

# Mostafizur Rahman — Curriculum Vitae

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## EDUCATION

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- 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

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- Assistant Professor** 2022 – Present  
Department of Computing & Mathematics  
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
- Sr. Software Engineer** 2012 – 2015  
Tizen Lab.  
Samsung R&D Institute Bangladesh (SRBD) Ltd., Dhaka, Bangladesh

## RESEARCH EXPERIENCE

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### 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

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- **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

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### University of West Georgia

- Computer Forensics (S’24)
- Introduction to Computer Security (S’24, S’23)
- System & Network Administration - I (S’23)
- Cybersecurity (F’23)

- Web Technologies - I (F'22, S'23, F'23)
- Introduction to Computer Concepts (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

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

## PUBLICATIONS

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### Journal (full paper refereed)

- [1] 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.
- [2] 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, 2023.
- [3] **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] **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)*, pp. 1–7, 2023.
- [2] 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)*, pp. 1–6, 2023.
- [3] 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)*, pp. 153–162, 2021.

- [4] **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.
- [5] 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.
- [6] **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.
- [7] **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.
- [8] **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.
- [9] **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.
- [10] **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.
- [11] **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.
- [12] 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 45<sup>th</sup> Research Conference on Communication, Information and Internet Policy (TPRC)*, (Arlington, VA), September 2017. (poster).

## INDUSTRY EXPERIENCE

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### 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

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### ○ 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 45<sup>th</sup> Research Conference on Communication, Information and Internet Policy, 2017

## PROFESSIONAL MEMBERSHIP, ACTIVITIES & SERVICES

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- 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

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- 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

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Will be provided upon request.