Mostafizur Rahman — Curriculum Vitae

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EDUCATION

Ph.D. in Computer Engineering 2020
University of Central Florida (UCF), Orlando, Florida
Dissertation: "Pervasive Spectrum Sharing for Improved Wireless Experience"

M.S. in Computer Engineering 2018
University of Central Florida, Orlando, Florida
Thesis: "A Game-theoretic Model for Regulating Freeriding in Subsidy-Based Pervasive Spectrum Sharing Markets"

B.S. in Computer Science & Engineering 2012
Bangladesh University of Engg. & Tech. (BUET), Dhaka, Bangladesh
Project: "A web-based community management system"

PROFESSIONAL APPOINTMENTS

Assistant Professor 2022 – Present
School of Computing, Analytics & Modeling
University of West Georgia (UWG), Carrollton, Georgia

Assistant Professor 2020 – 2022
Department of Electrical & Computer Engineering
University of Texas Rio Grande Valley (UTRGV), Edinburg, Texas

Software Engineer 2012 – 2015
Tizen Lab.
Samsung R&D Institute Bangladesh (SRBD) Ltd., Dhaka, Bangladesh

RESEARCH EXPERIENCE

Current Research

Networked Systems Lab., UWG

Research Theme: *Wireless Systems & Networks, Spectrum Sharing, Network Economics, Network Management, Cybersecurity, AI/ML in Network & Security.*

Prior Research

Networking & Wireless Systems Lab., UCF

Research Theme: *Wireless Systems & Networking, Machine Learning, Network Economics & Security, Game Theory, Device-to-Device (D2D) Systems*

- **Participated Projects**
  - NSF EARS: "Collaborative Research: Pervasive Spectrum Sharing for Public Safety Communications"
  - US Ignite: "Collaborative Research: Focus Area 1: Rapid and Resilient Critical Data Sourcing for Public Safety and Emergency Response"
  - NIST PSIAP: "Modeling and Development of Resilient Communication for First Responders in Disaster Management"

- **Contributions to Projects**
  - Prediction of cell tower locations from crowdsourced data
  - Intelligent spectrum sharing among primary network providers
  - Regulations in *subsidy-based spectrum sharing (SBSS)* markets
  - Multi-providers spectrum sharing strategies in SBSS markets
  - Game-theoretic framework to minimize *freeriding* in *SBSS* markets
  - *Proof-of-Sharing* architectures to maintain truthfulness and accounting of sharing
  - Government reward models to enable *intelligent pervasive spectrum sharing*
  - D2D service sharing in heterogeneous wireless networks
  - Mobile prototype development for D2D service sharing
  - Multi-hoped communication capability using D2D links

GRANTS

- **PI**, *UWG Perry Project Spring 25: Interfacing Universal Software Radio Peripheral Devices ($5000)*.
- **PI**, *UWG SRAP 24-25: Exploring Generative AI for Next-Generation Networks ($2000)*.
- **PI**, *UWG SRAP 23-24: Improving User Utility by Fostering Collaboration in Emerging Three-Tiered Wireless Networks ($1550)*.
- **PI**, *UWG SRAP 23-24: Verification of Spectrum Resource Sharing in Emerging Three-Tiered 5G Wireless Networks ($1550)*.
- **PI**, *UWG SRAP 23-34: Developing Wireless Networking Testbed Using Software-Interfaced Universal Software Radio Peripheral ($1550)*.
- **PI**, *UWG SRAP 23-34 Supplementary Fund ($372)*.

TEACHING EXPERIENCE

University of West Georgia

- Computer Forensics (S'25, S'24)
- Networks & Security (S'25)

- Systems Programming (F'24)
- Independent Study (S'25, F'24)
- Introduction to Computer Security (S'24, S'23)
- System & Network Administration - I (S'23)
- Cybersecurity (S'25, F'24, F'23)
- Web Technologies - I (F'22, S'23, F'23)
- Introduction to Computer Concepts (F'24, F'23, F'22)
- Project - I (F'22)

University of Texas Rio Grande Valley

- Software-Defined Networking (F'20, F'21)
- Digital Systems - I (F'20, S'21, S'22)
- Network Economics & Architectures (S'21)
- Probability and Statistics for Engineers (F'21, S'22)

AWARDS

- UWG Professional Development Fund 2023
- UCF Presentation Fellowship 2019, 2018, 2017
- IEEE DySPAN Student Travel Grant 2019
- UCF SGA Student Travel Grant 2018

PUBLICATIONS

Journal (full paper refereed)

[1] A. Mahmood, S. Mustafa, M. Yuksel, S. Seth, and **M. Rahman**, "Cellular network without borders: Exploring settlement-free peering," *Early access at IEEE Transactions on Cognitive Communications and Networking*, 2025.

[2] J. Zheng, H. Jiang, L. Yu, S. Y. Khamaiseh, and **M. Rahman**, "On the performance of uplink noma short-packet communication system," *IEEE Transactions on Vehicular Technology*, vol. 73, no. 12, pp. 18678–18687, 2024.

[3] A. Tauhid, L. Xu, **M. Rahman**, and E. Tomai, "A survey on security analysis of machine learning-oriented hardware and software intellectual property," *High-Confidence Computing*, p. 100114, 2023.

[4] N. Kapucu, B. Haupt, T. Quint, **M. Rahman**, and M. Yuksel, "Polycentric governance and decentralized decision-making for pervasive spectrum sharing," *International Journal of Public Administration*, vol. 46, no. 9, pp. 659–668, 2021.

[5] **M. Rahman**, M. Yuksel, and T. Quint, "A game-theoretic framework to regulate freeriding in inter-provider spectrum sharing," *IEEE Transactions on Wireless Communications*, vol. 20, no. 6, pp. 3941–3957, 2021.

Conference (full paper refereed)

[1] S. H. Sudhakara, M. S. Munir, **M. Rahman**, and S. Shetty, "Native AI-based predictive operational resiliency in cyber-physical energy systems," in *to appear at the Proceedings of IEEE 21st International Wireless Communications & Mobile Computing Conference (IWCMC)*, (Abu Dhabi, UAE), 2025.

[2] T. D. Hayes, K. R. Dearman, **M. Rahman**, and M. S. Munir, "User utility in tiered spectrum-shared markets," in *to appear at the Proceedings of IEEE SoutheastCon*, (Charlotte, NC), 2025.

[3] **M. Rahman**, A. Mahmood, and M. Yuksel, "Fostering collaboration in emerging three-tiered spectrum markets," in *Proceedings of IEEE 34th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, (Toronto, Canada), pp. 1–7, 2023.

[4] A. Mahmood, **M. Rahman**, and M. Yuksel, "Collaborative GAA clusters in emerging three-tiered spectrum markets," in *Proceedings of IEEE 34th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, (Toronto, Canada), pp. 1–6, 2023.

[5] S. Mustafa, S. Seth, M. Yuksel, and **M. Rahman**, "Cellular service with settlement-free peering," in *Proceedings of IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, (Los Angeles, USA), pp. 153–162, 2021.

[6] **M. Rahman**, M. A. Hossain, and M. Yuksel, "Multi-Operator Cell Tower Locations Prediction from Crowdsourced Data," in *Proceedings of IEEE International Conference on Computer Communications and Networks (ICCCN)*, (Athens, Greece), July 2021.

[7] M. M. Islam, **M. Rahman**, F. Heidari, and V. Gude, "Optimal onsite microgrid design for net-zero energy operation in manufacturing industry," *Procedia Computer Science*, pp. 81–90, June 2021.

[8] **M. Rahman**, M. Yuksel, and W. Saad, "Regulations and Strategies in Subsidy-based Spectrum Sharing Markets," in *Proceedings of IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, (Newark, NJ), pp. 1–10, November 2019.

[9] **M. Rahman** and M. Yuksel, "Mobile Proof-of-Sharing Architectures for Inter-Operator Spectrum Sharing Markets," in *Proceedings of IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, (Newark, NJ), pp. 1–5, November 2019.

[10] **M. Rahman** and M. Yuksel, "Government Reward Models for Inter-Operator Spectrum Sharing," in *Proceedings of IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, (Newark, NJ), pp. 1–5, November 2019.

[11] **M. Rahman**, M. Yuksel, and T. Quint, "Regulating Freeriding in Inter-Operator Spectrum Sharing," in *Proceedings of IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, (Seoul, South Korea), pp. 1–10, October 2018.

[12] **M. Rahman**, S. H. Ahmed, and M. Yuksel, "Proof of Sharing in Inter-Operator Spectrum Sharing Markets," in *Proceedings of IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN)*, (Seoul, South Korea), pp. 1–5, October 2018.

[13] **M. Rahman**, S. Mathew, M. Yuksel, and S. Sengupta, "A device-to-device service sharing middleware for heterogeneous wireless networks," in *Proceedings of IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN)*, pp. 1–6, June 2016.

[14] M. K. Rahman, M. Y. S. Uddin, N. Shahriar, and **M. Rahman**, "Sponge: A searchable P2P mobile app store using DHTs," in *Proceedings of IEEE International Conference on Networking Systems and Security (NSysS)*, (Dhaka, Bangladesh), pp. 1–6, January 2015.

Conference (abstract refereed)

[1] A. Mahmood, K. R. Reynoso, **M. Rahman**, and S. A. Islam, "Multi-operator intelligent uav delivery networks in beyond visual line of sight operations," in *Proceedings of IEEE 19th Annual Consumer Communications & Networking Conference (CCNC)*, pp. 965–966, 2022.

[2] B. Haupt, N. Kapucu, M. Yuksel, **M. Rahman**, and T. Quint, "Polycentric governance and spectrum sharing: Decentralized decision making and stakeholder engagement," in *Annual Conference of American Society for Public Administration*, 2018.

[3] **M. Rahman**, M. Yuksel, T. Quint, B. Haupt, and N. Kapucu, "Freeriding in Shared Spectrum Markets," in *The 45th Research Conference on Communication, Information and Internet Policy (TPRC)*, (Arlington, VA), September 2017. (poster).

INDUSTRY EXPERIENCE

Samsung R&D Institute Bangladesh (SRBD) Ltd.

- *Tizen Compliance Test Suite* to verify compliance issues
- *Tizen Mobile Application* for mobile and tablet devices
- *Tizen Gear Application* for wearable devices
- *Tizen Software Development Kit (SDK) Manual Testing*
- Development of a small scale NAND flash file system for low-powered IoT devices
- Tizen SDK Test Automation Suite development to automate manual testing

PRESENTATIONS

- **Oral:**
  - M. Rahman, *"Multi-Operator Cell Tower Locations Prediction from Crowdsourced Data,"* IEEE ICCCN, 2021
  - M. Rahman, *"Pervasive Spectrum Sharing to Improve End-users' Wireless Experience,"* University of Texas Rio Grande Valley, 2020
  - M. Rahman, *"Regulations and Strategies in Subsidy-based Spectrum Sharing Markets,"* IEEE DySPAN, 2019

- M. Rahman, *"Mobile Proof-of-Sharing Architectures for Inter-Operator Spectrum Sharing Markets,"* IEEE DySPAN, 2019
- M. Rahman, *"Government Reward Models for Inter-Operator Spectrum Sharing,"* IEEE DySPAN, 2019
- M. Rahman, *"Regulating Freeriding in Inter-Operator Spectrum Sharing,"* IEEE DySPAN, 2018
- M. Rahman, *"Proof of Sharing in Inter-Operator Spectrum Sharing Market,"* IEEE DySPAN, 2018
- M. Rahman, *"QuickSort: Theory and Implementation,"* Southern Arkansas University, 2020

- **Poster:**
  - M. Rahman, *"A Game-Theoretic Model for Regulating Freeriding in Subsidy-Based Pervasive Spectrum Sharing Markets,"* UCF Graduate Research Forum, 2019
  - M. Rahman, *"Freeriding in Shared Spectrum Markets,"* The 45th Research Conference on Communication, Information and Internet Policy, 2017

PROFESSIONAL MEMBERSHIP, ACTIVITIES & SERVICES

- Member: IEEE, ACM
- Reviewer of IEEE ICC, IEEE Globecom, IEEE TVT, IEEE INFOCOM, IEEE TCCN, Computer Networks
- TPC member at IEEE LANMAN'21, IEEE SmartSys'23
- UCF Senior Design Judge S'23, S'21
- Student volunteer at IEEE INFOCOM, IEEE MASS, IEEE DySPAN, ACM CoNext

LEADERSHIP & EXTRA-CURRICULAR ACTIVITIES

- One of the organizers of *Independence Day Cricket Tournament 2018, 2019* at UCF
- Led *UCF Knights* Cricket team to win *UCF Intramural Cricket Tournament 2019*

REFERENCES

Will be provided upon request.