

Abdullah Al Noman

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Website: Abdullah Al Noman

Education

Ph.D. in Computer Science 2025 – Present
University of Texas at Arlington, USA
Transformative Wireless Systems and Technology (TWiST) Lab
PhD Supervisor: **Dr. Debashri Roy**

Research Focus: Space–Air–Ground Integrated Networks (SAGIN), Direct-to-Satellite (D2S), Non-Terrestrial Networks (NTN), O-RAN (Open Radio Access Network), Next-Generation (NextG) Wireless Networks

Bachelor of Technology (B.Tech.) in Computer Science & Engineering 2020 – 2024
National Institute of Technology Tiruchirappalli, India CGPA: 7.51 / 10.00 (75.1%)

Publications

- T. T. Sari, R. Ahmed, **A. A. Noman**, G. Seçinti, C. Dick, and D. Roy. "TITAN: Twin-Informed Topology Adaptation for LAWN-enabled D2C Communication," *arXiv preprint*, 2026.
DOI: arXiv preprint
- A. A. Noman**, T. T. Sari, S. Amatare, G. Seçinti, and D. Roy. "Space-Air-Ground Network for Direct-to-Cell Communication," *IEEE Military Communications Conference (MILCOM)*, Los Angeles, USA, Oct. 2025.
DOI: document/11310652
- M. Priyadarsini, **A. A. Noman**, V. Patel, and S. Prakash. "A Reliable and Secure Multicast Transport Protocol for Space-Ground Integrated Networks using RBAC," *15th International Conference on Computing Communication and Networking Technologies (ICCCNT)*, IEEE, 2024.
DOI:10.1109/ICCCNT61001.2024.10725800

Experience

Graduate Teaching Assistant Jan 2025 –
University of Texas at Arlington *Arlington, USA*

- Supported undergraduate and graduate course instruction by assisting with lectures, laboratory sessions, technical discussions, and guided problem-solving activities.
- Evaluated assignments, exams, projects, and lab reports using standardized rubrics while providing constructive feedback and maintaining accurate academic records.

Machine Learning Intern May 2023 – July 2023
Indian Institute of Technology (IIT) Ropar *Punjab, India*

- Developed and implemented machine learning algorithms for **image enhancement and green screen removal** tasks, optimizing real-time processing.
- Achieved significant improvements in processing time and accuracy (**93%**) compared to existing models, leading to more efficient solutions.

Summer Research Intern May 2022 – Aug 2022
National Institute of Technology Tiruchirappalli *Tamil Nadu, India*

- Led the development of an **Intrusion Detection System (IDS)** for smart homes using Raspberry Pi, leveraging IoT devices to monitor and detect unauthorized activities.
- Collected and analyzed data from a network of sensors, integrating with a central control unit to trigger alarms and send notifications in case of intrusion.

Projects

Development of an O-RAN System | *Open Air Interface (OAI) 5G NR, Near-RT RIC, xApps*

- Actively contributing to the design and implementation of an O-RAN (Open Radio Access Network) system at TWIST lab to enhance network flexibility and interoperability.
- Developing and optimizing the RAN Intelligent Controller (RIC) for real-time decision-making in wireless communication.

Spherical Interpolation for Real-Time Emitter Navigation | *Software-Defined Radio, OctoClock, MATLAB*

- Built a synchronized 4-node USRP SDR system using OctoClock to enable coherent IQ capture and TDOA-based localization.
- Implemented and evaluated a mobility-robust Spherical Interpolation (SI) localization pipeline, validated through indoor static and mobile experiments.

Secure and Reliable Multicast Transport Protocol for Space-Ground Integrated Networks | *NS-2, Python, Secure Multicast*

- Designed a reliable and secure multicast transport protocol for space-ground integrated networks using role-based access control (RBAC) to mitigate security and reliability vulnerabilities.
- Implemented an intermediary-based communication framework with automated role verification and anomaly detection, enabling fault tolerance through backup intermediary activation.
- Evaluated system performance through experimental analysis, achieving 13.5 Mbps throughput, 0.004% packet delivery ratio (PDR), low transmission delay, and improved anomaly detection accuracy.

Speech Emotion Analyzer | *Python, Speech Processing, Deep Learning*

- Developed a speech emotion analyzer using **machine learning** to classify emotions from spoken language.
- Extracted acoustic features from audio recordings and applied them to a **deep learning model** for precise emotion detection.
- Evaluated model performance on labeled speech datasets to assess classification accuracy and generalization.

Technical Skills

Programming Languages: C, C++, Python, Dart

Web Technologies: HTML, CSS, JavaScript

Libraries & Frameworks: NVIDIA Sionna, TensorFlow, PyTorch, OpenCV, Matplotlib, pandas, Keras

Engineering Tools: MATLAB, Weka, Unity, Jupyter Notebook, VS Code, Android Studio, Makefile, Git

Reviewer Roles

- IEEE Transactions on Mobile Computing (TMC)
- Elsevier Computer Communications
- IEEE Global Communications Conference (GLOBECOM 2025)
- The 21st International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2025)
- The 18th International Workshop on Selected Topics in Wireless and Mobile Computing (STWiMob 2025)
- The 34th International Conference on Computer Communications and Networks (ICCCN 2025)
- EuCNC & 6G Summit (2025)

Achievements

- Awarded the prestigious Indian Council for Cultural Relations (**ICCR**) scholarship by the Government of India to pursue a B.Tech in Computer Science & Engineering in India.
- Honored with the Islami Bank Merit Scholarship for exceptional performance in the 10th standard board exam.
- Granted a government scholarship by the People's Republic of Bangladesh for achieving above 90% marks in both the 5th and 8th grades.