

Alexander Wu

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EDUCATION

New York University

New York, NY

Bachelor of Science in Mathematics and Computer Science, Minor in Cybersecurity

Aug. 2022 – May 2026

Coursework: Algorithms, Databases, Machine Learning, UNIX System Programming, Computer Networking, Web Search Engines, Container Operating Systems

EXPERIENCE

Software Development Engineer Intern

May 2025 – Aug. 2025

Amazon - Amazon Ads

New York, NY

- Reduced manual cleanup effort by 90% through an automation system that archived stale experiment configs from DynamoDB to S3 by invoking Lambda-based deletion flows, reducing latency for other ad services and costs by 190k per month
- Improved API reliability and scalability by designing a quota management system, enforcing limits of 2000 creations or 50 GB per customer to prevent overload.

Software Engineer Intern

May 2024 – Aug. 2024

PNC Financial Services

Pittsburgh, PA

- Explored efficient inference strategies for edge devices by prototyping SLM applications in PyTorch, contributing to early-stage NLP ideation
- Boosted compliance team productivity by 35% by developing a Retrieval-Augmented Generation (RAG) chatbot using Python and Pinecone for semantic search over internal documentation.

Computer Science Head Teaching Assistant

Aug. 2023 – Present

New York University

New York, NY

- Improved course support quality each semester by mentoring 3+ new TAs, offering guidance on grading consistency, student communication, and lab facilitation.
- Led weekly 60-student lab sessions to reinforce object-oriented programming concepts, helping students troubleshoot assignments and deepen understanding through live coding walkthroughs.

PROJECTS

Stock Educator | *Python, JavaScript, React, AWS (Lambda, API Gateway), OpenAI API*

- Developed an interactive web app that teaches users core stock market concepts by analyzing historical market data and generating personalized insights.
- Integrated AWS Lambda and API Gateway to deliver cost-efficient, scalable API calls to OpenAI models for natural-language explanations and stock trend analysis, using data stored and queried from AWS.

Proxo | *Javascript, React, Firebase, Google Cloud, Google Maps API*

- Engineered real-time location-based request system for discovering nearby students using Firestore listeners, geohashing, and Google Maps API integration.
- Implemented secure .edu email authentication, dynamic user profiles, and a Firestore-backed system for posting, searching, and managing hangout requests.

Web Crawler | *Python*

- Built a multi-threaded BFS-style crawler that prioritized domain diversity, achieving 10+ pages/second crawl speeds.
- Logged 10k+ URLs with metadata (depth, priority score, status code) while handling robots.txt, redirects, and duplicate detection.

TECHNICAL SKILLS

Languages: Java, Scala, Kotlin, Python, C/C++, JavaScript, TypeScript, HTML/CSS

Frameworks & Libraries: PyTorch, NumPy, Pandas, Scikit-learn, Flask, React

Cloud & Tools: AWS (Lambda, S3, CloudWatch, EMR, Step Functions, EventBridge, DynamoDB, API Gateway), Pinecone, MySQL / PartiSQL, Git, Docker