ZHANHAO LIU

jasperlau95@gmail.com ⋄ linkedin.com/in/zhanhaoliu/

EXPERIENCES

Google, Senior Software Engineer Mar 2020 -
C++, Java/Kotlin, GenAI Agent, Blockchain, Micro-services, Technical Leadership *Sunnyvale, CA*

· **Core Labs - GenAI Agent:** Research and develop AI agents leveraging the latest computer-use LLM models to fully automate web testing, replacing manual QA processes with intelligent test generation and execution.
· **Core Labs - Planet-Scale Blockchain:** Designed and developed a high-performance blockchain system surpassing **1M TPS**, addressing scalability, cost efficiency, and data storage limitations.
· **CoreID - Strategic Leadership & IAM Innovation:** As Tech Lead, provided strategic technical guidance and led a team of **10** engineers through multi-quarter design, development and deployment of a secure identity management system, reducing access overprovisioning by **50%** by implementing attribute-based access control.
· **CoreID Service Overhaul & Data Migration:** Redefined the Partner Domain Services database schema and APIs, leading a seamless migration from CloudSQL to Spanner with minimal downtime and **zero** user incidents.

Google, Application Engineer Intern May 2019 - Aug 2019
Python, BigQuery, Scikit-learn, TensorFlow, Keras *Sunnyvale, CA*

· Conducted in-depth analysis and visualization of Google's financial data using Python, BigQuery, and Data Studio, identifying key trends and insights to inform financial strategies.
· Developed and optimized ensemble (Random Forest, Gradient Boosting) and deep learning models (RNNs, LSTMs), reducing Google's daily accounts payable prediction error by **50%**, enhancing long-term cash flow forecasting accuracy.

SenseTime, ML System Engineer Intern May 2018 - Jul 2018
C++, Python, gRPC, Protobuf, Ceph, LevelDB, Amazon S3, ZeroMQ *Shenzhen, China*

· Engineered a large-scale face search engine SDK in C++, integrating pre-trained ML models into a high-performance, real-time face search service for clients using asynchronous gRPC protocol, enhancing client application capabilities.
· Optimized the face search pipeline through effective modularization and multi-threading, significantly increasing engine throughput to process **10 million** images per day, demonstrating a substantial boost in operational efficiency.

SKILLS

Languages Java/Kotlin, C++, Python, Go, SQL
Skills GenAI Agent, Blockchain, IAM, Micro-services, Distributed System, Testing, Project Management

EDUCATION

Georgia Institute of Technology Dec 2019
MSc in Computer Science, Specialization: Computing Systems, GPA: 4.0/4.0
Teaching Assistant: *Intro to Database Systems* & *Data Management and Machine Learning* courses

The Chinese University of Hong Kong May 2018
BSc (Hons) in Computer Science, First Class (ELITE Stream)

PROJECTS

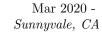**FlexPS: Flexible Parallelism Control in Parameter Server Architecture**
C++, Distributed ML System, Petuum, Spark MLlib, Hadoop, ZeroMQ

· Developed a Parameter Server based distributed ML system termed FlexPS, to provide flexible control over parallelism.
· Implemented scalable k-means++ algorithm on FlexPS, achieving a **400%** speedup w.r.t. Spark MLlib.
· Proposed a communication model on FlexPS optimized for dealing with sparse datasets based on the Stale Synchronous Parallel model. Reduced worker-server communication time by **45%** while preserving the convergence guarantees.

AWARDS & PUBLICATIONS

Third Place in KDD Cup 2019 AutoML Challenge KDD 2019

Tangram: Bridging Immutable and Mutable Abstractions for Distributed Data Analytics USENIX ATC 2019