

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

Expected May 2027

- **Thesis:** Resilient and Secure LPWAN Communication Under Jamming and Coexistence

- **Advisor:** Prof. Abusayeed Saifullah

Wayne State University

Detroit, MI

M.S., Computer Science

2024

Bangladesh University of Engineering and Technology

Dhaka, Bangladesh

B.S., Computer Science and Engineering

2018

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

2022 to Present

- **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

2019 to 2020

- 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 IoTDI 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