

Augustine Manu-Frimpong

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EDUCATION

Grambling State University (GSU)

Grambling, LA

B.Sc. Computer Science & Business Management, Mathematics (Minor) | GPA: 3.96/4.0

Expected Graduation: May 2027

Honors: GSU Hackathon Winner (Fall 2024), 4x President's List, GSU Research Symposium Winner (Spring 2025), BizTech Challenge

Finalist, Honors College, Presidential Scholarship, SAT Score: 1510 (99th Percentile) — EBRW: 740, Math: 770

Relevant Coursework: DSA, OOP, System Design, Operating System, Discrete Structures, Calculus 1 - 3, Computer Science 1 & 2, Statistics & Probability 1 & 2, Data Analytics, Differential Equations, Linear Algebra, Numerical Methods, Econometrics

TECHNICAL SKILLS AND CERTIFICATIONS

Languages: Python, Java, SQL, TypeScript, R, MATLAB, HTML, CSS

Frameworks: Flask, Django, FastAPI, Docker, Kafka, Celery, Redis, PostgreSQL, React, Supabase, Tailwind CSS

Libraries: PyTorch, TensorFlow, Scikit-Learn, NumPy, SciPy, Matplotlib, Pandas, Cirq, Seaborn, CVXPY

DevOps & Tools: Git, Github Actions, CI/CD, JIRA, Agile Methodologies

Certificates: Microsoft ML/ AI, Meta Front-End Dev, Cisco Data Science & Analytics, CodePath Technical Interview Prep & Web Development

EXPERIENCE

Louisiana Tech University

Ruston, LA

Machine Learning & Applied Math Intern — NSF REU

May 2025 – Present

- Developed an ℓ_1 trend filtering model in Python and PyTorch to extract structural signals from S&P 500 data, outperforming the HP filter by 25% in volatility shift detection and enabling robust signal isolation for quant trading and ML tasks
- Optimized data pipelines and matrix ops with NumPy/SciPy, achieving a 30% reduction in computation time across 2,000+ sensor records, and validated results via convergence plots and residual ACFs to ensure signal quality

eBay – Pathways Program

Remote

Software Engineering Fellow

May 2025 – Present

- Strengthened SWE skills with emphasis on JavaScript, REST APIs, data structures, and algorithm optimization via live coding sessions with eBay and CodeSignal engineers
- Enhanced algorithm efficiency and team collaboration through Agile development, technical discussions, and peer code reviews

BLK Capital Management

Remote

Equity Research Fellow

Feb 2025 – May 2025

- Assessed 10+ public companies by conducting in-depth equity research and building sector-specific DCF valuation models, leading to high-confidence investment theses used in mentor-led discussions
- Reduced equity research time by 35% by automating KPI tracking and macroeconomics data ingestion using Python

Grambling State University IT Department | Student Technology Center

Grambling, LA

IT Support Assistant

Jan 2024 – May 2025

- Provided tech support to 50+ campus devices, improving setup speed by 90% and reducing resolution time by 85% through streamlined OS/software deployments

Headstarter AI

Remote

Software Engineering Fellow | [EchoMind AI](#) – React, Supabase, TypeScript, OpenAI API, Speech Recognition

Jul 2024 – Aug 2024

- Built a production-ready AI chatbot with OpenAI for NLP and Web Speech APIs, achieving 100% crash-free sessions in 50+ tests; implemented editable history, dark mode, and keyboard shortcuts for accessibility

PROJECTS

[LokalLearn – Offline AI Tutor \(In Progress\)](#) | Python, Whisper, Transformers, pytsx3

- Led the development of an offline AI tutor for low-connectivity regions, by integrating Whisper STT, a local LLM, and TTS into a real-time voice interaction pipeline, enabling accessible STEM education without internet or cloud dependency
- Optimized end-to-end AI reasoning on CPU-only devices, by caching model weights and minimizing I/O latency using Python and Transformers, achieving sub-5s response time in constrained environments—ideal for edge deployment
- Designed modular architecture with speech, language, and audio modules, by orchestrating components in a CLI interface using PyTorch and Hugging Face, laying the foundation for future expansion into multilingual support and on-device learning

[Macro – Arb: Global Statistical Arbitrage Engine \(In Progress\)](#) | Python, Statsmodel, Pandas, Matplotlib

- Built a macro-driven trading strategy using 240+ monthly observations to generate mean-reversion signals across global ETFs (e.g., EWG), applying cointegration (Engle-Granger) on FRED macro data and Yahoo Finance prices
- Engineered a backtesting pipeline with z-score filtering, PCA signal refinement, and performance evaluation, achieving +9.2% higher CAGR vs. buy-and-hold while quantifying Sharpe, drawdowns, and statistical robustness
- Applied PCA on macro factor space to extract latent drivers and tested for cointegration via Augmented Dickey-Fuller test

[Market Data Microservice](#) | FastAPI, Kafka, Celery, PostgreSQL, Redis, Docker, Python

- Developed a real-time microservice that ingested and streamed over 1M+ financial market data points daily via Kafka, computing 5-point moving averages with <10ms latency, simulating infrastructure used by top-tier trading firms
- Deployed Dockerized FastAPI REST APIs with 99.99% test uptime, scheduled data polling with Celery every 5 seconds, and integrated PostgreSQL + Redis to handle 100K+ asynchronous tasks/week with zero data loss

LEADERSHIP / ACTIVITIES

Notion

Grambling, LA

Lead Organizer

Nov 2024 – Nov 2024

- Co-organized the Notion x Grambling hackathon with 60+ participants by leading a 10+ member team, securing \$3,000+ in sponsorship, and mentoring participants to successfully launch 5 minimum viable products (MVPs)