Zhenlin Wang

zhenlinw@cs.cmu.edu | (412) 726-9719 | www.linkedin.com/in/zhenlin-wang | criss-wang.github.io

EDUCATION

Carnegie Mellon University (CMU)   **Pittsburgh, PA**
Master of Science in Machine Learning   **December 2023 (Expected)**

National University of Singapore (NUS)   **Singapore**
Bachelor of Science in Applied Mathematics (1st Class), Double Major in Computer Science   **June 2022**
GPA**:** 4.75/5.0 | Dean's List (Fall 2020, Fall 2021)

Courses: Data Structures & Algorithms, Database Systems, Programming Methodology, Computer Networks, Operating Systems, Software Engineering, Distributed Systems, Parallel & Cloud Computing, Machine Learning & Artificial Intelligence

PROFESSIONAL EXPERIENCE

Emporio Analytics   **Singapore**
Machine Learning Engineering Intern   **May 2020 - August 2020**
- Constructed data/model pipelines in Flask-based backend system for an online data platform, deployed pipelines on MSSQL server, AWS EC2 and S3 and achieved 3 times better efficiency for model prediction tasks via asynchronous job queues
- Developed real-time, scalable models for price-quantity prediction using features from over 20 million grocery e-receipts based on Python asyncio, Apache PySpark Streaming and ML-lib, boosting prediction accuracy by 14.5% on real-world data

PROJECT EXPERIENCE

Twitch+: A Personalized Twitch Resources Recommendation Engine   **August 2022 – Present**
- Designed and built web-based, personalized engine for users to search twitch resources and get recommendations
- Built web pages with rich + user friendly experience using React and Ant Design
- Implemented REST APIs using Java servlets, retrieved real Twitch resources using Twitch API and stored data in MySQL
- Support login/logout and favorite collection
- Explored recommendation algorithms and applied Deep Factorization Machine on game information extracted from Twitch
- Deployed the service and database to Amazon Web Service (EC2, RDS) for better stability and scalability

SmartMall   **May 2022 – August 2022**
- Developed distributed backend system for a shopping app with microservices via Spring Framework and Docker/Kubernetes
- Achieved resources separation, reverse proxy, and load balancing with Nginx; registered and configured services with Nacos
- Accelerated data search, retrieval, and synchronization with MySQL, Redis, Elasticsearch and Spring Session
- Identified vulnerability issues during heavy network traffic using JMeter and resolved them with multi-threading (Redisson locks, Java Thread Pools) and maintained transaction reliability/consistency using message queue clusters (RabbitMQ)
- Deployed the services on Kubernetes with kubectl on KubeSphere, automated CI/CD with Docker, Maven, and Jenkins

Code Analyzer   **January 2022 – May 2022**
- Led a team of 5 to build a cross-platform code analyzer with MVC framework using C++, Linux GDB and CMake
- Designed database schemas with ER diagrams, built queries for CRUD operations of code snippet information in PostgreSQL
- Developed a knowledge base and enabled fast lexical token querying with token indexing feature and C++ STL threads

CLI-nic   **August 2020 – November 2020**
- Led the iterative development of a GUI-based medical supply monitor app in Java with Agile scrum and Kanban practices
- Implemented data models and deletion, search modules with factory method, dependency injection and adapter pattern
- Automated unit/integration testing in Continuous Integration/Deployment via JUnit Test and GitHub Actions

MyPal   **May 2019 – August 2019**
- Developed a loosely coupled website for students for relationship management, event scheduling and connection analysis
- Designed user interface of the app based on HTML, CSS, React, Node.js and applied D3.js for data visualization
- Built backend system with Express and Node.js, integrated cloud-hosted NoSQL database from MongoDB Atlas and engineered REST/GraphQL APIs to handle front-end/back-end connections and asynchronously process HTTP requests
- Awarded Orbital Software Development Apollo 11 (Advanced) Level

SKILLS

Programming Languages: Python, Java, JavaScript, C++, C, Golang, SQL, Shell scripts
Database and Cloud: MySQL, NoSQL, MongoDB, Redis, Hibernate, Amazon Web Service, Elasticsearch
DevOps/Web Dev: Spring, React, Express, Node.js, JUnit, JMeter, Jenkins, GitHub Actions, Docker/Kubernetes, RabbitMQ