Yahya Mohamed

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Education

CUNY Brooklyn College | Expected Graduation: 05/2028 | B.S. Computer Science & B.S. Applied Mathematics | GPA: 3.3

Relevant Coursework: Database Systems, C++ Programming, CS50 AI, Intro to Computer Science in C, CS50 Web Programming, Probability & Statistics, Data Structures & Algorithms, Problem solving in python, Discrete Structures,

Activities: Putnam Mathematical Competition Prep Club

Experience

Software Engineering (Full Stack) Intern — OpenQQuantify (Startup) **May 2025 - August 2025**

- **Architected and developed** a high-performance real-time data platform, designing a **PostgreSQL** database schema, building backend services with **Python/FastAPI**, and creating a responsive frontend with **React/TypeScript**.
- **Designed and deployed** scalable data ingestion pipelines on **AWS EC2**, implementing **Cron-scheduled** workers to collect, normalize, and persist data from publicly available information, forming the foundational dataset for all platform features.
- **Achieved a 40% reduction** in database latency by leveraging **EXPLAIN ANALYZE** to identify bottlenecks, refactoring complex queries, and implementing a **multi-faceted optimization** strategy including strategic indexing (B-tree, GIN, composite, partial) and a **Redis** cache-aside layer with event-driven invalidation.
- **Shipped** a highly-optimized production frontend using **React** and **Tailwind CSS**, deployed via **AWS Amplify** with a **CI/CD pipeline** to ensure sub-second load times and greater than **99% uptime.**

Projects & Hackathons

DermSense – AI Skin Cancer Detection Platform (World's Largest Hackathon 2025) | Website | Github | Demo

- **Architected** a **HIPAA-compliant** AI platform for dermatology, achieving **96.9**% Top-2 accuracy and >**0.95** AUC for melanoma detection and classification of **14** cancerous and precancerous skin lesions
- **Engineered production-grade** infrastructure on **Google Cloud** using a **Dockerized FastAPI** backend, **React** frontend, and an automated **CI/CD** pipeline with robust security (JWT, RBAC).
- **Enhanced clinical** decision-making by implementing an explainable **AI (XAI) system** with **Grad-CAM** heatmaps and a **RAG-based** temporal disease progression tracker.
- **Top 10%** of **Y Combinator** (Fall 2025 batch) out of **~55,000+ applicants**; invited to reapply

ULTRABOOK – High-Performance Market Microstructure Simulator (C++17) | Github

- **Engineered ultra-low latency** matching engine in **C++** processing **2.6M orders/second** with **1.5µs** median latency and **4.7x** multi-threaded scaling
- **Built real-time trading** interface using **React/Next.js** with **WebSocket** connections displaying live order book updates and trade execution
- **Implemented comprehensive stress testing** framework achieving consistent **P99 latencies under 5µs** across high-contention workloads.

Brandstyle AI – Adobe Hackathon | GitHub

- **Built and deployed FastAPI** backend and **Supabase** database with **ML-powered** brand **DNA extraction** (colors, fonts, logos) and **Selenium** web scraping, enabling **98%+** accurate brand inference from URLs; collaborated with **frontend teammate** to deliver a full Adobe Express add-on in just **1 week**.

TECHNICAL SKILLS

Languages: C++, Python, JavaScript/TypeScript, Java, SQL

Frameworks/Libraries: React, Django, Flask, FastAPI, Node.js, Supabase, Tailwind CSS, Keras

Tools & Technologies: Linux, Git, Docker, PostgreSQL, MongoDB, REST APIs, WebSockets, Google Cloud, AWS

Machine Learning: Deep Learning, Computer Vision, TensorFlow, PyTorch, scikit-learn, EfficientNet, Focal Loss, AdamW

Concepts: Distributed Systems, High-Performance Computing, Multi-threading, Low-Level Programming, XAI