Blessing Andrew Okoro

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Education

PhD Computer Science *(In View)* — Aug 2021 - 2026
University at Albany, State University of NY — Albany, NY

Master of Science in Computer Science — Aug 2021 - May 2024
University at Albany, State University of NY — Albany, NY
CGPA — 3.96/4.0

B.Eng Electrical and Electronics Engineering — Aug. 2013 - May 2018
Federal University of Technology Owerri — Nigeria
CGPA — 4.73/5.0

Peer Reviewed Publications

1. **Blessing Okoro**, Maxwell McNeil, Kavya Meka, Karyn Doke, Petko Bogdanov, and Mariya Zheleva. "Sparse Recovery Transmitter Detection." In IEEE INFOCOM 2025-IEEE Conference on Computer Communications, pp. 1-10. IEEE, 2025.
2. **Blessing Okoro**, Taneja Vaasu, Mattoon Clark, Xin Li, and Mariya Zheleva. "M-SHarC: Multi-Spectral Transmitter Analytics." **Under review** In IEEE INFOCOM 2026 - IEEE Conference on Computer Communications, 2026.
3. **Blessing Okoro**, Petko Bogdanov, and Mariya Zheleva. "Joint Time-Frequency-Space Transmitter Analytics via Dictionary-Based Tensor Factorization" **Under review** In IEEE ICC 2026 - IEEE International Conference on Communications, 2026.
4. Doke, Karyn, **Blessing Okoro**, Amin Zare, and Mariya Zheleva. "VIA: Establishing the link between spectrum sensor capabilities and data analytics performance." In IEEE INFOCOM 2024-IEEE Conference on Computer Communications, pp. 2229-2238. IEEE, 2024
5. Doke, Karyn, Shamik Sarkar, **Blessing Okoro**, Danijela Cabric, and Mariya Zheleva. "RadVIEW: Robust radar detection and characterization in high-noise regimes." In 2024 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), pp. 1-8. IEEE, 2024.

Experience

Research Project Assistant — Albany, NY
University at Albany, SUNY — August 2021 - Present

- Led the development of SCAN, a novel transmitter detection framework based on Orthogonal Matching Pursuit sparse coding, capable of detecting multiple low-SNR signals even in the presence of interference.
- Led the development of M-SHarC, a novel generative AI platform based on denoising diffusion models for harmonic detection and reconciliation with fundamental frequencies.
- Led the development of a transmitter characterization framework for joint detection of transmitters in time, frequency, and space using a multi-dictionary tensor decomposition approach.
- Designed and implemented a realistic Radio Frequency data simulation platform for generating datasets used in synthetic evaluation.
- Led the development of an RF denoising framework leveraging diffusion models to recover low-SNR signals and enhance detection performance.
- Collaborated on the development of a framework to assess spectrum data fidelity by profiling sensor properties and predicting the performance of spectrum analysis tasks.
- Led the setup of containers and custom images on Colosseum, a wireless experimentation testbed for collecting emulated over-the-air data under realistic channel conditions.

Teaching Assistant and Facilitator — Albany, NY and Mayaguez, PR
NSF SpectrumX Summer School — Summer 2023, 2024, 2025

- Facilitated a course on wireless communication for diverse undergraduate students at UPRM.
- Led the development of some of the instruction materials including scripts for collecting, processing, and analyzing RF traces.
- Led the hands-on demonstration of WiFi communication: Hidden terminal problem, exposed terminal problem, congestion, interference, rate adaptation and channelization.
- Led a hands-on building a USRP-based testbed for transmitting and collecting RF traces.
- Led a hackathon competition where students built an RTL based spectrum sensor, which they used to hunt some signals of interest, and then developed algorithm to characterize the collected traces.

ISN Products Nigeria Ltd Lagos, Nigeria
Service Engineer March 2019 - May 2021

- Significantly decreased customer downtime by 80% through the implementation of prompt solutions and fostering a culture of proactive maintenance.
- Enhanced operational efficiency by optimizing job scheduling, resulting in a notable reduction in Mean Time To Repair (MTTR).

Projects

- **Self Supervised Radio Frequency Image Denoising:** Diffusion model based framework for RFI denoising. The self-supervised model does not require extra training data for the denoising task.
- **Congestion in WiFi:** Conducted an in-depth analysis of congestion in IEEE 802.11 WiFi networks by collecting traces with Wireshark and injecting traffic using iperf, reporting insights on throughput, channel utilization, and the effects of RTS-CTS mechanisms
- **Network performance:** Designed an android app to measure WiFi and cellular network performance, identifying key insights into connectivity patterns in managed and unmanaged network environments.
- **Sparse Recovery Transmitter Detection:** Orthogonal Matching Pursuit like algorithm. Achieves multi-signal detection on realworld traces with jaccard score $> 95\%$ on all tasks.
- **Anonymizer: Socket Programming and Reliable Data Transfer:** Reliable client/server communication via TCP socket programming. Also UDP with stop-and-wait protocol for reliability.
- **Real Time Drowsiness Detection System:** A CNN based non-intrusive drowsiness detector with accuracy $> 98\%$

Skills

Languages:	Python, Matlab, Java, C, Kotlin, SQL
Libraries and Frameworks:	TensorFlow, Pytorch, Android, Flask, Spring Boot, Docker
Misc:	Bash, Linux, Agile, AWS - EC2, Git, iPerf, Wireshark, TShark

Award

- CyberPowder Fellowship 2025
- NSF SpectrumX GRS fellowship 2024
- Research Project Assistant RFSUNY, 2021
- Federal Government Scholarship award, 2017
- MTN Foundation Science and Technology Scholarship Award, 2015
- Agbami Medical and Engineering Professionals Scholarship Award, 2015

Professional Meetings attended

- IEEE International Conference on Computer Communications. May 19 - 22, 2025. London, UK.
- NSF SpectrumX Spring 2025 Center Meeting, April 14 - 16, 2025. Virtual Meeting.
- Mobile Experiment Platform software and data workshop. June 11 - 12, 2025. MIT Haystack Observatory. Westford, MA.
- IEEE Dynamic Spectrum Access Networks Conference. May 13 - 16, 2024. Washington D.C area.
- NSF Spectrum Week, Co-located with DySPAN 2024. May 13 - 16, 2024. Washington D.C area
- 50th Annual Convention, National Society of Black Engineers. March 20 - 24, 2024. Atlanta, GA
- NSF Spectrum Week. April 24 - 24, 2023. Alexandria, VA.
- IEEE International Conference on Computer Communications. May 17 - 20, 2023. New York City, NY.
- 13th New England Workshop on Software-Defined Radio, Boston SDR User Group. June 1 - 2, 2023. Worcester, MA.
- HotMobile: The International Workshop on Mobile Computing Systems and Applications. February 22 - 23, 2023. Orange County, CA
- Young Gladiators Colosseum Master Class. November 1 - 3, 2021. North Eastern University, Boston, MA.