

Maryam Aminu Mukhtar

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EDUCATION

Northeastern University, Boston, MA

December 2025

Master of Science, Wireless and Network Engineering

Courses: Fundamentals of Computer Networks, Wireless Sensor Networks and the Internet of Things, Mobile and Wireless Networking

University of Massachusetts Boston, Boston, MA

May 2023

Bachelor of Science, Computer Engineering (magna cum laude)

- Awarded Engineering Department's Outstanding Achievement in Engineering Award for exceptional academic and research work

TECHNICAL SKILLS

- **Platforms:** Mac OS, Windows 10, Linux, Ubuntu, Raspberry Pi OS, Virtual Box
- **Languages:** MATLAB, Python (Pandas, NumPy, Matplotlib, Seaborn), C/C++, bash, R, ns-3 network simulator
- **Development Tools:** Visual Studio, Arduino IDE, Raspberry Pi, Unity, RStudio
- **Applications:** Microsoft Office Suite, MATLAB, GNU Radio, Wireshark, GitHub, Docker, Red Hat OpenShift, Salesforce, NetCloud
- **Experience with:** Data analysis, Web server, Routing Protocols, Network Protocols (LAN/WAN, TCP/IP, UDP), 5G NR systems

SOFT SKILLS: Communication (Written & Verbal), Leadership, Teamwork, Attention to Detail, Problem-Solving, Project Management

PROJECT EXPERIENCE

University of Massachusetts Boston, Boston, MA

Augmented Reality Informational System (ARIS) for Astronauts, Capstone project

Sept 2022 – May 2023

- Led a multidisciplinary team in developing an **augmented reality** system that integrates sensors to provide astronauts with critical health and consumable data, utilizing Microsoft HoloLens for the AR display
- Engineered and implemented a sensor node using an **Arduino** to send data to a central hub, a **Raspberry Pi** that also housed a robust **server-client architecture** for efficient data collection and monitoring
- Programmed and managed the software aspects of the system using **C#, Python, and Unity**, with a focus on deploying **machine learning** algorithms for precise **data analysis** and classification
- Implemented wireless communication using **RF XBee modules** and **IEEE 802.15.4 protocol**, facilitating full-duplex data transmission and reception in simulated astronaut scenarios

Northeastern University, Boston, MA

5G Network Performance Analysis and Optimization, EECE 7364 Lab Series

Feb 2025 – April 2025

- Conducted hands-on experiments with **5G testbed (OAIBOX)**, analyzing the impact of bandwidth allocation (20/40 MHz), TDD slot configurations, modulation schemes (QPSK to 256-QAM), and signal propagation (LoS/NLoS) on network KPIs
- Measured and optimized throughput, SINR, BLER, and latency through systematic testing using **iperf**, **Wireshark** packet analysis, and RF signal quality metrics (RSRP, RSRQ, RSSI)
- Analyzed network performance data using **Python (Pandas, NumPy, Matplotlib, Seaborn)** to visualize trends, detect traffic bursts, and correlate signal quality metrics with throughput degradation across test scenarios

WORK EXPERIENCE

Institute for the Wireless Internet of Things, Northeastern University, Boston, MA

Lab Research Assistant

Sept 2023 – April 2024

- Contributed to projects by deploying Docker containers, including GNU Radio and web server environments to advance system efficiency and streamline operations
- Optimized sensor data for preprocessing initiatives using Python (NumPy and Pandas) to accurately prepare datasets, improving data organization for machine learning analysis
- Developed a web server using advanced data visualization techniques to deliver accessible, real-time data that significantly enhances project outcomes

Sullivan and McLaughlin, Dorchester, MA

Wireless Tech Intern

May 2024 – December 2024

- Processed router orders using **Salesforce** and **NetCloud**, managed customer returns, and ensured accuracy and operational efficiency
- Diagnosed and resolved network connectivity and configuration issues for over 100 Cradlepoint routers using NetCloud management platform, enhancing technical problem-solving skills
- Improved inventory accuracy by 90% by conducting and maintaining inventory, improving organizational skills, and attention to detail

LEADERSHIP & INVOLVEMENT

Paper Trails & Tales Book Club, Founder & Creative Director, Boston, MA

May 2024 – Present

- Founded and manage a book club, coordinating monthly discussions, curating diverse locations and activities for 18+ members
- Design all promotional materials, manage social media presence, and create engaging visual content to drive member engagement and community growth