Qingyu(Adina) Zhu

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EDUCATION

Carnegie Mellon University, Silicon Valley — *Mountain View, CA*
Master of Science in Electrical and Computer Engineering, Major GPA: 3.8/4.0 — *08/2019 - 12/2020*

The University of Hong Kong — *Hong Kong, China*
Master of Science in Computer Science, Major GPA: 3.6/4.3 — *09/2017 - 05/2019*

Nankai University — *Tianjin, China*
Bachelor of Engineering in Software Engineering, Major GPA 3.8/4.0 — *09/2012 - 06/2016*

WORK EXPERIENCE

Inspur USA Inc. — *Bellevue, WA*
Software Engineer Intern *(Python, PostgreSQL, AWS)* — *06/2020 - 08/2020*

- Worked in the AI team on several machine learning projects, which are core components of a distributed SQL database.
- Developed a real-time anomaly detection system for monitoring distributed database performance and sending alerts to administrators; Leveraged Facebook's Prophet and Keras LSTM to identify anomalies out of time-series Prometheus metrics; Visualized metrics trends at abnormal points using python. The system effectively **detects database failures up to 5 minutes ahead** of the actual breakdowns and achieves **84% improvement in effectiveness** by pre-filtering metrics.
- Implemented an ensemble model for credit card fraud detection using auto-sklearn library; Integrated the pre-trained model into PostgreSQL as a user-defined function and deployed it in AWS. The model achieves **98% accuracy and 91% AUC** .

Home Credit — *Tianjin, China*
Test Analysts *(Python, SQL, Java)* — *11/2016 - 07/2017*

- Constructed an efficient ETL pipeline to quantify personal credit information and collect statistics, e.g., loan-default rates. The pipeline handles data from **10,000 clients per day** and produces daily metadata.
- Refined the credit-scoring model by adding fingerprinting features, **increasing estimation accuracy by 10%**.
- Upgraded an online loan application system with **50 million active users** by testing and delivering **20+ APIs** in Java.
- Worked with senior engineers, data analysts, and product managers to optimize system performance and scalability.

ChinaSoft International Ltd. — *Tianjin, China*
Java Software Engineer Intern *(JSP + Servlet, Java, SQL)* — *06/2014 - 09/2014*

- Built a sports social networking website and its Android client-side from scratch. The application helps people find sports partners and provides personalized workout plans with **40+ functions**, e.g., creating profiles, uploading files and chatting online.
- Conducted full-stack web development; Implemented front-end using HTML5, CSS, JavaScript, Ajax to active page interaction and reduce page response times; Created back-end server with MySQL, MVC framework, J2EE, and Apache HTTP server.
- Designed and implemented the Android mobile app using multiple layouts, Adapter, Gson and JSON.

SELECTED PROJECTS

Investment Recommendation System *(NLP, Python)* — *08/2018 - 05/2019*

- Built an investment recommendation system, including a Twitter sentiment analyzer and a price prediction model.
- Trained futures' price prediction model using SVM, Random Forest, Decision Tree with **10-year daily price data** and **56K+ tweets text data** using Python; **Improved 27%** price prediction accuracy and **36%** trading profitability by tuning SVM hyperparameters.
- Created a new end-to-end Twitter sentiment analyzer with NLP by collecting and preprocessing massive text data from various online sources, and extracting Twitter keywords with the TF-IDF algorithm.

Parallel K-NN Acceleration *(CUDA, OpenMP, C, Python)* — *03/2020 - 05/2020*

- Optimized K-NN classification utilizing OpenMP and CUDA with loop unrolling, false sharing elimination methods in C, Python.
- Benchmarked the performance against the sequential implementation of K-NN and Python scikit-learn library functions with three UCI's data sets; **Achieved up to 70x speedup** with the CUDA multi-thread model compared to the baseline.

Web Proxy Server with Caching *(Linux shell, C)* — *11/2019 - 12/2019*

- Improved a web proxy server with C to handle multi-threading requests based on the **HTTP/1.0 protocol** in Linux shell.
- Designed and implemented a proxy cache with a Double LinkedList and **LRU policy** to improve throughput and reduce latency.

Dynamic Storage Allocator *(Linux shell, C)* — *11/2019 - 12/2019*

- Implemented a 64-bit general-purpose dynamic memory allocator with malloc, free, realloc, and calloc functions using C.
- Applied best-fit search policy and segregated lists to increase the utilization by **17%** and throughput by **110 times**.

SKILLS

Programming Languages Python, SQL, C/C++, Java, JavaScript, HTML/CSS
Frameworks & Softwares AWS, Docker, Linux, Git; Scikit-Learn, PyTorch, Keras; Tableau, D3.js