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: Data Structures and Algorithms, Object Oriented Programming, Algorithms I and II, Databases, Machine Learning, UNIX System Programming, Operating Systems, Computer Networking, Web Search Engines, Software Engineering

EXPERIENCE

Software Development Engineer Intern   May 2025 – Present
Amazon - Amazon Ads   *New York, NY*
- Decreased Spark application runtime by 30%, reducing EMR runtime and costs for hourly job by refactoring scripts and configuring arguments
- 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 40k per month
- Improved API reliability and scalability by building a quota management system that enforced a default 2000 creations or 50gb per customer.

Software Engineer Intern   May 2024 – Aug. 2024
PNC Financial Services   *Pittsburgh, PA*
- Contributed to advanced security protocol development for emerging threats by researching 6G networks and deepfake detection with the Technology Innovations team.
- Prototyped small language model (SLM) applications using PyTorch, exploring efficient inference strategies for edge devices and contributing to early-stage NLP product 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.
- Graded weekly assignments for 300+ students annually, ensuring timely and consistent feedback across multiple sections and contributing to course logistics at scale.

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.

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