awad** "*Modeling Energy Saving Mechanism for Green Routers*", IEEE Transactions on Green Communications and Networking, Vol. 2, no. 3 , Pages 817 - 829, September 2018.
- **M. K. Awad**, Y. Rafique, R. A. MHallah "*Energy-aware Routing for Software-defined Networks with Discrete Link Rates: A Benders Decomposition-based Heuristic Approach*", Elsevier, Sustainable Computing: Informatics and Systems, Vol. 13, Pages 31 - 41, March 2017, DOI:(10.1016/j.suscom. 2016.11.003). [Q3, IF=0.569]
- Deyu Zhang, Zhigang Chen, Ju Ren, Ning Zhang, **M. K. Awad**, Haibo Zhou, Xuemin (Sherman) Shen "*Energy Harvesting-Aided Spectrum Sensing and Data Transmission in Heterogeneous Cognitive Radio Sensor Network*", IEEE Transactions on Vehicular Technology, Vol. 66, no. 1, Pages 831 - 843, January, 2017. DOI: (10.1109/TVT.2016.2551721). [Q1, IF=2.273]
- H. Peng, S. Si, **M. K. Awad**, N. Zhang, H. Zhao, S. Shen, "*Towards Energy-Efficient and Robust Large-Scale WSNs: A Scale-Free Network Approach*", IEEE Journal on Selected Areas in Communications, Vol. 34, no. 12, Pages 4035 - 4047, December 2016. [Q1, IF=3.672]
- D. Zhang and Z. Chen and **M. K. Awad** and N. Zhang and H. Zhou and X. S. Shen "*Utility-optimal Resource Management and Allocation Algorithm for Energy Harvesting Cognitive Radio Sensor Networks*", IEEE Journal on Selected Areas in Communications, Vol. 34, no. 12, Pages 3552 - 3565, December 2016. [Q1, IF=3.672]
- **M. K. Awad**, Phone Lin, Gi-Ren Liu "*Distributed and Load Adaptive Energy Management Algorithm for Ethernet Green Routers*", Journal of Internet Technology, March 2017. [Q4, IF=0.533]
- **M. K. Awad**, Mohammed El-Shafei, Tassos Dimitriou, Yousef Rafique, Mohammed W. Baidas, Ammar H. Alhusaini "*Power-efficient Routing for SDN with Discrete Link Rates and Size-limited Flow Tables: a Tree-based Particle Swarm Optimization Approach*", International Journal of Network Management, Vol. 2, Issue 5, March 2017, **DOI:10.1002/nem.1972**. [Q4, IF=0.681]
- Tassos Dimitriou, **M. K. Awad** "*Secure and Scalable Aggregation in the Smart Grid Resilient against Malicious Entities*", Elsevier Ad-hoc Networks, Volume 50, no. 1, Pages 58–67, November 2016. [Q2, IF=1.660]
- **M. K. Awad**, B. Zogheib, and H. AlAzemi, "*On the Optimality of Escalating Penalties for Repeat Offenses Against the Academic Honor Code*", Taylor and Francis Group, Applied Economics, November 2015. [Q3, IF=0.586].
- **M. K. Awad**, K. T. Wong,"*Errata: Recursive Least-Squares Source Tracking Using One Acoustic Vector Sensor*," IEEE Transactions on Aerospace and Electronic Systems, Volume 49, no.5, Pages 668–692, January 2013. [Q1, IF=1.672]
- **M. K. Awad**, K. T. Wong," *Recursive Least-Squares Source Tracking Using One Acoustic Vector Sensor*," IEEE Transactions on Aerospace and Electronic Systems, Volume 48, no.4, Pages 3073-3083, October 2012. [Q1, IF=1.672]
- M. Mehrjoo, **M. K. Awad**, M. Dianati, and X. Shen, "*Design of fair weights for heterogeneous traffic scheduling in multichannel wireless networks*," IEEE Transactions on Communications, Volume 58, Issue 10, Pages: 2892-2902, October 2010. [Q1, IF=2.298]
- **M. K. Awad**, V. Mahinthan, M. Mehrjoo, X. Shen, and J. W. Mark, "*A dual decomposition-based resource allocation for OFDMA networks with imperfect CSI*," IEEE Transactions on Vehicular Technology,Volume 59, Issue 5, Page(s):1451 - 1468, June 2010. [Q1, IF=2.273]
- **M. K. Awad**, X. Shen, and B. Zogheib, "*Ergodic mutual information of OFDMA-based selection-decode-and-forward cooperative relay networks with imperfect CSI*," Elsevier Physical Communication, vol. 2, issue. 3, pp. 184 – 193, September 2009. [Q3, IF=0.802]
- **M. K. Awad**, K. T. Wong, and Z. Li, "*An integrated overview of the open literature's empirical data on the indoor radiowave channel's delay properties*,"IEEE Transactions on Antennas and Propagation, vol. 56, no. 5, pp. 1451 – 1468, May 2008. [Q1, IF=2.053]

Conference Papers

- M. W. Baidas, M. Al-Mubarak, E. Alsusa and **M. K. Awad**,"*A Two-Stage Solution Procedure to Joint Subcarrier Assignment and Global Energy-Efficient Power Allocation in Energy-Harvesting Two-Tier Downlink NOMA HetNets,*" 2020 IEEE Eighth International Conference on Communications and Networking (ComNet), 2020, pp. 1-8, DOI: 10.1109/ComNet47917.2020.9306085.
- **M. K. Awad**, M. W. Baidas and A. A. El-Amine,"*Optimal Downlink Resource Allocation for Joint Transmission CoMP-Enabled NOMA Networks: A Benchmark Implementation*", 36th National Radio Science Conference (NRSC), Port Said, Egypt, 2019, pp. 249-258, DOI: (10.1109/NRSC.2019.8734548).
- **M. K. Awad** and A. A. M. R. Behiry, "*A Quasi-Newton-based Approach to Load Balancing in Coordinated MultiPoint (CoMP) Green HetNets*" 2019 Seventh International Conference on Digital Information Processing and Communications (ICDIPC), Trabzon, Turkey, 2019, pp. 72-77, DOI: (10.1109/ICDIPC.2019.8723867).
- Ghadeer Neama and **M. K. Awad**"*An Energy Efficient Integral Routing Algorithm for Software-defined Networks*", IEEE 86th Vehicular Technology Conference, (VTC'17), September. 2017.
- Y. Rafique and **M. K. Awad**,"*A Benchmark Implementation for Evaluating the Performance of Power-aware Routing Algorithms in Practical Software-defined Networks*, IEEE 4th International Conference on Software Defined Systems, (SDS'17), May. 2017.
- **M. K. Awad**, Y. Rafique, S. Alhadlaq, D. Hassoun, A. Alabdulhadi, S. Thani "*A Greedy Power-aware Routing Algorithm for Software-defined Networks*, The 16th IEEE International Symposium on Signal Processing in Information Technology, (ISSPIT'16), Dec. 2016.
- Haixia Peng, Shuaizong Si, **M. K. Awad**, Nan Cheng, Haibo Zhou, Xuemin (Sherman) Shen, Hai Zhao "*Energy-efficient and Fault-tolerant Evolution Models for Large-scale Infrastructures of Wireless Sensor Networks: A Complex Networks-based Approach*, IEEE Global Communications Conference (GLOBECOM'15), Dec. 2015.
- **M. K. Awad**, Ghadeer Neama, Yousef Rafique "*The Impact of Practical Network Constraints on the Performance of Energy-aware Routing Schemes*," 10th IEEE International Conference on Service Operations and Logistics, and Informatics (SOLI'15), Nov 2015.
- **M. K. Awad**, B. Zogheib and H. M. Alazemi, "*Optimal Penalties for Misbehavior Deterrence in Communication Networks*," IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM'15), August 2015.
- **M. K. Awad**, B. Zogheib, and H. AlAzemi, "*A Penalty Scheme for Academic Dishonesty*, IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE'13), Indonesia, Aug. 2013. (Organized by the IEEE Education Society)
- **M. K. Awad**, V. Mahinthan, X. Shen, and J. W. Mark, "*Impact of imperfect channel state information on cooperative communication*," Proc. IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PacRim' 11), Victoria, Canada, Aug. 2011.
- **M. K. Awad**, V. Mahinthan, X. Shen, and J. W. Mark, "*Power Allocation for Cooperative Diversity Networks with Inaccurate CSI: A Robust and Constrained Kalman Filter Approach*," in Proc. IEEE Global Telecommunications Conference (GLOBECOM' 09), Honolulu, Hawaii, Dec. 2009.
- M. Mehrjoo, **M. K. Awad**, M. Dianati, and X. Shen, "*Maintaining fairness using weighting factors in wireless networks*," in Proc. IEEE Global Telecommunications Conference (GLOBECOM' 09), Honolulu, Hawaii, Dec. 2009.
- **M. K. Awad**, V. Mahinthan, M. Mehrjoo, X. Shen, and J. W. Mark, "*Downlink resource allocation for OFDMA-based multiservice networks with imperfect CSI*," in Proc. IEEE International Conference on Communications (ICC' 09), Dresden, Germany, May 2009.
- **M. K. Awad**, X. Shen, and B. Zogheib, "*Uplink ergodic mutual information of OFDMA two-hop cooperative relay networks based on imperfect CSI*," in Proc. IEEE Global Telecommunications Conference (GLOBECOM' 08), New Orleans, LA, Dec. 2008.
- **M. K. Awad** and X. Shen, "*OFDMA based two-hop cooperative relay network resources allocation*," in Proc. IEEE International Conference on Communications (ICC' 08), Beijing, China, May 2008.
- K. T. Wong and **M. K. Awad**, "*Source tracking with multiple-forgetting-factor RLS using a vector-*

hydrophone away from or near a reflecting boundary," in IEEE Oceans Asia-Pacific Conference, Singapore, May 2006.

Book Chapters

- M. Mehrjoo, **M. K. Awad**, and X. Shen, *WiMAX Network Planning and Optimization*, ser. Wireless Networks and Mobile Communications Series. CRC Press -Taylor & Francis Group, 2009, ch. Resource Allocation in OFDM-based WiMAX, pp. 113–131.

University Services

Department

- Director of Graduate Program, *Graduate Program Committee*, Kuwait University, 2018–19, 2019–20, & 2020–21.
  - Completed a major revision to the graduate program that was initiated by previous graduate program committees. The new curriculum is currently under revision by the college of graduate studies.
  - Promoted for the computer engineering graduate program on social media and created a Linked-in page to make the program's information available to the public, e.g., seminars announcements and theses examinations. This have encouraged engineers from other institutions and industry to participate in these events. The number applicants to the program have almost been doubling every year since we started promoting for the program.
  - Developed a detailed step-by-step guide for students and administrative assistances on completing all phases of the degree. It offers instructions on completing forms and requirements of each of phases.
  - Designed an intra-net website on sharepoint for the graduate program that provides students and supervisors with all program-related resources.
  - Remotely managed all program-related administrative activities during the COVID-19 lockdown. Also, facilitated remote theses defenses during the lockdown.
- Chair, *Systems and Networks Teaching-Area-Group Committee*, Kuwait University, 2016–17, 2017–18, & 2019–20.
  - **Cisco Academy**
    - Re-activated the Kuwait University Cisco Academy, Cisco Academy support Center and Cisco Instructor Training Center.
    - Integrated Cisco certification in the undergraduate networks courses; The CCNA Introduction to Networks course is offered to students in the CpE356 laboratory course.
    - Designed, developed lab layout, ordered equipment for three networks laboratories that would facilitate offering Cisco certificates in networks, security and IoT.
    - Administered course creation and students enrollment on Cisco's platform.
    - Issued official certificates for students who completed the certification requirements.
    - Sought funding from Cisco to provide instructors online training for our professors and teaching assistants through the University of Technology and Applied Sciences - Muscat Oman. More than 10 instructors benefited from the training and become certified instructors.
  - **SIEMENS Mindsphere Laboratory**
    - Designed and currently working on the implementation of SIEMENS-KU Mindsphere Laboratory. The laboratory hosts different samples of smart factories and smart cities components by fischertechnik, SIEMENS PLCs, and access to SIEMENS's mindsphere cloud.
    - The laboratory facilitates hands-on training for students in C++, java and Python programming courses. Furthermore, data analytics and machine learning techniques can be implemented on the cloud to analyze data collected from the fischertechnik components.
    - We successfully, in collaboration with SIEMENS, received funding (130,000 K.D.) from the Kuwait Direct Investment Promotion Authority (KDIPA) through their offset program.
- Member, *Systems and Networks Teaching-Area-Group Committee*, Kuwait University, 2020–21, & 2021–22.
- Member, *Strategic Planning and Operation*, Kuwait University, 2018–19.
- Member, *Department Budget and Labs. Committee*, Kuwait University, 2016–17.

- Member, *Capstone Design Committee*, Kuwait University, 2015–16.
- Member, *Graduate Program Committee*, Kuwait University, 2014–15, 2015–16, & 2021–22.
  - Made major contribution to the preparation of the graduate program self-study report.
- Chair, *Department Assessment Committee*, Kuwait University, 2013–14 & 2014–15.
- Member, *Department Assessment Committee*, Kuwait University, 2012–13 & 2015–16.
  - Prepared for the ABET evaluation visit. Prepared annual previous years assessment reports, organized evidences, and documented departmental processes. Assisted in labs and assessment office preparation for the visit.
- Member, *Undergraduate Program Committee*, Kuwait University, 2012–13, 2013–14, 2014–15, 2016–17, 2017–18, 2018–19, & 2019–2020.
  - Made major contribution to the preparation of the ABET self-study report for the 2013-2019 accreditation cycle.
  - Made major contribution to the preparation of the ABET self-study report for the 2019-2025 accreditation cycle.
- Council Secretary, *Computer Engineering Department*, Kuwait University, 2012–13.
- Chair, ABET *Accreditation Data Collection Committee*, American University of Kuwait, Spring 2011–12.
- Advisor, *Students Academic Advising Team*, American University of Kuwait, Spring 2010–12.
- Member, *Faculty Hiring Committee*, American University of Kuwait, Spring 2010–12.
- Member, *Adjuncts Hiring Committee*, American University of Kuwait, Spring 2010.

College

- Member, *Committee of Directors of Engineering Graduate Programs*, Kuwait University, 2018–21.
- Member, *College Teaching Excellence Award Committee*, Kuwait University, 2015–16 & 2016–17.
- Member, *College Assessment Committee*, Kuwait University, 2014–15.

University

- Member, *Degrees Evaluation and GPA Conversion University Committee*, Kuwait University, 2015–2021.
- Consultant to *Vice President for Academic Affairs*, Kuwait University, 2012–16.
- Attendee, *Degrees Evaluation and GPA Conversion University Committee*, Kuwait University, 2012–15.
- Chair, *Professional Development Committee*, American University of Kuwait, 2011–12.
- Member, *President's Award Committee*, American University of Kuwait, Spring 2012.
- Member, ABET *Accreditation Steering Committee*, American University of Kuwait, Spring 2012.
- Chair, *Academic Computing and Technologies Committee* , American University of Kuwait, 2010–11.

Community Services & Professional Activities

- *Editor*
  - Serving as an editor on the editorial board of *IEEE Transactions on Green Communications and Networking (TGCN) from 2016 to 2021.*
- *TPC Member*
  - Evaluated submissions, *IEEE International Conference on Communications*, Shanghai, November 2015.
- *Session Chair*
  - Chaired a session at the 16th IEEE International Symposium on Signal Processing in Information Technology, (ISSPIT'16).
  - Chaired multiple sessions at the Kuwait Conference on e-Services and e-Systems KCEE, Fall 2012.
- *Supported Several Local Activities*
  - Judge, International Invention Fair in the Middle East, Kuwait, Spring 2018.
  - Judge, High School Science Competitions, *Kuwait Science and Engineering Competition*, Kuwait Science Club, Spring 2013, 2014, 2015 & 2016.
  - Mentor, *Engineering Creativity to Serve People with Disability*, College of Engineering & Petroleum, Spring 2014.
  - Mentor, Group of senior students participating in the *Student's ICT Challenge 2014* at Gulf University of Science and Technology (GUST), Kuwait, Fall 2014.
  - Evaluator, *Capstone Projects Evaluation Committee*, Kuwait University, Fall 2012 and Spring 2013
  - Judge, *Kuwait Foundation for the Advancement of Science (KFAS) prize for Engineering Design*, Kuwait University, Spring 2013
  - Mentor, Group of students participating in the *Secure Information Systems Mentoring and Training (SISMAT) Program* at Dartmouth's Institute for Security, Technology, and Society, Dartmouth College, Hanover, NH, USA, Spring 2012.
  - Mentor, Group of students competing in the *National Robotics Competition of Kuwait Colleges* at Kuwait University, Kuwait. Spring 2012.
  - Support Person, Group of students participating in the *American University of Kuwait - Dartmouth exchange program*, Dartmouth College, Hanover, NH, USA, Summer 2011.
  - Judge, *The ACM technology Fair*, American University of Kuwait, Kuwait, Spring 2011
- *Peer Reviewer*
  - Journals: IEEE Journal of Selected Area of Communication (JSAC), IEEE Transactions on Wireless Communications, IEEE Wireless Communications, IEEE Transactions on Cognitive Communications and Networking, IEEE Transactions on Communications, and Kuwait University Journal of Engineering Research.
  - Conferences: IEEE INFOCOM' 09, IEEE Globecom' 08-09, IEEE WCNC' 08-09, IEEE ICC' 07-09, and many others.
  - Research Proposals: Australian College of Kuwait Research Office.
- *Coordinator*
  - BroadBand Communications Research (BBCR) weekly group meeting, University of Waterloo, (06-09).

Teaching Experience

Courses

The Computer Engineering (CPE) departmental courses I teach are related to my research on the design and optimization of communication networks. I also teach three of the College of Engineering and Petroleum (ENG) courses, which are computer programming for engineers, numerical methods in engineering, and probability-and-statistics. In addition, I teach an elective course in the Chemical Engineering (CHE) department, in which I cover basic operations-research techniques that I apply in my research towards networks optimization. The seven undergraduate courses I teach can be classified as follows:

- Departmental Core Course:
  - CpE-356 Computer Networks I
  - CpE-456 Computer Networks II
  - CpE-395 Computer Systems Engineering
  - CpE-495 Capstone Design
- Departmental Elective Courses:
  - CpE-458 Network Programming
  - CpE-454 Performance Evaluation of Computer Networks
  - CpE-443 Multimedia Applications and Systems
- College Core Courses:
  - ENG-200 Computer Programming for Engineers
  - ENG-304 Engineering Probability and Statistics
  - ENG-308 Numerical Methods in Engineering
  - ENG-307 Applied Numerical Methods and Programming in Engineering
- Elective Courses in other Departments:
  - ChE-481 Operations Research

Furthermore, I teach two graduate courses.

- Departmental Elective Graduate Course:
  - CpE-567 Modeling and Analysis of Communication Networks
- Departmental Core Graduate Course:
  - CpE-569 High Performance Computer Networks

Teaching Evaluation Results

Since Fall 2019–2020 I have offered 12 courses. The course evaluation results of all sections are attached to this resume.

Theses Supervision

I am currently supervising three masters degree students. The students names, status, progress and thesis title are listed as follows:

- Student: Marwah Kandil
  - Co-supervisor: Dr. Eman Alotaibi (Computer Engineering Department)
  - Status: Full time, Progress: Thesis writing.
  - Thesis title: *Energy Efficient Routing for Software-defined Networks: a Reinforcement Learning Approach*
- Student: Darin Kablawi

  - Co-supervisor: Dr. Ebrahim Alrashed (Computer Engineering Department)
  - Status: Full time, Progress: Thesis writing.
  - Thesis title: *A Reinforcement Learning-based Routing for Hybrid Networks*
- Student: Yazan Mohamad
  - Status: Full time, Progress: Thesis writing.
  - Thesis title: *Load Balancing and Handover in Cellular Networks*
- Student: Nourah Al-Mubarak
  - Co-supervisor: Prof. Mohammed W. Baidas (Electrical Engineering Department)
  - Status: Full time, Progress: Graduated September 2021.
  - Thesis title: *Design and Implementation of Resource Allocation Schemes for D2D-enabled NOMA Cellular Networks*
- Student: Marwa Hassan Hafez
  - Co-supervisor: Prof. Ali Almutairi (Electrical Engineering Department)
  - Status: Full time, Progress: Graduated September 2020.
  - Thesis title: *Machine Learning-based Multipath Routing for Software Defined Networks*
- Student: Ali Rady Behiry
  - Co-supervisor: Dr. Ebrahim Alrashed (Computer Engineering Department)
  - Status: Full time, Progress: Graduate May 2019.
  - Thesis title: *A Load Balancing and QoS Management Scheme for HetNets Powered by Hybrid Energy Sources*
- Student: Yousef Mohammad Rafique
  - Co-supervisor: Dr. Reem Mhallah (Statistics and operations Research Department)
  - Status: Full time, Progress: Graduated May 2017.
  - Thesis title: *An implementation of Energy-efficient Routing Algorithms for Software-defined Networks*
- Student: Ghadeer N. Neama
  - Status: Full time, Progress: Graduated May 2017.
  - Thesis title: *An Energy Efficient integral Routing Algorithm for Software-defined Networks*

I have served on the following theses examination committees:

- Student: Latifa Alsalman
  - Exam: March 2022.
  - Supervisor: Dr. Eman Alotaibi
  - Thesis title: *A Balanced Routing Protocol Based on Machine Learning for Underwater Sensor Networks*
- Student: Ali Kelkawi
  - Exam: January 2022.
  - Supervisor: Prof. Imtiaz Ahmad
  - Thesis title: *Parallel Implementation of the Cooperative Coevaluation Framework*
- Student: Karim Elmaghraby
  - Exam: May 2021.
  - Supervisor: Prof. Anastasios Dimitriou
  - Thesis title: *Blockchain-Based Fair and Secure Certified Electronic Mail*

Other Courses

Sep 2009 – Aug 2012	Institution: American University of Kuwait, Kuwait. Courses: *Computer Communications Networks, E-Commerce, Systems Analysis and Design, Software Project Management, Analysis of Algorithms, and Ethics in Computing.*
Sep 2009 – Aug 2010	Institution: Australian College of Kuwait, Kuwait. Courses: *Computer Programming and Problem Solving (Java), Calculus - A, Calculus - B, Digital Logic Design, Dynamic Systems, and Engineering Mathematics.*

Teaching-related Research

In my courses I focus not only on engineering related concepts but also I try to promote ethical and professional conduct among students. Plagiarism and cheating deterrence is one of the challenges I face in both undergraduate and graduate courses. At the undergraduate level, some students fail to distinguish between collaboration and plagiarism. At the graduate level, some students fail to follow writing integrity guidelines.
The teaching assistants and I have been applying strict policy when it comes to cheating. I have also included strong statements in all my syllabi on cheating; however, we continued to have plagiarism cases in assignments and projects. This motivated us to investigate the optimality of fixed cheating penalties and its effectiveness. In a project sponsored by Kuwait University Research Sector we developed a method to derive the optimal fines for cheating deterrence. Results show that escalating penalties are optimal for cheating deterrence. Research results were reported in the following papers:

- **M. K. Awad**, B. Zogheib, and H. AlAzemi, "*A Penalty Scheme for Academic Dishonesty*, IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE'13), Indonesia, Aug. 2013. (Organized by the IEEE Education Society)
- **M. K. Awad**, B. Zogheib, and H. AlAzemi, "*On the Optimality of Escalating Penalties for Repeat Offenses Against the Academic Honor*", Taylor and Francis Group, Applied Economics, 2015.

Professional Development

- Attendance, *Cybersecurity Education and Research Conference (CERC)*, Kuwait University, College of Life Sciences, November 2021.
- Participant, *Two days Workshop on Research Publication Workshop*, American Association for Advancement of Science, KFAS, Fall 2017
- Participant, *Three days Workshop on Developing Competitive Research Proposal*, American Association for Advancement of Science (AAAS), KFAS, Fall 2016.
- Participant, *Three days Teaching Excellence Program*, University of California - Berkeley, KFAS, Spring 2016.
- Participant, *Academic Ranking in the Middle East: Kuwait University*, College of Computing Sciences & Engineering, Spring 2016.
- Participant, *Workshop on Engineering Professional Skills Assessment (EPSA) related to ABET Engineering Accreditation*, College of Computing Sciences & Engineering, Spring 2014.
- Attendee "The first Workshop on Pricing and Incentives in Networks", held on June 11, 2012, in conjunction with ACM SIGMETRICS/Performance, London, 2012.

Professional Affiliation

- Professional Engineers of Ontario (PEO), Engineer in Training (EIT) member
- IEEE member and IEEE ComSoc member since 2002

References

Prof. Xuemin (Sherman) Shen
Professor
University of Waterloo
Dept. of Electrical & Computer Engineering
Waterloo, Ontario, Canada
phone: *+1 (519) 888-4567 ext. 32691*
e-mail: *xshen@bbcr.uwaterloo.ca*
web: http://bbcr.uwaterloo.ca/~xshen/

Prof. Jon W. Mark
Distinguished Professor Emeritus
University of Waterloo
Waterloo, Ontario, Canada
Dept. of Electrical & Computer Engineering
phone: *+1 (519) 888-4567 ext. 32532*
e-mail: *jwmark@bbcr.uwaterloo.ca*
web: http://www.ece.uwaterloo.ca/People/faculty/mark.html

Dr. Ali Charara
Dean of the College of Arts and Sciences
American University of Kuwait
College of Arts and Sciences
PO Box 3323, Safat, 13034
phone: +965 802040 Ext. 3505
e-mail: acharara@auk.edu.kw
web: http://www.auk.edu.kw