YUAN GU

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SKILLS

Programming	Java, Kotlin, C/C++, Python, PHP, JavaScript, TypeScript, Dart, Shell
Tools & Frameworks	AWS, Azure, Maven, Docker, Kubernetes, Terraform, MapReduce, HDFS, Spark Vert.x, Django, Flask, React, Flutter, Node.js, Ajax, Protobuf, gRPC, Linux, Git
Databases	MySQL, HBase, Firebase, RocksDB, MongoDB, Neo4j, Redis, DynamoDB

WORK EXPERIENCE

Software Engineer, Google LLC - Privacy Sandbox on Android (Confidential) 03/2022 - Present
Technologies: Android OS, Java/Kotlin, Differential Privacy, Federated Learning Mountain View, CA

Software Engineering Intern, Cloudera, Inc. - Distributed Storage Team 05/2021 - 08/2021
Project: Ozone Namespace Summaries in Recon Santa Clara, CA

- Enriched features for Hadoop's big data object storage, Apache Ozone, by adding **Java/Maven** modules and unit tests. Resolved 10+ **Jira** issues and contributed **10k+** lines of code as an open-source committer.
- Developed dashboard systems (CLI tool, Web UI, and APIs) for Ozone on the monitoring server, Recon, that helps clients visualize disk usage (DU) of Ozone clusters, which increases observability of the system.
- Designed a **RocksDB** schema to store real-time metadata updates by taking snapshots of Ozone datanode manager (OM) via **gRPC**. Implemented **Java RESTful APIs** that query metadata from RocksDB and (recursively) compute disk usage on Recon's backend, which saved 90% **CPU cycles** on OM.
- Visualized DU as pie charts on Web UI by building frontend in **React**, **TypeScript**, **Less**, and **Plotly.js**.

Teaching Assistant, Carnegie Mellon University 06/2021 - 12/2021, Pittsburgh, PA

- Redesigned the cloud storage project for cloud computing course, which built a social networking website with heterogeneous storage in **MySQL** for login info, **MongoDB** for comments, and **Neo4j** for social relations.
- Migrated cloud infrastructure and database provider from **GCP** to **Azure**. Built **Terraform** to automate VM deployment and dependency installation, which allowed students to focus on core learning objectives.

Full-Stack Mobile Developer, Iowa State University 04/2020 - 07/2020, Remote

- Developed a cross-platformed mobile app in **Flutter/Dart** for the university's COVID-19 Tracker project's dashboard, which provides daily infected cases and death tolls. Our work has been trended on news.
- In agile iterations, managed **UI design**, **automatic location pinpoint**, **OAuth integration**, and **screen size adaptation**. Loaded a **Firebase** database for the app from raw data in CSV and JSON.

PROJECTS

Twitter Analytics Web Cloud Service Cloud Computing, Distributed Storage | Spring 2021

- With a team of three, built a high-performance, **Java/Vert.x**-based web service on the cloud (**AWS EKS**). Containerized the service in **Docker/K8s** and automated the deployment in **Terraform** and shell scripts.
- Using **MapReduce/HDFS**, implemented **ETL** pipelines that extracted from **1TB** Twitter's raw data in JSON, transformed it to TSV, and loaded into four databases **(MySQL, HBase, RDS, DynamoDB)**.
- Under a strict budget, achieved an average of **150k RPS** by **load balancing** and optimizing **JDBC** queries.

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Information Networking 08/2020 - 12/2021
Coursework: Computer Systems, Cloud Computing, Distributed Systems, Database Systems, Storage Systems
Honors: Merit-based Tuition Scholarship, 2020 vGHC Full Scholarship, Teaching Assistant for Cloud Computing

College of William and Mary Williamsburg, VA
Bachelor of Science in Computer Science and Mathematics, GPA: 3.87/4.00 08/2017 - 05/2020
Honors: *summa cum laude*, James Monroe Scholar, Research Assistant fellowship, Dean's List student