

MD ASHIKUL HAQUE

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Professional Summary

PhD candidate in Computer Science focused on applying **machine learning** to enhance **IoT** and **wireless networks**, spanning learning driven coexistence, robust communication, and measurement driven optimization. Builds end to end systems that connect **PyTorch** training and evaluation with **real world wireless pipelines** (GNU Radio, USRP) and **network scale analysis** (NS-3). Hands on expertise in telemetry and instrumentation, SDR based packet detection and decoding, synchronization, and statistically grounded performance evaluation. Published in top systems and networking venues including **ACM/IEEE SenSys 2026**, **IEEE INFOCOM 2025**, **IEEE/ACM MobiHoc 2025**, **ACM/IEEE IoTDI 2024**, and **IEEE RTSS 2024**.

Education

University of Texas at Dallas	Dallas, TX
Ph.D., Computer Science	<i>Expected May 2027</i>
• Thesis: Resilient and Secure LPWAN Communication Under Jamming and Coexistence	
• Advisor: Prof. Abusayeed Saifullah	
Wayne State University	Detroit, MI
M.S., Computer Science	<i>2024</i>
Bangladesh University of Engineering and Technology	Dhaka, Bangladesh
B.S., Computer Science and Engineering	<i>2018</i>

Technical Skills

- **Programming:** C, C++, Python, MATLAB, SQL, Swift, Bash
- **Wireless and Signal Processing:** PHY and MAC systems, SDR pipelines, packet detection and decoding, synchronization, time frequency analysis
- **Systems and Networking:** protocol design, instrumentation, debugging, benchmarking, reproducible experimentation, performance analysis
- **IoT Measurement and Telemetry:** telemetry collection, device and network instrumentation, experiment logging, metrics definition, time synchronized measurement pipelines
- **Machine Learning:** deep reinforcement learning (DQN), PyTorch training and evaluation workflows, model driven optimization
- **Simulation and Data Analysis:** NS-3, MATLAB, Pandas, statistically grounded comparisons
- **Tools:** GNU Radio, Git, LATEX
- **Hardware:** USRP B200 SDR, LoRa and LPWAN transceivers, IoT gateways

Research Experience

University of Texas at Dallas	Dallas, TX
Graduate Research Assistant	<i>2022 to Present</i>
• SDR and wireless prototyping: Designed and implemented GNU Radio TX and RX chains on USRP B200 for LPWAN research, including signal conditioning, synchronization, and packet level detection and decoding modules.	
• Cross technology and coexistence systems: Built end to end pipelines that connect signal level processing with network level behavior, enabling controlled experiments and repeatable evaluation across real devices and simulation.	
• Learning based optimization: Developed PyTorch based DQN workflows for LPWAN coexistence management and integrated training, inference, and evaluation with NS-3 and controlled experiments.	
• Security and robustness: Implemented and evaluated gateway side recovery and multi gateway diversity methods against reactive and collaborative jamming under realistic LPWAN constraints.	
• Performance evaluation: Built benchmarking infrastructure to measure reliability, latency, and efficiency tradeoffs using well controlled experiments, instrumentation, and statistically grounded comparisons.	
• Publications: SenSys 2026, INFOCOM 2025, MobiHoc 2025, IoTDI 2024, RTSS 2024.	

Industry Experience

Samsung R&D Institute Bangladesh	Dhaka, Bangladesh
Software Engineer, IoT Division	<i>2019 to 2020</i>
• Developed production grade components in C++ for a Samsung Cloud client used in SmartThings workflows, improving reliability and maintainability of IoT device communication paths.	
• Built a Swift wrapper for iOS integration and delivered onboarding features, collaborating across client and app layers to improve user setup and reduce integration friction.	

- Automated multi step build and packaging workflows using **Bash**, improving reproducibility and reducing manual release effort for the team.
- Dhaka Electric Supply Company** Dhaka, Bangladesh
Assistant Engineer, ICT Division 2020 to 2021
- Maintained ICT infrastructure for operational reliability, monitoring, and fault handling in distributed utility systems.

Teaching Experience

University of Texas at Dallas	Dallas, TX
Guest Lecturer (multiple sessions), Course: Internet of Things	2025
Millennium University	Dhaka, Bangladesh
Lecturer, Dept. of Computer Science (Structured Programming, Data Communication)	2018 to 2019

Selected Publications

- Md Ashikul Haque, Venkata Modekurthy, Abusayeed Saifullah. *Enabling Cross Technology Communication from LR-FHSS to LoRa*. ACM/IEEE SenSys 2026 (accepted).
- Md Ashikul Haque, Abusayeed Saifullah, Haibo Zhang. *Deep Reinforcement Learning Based Coexistence Management in LPWAN*. IEEE INFOCOM 2025.
- Md Ashikul Haque, Abusayeed Saifullah. *Mitigating Jamming Attacks in LoRa Networks: A Defense Strategy Against LoRa Based Jammers*. IEEE/ACM MobiHoc 2025.
- Md Ashikul Haque, Abusayeed Saifullah. *Handling Jamming Attacks in LoRa Networks*. ACM/IEEE IoT-DI 2024.
- Aakriti Jain, Md Ashikul Haque, Abusayeed Saifullah, Haibo Zhang. *Burst-MAC: A MAC Protocol for Handling Burst Traffic in LoRa Network*. IEEE RTSS 2024.

Manuscripts Under Review

- Md Ashikul Haque, Abusayeed Saifullah. *Decoding LoRa Packets under Collaborative Jamming Attacks*.
- Md Ashikul Haque, Abusayeed Saifullah, Haibo Zhang. *Generative Policy Coordination for Coexisting Learning Enabled LPWANs*.

Professional Service

Conference Referee: ACM SenSys (2022, 2024 to 2026), IEEE RTSS (2023 to 2025), IEEE RTAS (2023, 2024), EWSN (2023 to 2025), IEEE DCOSS (2024).

Conference Reviewer: IEEE RTCSA (2025), IEEE SECON (2026), IEEE DCOSS (2026).

Journal Referee: IEEE/ACM Transactions on Networking (2024, 2025).

Journal Reviewer: Elsevier Pervasive and Mobile Computing (2024).

Volunteer: CPS-IoT Week (2023).

Awards and Grants

- Dean's List Award, Wayne State University 2024
- Professional Travel Award, College of Engineering, Wayne State University 2024
- SIGBED Travel Grant, CPS-IoT Week, San Antonio, Texas 2023