Favour Ozioma Umejesi

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Research Interests

AI Safety, Mechanistic Interpretability, Model Reliability, Large Language Models (LLMs), AI Agents & Multi-Agent Systems, Human-Agent Collaboration, and Information Retrieval

Education

Grambling State University Grambling, LA

Bachelor of Science in Computer Science and Mathematics, ***GPA: 3.96/4.0*** *Expected Graduation: May 2028*

- **Selected Coursework:** Deep Learning, Artificial Intelligence, Data Structures & Algorithms, Probability & Statistics I & II, Linear Algebra, Calculus I, II, & III, Computer Architecture & Organization
- **Honors and Awards:** 2x President's List, 2x Hackathon Winner, Mary Duncan Rice Scholar

Research Experience

Grambling State University Grambling, LA

Machine Learning Student Researcher *February 2026 – Present*

- Conducted research on **mechanistic interpretability of LLMs** by performing layer-wise zero ablation on GPT-2 FFN components to localize factual knowledge and identify layers contributing to hallucinations.
- Analyzed logit attribution across the residual stream using TransformerLens and PyTorch, identifying "source" and "inhibitor" layers to detect latent hallucinations beyond softmax probabilities.

Ursa Space Systems Remote

Machine Learning Fellow *August 2025 – December 2025*

- Trained an MLP baseline on 1.6K+ SAR images for ship-vs-iceberg classification (96% accuracy, 0.9855 ROC-AUC); evaluated ViT/ConvNeXt embeddings via PCA/t-SNE, with ConvNeXt showing stronger class separation.
- Benchmarked 6 ML models (LogReg, XGBoost, SVM, Random Forest, Decision Tree, MLP) on pretrained embeddings; MLP baseline outperformed all, highlighting transfer-learning limitations on SAR data.

Additional Professional Experience

ServiceNow Santa Clara, CA

Software Engineering Intern, (ITOM Health Crew) *May 2026 – August 2026*

- Built a multi-agent vulnerability remediation system (Python, MCP tools) unifying context from 5+ disconnected systems into a single natural-language command, reducing ticket resolution time from a week to under 2 hours.
- Deployed the secure AI automation framework across 100+ enterprise hosts, processing 50+ vulnerabilities per run against a queue of 1000+ manual tickets, with human-in-the-loop approval gating every production change.

Outamation Remote

AI Engineering Extern *February 2025 – April 2025*

- Automated data extraction from 10+ document types using OCR, Python (PyPDF2, PyMuPDF, pytesseract, pdfplumber, OpenCV, spaCy), Label Studio, NLP and Computer Vision, processing documents 2x faster.
- Built RAG pipeline with LlamaIndex, Mistral-7B, and LangChain's RetrievalQA, using metadata filtering and vector search to automate, classify and extract insights from mortgage documents, reducing manual tasks by 50%.

Projects

EcoTrack | *Next.js, TypeScript, PostgreSQL, Qwen3-8B, pgvector* Current

- Built a full-stack climate platform for tracking CO_2 emissions, sharing sustainable actions through community feed, and answering climate questions via RAG using Qwen3-8B, pgvector, and semantic search over trusted sources

JPMorganChase Data for Good Hackathon | *OpenAI API, Next.js, PostgreSQL, Google Maps API* 2026

- Collaborated on a team to build an NLP and geospatial matching system using OpenAI and Google Maps APIs to route surplus food to compatible nearby nonprofits, earning recognition from Rescuing Leftover Cuisine's CEO.

eBay University ML Challenge | *PyTorch, Hugging Face Transformers, NumPy* Top 10%, 2025

- Collaborated on a team to build an NER pipeline using XLM-RoBERTa and GELECTRA ensemble to extract automotive attributes from 2M+ German listings, achieving 0.933 F1 and 95.5% accuracy and placing Top 10%.

Presentations

- **Umejesi, F.**, Aiman, S., Agarwal, A., Heath, M., Emmanuel, C. J., Li, S., & Zeejah, H. "Evaluating Transfer Learning for Ship–Iceberg Classification in SAR Imagery." Ursa Space Systems × Break Through Tech AI, 2025.

Certifications

Machine Learning Foundations Certificate | *Cornell Tech, Breakthrough Tech AI Fellowship* 2025

- Completed a year-long machine learning fellowship covering foundational ML concepts and applied model development, culminating in an industry-sponsored project with Ursa Space Systems.

AI Accelerate Certificate | *ServiceNow* 2026

- Completed training in dataset generation, NLP evaluation, agentic AI, and LLM application development; developed an AI Email Editor with an LLM-based evaluation system.

Technical Skills

Programming: Python, Java, HTML/CSS, JavaScript, C++, SQL
Machine Learning & Data: PyTorch, TensorFlow, JAX, scikit-learn, Pandas, NumPy, Matplotlib
LLM & AI Tools: TransformerLens, LangGraph, Langfuse, LangChain, Hugging Face, MCP
Web & Backend: Next.js, Node.js, FastAPI, Streamlit, PostgreSQL
Cloud & Developer Tools: Docker, Git, Azure, Google Colab, Claude Code, GitHub Copilot

Leadership & Service

Notion Club, Grambling State University Grambling, LA

Treasurer *November 2024 – Present*

- Collaborated with a team of 9 to organize productivity workshops using Notion and co-led Grambling State's first student-run hackathon with 100+ participants, managing a $1K+ budget and raising $1.5K+ in sponsorships.

Justice Through Literacy Remote

Web Developer *August 2025 – Present*

- Migrated an education nonprofit's website from Wix to Next.js using an open-source headless CMS architecture, creating scalable content-management workflows for non-technical users while supporting $10K+ in fundraising.

Professional Affiliations

Breakthrough Tech AI, AI4ALL, Association for Computing Machinery (ACM), National Society of Black Engineers (NSBE), ColorStack, AnitaB.org, Rewriting the Code, Girls Who Code, Black Girls Code