

Nicholas Channg

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EDUCATION

Cornell University

Ithaca, NY

B.A. Computer Science, Minors in Artificial Intelligence, Data Science | GPA: 3.72/4.0 Expected Graduation, May 2027

- **Awards:** 3x Hackathon Winner, Y Combinator AI Startup School (1 of 2,500 selected)
- **Coursework:** Data Structures, OOP, Algorithms, Databases, NLP, Data Science, Functional Programming

EXPERIENCE

Amazon

New York, NY

Software Development Engineer Intern – Amazon Ads

Sep 2025 – Present

- Engineered distributed backend infrastructure for Amazon's new Sponsored Products Video ads (0 → 1 initiative) using Java, Python, and AWS, powering large-scale video generation and AI text optimization for 1M+ monthly videos
- Built an ECS microservice invoking Bedrock to perform multimodal video + text analysis and generate AI-optimized ad titles/descriptions informed by video content, storing ML outputs to S3 and DynamoDB for downstream Ads pipelines
- Developed a serverless Lambda-triggered ECS workflow to orchestrate final video asset assembly by merging clips and text overlays, enabling cross-service and cross-account access to S3 and DynamoDB for asset generation

Tesla

Fremont, CA

Software Engineer Intern – Charging Team

May 2025 – Sep 2025

- Developed an agentic AI QA assistant with Python that interpreted natural-language prompts into targeted microservice API calls to perform account-level operations (region switching, vehicle linking), improving QA throughput by 25%
- Engineered scalable backend infrastructure and REST APIs for the Tesla Mobile App using Node.js, Express.js, and TypeScript, improving Charging feature reliability and performance for 3.4M daily users
- Optimized Supercharger data pipelines (congestion, pricing, location) by caching Spark API results in Redis, reducing repeated mobile app requests and improving response latency by 10%

Flow

Remote

Software Engineer Intern

Jan 2024 – May 2024

- Developed REST APIs using Flask and Python to retrieve and process data from Flow's AI models, automating customer prospecting and increasing sales representative call volume by 300% (30 → 120 calls/day)
- Reduced model inference latency by 15% by optimizing PostgreSQL queries; replaced nested SELECTs with JOINs, added B-tree indexes on high-cardinality columns, and batched execution to minimize database calls
- Integrated backend services into CI/CD pipelines using GitHub Actions, ensuring automated testing and deployment

PROJECTS

ElectAI | Python, Scikit-learn, Flask, React, TypeScript, TailwindCSS, NumPy, Pandas

Jan 2025

- Engineered a full-stack ML web app to predict voter turnout using historical behavioral data patterns to model participation likelihood using a Flask REST API to retrieve data from the model and a React frontend
- Built a data preprocessing pipeline with Python, NumPy, and Pandas to clean 20 years of election data, enabling accurate regression modeling with Scikit-learn and achieving high accuracy (RMSE: 5.35, MAE: 4.22)

MathGPT | Microsoft Phi-3 API, React, TypeScript, HTML, CSS

July 2024

- Built an AI Math Tutor Chrome extension using Microsoft's Phi-3 LLM, React, and TypeScript that provides personalized math tutoring to 100+ students, featuring structured prompts and step-by-step AI solutions
- Reduced latency by 67% (30s → 10s) by dynamically adjusting user input via prompt engineering and implementing conditional API calls, eliminating redundant requests to the LLM and timeout issues

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, JavaScript, SQL

Frameworks: Flask, FastAPI, Node.js, Express.js, React, Next.js

Libraries: Scikit-learn, NumPy, Pandas, OpenAI API, TailwindCSS

Tools/Technologies: Git, AWS, Redis, Spark, PostgreSQL, CI/CD, Docker, Postman, Jira, Confluence