

Nicholas Channg

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EDUCATION

Cornell University

Ithaca, NY

B.A. Computer Science, Minors in Artificial Intelligence, Data Science

Expected Graduation, May 2027

- **Academics:** 3.72/4.0 Cumulative GPA, Dean's List
- **Awards:** Y Combinator AI Startup School (1 of 2,500 selected), 3x Hackathon Winner

EXPERIENCE

Amazon

New York, NY

Software Development Engineer Intern – Amazon Ads

Sep 2025 – Present

- Developing an AI-powered observability agent using Flask, Python, and Node.js to autonomously digest and diagnose failures in the Sponsored Products video ad upload pipeline, improving reliability and advertiser experience
- Implementing a Retrieval-Augmented Generation (RAG) pipeline that indexes logs and metrics into a vector store and AWS Bedrock with Model Context Protocol (MCP) to generate evidence-backed root-cause analyses of failures
- Engineering distributed infrastructure on AWS (ECS, S3, SQS), leveraging a messaging queue for real-time ingestion and processing of logs, metrics, and tickets

Tesla

Fremont, CA

Software Engineer Intern – Charging Team

May 2025 – Sep 2025

- Engineered scalable backend and REST APIs with Node.js, Express.js, and TypeScript for the Tesla Mobile App, powering Full Self-Driving and Charging features for 3.4M daily users
- Optimized retrieval of Supercharger metadata (congestion, pricing, location) from internal Spark APIs by caching results in Redis and reformatting data, reducing repeated requests and latency by 10%
- Integrated microservice APIs via a FastAPI and Python orchestration layer and optimized LLM API calls with prompt refinement, enabling a QA automation AI agent to execute tests and improve QA efficiency by 200%
- Developed real-time Supercharger pricing and congestion visualizations using React, TypeScript, Next.js, and Tesla's design system (TDS), improving charger discoverability for 30K+ daily users

Flow

Remote

Software Engineer Intern

Jan 2024 – May 2024

- Engineered 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 across U.S. states using a Flask REST API to retrieve data from the model and a React frontend to dynamically display the prediction on a U.S. map
- 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 application 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: Python, Java, TypeScript, JavaScript, SQL

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

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

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