Curriculum Vitae

Mohammad J. Abdel-Rahman

Assoc. Prof., Data Science Dept., PSUT (on leave from HTU)

Adj. Asst. Prof., Elect. & Comp. Eng. Dept., Virginia Tech, Blacksburg, VA, USA

CONTACT INFORMATION

Khalil Al-Saket St., Al-Jubaiha 11941, Amman, Jordan   Tel.: +962 (79) 731-2107

Data Science Department   E-mail: M.AbdelRahman@psut.edu.jo

Princess Sumaya University for Technology (PSUT)   URL: https://sites.google.com/vt.edu/mohammad/

EDUCATION

The University of Arizona, Tucson, AZ, USA   Sept. 2010 – Nov. 2014
Ph.D. in electrical and computer engineering   *College of Engineering*
Minor in mathematics   *Outstanding Graduate*
Minor in systems & industrial engineering (operations research)   *Student Award*
Dissertation Title: *Robust Cognitive Algorithms for Fast-varying Spectrum-agile Wireless Networks*

Jordan University of Science and Technology, Irbid, Jordan   Sept. 2008 – May 2010
M.Sc. in electrical engineering
Area of Study: Wireless communications
Thesis Title: *On the Detection of Intelligent Mobile Targets in a Mobile Sensor Network*

Yarmouk University, Irbid, Jordan   Sept. 2004 – Sept. 2008
B.Sc. in telecommunications engineering

PROFESSIONAL EXPERIENCE

Princess Sumaya University for Technology (PSUT), Amman, Jordan   Sept. 2022 – present
Associate Professor, Data Science Department

Al Hussein Technical University (HTU), Amman, Jordan   May 2019 – present (on leave)
Associate Professor, Electrical Engineering and Computer Science Departments

Al Hussein Technical University (HTU), Amman, Jordan   April 2019 – present
Director, Wireless Networks & Security (WiNS) Research Lab.

Al Hussein Technical University (HTU), Amman, Jordan   Oct. 2018 – March 2022
Founding Chair, Electrical Engineering Department

Khalifa University, Abu Dhabi, UAE   Sept. 2018 – Oct. 2018
Visiting Assistant Professor, Electrical and Computer Engineering Department

Al Hussein Technical University (HTU), Amman, Jordan   Sept. 2018 – May 2019
Assistant Professor, Computer Science Department

Virginia Polytechnic Institute and State University, Blacksburg, VA, USA   Jan. 2018 – present
Adjunct Assistant Professor, Electrical and Computer Engineering Department

Al Hussein Technical University (HTU), Amman, Jordan   Oct. 2017 – May 2019
Assistant Professor, Electrical Engineering Department

Virginia Polytechnic Institute and State University, Blacksburg, VA, USA   June 2016 – Sept. 2017
Research Associate, member of Wireless @ Virginia Tech Group

Virginia Polytechnic Institute and State University, Blacksburg, VA, USA   Jan. 2015 – June 2016
Postdoctoral Research Associate, member of Wireless @ Virginia Tech Group

The University of Arizona, Tucson, AZ, USA   Sept. 2010 – Dec. 2014
Graduate Research Assistant, member of Wireless Communications and Networking Group

INRIA, Sophia Antipolis, France   July 2012 – Aug. 2012
Visiting Ph.D. Student

UMNIAH mobile company (GSM operator), Amman, Jordan   Feb. 2008 – Aug. 2008
Intern Engineer

PUBLICATIONS

Journal Articles

1. <u>Mohammad J. Abdel-Rahman</u>, Adel M. AlWaqfy, Jumanh K. Atoum, Maysa A. Yaseen, and Allen B. MacKenzie, "A Novel Multi-Objective Sequential Resource Allocation Optimization for UAV-Assisted VLC," *IEEE Transactions on Vehicular Technology*, to appear.

2. Shubhajeet Chatterjee, <u>Mohammad J. Abdel-Rahman</u>, and Allen B. MacKenzie, "On Optimal Orchestration of Virtualized Cellular Networks with Statistical Multiplexing," *IEEE Transactions on Wireless Communications*, vol. 21, issue 1, pp. 310-325, Jan. 2022.

3. Shubhajeet Chatterjee, <u>Mohammad J. Abdel-Rahman</u>, and Allen B. MacKenzie, "A Joint Optimization Framework for Network Deployment and Adaptive User Assignment in Indoor Millimeter Wave Networks," *IEEE Transactions on Wireless Communications*, vol. 20, issue 11, pp. 7538-7554, Nov. 2021.

4. Amr Nabil, <u>Mohammad J. Abdel-Rahman</u>, Allen B. MacKenzie, and Fahid Hassan, "A Stochastic Optimization Framework for Channel Bonding in Wireless LANs Under Demand Uncertainty," *IEEE Transactions on Wireless Communications*, vol. 19, issue 11, pp. 7528-7542, Nov. 2020.

5. Shubhajeet Chatterjee, <u>Mohammad J. Abdel-Rahman</u>, and Allen B. MacKenzie, "On Optimal Orchestration of Virtualized Cellular Networks with Downlink Rate Coverage Probability Constraints," *IEEE Transactions on Wireless Communications*, vol. 19, issue 7, pp. 4378-4393, July 2020.

6. Jacek Kibiłda, Allen B. MacKenzie, <u>Mohammad J. Abdel-Rahman</u>, Seong Ki Yoo, Lorenzo Galati Giordano, Simon L. Cotton, Nicola Marchetti, Walid Saad, William G. Scanlon, Adrian Garcia-Rodriguez, David López-Pérez, Holger Claussen, and Luiz A. DaSilva, "Indoor Millimeter-Wave Systems: Design and Performance Evaluation," *Proceedings of the IEEE*, vol. 108, issue 6, pp. 923-944, June 2020.

7. Marcela M. Gomez, Shubhajeet Chatterjee, <u>Mohammad Abdel-Rahman</u>, Allen MacKenzie, Martin B.H. Weiss, Luiz DaSilva, "Market-driven Stochastic Resource Allocation Framework for Wireless Network Virtualization," *IEEE Systems Journal*, vol. 14, issue 1, pp. 489-499, Mar. 2020.

8. <u>Mohammad J. Abdel-Rahman</u>, Fatimah Al-Ogaili, Mustafa A. Kishk, Allen B. MacKenzie, Paschalis Sofotasios, Sami Muhaidat, and Amr Nabil, "DBmmWave: Chance-constrained Joint AP Deployment and Beam Steering in mmWave Networks with Coverage Probability Constraints," *IEEE Networking Letters*, vol. 1, issue 4, pp. 151-155, Dec. 2019.

9. EmadelDin Mazied, Mustafa ElNainay, <u>Mohammad J. Abdel-Rahman</u>, Scott Midkiff, Mohamed Rizk, Hesham Rakha, and Allen B. MacKenzie, "The Wireless Control Plane: An Overview and Directions for Future Research," *Journal of Network and Computer Applications*, vol. 126, pp. 104-122, Jan. 2019.

10. Amr Nabil, Aditya V. Padaki, <u>Mohammad J. Abdel-Rahman</u>, Mustafa ElNainay, Allen B. MacKenzie, and Jeffrey H. Reed, "On Optimal Resource Allocation in Multi-RAT Wireless Networks with Receiver Characteristic Awareness," *IEEE Transactions on Cognitive Communications and Networking*, vol. 5, issue 1, pp. 103-118, Mar. 2019.

11. Shubhajeet Chatterjee, <u>Mohammad J. Abdel-Rahman</u>, and Allen B. MacKenzie, "Optimal Base Station Deployment with Downlink Rate Coverage Probability Constraint," *IEEE Wireless Communications Letters*, vol. 7, issue 3, pp. 340-343, June 2018.

12. Wessam Afifi, <u>Mohammad J. Abdel-Rahman</u>, Marwan Krunz, and Allen B. MacKenzie, "Full-duplex or Half-duplex: A Bayesian Game for Wireless Networks with Heterogeneous Self-interference Cancellation Capabilities," *IEEE Transactions on Mobile Computing*, vol. 17, issue 5, pp. 1076-1089, May 2018.

13. AbdulMajid Al-Mqdashi, Aduwati Sali, <u>Mohammad J. Abdel-Rahman</u>, Nor NoorDin, Shaiful Hashim, and Rosdiadee NorDin, "Efficient rendezvous schemes for fast-varying cognitive radio ad hoc networks," *Transactions on Emerging Telecommunications Technologies*, vol. 28. issue 12, pp. 1-22, Dec. 2017.

14. Mohamed AbdelRaheem, <u>Mohammad J. Abdel-Rahman</u>, Mustafa El-Nainay, and Scott F. Midkiff, "Spectrum-efficient Resource Allocation Framework for Cooperative Opportunistic Wireless Networks," *IEEE Transactions on Cognitive Communications and Networking*, vol. 2, issue 3, pp. 249-262, Sept. 2016.

15. Manjesh K. Hanawal, <u>Mohammad J. Abdel-Rahman</u>, and Marwan Krunz, "Joint Adaptation of Frequency Hopping and Transmission Rate for Anti-jamming Wireless Systems," *IEEE Transactions on Mobile Computing*, vol. 15, issue 9, pp. 2247-2259, Sept. 2016.

16. <u>Mohammad J. Abdel-Rahman</u>, Harish K. Shankar, and Marwan Krunz, "QoS-aware Parallel Sensing/Probing Architecture and Adaptive Cross-layer Protocol Design for Opportunistic Networks," *IEEE Transactions on Vehicular Technology*, vol. 65, issue 4, pp. 2231-2242, Apr. 2016.

17. <u>Mohammad J. Abdel-Rahman</u>, Dima Abu-Aysheh, Ahmad Abu-El-Haija, Rasheed Abu-Aysheh, and Hazem Al-Najjar, "Detecting Intruders by Wireless Sensor Networks," *Ad Hoc & Sensor Wireless Networks (AHSWN) Journal*, vol. 31, pp. 303-337, Mar. 2016.

18. <u>Mohammad J. Abdel-Rahman</u> and Marwan Krunz, "Stochastic Guard-band-aware Channel Assignment with Bonding and Aggregation for DSA Networks," *IEEE Transactions on Wireless Communications*, vol. 14, issue 7, pp. 3888-3898, July 2015.

19. <u>Mohammad J. Abdel-Rahman</u>, Hanif Rahbari, and Marwan Krunz, "Multicast Rendezvous in Fast-varying DSA Networks," *IEEE Transactions on Mobile Computing*, vol. 14, issue 7, pp. 1449-1462, July 2015.

20. <u>Mohammad J. Abdel-Rahman</u>, Marwan Krunz, and Richard Erwin, "Exploiting Cognitive Radios for Reliable Satellite Communications," *Wiley International Journal of Satellite Communications and Networking*, vol. 33, issue 3, pp. 197-216, May/June 2015.

21. Gulnur S. Uyanik, <u>Mohammad J. Abdel-Rahman</u>, and Marwan Krunz, "Optimal Channel Assignment with Aggregation in Multi-channel Systems: A Resilient Approach to Adjacent-channel Interference," *Elsevier Ad Hoc Networks Journal*, vol. 20, pp. 64-76, Sept. 2014.

22. Mustafa Al-Shawaqfeh, Ahmad Abu-El-Haija, and <u>Mohammad J. Abdel-Rahman</u>, "Collision Avoidance Slot Allocation Scheme for Multi-cluster Wireless Sensor Networks," *ACM/Springer Wireless Networks Journal (WINET)*, vol. 19, issue 6, pp. 1187-1201, 2013.

Conference Papers

1. Adel M. AlWaqfi, <u>Mohammad J. Abdel-Rahman</u>, Yunis A. Al-Qreenawi, Zain AlHwaidy, and Ahmad I. Abu-El-Haija, "Implementation of a Fully-automated Optimized Fog-computing-based IoT-controlled PV Network," *to appear in the Proceedings of the International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies (ENERGY)*, 2023.

2. <u>Mohammad J. Abdel-Rahman</u>, Fahid Hassan, and Ahmad I. Abu-El-Haija, "QUANTA: A Nested QUorum-based ANTi-jamming Rendezvous Game for DSA Systems," *Proceedings of the IEEE International Wireless Communications and Mobile Computing Conference (IWCMC)*, 2022, pp. 1262-1266.

3. Shubhajeet Chatterjee, <u>Mohammad J. Abdel-Rahman</u>, and Allen B. MacKenzie, "Robust Access Point Deployment and Adaptive User Assignment for Indoor Millimeter Wave Networks," *Proceedings of the IEEE International Conference on Communications (ICC)*, 2020, pp. 1-6.

4. Kory Teague, <u>Mohammad J Abdel-Rahman</u>, and Allen B MacKenzie, "Joint Base Station Selection and Adaptive Slicing in Virtualized Wireless Networks: A Stochastic Optimization Framework," *Proceedings of the International Conference on Computing, Networking and Communications (ICNC)*, 2019, pp. 859-863.

5. Shubhajeet Chatterjee, <u>Mohammad J. Abdel-Rahman</u>, and Allen B. MacKenzie, "Virtualization Framework for Cellular Networks with Downlink Rate Coverage Probability Constraints," *Proceedings of the IEEE Global Communications (GLOBECOM) Conference*, 2018, pp. 1-7.

6. Amr Nabil, Aditya V. Padaki, <u>Mohammad J. Abdel-Rahman</u>, Allen B. MacKenzie, and Jeffrey H. Reed, "Receiver Characteristic Aware Optimal Resource Allocation in Multi-RAT Wireless Networks," *Proceedings of the IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, 2017, pp. 1-7.

7. Amr Nabil, <u>Mohammad J. Abdel-Rahman</u>, and Allen MacKenzie, "Adaptive Channel Bonding in Wireless LANs Under Demand Uncertainty," *Proceedings of the IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, 2017, pp. 1-7.

8. Kleber V. Cardoso, <u>Mohammad J. Abdel-Rahman</u>, Allen MacKenzie, and Luiz A. DaSilva, "Virtualization and Programmability in Mobile Wireless Networks: Architecture and Resource Management," *Proceedings of the ACM SIGCOMM 2017 Workshop on Mobile Edge Communications (MECOMM)*, Los Angeles, CA, USA, Aug. 2017, pp. 1-6.

9. <u>Mohammad J. Abdel-Rahman</u>, EmadelDin A. Mazied, Kory Teague, Allen B. MacKenzie, and Scott F. Midkiff, "Robust Controller Placement and Assignment in Software-defined Cellular Networks," *Proceedings of the 26th International Conference on Computer Communications and Networks (ICCCN)*, Vancouver, Canada, July/Aug. 2017, pp. 1-9.

10. Shubhajeet Chatterjee, <u>Mohammad J. Abdel-Rahman</u>, and Allen B. MacKenzie, "Optimal Distributed Allocation of Almost Blank Subframes for LTE/WiFi Coexistence," *Proceedings of WiOpt International Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET)*, Paris, France, May 2017, pp. 1-6.

11. Mehdi Soorki, <u>Mohammad J. Abdel-Rahman</u>, Allen MacKenzie, and Walid Saad, "Joint Access Point Deployment and Assignment in mmWave Networks with Stochastic User Orientation," *Proceedings of WiOpt International Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET)*, Paris, France, May 2017, pp. 1-6.

12. <u>Mohammad J. Abdel-Rahman</u>, EmadelDin A. Mazied, Allen MacKenzie, Scott Midkiff, Mohamed R. M. Rizk, and Mustafa El-Nainay, "On Stochastic Controller Placement in Software-defined Wireless Networks," *Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC)*, San Francisco, USA, Mar. 2017, pp. 1-6.

13. AbdulMajid Al-Mqdashi, A. Sali, N. NoorDin, Shaiful Hashim, Rosdiadee NorDin, and <u>Mohammad J. Abdel-Rahman</u>, "An Efficient Quorum-based Rendezvous Scheme for Multi-radio Cognitive Radio Networks," *Proceedings of the IEEE International Symposium on Telecommunication Technologies (ISTT)*, Kuala Lumpur, Malaysia, Nov. 2016, pp. 59-64. **Best Paper Award**

14. Wessam Afifi, <u>Mohammad J. Abdel-Rahman</u>, Marwan Krunz, and Allen B. MacKenzie, "Coexistence in Full-duplex Wireless Networks with Imperfect Self-interference Cancellation Capabilities," *Proceedings of the International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, Tempe, AZ, USA, May 2016, pp. 1-8.

15. <u>Mohammad J. Abdel-Rahman</u>, Mohamed AbdelRaheem, Allen B. MacKenzie, Kleber Cardoso, and Marwan Krunz, "On the Orchestration of Robust Virtual LTE-U Networks from Hybrid Half/Full-duplex Wi-Fi APs," *Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC)*, Doha, Qatar, Apr. 2016, pp. 1-6.

16. <u>Mohammad J. Abdel-Rahman</u>, Kleber Cardoso, Allen B. MacKenzie, and Luiz A. DaSilva, "Dimensioning Virtualized Wireless Access Networks from a Common Pool of Resources," *Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC)*, USA, Jan. 2016, pp. 1042-1047.

17. <u>Mohammad J. Abdel-Rahman</u>, Mohamed AbdelRaheem, and Allen B. MacKenzie, "Stochastic Resource Allocation in Opportunistic LTE-A Networks with Heterogeneous Self-interference Cancellation Capabilities," *Proceedings of the IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, Stockholm, Sweden, Sept./Oct. 2015, pp. 200-208.

18. <u>Mohammad J. Abdel-Rahman</u> and Marwan Krunz, "CORE: A Combinatorial Game-theoretic Framework for COexistence REndezvous in DSA Networks," *Proceedings of the IEEE International Conference on Sensing, Communication, and Networking (SECON)*, Seattle, Washington, USA, June 2015, pp. 10-18.

19. Manjesh K. Hanawal, <u>Mohammad J. Abdel-Rahman</u>, and Marwan Krunz, "Game Theoretic Anti-jamming Dynamic Frequency Hopping and Rate Adaptation in Wireless Systems," *Proceedings of the IEEE/IFIP International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, Hammamet, Tunisia, May 2014, pp. 247-254.

20. <u>Mohammad J. Abdel-Rahman</u>, and Marwan Krunz, "Game-theoretic Quorum-based Frequency Hopping for Anti-jamming Rendezvous in DSA Networks," *Proceedings of the IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), Technology Track*, McLean, Virginia, USA, Apr. 2014, pp. 248-258.

21. <u>Mohammad J. Abdel-Rahman</u>, Harish K. Shankar, and Marwan Krunz, "Adaptive Cross-layer Protocol Design for Opportunistic WLANs over TVWS," *Proceedings of the IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), Technology Track*, McLean, Virginia, USA, Apr. 2014, pp. 519-530.

22. <u>Mohammad J. Abdel-Rahman</u>, Fujun Lan, and Marwan Krunz, "Spectrum-efficient Stochastic Channel Assignment for Opportunistic Networks," *Proceedings of the IEEE Global Communications (GLOBECOM) Conference*, Atlanta, Georgia, USA, Dec. 2013, pp. 1272-1277.

23. Gulnur Selda Uyanik, <u>Mohammad J. Abdel-Rahman</u>, and Marwan Krunz, "Optimal Guard-band-aware Channel Assignment with Bonding and Aggregation in Multi-channel Systems," *Proceedings of the IEEE Global Communications (GLOBECOM) Conference*, Atlanta, Georgia, USA, Dec. 2013, pp. 4769-4774.

24. <u>Mohammad J. Abdel-Rahman</u>, Hanif Rahbari, Marwan Krunz, and Philippe Nain, "Fast and Secure Rendezvous Protocols for Mitigating Control Channel DoS Attacks," *Proceedings of the IEEE International Conference on Computer Communications (INFOCOM) Mini-Conference*, Turin, Italy, Apr. 2013, pp. 370-374.

25. <u>Mohammad J. Abdel-Rahman</u>, Hanif Rahbari, and Marwan Krunz, "Adaptive Frequency Hopping Algorithms for Multicast Rendezvous in DSA Networks," *Proceedings of the IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), Technical Track*, Bellevue, Washington, USA, Oct. 2012, pp. 436-447.

26. <u>Mohammad J. Abdel-Rahman</u>, Marwan Krunz, and Richard Erwin, "Out-of Band Sensing Scheme for Dynamic Frequency Hopping in Satellite Communications," *Proceedings of the IEEE International Conference on Communications (ICC) - Selected Areas in Communications Symposium*, Ottawa, Canada, June 2012, pp. 3273-3277.

27. <u>Mohammad J. Abdel-Rahman</u>, Marwan Krunz, and Richard Erwin, "Interference Mitigation Using Spectrum Sensing and Dynamic Frequency Hopping," *Proceedings of the IEEE International Conference on Communications (ICC) - Wireless Communications Symposium*, Ottawa, Canada, June 2012, pp. 5932-5936.

28. <u>Mohammad J. Abdel-Rahman</u>, Ahmad Abu-El-Haija, and Hazem Al-Najjar, "On the Detection of Intelligent Mobile Targets in a Mobile Sensor Network," *Proceedings of the IEEE International Wireless Communications and Mobile Computing Conference (IWCMC)*, Istanbul, Turkey, July 2011, pp. 1268-1275.

Poster Presentations

1. <u>Mohammad J. Abdel-Rahman</u>, Allen B. MacKenzie, and Walid Saad, "Enabling Cellular Networks to Exploit Millimeter-wave Opportunities (NEMOs)," *Wireless Personal Communications Symposium*, Blacksburg, VA, USA, June 2016.

2. Kleber Cardoso, <u>Mohammad J. Abdel-Rahman</u>, Allen B. MacKenzie, and Luiz A. DaSilva, "Virtualization and Programmability in Mobile Wireless Networks: Architecture and Resource Management," *Wireless Personal Communications Symposium*, Blacksburg, VA, USA, May 2015.

3. <u>Mohammad J. Abdel-Rahman</u> and Marwan Krunz, "Rendezvous Under Smart Jamming," *NSF Broadband Wireless Access & Applications Center (BWAC) IAB Meeting*, Auburn, AL, USA, Oct. 2013.

4. <u>Mohammad J. Abdel-Rahman</u>, Marwan Krunz, and Diep Nguyen, "Frequency and Waveform Adaptation Strategies for Countering Smart Adversaries in Satellite Systems," *NSF Broadband Wireless Access & Applications Center (BWAC) IAB Meeting*, Tucson, AZ, USA, Apr. 2013.

5. Marwan Krunz, Ricardo Sanfelice, Diep Nguyen, and <u>Mohammad J. Abdel-Rahman</u>, "Game Theoretic Channel Selection and Waveform Adaptation for Anti-jamming Satellite Systems," *NSF Connection One Semi-annual Meeting*, Tucson, Jan. 2013.

6. <u>Mohammad J. Abdel-Rahman</u>, Hanif Rahbari, and Marwan Krunz, "Unicast and Multicast Rendezvous Protocols for Heterogeneous DSA Networks," *NSF Connection One Semi-annual Meeting*, Scottsdale, AZ, USA, Jan. 2013.

7. <u>Mohammad J. Abdel-Rahman</u>, Sean Phillips, Ricardo G. Sanfelice, and Marwan Krunz, "Adaptive Frequency Hopping and Synchronization-Based Algorithms for Rendezvous," *Cognitive RF Workshop*, Kirtland AFB, Albuquerque, NM, USA. Sept. 2012.

8. <u>Mohammad J. Abdel-Rahman</u> and Marwan Krunz, "Interference and Jamming Mitigation in Satellite Communications," *NSF Connection One Semi-annual Meeting*, Scottsdale, AZ, USA, May 2012.

9. <u>Mohammad J. Abdel-Rahman</u> and Marwan Krunz, "Anti-Jamming Frequency Hopping Techniques for Secure Multicast Communications," *ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec)*, Tucson, AZ, Apr. 2012.

GRANT PROPOSAL EXPERIENCE

- PI/Co-I of the following grant proposals:

  - "Robust Resource Allocation Framework for Intelligent Reflecting Surface Assisted Millimeter-Wave NOMA Networks" Jordan Scientific Research and Innovation Support Fund (SRISF), Jan. 2022 – June 2023.
  - "Stochastic Resource Allocation Framework for Fog Computing-based IoT Networks with an Application to Smart Grids" Jordan Scientific Research and Innovation Support Fund (SRISF), Dec. 2020 – Dec. 2022.

TEACHING EXPERIENCE

Princess Sumaya University for Technology (PSUT), Amman, Jordan   Fall 2022
Teaching the following courses:

B.Sc.	M.Sc.	Ph.D.
Business Intelligence	Business Modeling for Data Science	Scientific Research Methods
	Business Intelligence	Special Topics in Computer Science (Optimization, Game Theory, & Markov Theory)

Al Hussein Technical University (HTU), Amman, Jordan   Fall 2017 – Summer 2022
Teaching the following undergraduate courses:

Functional Mathematics	Engineering Mathematics	Further Mathematics
Electrical & Electronic Principles	Digital Principles	
Data Structures & Algorithms	Data Analytics	
Signals & Systems	Communication Systems I	Communication Systems II
Research Project	Capstone Project	

Virginia Tech, Blacksburg, VA, USA   Fall 2016
Teaching ECE 4634 (Digital Communications), a cross-listed undergraduate/graduate course

Virginia Tech, Blacksburg, VA, USA   Fall 2015
Guest Lecturer
Giving one lecture for the ECE 5605 (Stochastic Signals and Systems) course

The University of Arizona, Tucson, AZ, USA   Fall 2014
Guest Lecturer
Giving one lecture for the ECE 564 (Advanced Topics in Computer Networks) course

The University of Arizona, Tucson, AZ, USA   Spring 2013
Guest Lecturer
Giving two lectures for the ECE 678 (Wireless Protocols) course

The University of Arizona, Tucson, AZ, USA   Spring 2011
Grader
ECE 442/542: Digital Control Systems (Instructor: Dr. Hal Tharp)

Jordan University of Science and Technology, Irbid, Jordan   Sept. 2008 – May 2010
Teaching Assistant
Electric Circuits and Introduction in Electrical Engineering (MATLAB) courses

GRADUATE STUDENTS ADVISED

- Jumana Kaid, M.S. expected 2023 (co-advised with Prof. Allen MacKenzie).

- Shubhajeet Chatterjee, Ph.D. 2020 (co-advised with Prof. Allen MacKenzie).

- Kory Teague, M.S. 2018 (co-advised with Prof. Allen MacKenzie).

TUTORIALS, PANELS, AND INVITED TALKS

Tutorials

- Allen B. MacKenzie and Mohammad J. Abdel-Rahman, "Resource Allocation in Wireless Networks Under Uncertainties: A Stochastic Optimization Framework," *IEEE International Conference on Communications (ICC)*, Paris, France, May 2017.

- Allen B. MacKenzie and Mohammad J. Abdel-Rahman, "Stochastic and Dynamic Resource Allocation in Wireless Networks," *Wireless Personal Communications Symposium*, Blacksburg, VA, USA, June 2016.

Invited Panelist

- Al Hussein Technical University (HTU) Second Annual Conference: Industry 4.0, Amman, Jordan, Aug. 2019 (invited panelist; panel title "Industial IoT").

Invited Talks

- "Resource Allocation in Wireless Networks Under Uncertainties: A Stochastic Optimization Framework," Wireless @ Virginia Tech Seminar Series, Blacksburg, VA, USA, Nov. 2016.

- "Opportunistic WLAN Designs," University of Arizona, Tucson, AZ, USA, Feb. 2013.

- "Control Channel Assignment in DSA Network," University of Arizona, Tucson, AZ, USA, Feb. 2013.

- "Asynchronous Unicast and Multicast Rendezvous Protocols for Heterogeneous Dynamic Spectrum Access (DSA) Networks," INRIA, Sophia Antipolis, France, July 2012.

SELECTED PROFESSIONAL SERVICE

TPC Member

- *IEEE WCNC Conference* (2016-2023).

- *IEEE GLOBECOM Conference* (2015, 2017-2019, 2021, 2022).

- *IEEE VTC 2018-Fall*.

- *IEEE 5G World Forum*, 2020.

Reviewer

- *Commonwealth Cyber Initiative (CCI) proposals*.

- *IEEE Transactions on Mobile Computing*.

- *IEEE Transactions on Vehicular Technology*.

- *IEEE Transactions on Wireless Communications*.

- *IEEE Transactions on Cognitive Communications and Networking*.

- *ACM Transactions on Sensor Networks*.