Haizhi Geng

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Education

Beijing University of Posts and Telecommunications, Undergraduate 09/2017 – 06/2021

- Major: Computer Science and Technology, School of Computer. Graduation date: 06/2021

Work Experience

ByteDance Inc., Beijing, China 09/2019 – 04/2020

(App Back-end Research & Develop) R&D Intern, Golang/Python

- Responsible for App R&D work related to vertical business, using Golang/Python language, Thrift and other tools for microservice development and maintenance.
- Participated in R&D work of UGC and live broadcast, had cross-departmental cooperative development experience with Toutiao, Douyin and Watermelon Video.
- Learned a lot about Web development and DevOps.

PingCAP Inc., Beijing, China 06/2020 – Present

(Database R&D) Scheduling R&D Intern

- Responsible for the development of TiDB's scheduling component PD. Tuned and refactored some modules, designed and participated in the development and maintenance of distributed TSO services across data centers.
- Responsible for the development of TiDB. Participated in the design, development and testing of the function/syntax for the Stale Read, i.e, non-consistent read.
- Learned a lot about the distributed system and database.

(Database R&D) Scheduling R&D

- Responsible for the design, development and testing of TSO Scalability related features. Optimized and alleviated the performance bottleneck of TSO service caused by Go Runtime scheduling in high concurrency scenarios, improved TiDB transaction performance by 260%+ TPS, and reduced latency by 80% milliseconds.
- Refactored the Storage module of the PD component to standardize the underlying abstraction and decouple multiple modules, enhancing the pluggability of the underlying storage and the upper layer application.

Portfolios

MVCC https://github.com/Long-Live-the-DoDo/rfc

Flashback function based on the TiDB MVCC

- Won third prize at TiDB Hackathon 2021.
- Based on TiDB MVCC data to enable sub-second data archival, with the ability to restore specified tables to any existing historical version via Flashback SQL.

wince-tp(W.I.P) https://github.com/JmPotato/wince-tp

A thread pool implementation that supports Rust asynchronous programming

- At present, only a prototype is implemented based on the work-stealing scheduling algorithm, after then I want to transform it into a TPC-like sharding model.

fp-growth-rs https://github.com/JmPotato/fp-growth-rs

An implementation of the FP-Growth algorithm in pure Rust, which is inspired by enaeseth/python-fp-growth.

- A Rust implementation for frequent pattern mining algorithm, completed for the purpose of graduation design, and then found that Rust lacks similar libraries, so make it open-source.

dopamine https://github.com/JmPotato/dopamine

Python Web Framework

- Based on WSGI of PEP 3333.
- Use the gevent library to provide fast network IO performance.
- Use Flask-like router and HTTP wrapper.

Skills

- **Programming Language**: **multilingual** (not limited to any specific language), experienced in Golang/Python, comfortable with Rust/JavaScript/C/C++
- **Distributed System/Database**: Experience in tuning and deployment of TiDB, know the basic use of K8s and tidb-operator. taken course MIT 6.824 and PingCAP's Talent Plan, understand the basic theory of distributed system/database, including but not limited to algorithms such as Raft and Percolator.

- **Developing Tool**: familiar with Linux-based programming, have experience with team tools like Git, Jira, etc.
- **Others**: have experience using MySQL/Redis/Kafka, understand Docker and Docker orchestration concepts, have experience in developing digital currency quantitative trading strategy, solved JobShop problem with genetic algorithm.

Miscellaneous

- **Open-source Contributions**: contributed to `@rust-analyzer @etcd @tikv @tidb @talent-plan`, etc.
- **Passionate about sharing**: I have been writing on my personal blog for years and have accumulated several high-quality technical sharing articles.
- **Language Level**: English CET-6, ability to conduct daily conversation and essay reading, experience in English presentation.
- **Personal tags**: self-driven, quick learner, earnest curiosity, open source lover.
- **Interests**: Distributed System, Database, Cloud and Web application.
- **Selected Courses**: OS, Network, Database, Algorithm, Compiler Principle.