Mingli Zhang

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Objective

Motivated and skilled professional seeking a role as a Machine Learning Engineer or Full-Stack Developer. Offering hands-on experience in developing AI-driven solutions to create impactful, user-focused products. Dedicated to continuous learning, contributing to collaborative teams, and evolving into a mentorship role to support and guide emerging talent in the tech industry.

Work Experience

ByteDance | **Machine Learning Backend Engineer** | **San Jose, CA, USA**   **Jan 2024 - Present**
A member of IT's Enterprise Solution AI Operations Algorithm Team

- Built a Text-to-SQL AI agent with **LangChain** to automate natural language-to-SQL queries, integrated **RAG** for schema fetching, and enhanced ByteDance's network monitoring service, saving **hundreds of human hours monthly** across all offices by streamlining network diagnostics.
- Developed and fine-tuned **computer vision** algorithms using **YOLO** for human detection, **DeepSort** for people tracking, and **Mmpos** for action detection to automate server room monitoring across **1,000+** global sites. The system triggers alerts for unauthorized access, over-crowding, or prohibited activities, eliminating manual monitoring and freeing up resources for server room management.
- Designed and implemented a network diagnostic AI chatbot for a commercialized ByteDance product based on **Swarm**. The chatbot enables non-technical users to diagnose network issues by retrieving and analyzing monitoring data, streamlining deployment for small businesses and reducing reliance on network specialists.
- Developed backend services using **FastAPI** (for Text-to-SQL and Network Diagnostic) and **gRPC** (for Computer Vision) to expose machine learning models and support client interaction. Implemented **authentication**, **managed deployment**, and ensured service health. Led real-time **output streaming** to enhance user experience and provide instant feedback.
- Collaborate with clients, product managers, and team members to clarify requirements, manage expectations, suggest alternative engineering solutions when needed, and brainstorm optimal approaches, ensuring clear communication and alignment across all stakeholders.

Cymantix | **Software Engineer (Part Time)** | **North Carolina, USA**   **Oct 2021 - Feb 2023**
A SaaS tech startup that integrated machine learning with data analytics and information retrieval.

- Identified and resolved **communication issues** proactively between clients and engineers, which boosted the company's reputation and gained 3 additional clients.
- Investigated replacing K-Means with Hierarchical clustering on the **Flask (Python)** backend, which reduced computation and user wait time by 10%-60%.
- Optimized real-time news analysis using **multithreading**, **NodeJS** and **Socket.io**, which decreased user wait time by 90%.
- Created a full-stack machine-learning-driven data analytics web platform in a global team of 5 engineers that secured seed-round funding.
- Refactored codebase to **Next.js** and added animations using **D3.js**, which reduced 20% code redundancy and provided a smoother user experience.
- Integrated **Microsoft Azure** into our platform, which provided login options and secure data storage from Microsoft's cloud. Resulted in a cost-effective transition for users and gained 2 non-profit organizations as clients within 1 week.
- Automated PubMed data update pipeline using **Bash script**, **Python**, and **CronJob**, which reduced manual labor and gained 2 clients that required the most up to date data.

IBM | **Full-Stack Engineer (Summer Intern)** | **North Carolina, USA**   **May 2021 - Aug 2021**
Worked on IBM's internal platform that provisions and customizes live demo environments.

- Co-founded an automated validation service using **SailsJS** that streamlined database maintenance and saved the team $14,000 annually by eliminating headcounts for manual tasks.
- Enhanced user experience based on user feedback using **NextJS**, which expanded the monthly user base to over 12,000+.
- Streamlined administrative content processes, achieved faster content updates, and reduced redeployments by over 20 per week.

Education

University of North Carolina at Chapel Hill

Master's of Science in Computer Science | **Aug 2022 - Aug 2023**
- **GPA: 3.9/4.0**.

Bachelor's of Science in Computer Science and Mathematics | **Aug 2018 - May 2022**
- **GPA: 3.8/4.0**, Dean's List from 2018-2022.

Skills

Coding   JavaScript, SQLite, Python(Pandas, TensorFlow, NumPy, Scikit-learn, etc.), C/C++, HTML/CSS, Bash, Zsh, Java
Technologies   NextJS/React, NodeJS, React Native, Git, Flask, jQuery, Microsoft Azure, Firebase, Linux, Tableau, MySQL
Hobbies   Cooking, Barista, and Hardware