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. 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), IEEE SECON (2022, 2023), IEEE RTCSA (2025)
Conference Reviewer: IEEE RTCSA (2024), IEEE SECON (2026), IEEE DCOSS (2026).
Journal Referee: IEEE/ACM Transactions on Networking (2024, 2025).
Journal Reviewer: Elsevier Pervasive and Mobile Computing (2023).
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