Ruipeng (Ray) Han

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EDUCATION

University of Illinois Urbana-Champaign   **Expected Dec 2024**
Master of Computer Science   GPA: 4.0/4.0
Teaching Assistant for Database Systems (CS 411), Software Development Methods (CS 477)

University of Illinois Urbana-Champaign   **Aug 2019 - May 2023**
B.S. with Highest Distinction in Math and Computer Science and Statistics   GPA: 3.95/4.0
Coursework: Parallel Programming, Data Structures, Database Systems, Distributed Systems, Networks, Compilers
Machine Learning, Deep Learning, NLP, Signal Processing, Internet of Things, Computer Vision

TECHNICAL SKILLS

Languages: C++, Python, Golang, JavaScript/TS, C, C#, Java, R, SQL, Linux Shell, HTML5&CSS
Frameworks: Django, Flask, React.js, Next.js, Node.js, Express, Java Spring Boot, gRPC, FastAPI, Hadoop
Developer Tools: Docker, Git, Gitlab, Github, VMware, GCP, AWS, Postman, MongoDB, Neo4j, PostgreSQL, CUDA

PROFESSIONAL EXPERIENCE

Software Research Assistant   Dec 2023 – Present
Coordinated Science Lab, University of Illinois at Urbana Champaign   Champaign, IL
- Developed an automated sentiment analysis pipeline in **Python** to retrieve raw tweets, preprocess data, and perform sentiment analysis and chain-of-thought prompting using **LangChain**, OpenAI GPT-4 API, and **NLTK**
- Assisted in developing decision tree models and analyzing outcomes, clustering users and tweets by sentiment on topics.

Software Engineer Intern   May 2022 – Aug. 2022
Foxconn Industrial Internet (FII-USA)   Mt. Pleasant, WI
- Led the design and development of RESTful APIs using **FastAPIs** to retrieve real-time IoT machine data from the production line, enabling seamless integration with user and client applications and effectively handling 10K+ daily requests
- Developed microservices architectures using **Django-REST framework** that communicated with Microsoft Graph APIs and provided access to Microsoft cloud services, including emails, Teams messages, cloud communications, and search functions

Software Engineer Intern   May 2021 – Aug. 2021
Foxconn Industrial Internet (FII-USA)   Mt. Pleasant, WI
- Developed and maintained an ERP web application using **Django** and **React.js** with **PostgreSQL** databases, automating human resources' business workflow and affairs, including form approvals, production planning, document management, etc
- Implemented an admin portal to visualize thousands-scaled sales forms and materials documents, enhancing business analysis
- Implemented health checks and monitoring mechanisms in **HAProxy** to constantly monitor the availability and responsiveness of web servers, automatically routing traffic away from underperforming servers and ensuring 99.999% host uptime

IT Technician Intern   May 2020 - Aug. 2020
Foxconn Technology Group   Mt. Pleasant, WI
- Collaborated with system engineers to optimize PostgreSQL replications, load-balancing protocols, and failover performance. Achieved 30% latency reduction, enhancing data sync between primary and standby databases
- Leveraged **GitLab CI/CD** and developed shell scripts to automate deployments, server updates, testings, and database migrations and failovers, enhancing the DevOps cycle and continuous integration efficiency under Linux OS.

PROJECTS

Distributed Machine Learning Computing Scheduler
- Developed a fault-tolerant distributed file system in **Golang** using **gRPC**, enabling efficient file operations such as fetching, deleting, and uploading files while ensuring system reliability
- Implemented the **Bully Algorithm** for automatic master node election, providing seamless failover capabilities in case of master node failures, ensuring uninterrupted system functionality
- Designed and implemented a **Round-Robin** style resource scheduler for efficient task allocation among ML models/inference tasks, optimizing resource utilization and ensuring fair distribution of computing resources

lc-gg (Full-stack Development)
- Designed and developed an online group-study platform for Leetcode in **Next.js** and **MongonDB**, deployed using **Vercel**
- Leveraged Leetcode's API to fetch user statistics, providing users with up-to-date information to aid in their preparation