Mohammad J. Abdel-Rahman

Professor, Data Science Department, Princess Sumaya University for Technology

Adjunct Assistant Professor, Electrical and Computer Engineering Department, Virginia Tech

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1. Professional Profile

Professor of Data Science whose research integrates Artificial Intelligence, Operations Research, and Mathematical Optimization to develop intelligent decision-support methodologies for healthcare, communications, cybersecurity, transportation, and energy systems. His work bridges optimization theory and modern AI, including deep learning, reinforcement learning, large language models, and prescriptive analytics. He has authored more than 60 refereed publications, serves as Associate Editor for three international journals, and has led multiple externally funded research projects.

2. Research Interests

- **Artificial Intelligence and Data Science:** Machine Learning, Deep Learning, Reinforcement Learning, Large Language Models (LLMs), Explainable AI, Business Intelligence, and AI-Driven Optimization.
- **Mathematical Optimization and Operations Research:** Mathematical Programming, Mixed-Integer Linear Programming (MILP), Stochastic Optimization, Robust and Distributionally Robust Optimization, Multi-objective Optimization, Game Theory, and Learning-Based Optimization.
- **Wireless Communications and Networking:** 5G/6G Networks, AI-Native Networks, Open Radio Access Networks (O-RAN), Network Slicing, Resource Allocation, Visible Light Communications (VLC), UAV Communications, Internet of Things (IoT), Software-Defined Networking (SDN), and Wireless Network Virtualization.
- **Cybersecurity and Network Intelligence:** Network Intrusion Detection Systems (IDS), Adversarial Machine Learning, GAN-based Security, Secure Wireless Communications, and Network Resilience.
- **Application Domains:** Healthcare Analytics and Optimization, Smart Cities, Intelligent Transportation Systems, Energy Systems, and Decision Support Systems.

3. Education and Academic Distinctions

Ph.D. in Electrical and Computer Engineering 2010–2014
University of Arizona
Minor in Mathematics
Minor in Systems and Industrial Engineering (Operations Research)

Dissertation: *Robust Cognitive Algorithms for Fast-varying Spectrum-agile Wireless Networks*
Distinction: College of Engineering Outstanding Graduate Student Award (Fall 2014)

M.Sc. in Electrical Engineering 2008–2010
Jordan University of Science and Technology
Thesis: *On the Detection of Intelligent Mobile Targets in a Mobile Sensor Network*
Full Graduate Scholarship

B.Sc. in Telecommunications Engineering 2004–2008
Yarmouk University
Full Undergraduate Scholarship

4. Academic Appointments

Professor Mar. 2026–Present
Data Science Department
Princess Sumaya University for Technology
Amman, Jordan

Associate Professor Sep. 2022–Mar. 2026
Data Science Department
Princess Sumaya University for Technology
Amman, Jordan

Associate Professor May 2019–Sep. 2022
Electrical Engineering Department (Joint Appointment with the Computer Science Department)
Al Hussein Technical University
Amman, Jordan

Assistant Professor Oct. 2018–May 2019
Electrical Engineering Department (Joint Appointment with the Computer Science Department)
Al Hussein Technical University
Amman, Jordan

Visiting Assistant Professor Sep. 2018–Oct. 2018
Electrical and Computer Engineering Department
Khalifa University
Abu Dhabi, United Arab Emirates

Adjunct Assistant Professor Jan. 2018–Present
Wireless @ Virginia Tech
Electrical and Computer Engineering Department
Virginia Tech
Blacksburg, Virginia, USA

Assistant Professor Oct. 2017–Oct. 2018

Electrical Engineering Department
Al Hussein Technical University
Amman, Jordan

Research Associate Jan. 2015–Sep. 2017
Wireless @ Virginia Tech
Electrical and Computer Engineering Department
Virginia Tech
Blacksburg, Virginia, USA

Postdoctoral Research Associate Jan. 2015–Dec. 2015
Wireless @ Virginia Tech
Electrical and Computer Engineering Department
Virginia Tech
Blacksburg, Virginia, USA

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

Graduate Research Assistant Sep. 2010–Dec. 2014
Electrical and Computer Engineering Department
University of Arizona
Tucson, Arizona, USA

5. Academic Leadership

Director Apr. 2019–Oct. 2022
Wireless Networks and Security (WiNS) Research Laboratory
Al Hussein Technical University

Founding Chair Oct. 2018–Mar. 2022
Electrical Engineering Department
Al Hussein Technical University

6. Research Funding

Co-Principal Investigator 2023–2024
Data-Driven Health Care Cost Optimization for the Jordanian Health Care Sector
Princess Sumaya University for Technology (PSUT)

Principal Investigator 2022–2024
Robust Resource Allocation Framework for Intelligent Reflecting Surface Assisted Millimeter-Wave NOMA Networks
Scientific Research and Innovation Support Fund (SRISF), Jordan

Co-Principal Investigator 2020–2023
Stochastic Resource Allocation Framework for Fog Computing-Based IoT Networks with Applications to Smart Grids
Scientific Research and Innovation Support Fund (SRISF), Jordan

Additional Proposal Development

- Active contributor (technical development and proposal writing) to "Collaborative Research: Coexistence of Heterogeneous Secondary Networks for Shared Spectrum Access," National Science Foundation (NSF). (2014–2016)
- Active contributor (technical development and proposal writing) to "Optimal Sensing, Resource Allocation, and Protocol Design for Real-Time Communications in Dynamic Spectrum Access Networks," Qatar National Research Fund (QNRF). (2013–2015)
- Active contributor (technical development and proposal writing) to "Cognitive Radio Spectrum Management and Waveform Adaptation for High-Capacity Satellite Communications," Phase-I STTR. (2012–2013)

7. Graduate Student Supervision

7.1 Princess Sumaya University for Technology

Current Ph.D. Students:

- **Amro Saleh** (Expected 2027)

  Dissertation: *Toward Secure and Resource Efficient Distributed Cyber Systems: An Optimization Framework*

  Co-supervised with Prof. Loukas Lazos (University of Arizona).

Graduated Ph.D. Students:

- **Yasmeen Alslman** (2026)

  Dissertation: *A Novel Framework for Optimized Generative Adversarial Networks-Based Attacks Against Intrusion Detection Systems*

  Co-supervised with Prof. Mouhammd Alkasassbeh (Princess Sumaya University for Technology).

Current M.Sc. Students:

- **Rana Fraihat** (Expected 2027)

  Thesis: *Decision-Aware Customer Segmentation Under Uncertainty for Telecom Campaign Optimization*

  Co-supervised with Dr. Samer Elkababji (Princess Sumaya University for Technology).

- **Zain Ibrahim** (Expected 2027)

  Thesis: *UAV Routing Optimization Using Quantum Reinforcement Learning.*

Graduated M.Sc. Students:

- **Maysa Khalil** (2025)

  Thesis: *LLM-Driven Curriculum-Based Deep Reinforcement Learning Framework for Resource Allocation in Open Radio Access Networks.*

- **Alaa Alarabiat** (2025)

  Thesis: *Resource Allocation in Wireless Communication Systems with Multiple Multi-layer Reconfigurable Intelligent Surfaces: A Deep Neural Network-Based Approach.*

- **Ibrahim Shahbaz** (2024)

  Thesis: *Electric Circuits Informed Neural Networks: An Efficient and Generalizable Framework for Analyzing and Designing Electrical Circuits.*

7.2 Virginia Tech

Ph.D. Student

- **Shubhajeet Chatterjee** (2020)

  Dissertation: *On Enabling Virtualization and Millimeter Wave Technologies in Cellular Networks*

  Co-supervised with Prof. Allen B. MacKenzie (Virginia Tech).

M.S. Student

- **Kory Teague** (2018)

  Thesis: *Approaches to Joint Base Station Selection and Adaptive Slicing in Virtualized Wireless Networks*

  Co-supervised with Prof. Allen B. MacKenzie (Virginia Tech).

8. Teaching

8.1 Teaching Summary

Courses taught span undergraduate and graduate levels in Data Science, Artificial Intelligence, Computer Engineering, Electrical Engineering, Communications, Mathematics, and Computer Science. Teaching has been conducted at Princess Sumaya University for Technology, Al Hussein Technical University, Virginia Tech, and German Jordanian University.

8.2 Graduate Courses

- Scientific Research Methods, Princess Sumaya University for Technology
- Business Modeling for Data Science, Princess Sumaya University for Technology
- Business Intelligence, Princess Sumaya University for Technology

- Mathematical Modeling in Computer Science, Princess Sumaya University for Technology
- Applied Data Analytics, German Jordanian University
- Digital Communications, Virginia Tech

8.3 Undergraduate Courses

Data Science

- Business Intelligence, Princess Sumaya University for Technology
- Machine Learning, Princess Sumaya University for Technology
- Data Engineering Laboratory, Princess Sumaya University for Technology
- Data Analytics, Al Hussein Technical University

Signals and Communications

- Signals and Systems, Princess Sumaya University for Technology and Al Hussein Technical University
- Programming Applications in Signals and Systems Laboratory, Princess Sumaya University for Technology
- Communication Systems I, Al Hussein Technical University
- Communication Systems II, Al Hussein Technical University

Mathematics

- Functional Mathematics, Al Hussein Technical University
- Engineering Mathematics, Al Hussein Technical University
- Further Mathematics, Al Hussein Technical University

Computer Science and Electrical & Computer Engineering

- Data Structures and Algorithms, Al Hussein Technical University
- Digital Principles, Al Hussein Technical University
- Electrical and Electronic Principles, Al Hussein Technical University

9. Curriculum Development

- Co-authored the Jordanian National Computer Curriculum (Digital Skills, Grade 11), supervised by the National Center for Curriculum Development (2023–2024).
- Contributed to the design and revision of undergraduate and graduate curricula in Data Science and Computer Science at Princess Sumaya University for Technology.
- Established the undergraduate curriculum in Electrical Engineering as the Founding Chair of the Department at Al Hussein Technical University.
- Developed graduate and undergraduate courses in Artificial Intelligence, Data Science, Optimization, Business Intelligence, and Wireless Communications.
- Designed laboratory experiments, course projects, and capstone experiences aligned with industry needs and current research trends.
- Contributed to study-plan development, accreditation activities, and continuous curriculum assessment.

10. Professional Leadership and Service

10.1 Editorial Appointments

Associate Editor 2024–Present
IEEE Transactions on Cognitive Communications and Networking
AI-Empowered Resource Management Track

Associate Editor 2024–Present
IEEE Access

Associate Editor 2023–Present
Wireless Personal Communications
Springer Nature

10.2 Professional Service

Technical Program Committee (TPC) Member

- IEEE Wireless Communications and Networking Conference (WCNC), 2016–2026
- IEEE Global Communications Conference (GLOBECOM), 2015, 2017–2024
- IEEE 5G World Forum, 2018–2020
- IEEE Vehicular Technology Conference (VTC-Fall), 2018

Proposal Reviewer

- Commonwealth Cyber Initiative (CCI)

Journal Reviewer
Reviewer for numerous international journals, including

- IEEE Transactions on Wireless Communications
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Communications
- IEEE Transactions on Cognitive Communications and Networking
- IEEE Transactions on Reliability
- ACM Transactions on Sensor Networks

10.3 Professional Memberships

Global Young Academy (GYA) 2024–Present
Elected Member

IEEE 2020–Present
Senior Member

DigiEng Initiative 2023–Present
Steering Committee Member
Jordan Engineers Association

11. Tutorials, Panels, and Invited Talks

11.1 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, 2017.
- Allen B. MacKenzie and Mohammad J. Abdel-Rahman, "Stochastic and Dynamic Resource Allocation in Wireless Networks," Wireless Personal Communications Symposium, Virginia Tech, USA, 2016.

11.2 Invited Panels

- Invited Panelist, HTU Second Annual Conference: Industry 4.0, Panel on Industrial IoT, Amman, Jordan, 2019.

11.3 Invited Talks

- Resource Allocation in Wireless Networks Under Uncertainties: A Stochastic Optimization Framework, Wireless @ Virginia Tech Seminar, 2016.

- Opportunistic WLAN Designs, University of Arizona, 2013.
- Control Channel Assignment in Dynamic Spectrum Access Networks, University of Arizona, 2013.
- Asynchronous Unicast and Multicast Rendezvous Protocols for Heterogeneous Dynamic Spectrum Access Networks, INRIA, Sophia Antipolis, France, 2012.

12. Honors, Awards, and Scholarships

12.1 Honors

- College of Engineering Outstanding Graduate Student Award, University of Arizona, 2014.
- Dean's Honor List, Jordan University of Science and Technology (all semesters).
- Dean's Honor List, Yarmouk University (all semesters).
- Passed the Engineering Quality Examination with a national ranking of 99.6%.
- Certificate of Academic Excellence, Yarmouk University.
- Ranked in the top 0.2% nationally in the Jordanian General Secondary Education Examination (Tawjihi).

12.2 Best Paper Award

- IEEE International Symposium on Telecommunication Technologies (ISTT), Best Paper Award, 2016.

12.3 Travel Awards

- Four National Science Foundation (NSF) Travel Awards.
- University of Arizona Travel Award.

12.4 Scholarships

- DAAD Summer School Scholarship.
- Engineering Graduate Tuition Scholarship, University of Arizona.
- Full M.Sc. Scholarship, Jordanian Ministry of Higher Education.
- Full B.Sc. Scholarship, Jordanian Ministry of Higher Education.

13. Research Impact

- Refereed Journal Articles: 30+
- Refereed Conference Papers: 30+

- Total Publications: 60+
- Google Scholar Citations: 1150+
- Google Scholar h-index: 20
- Scopus h-index: 16
- Research grants awarded: 3
- Graduate students supervised: 6+
- Associate Editor appointments: 3

14. Publications

14.1 Refereed Journal Articles

[1] Y. Alslman, M. Alkasassbeh, and M. J. Abdel-Rahman, "Exploiting GANs against IDSs: A systematic review, meta-analysis, and case study evaluation," *IEEE Transactions on Artificial Intelligence*, 2026 (to appear).

[2] M. Azzeh and M. J. Abdel-Rahman, "Cross-project software defects prediction using fuzzy embedding and deep learning," *Information and Software Technology*, vol. 190, p. 107 968, 2026.

[3] M. J. Abdel-Rahman, Y. Alslman, D. Refai, A. Saleh, M. A. A. Loha, and M. Y. Hamed, "Mathematical programming through the lens of LLMs: Systematic evidence and empirical gaps," *IEEE Access*, vol. 13, pp. 180 953–180 991, Oct. 2025.

[4] M. J. Abdel-Rahman, A. Khalil, and D. Refai, "From doctors to teams: Expanding lean ILP models for smarter outpatient capacity planning," *IEEE Access*, vol. 13, pp. 167 459–167 474, Sep. 2025.

[5] L. Abu-El-Haija, B. E'layan, Y. Refai, M. K. Alsafadi, M. J. Abdel-Rahman, and A. I. Abu-El-Haija, "Multi-microgrid system optimization addressing the uncertainties in generation and load demand," *IEEE Access*, vol. 13, pp. 62 165–62 178, Mar. 2025.

[6] Y. Alslman, M. Alkasassbeh, and M. J. Abdel-Rahman, "Breaking and healing: GAN-based adversarial attacks and post-adversarial recovery for 5G IDSs," *IEEE Access*, vol. 13, pp. 132 109–132 125, Jul. 2025.

[7] A. Saif, A. M. Altarazi, A. Al-Badarneh, and M. J. Abdel-Rahman, "HPG-Tree: An enhanced B^+-tree for spatial indexing," *IEEE Access*, vol. 13, pp. 91 312–91 324, 2025.

[8] S. Taweel, M. J. Abdel-Rahman, N. Alawi, J. Daghlas, and A. Ghunaim, "PanOpt: A nationwide joint optimization of dynamic bed allocation and patient transfer in pandemics," *IEEE Access*, vol. 13, pp. 103 913–103 930, Jun. 2025.

[9] M. J. Abdel-Rahman, E. A. Mazied, F. Hassan, K. Teague, A. B. MacKenzie, S. F. Midkiff, K. V. Cardoso, and D. S. Nikolopoulos, "On robust optimal joint deployment and assignment of RAN intelligent controllers in O-RANs," *IEEE Open Journal of the Communications Society*, vol. 5, pp. 2358–2376, 2024.

[10] M. J. Abdel-Rahman, A. M. AlWaqfi, J. K. Atoum, M. A. Yaseen, and A. B. MacKenzie, "A novel multi-objective sequential resource allocation optimization for UAV-assisted VLC," *IEEE Transactions on Vehicular Technology*, vol. 72, no. 5, pp. 6896–6901, 2023.

[11] M. J. Abdel-Rahman, Y. A. Al-Qreenawi, J. K. Atoum, and A. B. MacKenzie, "SteerVLC: A joint deployment and beam-steering optimization for VLC-enabled UAV networks," *IEEE Access*, vol. 11, pp. 88 745–88 758, 2023.

[12] D. Refai, S. Abu-Soud, and M. J. Abdel-Rahman, "Data augmentation using transformers and similarity measures for improving arabic text classification," *IEEE Access*, vol. 11, pp. 132 516–132 531, 2023.

[13] S. Chatterjee, M. J. Abdel-Rahman, and A. B. MacKenzie, "On optimal orchestration of virtualized cellular networks with statistical multiplexing," *IEEE Transactions on Wireless Communications*, vol. 21, no. 1, pp. 310–325, 2022.

[14] S. Chatterjee, M. J. Abdel-Rahman, and A. 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, no. 11, pp. 7538–7554, 2021.

[15] S. Chatterjee, M. J. Abdel-Rahman, and A. B. MacKenzie, "On optimal orchestration of virtualized cellular networks with downlink rate coverage probability constraints," *IEEE Transactions on Wireless Communications*, vol. 19, no. 7, pp. 4378–4393, 2020.

[16] M. M. Gomez, S. Chatterjee, M. J. Abdel-Rahman, A. B. MacKenzie, M. B. H. Weiss, and L. A. DaSilva, "Market-driven stochastic resource allocation framework for wireless network virtualization," *IEEE Systems Journal*, vol. 14, no. 1, pp. 489–499, 2020.

[17] J. Kibiłda, A. B. MacKenzie, M. J. Abdel-Rahman, S. K. Yoo, L. G. Giordano, S. L. Cotton, N. Marchetti, W. Saad, W. G. Scanlon, A. Garcia-Rodriguez, et al., "Indoor millimeter-wave systems: Design and performance evaluation," *Proceedings of the IEEE*, vol. 108, no. 6, pp. 923–944, 2020.

[18] A. Nabil, M. J. Abdel-Rahman, A. B. MacKenzie, and F. Hassan, "A stochastic optimization framework for channel bonding in wireless LANs under demand uncertainty," *IEEE Transactions on Wireless Communications*, vol. 19, no. 11, pp. 7528–7542, 2020.

[19] M. J. Abdel-Rahman, F. Al-Ogaili, M. A. Kishk, A. B. MacKenzie, P. C. Sofotasios, S. Muhaidat, and A. Nabil, "DBmmWave: Chance-constrained joint AP deployment and beam steering in mmWave networks with coverage probability constraints," *IEEE Networking Letters*, vol. 1, no. 4, pp. 151–155, 2019.

[20] E. A. Mazied, M. Y. ElNainay, M. J. Abdel-Rahman, S. F. Midkiff, M. R. M. Rizk, H. A. Rakha, and A. B. MacKenzie, "The wireless control plane: An overview and directions for future research," *Journal of Network and Computer Applications*, vol. 126, pp. 104–122, 2019.

[21] A. Nabil, A. V. Padaki, M. J. Abdel-Rahman, M. El-Nainay, A. B. MacKenzie, and J. H. Reed, "On optimal resource allocation in multi-RAT wireless networks with receiver characteristic awareness," *IEEE Transactions on Cognitive Communications and Networking*, vol. 5, no. 1, pp. 103–118, 2019.

[22] W. Afifi, M. J. Abdel-Rahman, M. Krunz, and A. 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, no. 5, pp. 1076–1089, 2018.

[23] S. Chatterjee, M. J. Abdel-Rahman, and A. B. MacKenzie, "Optimal base station deployment with downlink rate coverage probability constraint," *IEEE Wireless Communications Letters*, vol. 7, no. 3, pp. 340–343, 2018.

[24] A. Al-Mqdashi, A. Sali, M. J. Abdel-Rahman, N. K. Noordin, S. J. Hashim, and R. Nordin, "Efficient rendezvous schemes for fast-varying cognitive radio ad hoc networks," *Transactions on Emerging Telecommunications Technologies*, vol. 28, no. 12, e3217, 2017.

[25] M. J. Abdel-Rahman, D. Abu-Aysheh, A. I. Abu-El-Haija, R. J. Abu-Aysheh, and H. M. Al-Najjar, "Detecting intruders by wireless sensor networks," *Ad Hoc & Sensor Wireless Networks*, vol. 31, no. 1–4, pp. 303–337, 2016.

[26] M. J. Abdel-Rahman, H. K. Shankar, and M. Krunz, "QoS-aware parallel sensing/probing architecture and adaptive cross-layer protocol design for opportunistic networks," *IEEE Transactions on Vehicular Technology*, vol. 65, no. 4, pp. 2231–2242, 2016.

[27] M. AbdelRaheem, M. J. Abdel-Rahman, M. El-Nainay, and S. F. Midkiff, "Spectrum-efficient resource allocation framework for cooperative opportunistic wireless networks," *IEEE Transactions on Cognitive Communications and Networking*, vol. 2, no. 3, pp. 249–262, 2016.

[28] M. K. Hanawal, M. J. Abdel-Rahman, and M. Krunz, "Joint adaptation of frequency hopping and transmission rate for anti-jamming wireless systems," *IEEE Transactions on Mobile Computing*, vol. 15, no. 9, pp. 2247–2259, 2016.

[29] M. J. Abdel-Rahman and M. Krunz, "Stochastic guard-band-aware channel assignment with bonding and aggregation for DSA networks," *IEEE Transactions on Wireless Communications*, vol. 14, no. 7, pp. 3888–3898, 2015.

[30] M. J. Abdel-Rahman, M. Krunz, and R. Erwin, "Exploiting cognitive radios for reliable satellite communications," *International Journal of Satellite Communications and Networking*, vol. 33, no. 3, pp. 197–216, 2015.

[31] M. J. Abdel-Rahman, H. Rahbari, and M. Krunz, "Multicast rendezvous in fast-varying DSA networks," *IEEE Transactions on Mobile Computing*, vol. 14, no. 7, pp. 1449–1462, 2015.

[32] G. S. Uyanik, M. J. Abdel-Rahman, and M. Krunz, "Optimal channel assignment with aggregation in multi-channel systems: A resilient approach to adjacent-channel interference," *Ad Hoc Networks*, vol. 20, pp. 64–76, 2014.

[33] M. Al-Shawaqfeh, A. Abu-El-Haija, and M. J. Abdel-Rahman, "Collision avoidance slot allocation scheme for multi-cluster wireless sensor networks," *Wireless Networks (WINET)*, vol. 19, no. 6, pp. 1187–1201, 2013.

14.2 Refereed Conference Papers

[1] D. Campos, G. Almeida, M. J. Abdel-Rahman, and K. V. Cardoso, "DREAMIN: Channel-aware inter-slices radio resource scheduling for efficient SLA assurance," in *Proceedings of the IEEE International Conference on Communications (ICC)*, 2025, pp. 103 913–103 930.

[2] G. M. Almeida, M. J. Abdel-Rahman, and K. V. Cardoso, "Constraint-aware deep reinforcement learning for vran dynamic placement," in *Proceedings of the 42nd Brazilian Symposium on Computer Networks and Distributed Systems (SBRC)*, 2024.

[3] D. Campos, G. M. Almeida, W. T. P. Junior, C. V. Nahum, A. Klautau, M. J. Abdel-Rahman, and K. V. Cardoso, "Stepwise optimal inter-slices radio resource scheduling for service-level agreement assurance," in *Proceedings of the 42nd Brazilian Symposium on Computer Networks and Distributed Systems (SBRC)*, 2024.

[4] W. T. Pires-Jr, D. C. da Silva, R. S. Silva, L. de L. Pinto, A. Oliveira-Jr, M. J. Abdel-Rahman, and K. V. Cardoso, "Qos-aware optimal deployment of lora gateways in uav-enabled lorawans," in *Proceedings of the 42nd Brazilian Symposium on Computer Networks and Distributed Systems (SBRC)*, 2024.

[5] A. M. AlWaqfi, M. J. Abdel-Rahman, Y. A. Al-Qreenawi, Z. AlHwaidy, and A. I. Abu-El-Haija, "Implementation of a fully-automated optimized fog-computing-based IoT-controlled PV network," in *Proceedings of the International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies (ENERGY)*, 2023, pp. 42–48.

[6] M. J. Abdel-Rahman, F. Hassan, and A. I. Abu-El-Haija, "QUANTA: A nested quorum-based anti-jamming rendezvous game for DSA systems," in *Proceedings of the IEEE International Wireless Communications and Mobile Computing Conference (IWCMC)*, 2022, pp. 1262–1266.

[7] S. Chatterjee, M. J. Abdel-Rahman, and A. B. MacKenzie, "Robust access point deployment and adaptive user assignment for indoor millimeter wave networks," in *Proceedings of the IEEE International Conference on Communications (ICC)*, 2020, pp. 1–6.

[8] K. Teague, M. J. Abdel-Rahman, and A. B. MacKenzie, "Joint base station selection and adaptive slicing in virtualized wireless networks: A stochastic optimization framework," in *Proceedings of the IEEE International Conference on Computing, Networking and Communications (ICNC)*, 2019, pp. 859–863.

[9] S. Chatterjee, M. J. Abdel-Rahman, and A. B. MacKenzie, "Virtualization framework for cellular networks with downlink rate coverage probability constraints," in *Proceedings of the IEEE Global Communications (GLOBECOM) Conference*, 2018, pp. 1–7.

[10] M. J. Abdel-Rahman, E. A. Mazied, A. B. MacKenzie, S. F. Midkiff, M. R. M. Rizk, and M. El-Nainay, "On stochastic controller placement in software-defined wireless networks," in *Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC)*, 2017, pp. 1–6.

[11] M. J. Abdel-Rahman, E. A. Mazied, K. Teague, A. B. MacKenzie, and S. F. Midkiff, "Robust controller placement and assignment in software-defined cellular networks," in *Proceedings of the International Conference on Computer Communications and Networks (ICCCN)*, 2017, pp. 1–9.

[12] K. V. Cardoso, M. J. Abdel-Rahman, A. B. MacKenzie, and L. A. DaSilva, "Virtualization and programmability in mobile wireless networks: Architecture and resource management," in *Proceedings of the ACM SIGCOMM Workshop on Mobile Edge Communications (MECOMM)*, 2017, pp. 1–6.

[13] S. Chatterjee, M. J. Abdel-Rahman, and A. B. MacKenzie, "Optimal distributed allocation of almost blank subframes for LTE/Wi-Fi coexistence," in *Proceedings of the International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, 2017, pp. 1–6.

[14] A. Nabil, M. J. Abdel-Rahman, and A. B. MacKenzie, "Adaptive channel bonding in wireless LANs under demand uncertainty," in *Proceedings of the IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, 2017, pp. 1–7.

[15] A. Nabil, A. V. Padaki, M. J. Abdel-Rahman, A. B. MacKenzie, and J. H. Reed, "Receiver characteristic aware optimal resource allocation in multi-RAT wireless networks," in *Proceedings of the IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, 2017, pp. 1–7.

[16] M. N. Soorki, M. J. Abdel-Rahman, A. B. MacKenzie, and W. Saad, "Joint access point deployment and assignment in mmWave networks with stochastic user orientation," in *Proceedings of the International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, 2017, pp. 1–6.

[17] M. J. Abdel-Rahman, M. AbdelRaheem, A. B. MacKenzie, K. V. Cardoso, and M. Krunz, "On the orchestration of robust virtual LTE-U networks from hybrid half/full-duplex Wi-Fi access points," in *Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC)*, 2016, pp. 1–6.

[18] M. J. Abdel-Rahman, K. V. Cardoso, A. B. MacKenzie, and L. A. DaSilva, "Dimensioning virtualized wireless access networks from a common pool of resources," in *Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC)*, 2016, pp. 1042–1047.

[19] W. Afifi, M. J. Abdel-Rahman, M. Krunz, and A. B. MacKenzie, "Coexistence in wireless networks with heterogeneous self-interference cancellation capabilities," in *Proceedings of the International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)*, 2016, pp. 1–8.

[20] A. Al-Mqdashi, A. Sali, N. K. NoorDin, S. J. Hashim, R. NorDin, and M. J. Abdel-Rahman, "An efficient quorum-based rendezvous scheme for multi-radio cognitive radio networks," in *Proceedings of the IEEE International Symposium on Telecommunication Technologies (ISTT)*, 2016, pp. 59–64.

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