

# 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 – Dec 2025

- Engineered backend infrastructure for Sponsored Products Video (SPV) ads with Java, Python, and AWS, building cloud-native workflows that power large-scale video ad generation for 80K videos per week
- Developed a production AI microservice that performs multimodal video analysis using AWS Bedrock VLMs/LLMs to generate optimized ad titles and descriptions, serving 98% of SPV ads on Amazon.com
- Integrated an existing video assembly service into the SPV pipeline by building a Lambda-triggered ECS execution path and S3/DynamoDB asset storage, enabling fault-tolerant, asynchronous video assembly

### Tesla

Fremont, CA

Software Engineer Intern – Charging Team

May 2025 – Sep 2025

- Developed scalable REST API endpoints in the Tesla Mobile App backend with Node.js, Express.js, and TypeScript, orchestrating vehicle/charging microservice calls to power real-time user-visible data for 3.4M daily users
- Implemented a Redis caching layer to store Spark API responses for supercharger congestion/pricing data, reducing redundant upstream microservice calls and improving Tesla Mobile App response latency by 10%
- 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%

### 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 application 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 | React, TypeScript, HTML, CSS, Microsoft Phi-3 API

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, PostgreSQL, CI/CD, Docker, Postman