# 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