

# Olisemeka Nmarkwe

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## EDUCATION

### Southeastern Louisiana University

Hammond, LA

*Bachelor of Science, Computer Science, Concentration: Data Science*

May 2026

- **Achievements:** Thirteen Club (Top GPA), Honors Scholarship, Student Leader of International Student Union
- **Coursework:** Machine Learning, Data Structures, Algorithms, Statistics, Cloud Computing

## EXPERIENCE

### AI Intern

May 2025 – Aug 2025

*Dialysis Care Center*

Remote

- Engineered production-ready RAG pipelines using PyTorch to streamline patient interaction workflows, ensuring strict adherence to healthcare data governance and compliance standards.
- Architected a semantic vector search engine (FAISS) with optimization techniques to modernize legacy knowledge retrieval, significantly reducing query resolution time for medical staff.
- Collaborated with cross-functional teams to integrate LLM-based autonomous agents, implementing guardrails to eliminate hallucinations in high-stakes clinical environments.

### Student Engineer

Aug 2025 – Present

*Southeastern Northshore STEM Center*

Hammond, LA

- Lead technical enablement workshops, translating complex hardware architecture and AI concepts for non-technical audiences to drive customer engagement.
- Engineered computer vision pipelines for NVIDIA Jetson-powered robots, applying quantization to optimize custom machine learning workflows for real-time edge processing.
- Designed and deployed autonomous navigation systems using PyTorch models, benchmarking object detection algorithms to showcase hardware capabilities to stakeholders.

### Research Assistant

Aug 2024 – Dec 2024

*Southeastern Louisiana University*

Hammond, LA

- Implemented end-to-end data acquisition protocols and preprocessing pipelines for high-fidelity EEG signals, ensuring reproducibility of scientific results.
- Trained and evaluated classical ML classifiers (SVM, KNN, Decision Trees) to validate novel biometric identifiers, applying advanced data augmentation to handle sparse biological datasets.

## PROJECTS

### Inferno Computer Vision | YOLO11n, Quantization, NVIDIA A100 (Cloud), iOS

May 2025

- Provisioned a high-performance NVIDIA A100 SXM (80GB) cloud instance to train a custom YOLO11n model on a 160k+ image dataset, optimizing hyperparameters for rapid convergence.
- Applied post-training quantization to the model, achieving ultra-low latency inference on constrained edge devices and successfully porting the detection system to run natively on iOS.
- Designed a searchable event database and tracking system, presenting the edge-optimized architecture to the IAB to demonstrate scalable security solutions.

### PragBase | Flask, HTMX, RAG, Embeddable Widget

Aug 2025

- Architected a universal RAG assistant using Flask and HTMX that ingests agnostic data sources (PDFs, URLs, Raw Text), converting them into a vector-searchable knowledge base.
- Developed a lightweight, JavaScript-based widget enabling users to embed the AI agent into any external website with a single script tag, delivering dynamic interactivity with minimal load.
- Optimized backend retrieval utilizing Dockerized microservices, ensuring secure data isolation and sub-second response times for concurrent user sessions.

### Paokinotor | FastAPI, PostgreSQL (Supabase), Railway

Oct 2025

- Engineered a probabilistic guessing game (Akinator clone) utilizing a FastAPI backend and Supabase PostgreSQL to efficiently query over 100k+ character datapoints.
- Deployed the full-stack application on Railway using CI/CD pipelines, optimizing database connection pooling to handle high-concurrency global traffic.
- Implemented a self-correcting fuzzy logic algorithm that dynamically updates decision weights based on real-time user feedback, automating data accuracy improvements.

## TECHNICAL SKILLS

**Languages:** Python, C++, Java, JavaScript, SQL, PHP

**AI/ML & Vision:** PyTorch, TensorFlow, YOLO11, OpenCV, RAG, LangChain, Hugging Face, LLMs, Quantization

**MLOps & Infrastructure:** Docker, AWS, GCP, FastAPI, Flask, HTMX, PostgreSQL, Railway, Distributed Training, Linux