MD ASHIKUL HAQUE

mdashikul.haque@utdallas.edu | ashikul-haque.github.io
github.com/ashikul-haque | +1 (515) 598-6458
scholar.google.com/citations?user=11vTHPYAAAAJ

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. Strong **written and verbal communication skills** with experience presenting research to international conference audiences. Published in top systems and networking venues including **ACM/IEEE SenSys 2026**, **IEEE INFOCOM 2025**, **IEEE/ACM MobiHoc 2025**, **ACM/IEEE IoTDI 2024**, **IEEE RTSS 2024**, and **ACM EWSN 2023**.

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
- **Prototyping:** rapid prototyping, proof of concept development, SDR and networked system prototypes
- **Communication:** communication skills, presentation skills, verbal communication, written and verbal communication skills
- **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.
- **Verbal and presentation skills:** Delivered conference talks at **MobiHoc 2025** (Rice University, Houston) and **IoTDI 2024** (Hong Kong), presenting research methods, results, and design tradeoffs to expert audiences.
- **Publications:** SenSys 2026, INFOCOM 2025, MobiHoc 2025, IoTDI 2024, RTSS 2024, EWSN 2023.

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 with strong verbal communication and presentation skills.
- 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**.
- **Md Ashikul Haque**, Abusayeed Saifullah. *A Game Theoretic Approach for Mitigating Jamming Attacks in LPWAN*. **ACM EWSN 2023**.

Selected Talks

- **Mitigating Jamming Attacks in LoRa Networks: A Defense Strategy Against LoRa Based Jammers**. **MobiHoc 2025**, Rice University, Houston, USA (Oct 2025).
- **Handling Jamming Attacks in LoRa Networks**. **IoTDI 2024**, Hong Kong, China (May 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