

Shah Jacob

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EDUCATION

The City University of New York, Queens College

Expected Graduation: May 2025

Bachelor of Arts in Computer Science

Relevant Coursework: Object Oriented Programming with C++, Advanced Python Programming, Analysis of Algorithms, Computer Architecture, Database Systems, Corporate Finance, Investment Analysis

PROFESSIONAL EXPERIENCE

Pharmesol AI

New York, New York

Software Engineering Intern

June 2024 – August 2024

- Migrated application from Create React App to Next.js, reducing First Contentful Paint by 300ms and Largest Contentful Paint by 25%, significantly enhancing rendering speed and user experience
- Deployed production infrastructure using AWS Amplify, achieving 99.999% uptime with automated CI/CD pipeline integration
- Integrated voice AI capabilities by implementing FastAPI endpoints with Twilio webhooks, enabling AI-powered customer conversations
- Built a real-time analytics dashboard using React, providing visibility into cost savings and AI-human interaction metrics

Moody's Investors Service

New York, New York

Summer Credit Research Analyst

May 2019 – August 2019

- Managed a portfolio containing 24 companies with a market cap of \$20B, monitoring ratings while reporting to managing director
- Employed Power BI to visualize key indicators from corporate balance sheets, enhancing our credit risk assessment process
- Built financial models to calculate cash flow pre-WC and cost recovery figures, directly affecting research for investors
- Participated in 10+ strategic meetings, presenting calculated metrics and corporate insights on portfolio companies to sector team leads

PROJECTS

Market Data Observability Platform | [GitHub](#)

Built an observability platform that instruments Yahoo Finance API endpoints for real-time monitoring and telemetry

- Implemented OpenTelemetry instrumentation to trace ticker data requests, tracking latency and success rates across different endpoints
- Configured Prometheus collectors to monitor API usage patterns, including multi-ticker query performance and download rates
- Created Grafana dashboards visualizing endpoint-specific metrics, helping identify bottlenecks in stock data retrieval operations
- Containerized the stack with Docker, enabling consistent deployment of the FastAPI backend, Prometheus, and Grafana

Sahm | [GitHub](#)

Developed an AI-powered equity research assistant to provide financial insights and analysis for retail investors on publicly traded companies

- Leveraged GPT-4o mini and utilized OpenAI's function calling feature to implement information retrieval, enhancing decision-making for retail investors
- Implemented Pydantic for data validation and structuring LLM outputs, ensuring validated outputs in the application
- Developed a React frontend and FastAPI backend, creating an intuitive user interface with a robust server-side architecture
- Integrated yfinance API for real-time stock data retrieval, supplying up-to-date financial information for AI-driven analysis

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

Google Software Engineering Program (G-SWEP)

October 2024 – December 2024

Fellow

- Strengthened skills in data structures and algorithms by solving challenging coding problems during a 10-week G-SWEP fellowship, with weekly 1:1 mentorship from a Google engineer to enhance technical communication and problem-solving strategies.
- Gained insights into domain-specific roles like infrastructure and backend engineering, learning about the programming languages, tools, and workflows unique to each.

MongoDB Gen AI Hackathon | [GitHub](#)

April 2024

Hackathon Team Lead

Led a team of four to engineer Mango10K, an AI chatbot enabling natural language queries of SEC filings (10-Ks and 10-Qs), streamlining research for retail investors

- Implemented vector search and RAG using Nomic embeddings and MongoDB Atlas, enhancing financial data retrieval accuracy
- Integrated OpenAI's GPT-3.5 with LangChain for generating coherent responses to complex financial queries
- Developed a user-friendly interface using Gradio, allowing for natural interactions and an intuitive user experience

Software Development Venture at Queens College

Fall 2021 – Spring 2023

President

- Cofounded an off-campus software engineering club dedicated to host workshops, facilitate peer learning, and foster a community
- Organized biweekly 'Cookies and Code' meetings for students to debug, ideate on, and write code with others
- Spearheaded planning of events with other board members to create engaging and practical coding workshops for club members

TECHNICAL SKILLS

- Languages:** Python, JavaScript, C++, Java
- Software Frameworks/Services:** React, NextJS, FastAPI, Flask, AWS Amplify, OpenAI API
- Databases:** AWS DynamoDB, MySQL
- Tools & Platforms:** Docker, AWS S3, Prometheus, Grafana