Ezra Fu

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Seeking 2025 Spring SDE / MLE Full-time Opportunities

EDUCATION

Carnegie Mellon University   Pittsburgh, Pennsylvania
Master of Science in Information Networking   *Jan. 2023 – Dec. 2024*

- **GPA: 4.0** | Relevant Courses: Intro to Computer Systems, Distributed Systems, Storage Systems, OS Design and Implementation, Parallel Computer Architecture and Programming, Fundamentals of Telecommunications Networks, Intro to ML, NLP.
- **Leadership**: TA for NLP Course (11-411/611); President of Graduate Organization @INI; Graduate Student Assembly Rep.

Fudan University   Shanghai, China
Bachelor of Science in Computer Science   *Sep. 2018 – Jun. 2022*

- **Awards**: Excellent Graduate of Fudan University, 2022; Outstanding Student Scholarship (2018 – 2022).
- **Competitions**: Silver Medal, ICPC Asia-East Continent Final Contest; Gold Medal, ICPC Asia Regional Shanghai (2020).
- **Publication**: "*Understanding the User Interactions on GitHub: A Social Network Perspective*", CSCWD'21.

PROFESSIONAL EXPERIENCE

Apple   Seattle, Washington
Software Engineering Intern, AIML - Siri and Information Intelligence   *May 2024 – Aug. 2024*

- Worked on the projects focusing on improving cross device experience for Siri using Swift and Objective C.
- Improved Siri reliability by redesigning and implementing the request flow, expanding use cases, and optimizing performance.
- Maintained and iterated an internal tool designed for collecting feedback from Apple employees with Swift and SwiftUI.

Bilibili Group (NASDAQ: BILI)   Shanghai, China
Machine Learning Engineer Intern, AI Tech Dept   *May 2021 – Jun. 2022*

- Maintained the recommender system in C/C++, handling over 1 billion daily requests, focusing on re-ranking and diversity control.
- Innovated three approaches to match candidates for the recommender system, boosting CTR by 1%, 3%, and 1%, respectively:
  - Identified potential episodes from video series by analyzing patterns in video titles using sequence-to-sequence models.
  - Applied GNN to find related videos with similar embeddings using data processed by Airflow, MapReduce, and Bash.
  - Utilized BERT model in TensorFlow with HNSW algorithm to match cold-start videos having similar titles.
- Established BI for the rec system with Presto and Hive, providing data support for company-level user-growth strategy meetings.

ByteDance (Parent company of TikTok)   Shanghai, China
Software Engineer Intern, Data Dept   *Jan. 2021 – Apr. 2021*

- Improved feed request access across platforms (*TikTok*, *Douyin*, etc.) to the advertising system's landing page optimization service using C/C++ on Linux servers, resulting in a 1% higher conversion rate and enhancing user experiences.
- Deployed an online FreeType mechanism to support 40+ languages for the image rendering service for international advertisers.

SKILLS

- **Programming Languages & Tools**: C/C++, Python, Swift, Go, Java, Objective C, PyTorch, TensorFlow, Linux, Git, Bash
- **Data Technologies**: MySQL, Redis, Neo4j, Hadoop (HDFS, MapReduce), Hive, Presto, Airflow, Kafka, Storm, Zookeeper

PROJECTS

Pebbles Kernel and Paravirtualization   *Operating System Design and Implementation, Spring 2024*

- Implemented a Unix-like kernel from scratch, supporting multiple virtual memory address via paging, preemptive multitasking, and a set of important system calls, and supplying device drivers for the keyboard, the console and the timer.
- Wrote a user-level thread library based on the kernel, including synchronization primitives such as mutexes and condition variables.
- Transformed the kernel into a hypervisor capable of hosting itself (using paravirtualization).

Common Good Progressive Web Application   *Thematic Development-based Project, Spring 2024*

- Migrated the account signup process from web to the app communicating results to the server within a Svelte-based architecture.
- Conducted a thorough security audit within the codebases and infrastructure of Common Good with tools like SonarQube.

SELECTED AWARD

- Dec. 2016 - **First Prize** of the National Olympiad in Informatics in Provinces (NOIP 2016)