Warren Mo

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Education

University of Chicago — Chicago, IL
Bachelor of Science in Computational and Applied Math — *Sep. 2013 – June 2017*

Experience

Treasury Prime | *Clojure, Python, SQL (PostgreSQL)* — 3 years; Mar. 2021 - Feb. 2024

Software Engineer III (Aug. 2023 - Feb. 2024)

- Led a project to refactor and update customer KYC, removing over 500 lines of code.
- Led project to automatically reconcile negative account-balances to maintain compliance standards.

Software Engineer II (Feb. 2022 - Aug. 2023)

- Built infrastructure to allow clients to manage accounts at different banks with a single API key (OneKey) leading to the signing of 3 fintechs worth $2M ARR and deposits of $1.5B.
- Helped design and implement a new payment rail (Network Transfers) allowing instant transfers across banks.
- Led project to balance Network Transfers totaling $820M with perfect reconciliation to-date.

Software Engineer I (Mar. 2021 - Feb. 2022)

- Designed and coded a transaction-upload service, processing millions of transactions daily with 0 missed to date.
- Contributed to generalized NACHA-file processor, reducing code written for every new bank by ∼100 lines.
- Improved efficiency of various cron jobs, reducing their runtimes from ∼1-2 hours to a few seconds.

University of Chicago | *C++, Python* — 1 year, 4 months; June 2017 - Sept. 2018

Research Specialist (Software Engineer)

- Led the lab's efforts to integrate time-series algorithms into the DARPA-funded Data-Driven Discovery of Models (D3M) Project using C++14/17 and Python on Linux.
- Predicted cardiac events from ICD data, obtaining AUC comparable to that of domain experts using traditional statistics. Used pandas, Scikit-learn, data imputation, and ensemble (random forests, AdaBoost) methods.

Projects

Competitive Programming | *C++, Python*

- Currently ranked top 2% in global Leetcode coding competitions using C++ and Python.

HPC Exploration | *C++*

- Developing high-performance algorithms and data structures in C++20/23.
- Optimized using low-level systems and CPU architecture knowledge.
- Performance measured with perf and Google Benchmark.

Resident Scheduler | *C++, Python*

- Developing a year-long scheduler for Northwestern internal medicine residents in C++23.
- Experimenting with backtracking and other heuristics for performance.

Patents & Publications

Executing Network Transfers of Funds in a Networked Computing Environment | *Co-Inventor*

- Patent pending *(U.S. Patent Application No.: 18/393,091)*
- A software-based payment rail allowing instant, inter-bank transfers of funds with lower fees than wire transfers.
- Led design and implementation for underlying balancing of funds and ETA of settlement funds.

Autostacker: A Compositional Evolutionary Learning System | *Co-Author*

- Chen, B., Wu H., Mo, W., Chattopadhyay, I., and Lipson, H. *GECCO*, 2018, pp. 402-409.
- Contributed to integration of algorithm within the DARPA D3M Project.

Technical Skills

Languages: C++17/20/23, Clojure, Python, SQL
Fundamentals: Operating Systems (Linux), Networks (TCP, UDP, IP), Concurrency/Multithreading, Machine Learning, Functional Programming
Developer Tools: Git, Vim, gdb, Google Benchmark, Perf
Libraries: pandas, NumPy, Matplotlib