

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
Data Science Department
Princess Sumaya University for Technology (PSUT)

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EDUCATION

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

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

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

PROFESSIONAL EXPERIENCE

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

German Jordanian University (GJU), Amman, Jordan
Adjunct Associate Professor, Industrial Engineering Department
Oct. 2022 – Feb. 2023

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

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

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

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

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

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

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

Virginia Polytechnic Institute and State University , Blacksburg, VA, USA Research Associate, member of Wireless @ Virginia Tech Group	June 2016 – Sept. 2017
Virginia Polytechnic Institute and State University , Blacksburg, VA, USA Postdoctoral Research Associate, member of Wireless @ Virginia Tech Group	Jan. 2015 – June 2016
The University of Arizona , Tucson, AZ, USA Graduate Research Assistant, member of Wireless Communications and Networking Group	Sept. 2010 – Dec. 2014
INRIA , Sophia Antipolis, France Visiting Ph.D. Student	July 2012 – Aug. 2012
UMNIAH mobile company (GSM operator) , Amman, Jordan Intern Engineer	Feb. 2008 – Aug. 2008

SELECTED JOURNAL PUBLICATIONS

1. Mohammad J. Abdel-Rahman, Yunis A. Al-Qreenawi, Jumanh K. Atoum, and Allen B. Mackenzie, "STEERVLC: A Joint Deployment and Beam-steering Optimization for VLC-enabled UAV Network," *IEEE Access*, to appear.
2. Mohammad J. Abdel-Rahman, 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*, vol. 72, issue 5, pp. 6896-6901, May 2023.
3. Shubhajeet Chatterjee, Mohammad J. Abdel-Rahman, 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.
4. Shubhajeet Chatterjee, Mohammad J. Abdel-Rahman, 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.
5. Amr Nabil, Mohammad J. Abdel-Rahman, 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.
6. Shubhajeet Chatterjee, Mohammad J. Abdel-Rahman, 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.
7. Jacek Kibiřda, Allen B. MacKenzie, Mohammad J. Abdel-Rahman, 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.
8. Mohammad J. Abdel-Rahman, 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. Amr Nabil, Aditya V. Padaki, Mohammad J. Abdel-Rahman, 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.
10. Shubhajeet Chatterjee, Mohammad J. Abdel-Rahman, 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.
11. Wessam Afifi, Mohammad J. Abdel-Rahman, 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.

12. Manjesh K. Hanawal, Mohammad J. Abdel-Rahman, 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.
13. Mohammad J. Abdel-Rahman, 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.
14. Mohammad J. Abdel-Rahman 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.
15. Mohammad J. Abdel-Rahman, 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.
16. Mohammad J. Abdel-Rahman, 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.

GRANT PROPOSAL EXPERIENCE

- PI/Co-I of the following grant proposals:
 - "Data-Driven Health Care Cost Optimization For Jordan Health Care Sector," Princess Sumaya University for Technology (PSUT), July 2023 – July 2024.
 - "Robust Resource Allocation Framework for Intelligent Reflecting Surface Assisted Millimeter-Wave NOMA Networks," Jordan Scientific Research and Innovation Support Fund (SRISF), Jan. 2022 – June 2024.
 - "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 – June 2023.
- Played an active role (technical discussions and writing) in preparing several grant proposals, including:
 - "I/UCRC FRP: Collaborative Research: Coexistence of Heterogeneous Secondary Networks for Shared Spectrum Access," National Science Foundation, Aug. 2014 – July 2016.
 - "Cognitive Radio Spectrum Management and Waveform Adaptation for High-Capacity Satellite Communications," Phase-I STTR, June 2012 – Feb. 2013.
 - "Optimal Sensing, Resource Allocation, and Protocol Design for Real-time Communications in Dynamic Spectrum Access Networks," Qatar National Research Fund, Jan. 2013 – Sept. 2015.

TEACHING EXPERIENCE

Princess Sumaya University for Technology (PSUT), Amman, Jordan

Fall 2022 – Summer 2023

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)

German Jordanian University (GJU), Amman, Jordan

Fall 2022

Teaching IE751 (Applied Data Analytics).

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

GRADUATE STUDENTS ADVISED

- Alaa Alarabiat, PSUT, M.S. expected 2024.
- Ibrahim Shahbaz, PSUT, M.S. expected 2024.
- Shubhajeet Chatterjee, Virginia Tech, Ph.D. 2020 (co-advised with Prof. Allen MacKenzie).
- Kory Teague, Virginia Tech, M.S. 2018 (co-advised with Prof. Allen MacKenzie).

TUTORIALS AND PANELS

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 “Industrial IoT”).

SELECTED PROFESSIONAL SERVICE

TPC Member

- *IEEE WCNC Conference* (2016-2023).
- *IEEE GLOBECOM Conference* (2015, 2017-2019, 2021-2023).
- *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*.

REFERENCES

Available upon request.