

GE (DJANGO) JIANG

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EDUCATION

Georgia Institute of Technology

Master of Science in Computer Science

Aug. 2023 - Dec. 2024 (Expected)

Atlanta, GA, USA

Shanghai Jiao Tong University (SJTU)

B.S. in Computer and Information Science

Sep. 2019 - Jun. 2023

Shanghai, CN

SKILLS

- **Languages:** C++, Golang, Python, Java, JavaScript, SQL, HTML/CSS, Shell
- **Databases:** RocksDB, MySQL, PostgreSQL, MongoDB, Elasticsearch, Redis, HBase, Memcached, Spark
- **Tools:** Docker Compose, Kubernetes, Helm, AWS, Nginx, GCP, LLVM, Django, Flask, gRPC, Hibernate, Cutlass

WORK

MOLOCO, Inc.

May. 2024 - Present

Software Engineer Intern, Data Infra

- Develop a real-time observability service enabling users to send logs/metrics to **Kafka** via SDK, and store data in **Pinot** and **GCP Memorystore**, utilize **Startree** and **Inverted Index** for real-time statistical analysis and data retrieval, and Finally, visualize it on **Superset** for users to monitor and interact with. Support handling up to **360 MBps**.
- Maintain an **Airflow** service, resolving Web server restarts and Schedulers blockages during high request volumes
- Develop an automation tool to transfer **BigQuery** table to other GCP Project and auto encrypts sensitive information.

Naive Systems

Sep. 2022 - May. 2023

Software Engineer Intern, Static Code Analysis Group

- Develop **Static Analyzer** for AUTOSAR and MISRA with **Clang LibTooling**, **Clang AST**, **Infer**, **LLVM** and **Bazel**. Implement rule-specific checkers for **Abstract Syntax Trees** and **runtime behaviors**.
- Improve **Cppcheck** by Python to support **Google C++ Style** on Token Level, support Cross Translation Unit Analysis.
- Integrate these **300+** checkers into a single analyzer by **Golang** and support for **Docker** runs.
- Create test cases with **gtest** to reduce false positives. Engage in full development process with **Gerrit** and **Redmine**.

NetEase Game, Inc.

May. 2022 - Sep. 2022

Backend Engineer Intern, Infrastructure Group

- Improve search speed of the Localization Platform by **90%** (20s -> 2s) by replacing **MongoDB**'s Full-Text Search with **Elasticsearch** and migrating game text to Elasticsearch. Implement asynchronous jobs using **Celery** and **Redis**.
- Develop **80+** REST API in the HR Platform using **Flask**, **MySQL**, **Redis**, **Celery** and **Vue**. Features include: Interviewee Score Statistics; Periodically Synchronize Data; User Permission Management and History Records.
- Develop and maintain a Teams Bot utilizing **Microsoft Bot Framework** and **.NET core**, enabling developers to easily query databases and request internal APIs through natural language, saving **10** working hours per month.

Baidu, Inc.

Mar. 2022 - Apr. 2022

Software Engineer Intern, Autonomous Driving Group (Baidu Apollo)

- Port autopilot middlewares and integrate them into **RTOS** (Ubuntu) and solve the problems of middleware crashes.
- Build System on Chip (SoC) and deploy **QT** platform. Add tool functions for the Scheduler of Baidu Apollo.
- Write **Makefile** for three cross-compilation and test environments. Increase **20%** efficiency.

PROJECTS

SLM DB: a Single-Level Merge DB based on LSM and B+ tree

- Design a **LSM**(Log-structured merge-tree) based key-value database, merging the read advantage of **B+ Tree**:
- Use **Bbolt** to maintain an in-memory B+ tree, enabling fast and range queries; Support append writes similar to **LevelDB** to optimize bulk data writes; Set a **Write-ahead log** to ensure data durability; Implement **SkipList** based **Multi-level Memtables** (managed by **Arena Memory Pool**) to guarantee $O(\log N)$ efficiency; Design a single-level **SSTable** and uses **Selective Compaction** to manage garbage collection and mitigate Write/Space Amplification.

In-silico platform Development

- Build a platform by **Django** to support **SVM** and **GNN** in cancer diagnosis, enable it to support a high QPS over 2000 leveraging **Redis** for caching, **Celery** for asynchronous message processing and **Nginx** for load balancing.
- Set up a **CI/CD** procedure to automate the deployment of the application on 4 **MongoDB Clusters** (gridFS) on **Alibaba Cloud** and implemented a server monitoring system using **Prometheus** and **Grafana**.