MD ASHIKUL HAQUE

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Professional Summary

PhD candidate in Computer Science with hands-on experience in **networked systems**, **wireless and physical-layer systems**, and **learning-based optimization**. Skilled in building end-to-end research and engineering artifacts, from low-level implementation in **C/C++** and **Python** to experiment-driven benchmarking on testbeds and simulation. Published in top systems and networking venues including **ACM/IEEE SenSys 2026 (accepted)**, **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
- ○ **Systems & Networking:** protocol design, measurement/instrumentation, performance debugging, reproducible experimentation
- ○ **Wireless & Signal Processing:** PHY/MAC concepts, packet detection/decoding pipelines, time-frequency analysis, synchronization/offset handling
- ○ **AI/ML:** deep reinforcement learning (DQN), training/evaluation workflows in PyTorch, data analysis with Pandas
- ○ **Modeling/Simulation:** NS-3 packet-level simulation, MATLAB analysis, statistically grounded comparisons
- ○ **Tools:** GNU Radio, Docker, Git, Linux, LaTeX
- ○ **Hardware:** USRP B200 SDR, LoRa/LPWAN transceivers, IoT gateways

Research Experience

University of Texas at Dallas	Dallas, TX
Graduate Research Assistant	*2022–Present*

- **System design and evaluation:** Built end-to-end systems and benchmarking pipelines combining low-level implementation, controlled experiments, and large-scale simulation to quantify reliability, latency, and efficiency tradeoffs.
- **Signal-level cross-technology communication (ACM/IEEE SenSys'26, accepted):** Implemented an SDR-based TX/RX pipeline bridging LR-FHSS and LoRa at the **signal level** using GNU Radio and USRP B200, including receiver-side detection/correction components and end-to-end benchmarking.
- **Learning-based optimization (IEEE INFOCOM'25):** Implemented a deep Q-learning coexistence framework in **PyTorch**, integrating training with network-level evaluation and analyzing performance across dense coexistence scenarios using NS-3 and controlled experiments.
- **Generative coordination (under review):** Designed a hypernetwork-based generative coordination layer that synthesizes mutually exclusive policy updates from model-level parameter exchange among multiple learning-enabled networks; evaluated with testbed experiments and NS-3 simulation.
- **Robustness and security (MobiHoc'25, IoTDI'24):** Implemented and evaluated receiver/gateway-side recovery and multi-gateway diversity methods under reactive and collaborative jamming, emphasizing reproducibility and realistic constraints.
- **MAC protocol design (RTSS'24):** Co-designed Burst-MAC for bursty traffic with predictable access behavior; evaluated reliability/latency/energy tradeoffs via experiments and simulation.

Industry Experience

Samsung R&D Institute Bangladesh	Dhaka, Bangladesh
Software Engineer, IoT Division	*2019–2020*

- Developed Samsung Cloud Client in **C++** enabling SmartThings application to device communication with IoT devices.

- Wrapped the C++ client with a **Swift** interface for iOS integration; developed onboarding module features and fixed front-end bugs in the SmartThings iOS app.
- Automated multi-step build and packaging workflow using **Bash** scripts to create a single reproducible build pipeline.

Dhaka Electric Supply Company Dhaka, Bangladesh
Assistant Engineer, ICT Division *2020–2021*
- Maintained large-scale ICT infrastructure focusing on 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) *2018–2019*

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

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