Jiangkun QIU

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Skill Set

- Programming experience for 9 years since 10
- Trained intensively in algorithms and data structures and get awards in Informatics
- Familiar with C, C++, Java, Python, Rust and Scala
- Basic experience in JavaScript, HTML, PHP, C#, SQL, Bash
- Hands-on experience in Linux and git on daily basis for years
- Comprehend operating system, network, machine learning, deep learning, Kafka, K8S, Netty, Disruptor, concurrent programming, JVM optimization

Education

Hong Kong University of Science and Technology, China — Sep 2020-Now

Computer Engineering major

Working Experienes

Internship Server Arch — Beijing ByteDance Technology Co., Ltd. — 2022.04-2022.09

- Propose and implement independently git-fuse, which is a ultra fast git tool combined with FUSE, solving the slow cloning problem of huge repos while using codegen tools. It minimizes the total processing time to 1/20, disk usage to 1/100, used in Overpass. And hosted a tech talk within the company, with 100+ audience
- According to the company's demand, write a universal and customizable API Linter, supporting both ProtoBuf and Thrift, running as a CLI tool and an gitlab CI task
- Maintain and improve on DevFlow, letting it support more products. It's a platform that integrates a fluent online editor, peer review for API changes, linting, compatibility check, code generation
- Maintain and improve on Overpass, a widely used platform that collects RPC definition files and generate RPC client for other go projects

Full-time Backend Dev — ERX Inc, Thailand — 2022.03-今

Context: Rewrite ERX.io, the only licensed "digital asset" exchange in Thailand

Content

- Rewrite a Tezos smart contract from the obscure Haskell Morley to clear SmartPy code
- Build the exchange from scratch, involved in regulatory compilance, architecture, database design, API design and development, matching engine MVP development
- Research on cryptography and HSM, implement wallets for crypto on-chain transaction signing

Full-time Backend Dev — Infinity Force Inc, Singapore — 2022.02-2022.04

Context: Build a account rental platform for the game Axie Infinity

Content

- Implement Infinity Force Token in Solidity
- Optimize the original Python+Postgres backend stack with Rust.Optimize workflow with Code Generation
- Exploit the private APIs of the game to manage NFT assets with web3 package on the platform

Backend Internship — Shanghai Rangchuan Information Technology Co., Ltd. — Dec 2020-Now

- Distributed Rate Limiter: Implemented a modified version of the Sliding Log algorithm With Akka and Redis, to restrict service usage for each user and API. This solved the incapacity that distributed nodes cannot constrict use rate within a small number after load balancing with Ingress in K8S
- WeChat Work Third Party Application: Developed a WeChat Enterprise third-party App prototype with Python to boost intelligent hiring
- Slow Speed Refresh Service: Read changelog from PostgreSQL, clense changelog for each tenant company and write to different Kafka topics according to configuration; Implement a Slow Speed Refresh Queue and its Web Dashboard for internal use with restricted SQL injection

Part-time Job	High Frequency Trading of Cryptocurrencies, Personal Project	Jul 2020-Now

- Developed, from scratch in Rust, a set of libraries to collect and process data from dozens of trading platforms. Utilize cache line, lockless ring buffer, etc, to implement a 1:1 thread model and boost performance. Implemented a UDP proxy to work around AWS whitelist.
- Set up a web-based monitoring system with InfluxDB ReactJS, Flask and Plotly Dash
- Built a distributed backtesting system. Collect data from trading platforms to Kafka, and automatically deploy backtesting tasks to AWS autoscaling groups with ansible, then collect backtesting data to PostgreSQL and TimescaleDB.
- Implemented a json deserialization libray with Rust procedual macros and outperform the classic Serde libray by one time.

Projects

School Research	The SHLL Programming language	2022.01-Now

Reasons: SHLL is a programming language for researching high-level compiler optimization, hoping facilitate development of High-Frequency Trading software. SHLL borrows some ideas from a similar school project, which is badly written, but has more engineering, aesthetic and agronomical considerations

Development: Build a user-friendly, beautiful language, which utilizing analyzing code, specialization and inlining to eliminate abstraction cost, achieving the true zero-cost abstraction. Use scala 3 as the front-end language, to ensure expressiveness of the language

Personal Project	Unidef	2021.07-Now

Context: Unidef a tool for type to type conversion across languages, for code generation and transpilation. Written originally in Python but written in Scala

Content: Maintain a set of ASts, which try to keep all nuance of source languages and be language netural and consistent. It supports JSON, Json Schema, FIX, primary programming languages. It's also the base for SHLL

Awards and Certifications

- China Computer Federation Certified Student Member — Jul 2019-Now
- First Prize in the High School Group of National Informatics Olympiad in Provinces — Nov 2017, Nov 2018
- Gold Award of RoboCom2018 Global Championship(Robot Competition) — Jul 2018
- Second Prize in 2017 Tsinghua University Dengfeng Cup Data Mining Competition — Jul 2018
- National Computer Rank Examination Level 4, Network Engineer — Nov 2016
- First Prize(6th) in the Middle School Group of National Informatics Olympiad in Provinces — Oct 2016
- First Prize(1st) in national finals of 19th He Education Cup Computer Competition — Jul 2016