Kyle Xu (Zhongjian Xu)

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Summary

Backend engineer with 6 years of experience in distributed systems and real-time processing. Specialized in market data infrastructure, trading systems, and streaming architectures using Flink and Kafka. Strong background in high-concurrency system design and financial system modeling.

Education

Heilongjiang University *Sep 2016 - Jun 2020*
Bachelor of Engineering in Electronic Information Engineering

Work Experience

Tiger Brokers · Crypto Exchange   Senior Software Engineer   *May 2023 - Present*
Hong Kong licensed cryptocurrency exchange. Core contributor to market data, OTC trading, and real-time rule engine.

Meituan · Hotel & Travel Group   Software Engineer   *May 2021 - Mar 2023*
Built merchant-level rate limiting with Redis and implemented signature verification with multi-level cache to improve throughput.

Xiaomi   Software Engineer   *Oct 2019 - Apr 2021*
Contributed to retail management systems focusing on order and inventory modules and improved consistency.

Core Project Experience

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

- **Market Data**: Consumed trade-level events from the matching engine and computed real-time candlestick data with Flink.
- **External Feed Integration**: Integrated external exchange feeds (e.g., Binance) for redundancy and price validation.
- **Tiered Architecture**: Designed MQTT real-time push (<50ms), Redis hot cache, and DynamoDB historical storage.
- **Risk Monitoring**: Implemented real-time volatility and liquidity monitoring for automated risk alerts.

Real-Time Rule Engine Platform @*Tiger Brokers* *Flink, Spring Boot, Kafka, Redis, MySQL, REST API*

- **Rule Engine**: Built a configurable Flink-based rule engine enabling hot rule deployment without service releases.
- **Job Lifecycle**: Implemented dynamic job lifecycle management with savepoint recovery and state persistence.
- **Efficiency**: Reduced rule rollout time from 2 day to 1 hour.
- **Adapter Framework**: Designed multi-source adapters (Kafka, MySQL, WebSocket) for extensible data integration.

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

- **OTC Platform**: Designed OTC trading platform supporting fiat-crypto large-volume transactions.
- **Pricing**: Implemented proprietary order book aggregation across multiple LPs for optimal pricing.
- **Order Lifecycle**: Modeled full order lifecycle using a state machine (Quote □Lock □Trade □Settlement).
- **Settlement**: Optimized net settlement process, improving capital turnover 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 from application to offline, preventing illegal state transitions.
- **Rate Limiting**: Based on Redis, build a high-efficiency rate limiting algorithm to achieve multi-dimensional rate limiting.

Technical Skills

- **Languages**: Java (Primary), Python, SQL.
- **Streaming & Messaging**: Flink, Kafka.
- **Storage**: Redis, MySQL, DynamoDB.
- **Architecture**: Distributed systems, high-concurrency design, state machine modeling.
- **DevOps**: Docker, Kubernetes, Prometheus.