Michael Cao

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EDUCATION

Stanford University   Stanford, CA
B.S. and M.S. in Computer Science (Information and AI), GPA: 3.99   *Sept. 2019 – June 2024*

EXPERIENCE

Software Engineering Intern   June 2023 – Sept. 2023
Databento   *New York, NY*
- Design and implement a scalable WebSocket API in Python to serve real-time usage data and notifications
- Save millions of API calls per day and allow monitoring service to stay under quota by eliminating busy-polling

Python Development Intern   June 2022 – Aug. 2022
Akuna Capital   *Chicago, IL*
- Built a full-stack web app using Python and React, enabling traders to configure parameters for new expirations
- Implemented an asynchronous per-parameter handler strategy to allow for efficient parameter creation
- Established robust input validation, error handling, and error reporting and achieved 80% test coverage
- Designed a flexible, effective PostgreSQL database schema for storing parameter configurations

Software Engineering Intern   June 2021 – Sept. 2021
DoorDash   *San Francisco, CA*
- Deployed multiple gRPC microservice endpoints using Kotlin that fetches store menus and data for SEO pages (Food Near Me, Grocery in San Francisco, etc.)
- Implemented an efficient read-through caching scheme in Redis, reducing average backend latency by 10x and increasing SEO page conversion rates by 3%
- Created Kafka consumer to process menu change events and keep cached menus up to date

Software Engineering Intern   June 2020 – Sept. 2020
UnitedHealth Group   *Minnetonka, MN*
- Implemented CycleGAN in Tensorflow for document cleanup, improving OCR performance by over 5%
- Developed a React-based frontend used by 10+ teams to streamline and automate image classification workflows

PROJECTS

Droplet - Soundbite Social Media Platform | *React Native, Redux, Firebase*   Sept. 2020 – Jan. 2021
- Developed a social media app for shortform audio and launched beta with 200 downloads on iOS
- Implemented and owned key pages such as the main feed, profile page, and audio recording page

PintOS Operating System | *C*   Jan. 2022 - Mar. 2022
- Implemented and/or enhanced core components of a barebones operating system
- Extended basic thread system by implementing priority scheduling and a multilevel feedback queue scheduler
- Enhanced OS to support user programs by implementing argument passing, user memory, and system calls
- Implemented virtual memory, paging, stack growth, and memory mapped files
- Improved file system to have indexed and extensible files, subdirectories, and a buffer cache for efficiency

Retro QANet - CS224N Final Project | *PyTorch*   Feb. 2021 – Mar. 2021
- Developed machine reading comprehension (MRC) model to accurately solve question answering problems from the Stanford Question Answering Dataset (SQuAD)
- Combined two leading non-PCE model architectures to achieve an F1/EM score of 66.10/62.28

Lyri - Song Lyrics in Real Time | *React, Node, Electron*   Oct. 2020
- Created cross-platform desktop app that displays song lyrics based on the user's currently playing song on Spotify
- Interfaces with Spotify API and scrapes both Genius and MusixMatch for song lyrics

TECHNICAL SKILLS

Languages: Python, JavaScript/TypeScript, Kotlin, C/C++, HTML/CSS, SQL, Java, Solidity
Frameworks: React, Redux, Node.js, FastAPI, Express, MongoDB, React Native, TailwindCSS
Developer: Git, Bash, Docker, Kubernetes, Postgres, GCP, BigQuery, Azure, Linux, pytest, gdb/pdb
Libraries: PyTorch, NumPy, SciPy, TensorFlow, Keras, pandas, matplotlib, asyncio, scikit-learn, networkx, nltk
Certifications: Coursera Deep Learning Specialization