

Kyle Xu (Zhongjian Xu)

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Education

Heilongjiang University

Sep 2016 - Jun 2020

Bachelor of Engineering in Electronic Information Engineering

Work Experience

Tiger Brokers · Crypto Exchange · Post-Trade Team Senior Software Engineer May 2023 - Present
Hong Kong licensed cryptocurrency exchange. Responsible for the design, development, and maintenance of market data systems, OTC business, and rule engine platform.

Meituan · In-Store Business Group · Hotel Division · Distribution Team Software Engineer May 2021 - Mar 2023

Responsible for the development and maintenance of hotel distributor management system, implementing API rate limiting and signature verification systems.

Xiaomi · China Region · New Retail Business · System Development Team Software Engineer Oct 2019 - Apr 2021

Participated in new retail business system development and optimization, responsible for order system and inventory management modules.

Core Project Experience

Rule Engine Platform @Tiger Brokers Flink, Spring Boot, Kafka, Redis, MySQL, REST API

- **Background:** Built a unified processing platform supporting dynamic task configuration and rule engine for **risk control**, **account opening**, **KYC** and other business scenarios.
- **Platform Architecture:** Designed multi-source data ingestion architecture, unified streaming and batch task processing, supporting Kafka and MySQL as data sources.
- **Configuration Management:** Implemented end-to-end configuration from data source input, processing logic, to output, enabling zero-code rapid deployment for business teams.
- **Dynamic Rule Engine:** Supported Flink SQL dynamic rule submission, online editing and hot-reloading, reducing rule loading time by **90%**.
- **Efficiency Improvement:** Reduced task deployment cycle from 1 day to 1 hour, supporting real-time computing requirements across multiple business lines.

Market Data System @Tiger Brokers Flink, Kafka, Redis, DynamoDB, WebSocket, MQTT, Thrift

- **Background:** Built a unified market data platform integrating internal matching engine and external exchange data, providing real-time data services for trading, risk control, and frontend.
- **Internal Market Calculation:** Connected to matching engine trade stream, implemented real-time K-line calculation using Flink sliding windows, supporting depth, volume, and other indicator aggregations.
- **External Market Integration:** Real-time subscription to major exchanges (Binance, Crypto.com) via WebSocket, implementing data standardization and caching.
- **Tiered Storage:** Redis for hot data + DynamoDB for historical market data persistence, meeting real-time query and regulatory reporting requirements.
- **Risk Monitoring:** Real-time monitoring of abnormal price fluctuations, large transactions, and liquidity depletion events, triggering alerts and automatic failover to backup data sources.

OTC Trading System @Tiger Brokers Spring Boot, Redis, MySQL, XXL-Job, State Machine, Thrift, RateLimiter

- **Background:** Built an OTC trading system for fiat and cryptocurrency, supporting large-volume exchanges between users and LPs (Liquidity Providers).
- **Price Management:** Maintained proprietary order book, supporting multi-LP API and Socket dual-channel quoting, aggregation algorithm for optimal pricing.
- **Order State Machine:** Designed complete order lifecycle (Quote→Lock→Trade→Settlement→Confirmation), covering asset locking and fund transfers.
- **Risk Control System:** Real-time user risk scoring based on Flink, combining account information and trading behavior for multi-dimensional risk control.
- **Net Settlement Optimization:** Aggregated unsettled orders for net settlement, reducing transfer frequency, improving capital turnover rate by **70%**.

Distributor Management System @Meituan Spring, Redis, MySQL, XXL-Job, Thrift, State Machine, Guava Cache, MyBatis

- **Background:** Provided hotel and ticket distribution services across industries, managing full distributor lifecycle.

- **Rate Limiting System:** Implemented merchant-level traffic limiting based on Redis + Guava Cache, preventing malicious requests and system overload.
- **Signature Verification:** Redis for signature storage combined with Guava Cache for improved verification efficiency, QPS improved by **3x**.
- **Lifecycle Management:** State Machine managing distributor status transitions (Application→Review→Active→Suspended→O... preventing illegal state transitions.
- **Merchant Profiling:** Processed merchant tracking data, built profiling system supporting precision operations.
- **Rate Limiting:** Sliding window rate limiting algorithm (Redis + Lua script); multi-level cache architecture (Guava Cache + Redis) reducing database pressure.

Professional Skills

- **Programming & Frameworks:** Proficient in Java, familiar with Python and SQL; skilled in Spring Boot, MyBatis and other backend frameworks.
- **Middleware & Storage:** Deep expertise in Flink real-time computing, Kafka messaging, Redis caching, MySQL, DynamoDB, Thrift RPC, etc.
- **Architecture & DevOps:** Experienced in microservices architecture, high-concurrency system design, DDD domain modeling, state machine design; familiar with Docker, Kubernetes, Prometheus, Grafana.
- **Real-time Computing & High-Concurrency:** Deep expertise in Flink stream processing, skilled in designing distributed systems with 10k+ concurrency and sub-second latency, familiar with multi-level caching and rate limiting architectures.
- **Complex Business System Design:** Extensive experience in trading, settlement, and risk control financial system design, skilled in complex business abstraction and state machine modeling, capable of independent 0-to-1 architecture design.
- **Platform Infrastructure:** Built configurable, reusable rule engine and task scheduling platforms, enabling rapid business iteration, reducing task deployment cycle from days to hours.