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 — *06/2020 - 08/2020*

- Developed a real-time anomaly detector in Python for monitoring the performance of distributed systems; Leveraged Facebook's Prophet and LSTM to identify anomalies from time-series Prometheus metrics; The system effectively **detects database failures up to 5 minutes ahead** of the actual breakdowns and saves maintenance cost.
- Implemented an ensemble model for credit card fraud detection using the auto-sklearn library; Integrated the pre-trained model into PostgreSQL as a user-defined function and deployed it on AWS. The model achieves **98% accuracy and 91% AUC**.

Home Credit — *Tianjin, China*
Test Analysts — *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%**.
- Enhanced 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 — *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 customized workout plans with MVC framework and **40+ functions**, e.g., profile pages, chat rooms, posting.
- Conducted full-stack web development; Implemented front-end using HTML5, CSS, JavaScript, Ajax to active page interaction and reduce page loading time; 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 — *08/2018 - 05/2019*

- Built an investment recommendation system with a Twitter sentiment analyzer and a price prediction model from scratch.
- 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.
- Trained futures' price prediction model using SVM, Random Forest, Decision Tree with **10-year daily price data** and **56K+ tweets text data** in Python; **Improved 27%** in prediction accuracy and **36%** in trading profitability by tuning SVM hyperparameters.

Parallel K-NN Acceleration with CUDA and OpenMP — *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 — *11/2019 - 12/2019*

- Designed and developed an **HTTP/1.0** web proxy server in C to handle multi-threading requests with the Pthreads library.
- Boosted proxy performance by introducing an **LRU cache** with a Double LinkedList and a mutual exclusion lock.

Dynamic Storage Allocator — *11/2019 - 12/2019*

- Implemented a 64-bit high-performance dynamic memory allocator with malloc, free, realloc, and calloc functions using C.
- Designed segregated free lists with best-fit search policy to increase the space 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, Tensorflow; Spring MVC