# Ayan Mao

Palo Alto, CA

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## About Me

Software Engineer with 2.5 years of experience building large-scale advertising systems. Specialized in high-throughput ad serving and ads retreival, familiar with ad targeting, ranking, auction pipelines.

Promoted within 11 months; received a 40% salary raise for exceptional performance. I make ads system print money smoothly and quickly. Currently on H1B visa (2nd year).

## Experience

### X/xAI (Twitter)                                                            Feb. 2024 – Now
*Software Engineer @ Ads Team | Java, Scala, Python*                            *Palo Alto, CA*

- Operated within a lean ads engineering team(20 engineers) and served as 1 of 4 ads-serving oncall, ensuring SLA compliance and high availability for X's ad ranking  serving infrastructure.
- Led two junior engineers to deprecate the old ads ranking service successfully, by migrating new-generation ranking model call and auction library into ranking stage of the orchestra service, which supported the epic new-generation ranking model's launch and eliminated legacy code debt
- Integrated Google Mobile Ads into X's DSP, optimizing the pipeline and scaling traffic, resulting in 150× revenue growth with 5 months
- Owned all Takeover Ads surfaces (Promoted Trend, Spotlight, First View Timeline  Video), ensuring delivery quality, reliability, and feature development for products contributing hundreds of millions in revenue per year
- Shipped Grok-based retrieval for ad selection; improved DPA(Dynamic Product Ads) performance and user-ad matching quality. Grok retrieval became one of the highest-performing retrieval sources in the ads system
- Improved ad fatigue logic and diversity, increasing CTR by 1.3% and user active seconds by 0.12% system-wide

## Internships

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

- Delivered a complete prototype (Metaverse Ads) including a Lua SDK with asynchronous unit tests
- Designed and implemented an end-to-end advertising pipeline in virtual 3D world from scratch, integrated GMA with selected Metaverse platforms, highlighting potential expansion opportunities beyond iOS and Android
- 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, CA*

- Enhanced ads internal testing platforms by automating A/B tests on test and prod machines, which generated a detailed URL and performance metrics for different commits
- Increased debugging efficiency with 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

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

- Contributed features like new parameter auto-tuners to the NNI (Neural Network Intelligence: an Open Source AutoML Toolkit for Machine Learning Lifecycle, GitHub 13.2k 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

## Technical Skills

**Programming Languages**: Java, Scala, C++, Python, Lua, C, Shell scripting
**Development Platforms**: Linux, AWS, GCP, Xcode, Docker, Arduino, Unity
**Frameworks and Tools**: MySQL, Hadoop, React, Valgrind, Scalding, gdb, scripts, LaTeX, Maven, Gradle

## Education

### Northeastern University                                                    2021 − 2023
*Master of Science in Computer Science*                                        *Seattle, WA*

### Zhejiang University                                                        2017 − 2021
*Bachelor of Engineering in Computer Science*                                  *Hangzhou, China*