Ayan Mao

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Education

Northeastern University   Sept. 2021 – Dec. 2023(Expected)
Master of Science in Computer Science   *Seattle, WA*

Zhejiang University   Sept. 2017 – July 2021
Bachelor of Science in Computer Science   *Hangzhou, Zhejiang, China*

Experience

Google   Aug. 2022 – Nov. 2022
Software Engineering Intern @ Ads Mobile Team | Java, Lua, GCP   *Mountain View, California*

- Worked on research projects Metaverse Ads, delivered a complete prototype and a Lua SDK including asynchronous unit tests, and got great feedback from L8 principle SDE and L7 product managers
- Did confidential research for monetizing GMA(Google Mobile Ads), integrated GMA in certain Metaverse platforms by developing the whole end-to-end workflow and validating the seamless functionality from scratch
- Optimized mobile ads close button, tested and released it for billions of Android users using Android Studio

Meta (Facebook)   May 2022 – July 2022
Software Engineering Intern @ Ads Infra Team | C++, Python   *Menlo Park, California*

- Unblocked new Ads publishing services dev and ensured its release reliability, with new necessary features running A/B tests on test and prod machines, which generated a detailed URL and performance metrics for different commits
- Enhanced debugging efficiency by implementing scalable features and automated bug fixes, saving engineers 2 hours each time in troubleshooting parent and child canary instances within the Ads performance testing system
- Boosted dev efficiency by automating seamless termination of joint canaries without manual server interaction, optimizing Python packages for streamlined operations

Microsoft Research Asia   Oct. 2020 – June 2021
Research Intern @ System Research Group | Python, Typescript   *Beijing*

- Contributed features like new parameter auto-tuners to the NNI (Neural Network Intelligence: An Open Source AutoML Toolkit for machine Learning Lifecycle, GitHub 12.9k star), during which NNI added over 3000 GitHub stars
- Increased the diverse downstream search strategies' effect by 24%, with innovative Unsupervised Architecture Representation Learning and NLP-NAS-Benchmark migrated to NAS
- Visualized the arch graph result on the website using React, Typescript and D3.js on the website

Akuna Capital   July 2020 – Sept. 2020
Software Engineering Intern @ Gateway Team | C++, Shell   *Shanghai*

- Replayed and captured market data and orders for the high-frequency and low-latency trading engine
- Increased the latency timestamp accuracy from 0.001ms to 0.000001ms using C++ to help grab profitable orders
- Reduced memory leaks in Gateway exchanges repository by 37% with Valgrind, gdb

State Key Lab of CAD and CG, Zhejiang University   July 2019 – Mar. 2020
Research Assistant @ Visualization Group | Unity   *Hangzhou, Zhejiang*

- Migrated Kernel Density Estimation Edge-Bundling (KDEEB) to 3D, making the graphic display more intuitive
- Implemented Force-Directed Layout Algorithms etc in Interactive Data Group using Unity

Projects

Operating System Project - Concurrent Key-Value Store and File System | *C, C++*   March 2022

- Leveraged multi-threading to accelerate the Key-Value store server
- Implemented a simplified Unix-like file system with the FUSE (File system in User Space) library

Self-made Database miniSQL | *C++*   May 2020

- Made a mini database system like MySQL with two classmates
- Implemented index as memory with B+ Tree, interpreter with tokenizer and parser with flex and bison toolchains

Technical Skills

Programming Languages: C++, Python, Java, Lua, C, MySQL, TypeScript, Rust
Technologies/Frameworks: Linux, AWS, GCP, Hadoop, Valgrind, git, gdb, scripts, LaTeX