

Abba Otieno Ndomo

Atlanta, GA | +1 (404) 819-5945 | abba.ndomo@gmail.com | Portfolio

Software Engineering Intern

Work Authorization: F-1 (CPT eligible) | OPT (May 2027) | STEM OPT eligible | No sponsorship required for internship (CPT)

Technical Skills

Languages: Python, SQL (PostgreSQL), C++, Java, Bash, JavaScript (React Native), R

Frameworks & Libraries: FastAPI, Flask, PyTest, Pandas, Scikit-Learn, Expo, JUnit

Tools & Infrastructure: Git, Docker, Airflow, Linux/Unix, CI/CD Pipelines, VS Code, Postman

Concepts: Object-Oriented Programming (OOP), REST APIs, Data Structures, System Design, 3NF Normalization

Experience

KPMG Mumbai, India

Software Engineering Intern

Jun 2024 – Aug 2024

- Developed Retrieval-Augmented Generation (RAG) pipelines for internal AI assistants, integrating high-signal context retrieval into LLM classification flows.
- Implemented an automated CI/CD testing suite using PyTest to ensure compatibility between Python ML microservices and legacy Java enterprise backends.
- Engineered a Java-compatible API layer to expose SQL-backed investment data, enabling real-time inference for the firm's main dashboard applications.

GT Investment Committee Atlanta, GA

Quantitative Analyst Mentee

Jan 2025 – Present

- Engineered risk-adjusted ETF selection pipelines using Python, regression, and forecasting to model performance across diverse macroeconomic regimes.
- Leveraged the Bloomberg Terminal API and Python to develop, backtest, and validate trading signals for a \$1M paper portfolio.

Selected Projects

Boxxer AI — ML-Powered Packing Assistant Jan 2024 – Present

React Native, Python (Flask), Knapsack Optimization, FastAPI, SHAP

- Designed and shipped an offline-first mobile system using Expo and modular state management, enabling deterministic packing optimization, local persistence, and zero-dependency demos without backend, auth, or network availability
- Defined a forward-compatible ML and backend roadmap, including on-device and server-based inference options, data collection strategies, and Postgres-backed pipelines—demonstrating product trade-off reasoning, system extensibility, and data-driven decision making.

Loan Default Predictor Independent Project

SQL, Python, XGBoost, SHAP

Nov 2024 – Dec 2024

- Executed complex ETL using SQL (CTEs, Null handling) to clean raw data; trained an XGBoost classifier and applied SHAP for model interpretability.
- Delivered a model with 80 % AUC and a summary memo for "stakeholders" explaining the top 3 risk drivers (Debt-to-Income, Credit Score, History).

Hospital Operations Database (End-to-End SQL Case Study) Atlanta, GA

Database Design & Analytics Lead

Oct 2024 – Dec 2024

- Healthcare facilities faced operational inefficiencies due to fragmented, unnormalized patient and resource data.
- Designed a robust relational schema in PostgreSQL; executed end-to-end ETL to clean and load disparate datasets while ensuring 3NF normalization.
- Developed complex SQL queries (Window functions/CTEs) to analyze bed occupancy and patient throughput, delivering a dashboard-ready report that identified 20% latency in discharge-to-admission cycles.

Quantitative Trading Library Jan 2024 – May 2024

C++, Python, OOP, Monte Carlo

Atlanta, GA

- Built a scalable, object-oriented framework to price complex derivatives, utilizing Java for computationally intensive Monte Carlo simulations.
- Designed high-performance delta-hedging logic, optimizing execution speed by 10x via Java memory management compared to standard Python implementations.
- Integrated Limit Order Book (LOB) dynamics to simulate risk management strategies for complex options spreads.

Education

Georgia Institute of Technology Atlanta, GA

BS, Industrial & Systems Engineering; Minor in Mathematics

Aug 2023 – May 2027

- **Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Data Engineering Operations, Database Systems, Discrete Math.

Awards and Honors

Dean's List @ Georgia Institute of Technology

Peer Inspiration Award @ Georgia Tech ISyE Center for Academic Success

Third Place – OKSEF International Engineering Fair (Chemical Eng. Category)