Andy (Xiangyu) Cui

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EDUCATION

Northeastern University Boston, MA
M.S. in Artificial Intelligence of Khoury College Dec 2023
University of Nebraska-Lincoln Lincoln, NE
B.S. in Computer Science of Arts Science College *May 2020*

PROFESSIONAL EXPERIENCE

King 7 Club Corp Jan. 2025-Present
Senior Software Engineer *Los Angeles, CA*

- Developed and deployed a responsive web application using **React** for the frontend and **Node.js + FastAPI** for a modular backend architecture, supporting dynamic UI with custom **JavaScript** logic and **CSS** animations.
- Hosted static assets via GitHub, containerized the full-stack app with **Docker**, and deployed to **AWS Lightsail**, including kernel optimization to reduce resource overhead and improve runtime stability.
- Used **PostgreSQL** as the backend database to securely manage user data, and structured APIs with clean JSON responses for frontend integration.
- Implemented intelligent DNS-based traffic routing to serve international users via **AWS Global Accelerator** and Chinese users via a mirrored deployment on Alibaba Cloud, reducing cross-region latency by up to **90%**.
- Integrated **Google Analytics Reporting API** to track user behavior across platforms (TikTok, Xiaohongshu, YouTube), with real-time dashboards and automated insights that improved backend operations by **80%.**
- Boosted backend throughput and frontend delivery with **CDN** and caching strategies for seamless cross-device performance.
- Deployed **AI-driven traffic analytics module** to automatically generate daily and weekly reports on user visits, content performance, and engagement trends.

CAC Auto Group LLC Feb. 2024-Dec. 2024
Data Engineer *Southborough, MA*

- Developed and maintained a predictive pricing system for vehicles on CarGurus using **AWS serverless architecture**, enhancing market compatibility and streamlining operations. Leveraged key AWS services including **S3**, **Lambda**, **DynamoDB**, **SNS**, **CloudWatch**, and **Kinesis**, and used **Python** with **AWS CloudFormation** for scalable infrastructure deployment.
- Designed and implemented a **fully serverless** data pipeline to continuously monitor target data sources using **Kinesis streams** and **Lambda triggers**, eliminating the need for traditional polling. This approach reduced infrastructure and processing costs by **80%**, while maintaining high scalability and responsiveness.
- Integrated real-time monitoring to track market data fluctuations, enabling automated detection and adjustment of vehicle prices in response to deviations. This solution boosted daily operational efficiency by **80%** and improved pricing accuracy by over **50%** compared to industry standards.

PROJECTS

Automated Tax Office AI Assistant Tool for Tax May 2025

- Built a **PyQt5/PySide6** desktop tool with **pywinauto** to automate W-2 and 1099 entry for tax preparation, supporting Excel uploads and real-time progress tracking via **QTableWidget**.
- Integrated **GPT-4** API to assist staff with data formatting and form guidance, reducing operational time cost by **80%** and cutting manual errors by **70%**.
- Implemented error logging and auto-organized user data folders using a unit format to improve traceability and file management.
- Boosted processing efficiency by **100%** and reduced manual workload by **85%** for small tax firms.

Job Recommendation System Design Jan 2025

- Developed a user interface for job searching using **Axure RP 10**; Applied content-based filtering using **TF-IDF** and cosine similarity, achieving 82% precision in matching user skills to job descriptions; Conducted **collaborative filtering** in **Python** with implicit user feedback, improving recommendation diversity by 18% via matrix factorization.
- Leveraged **deepseek API** to dynamically adjust recommendations based on real-time user feedback; Reduced cold-start bias by 30% through RL-driven exploration of niche roles.

Stock Price Prediction with Deep Learning Oct 2024

- Collected the historical stock price and other financial assets data on the company of interest; Conducted data preprocessing by applying min-max scaling in **Sklearn** to normalize stock price values, ensuring consistency across the dataset.
- Implemented **LSTM**, **GRU**, and **Transformer models** in **PyTorch**, optimizing hyperparameters (e.g., number of layers, optimization methods) through grid search, increasing model accuracy by **20%**; Visualized opening and closing price trends to assess model performance in Python.