Harshit Bansal

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Profile Summary

Software Developer with 2 years of experience at the Bombay Stock Exchange, specializing in building high-performance financial systems. Proficient in Socket Programming, FIX protocol, and Solace API using C, C++, and MFC. Adept at implementing real-time solutions for financial markets with a focus on scalability and low latency.

Technical Skills

Programming Languages: C, C++, MFC, SQL

Messaging Protocols: FIX Protocol, Solace API, Socket Programming

Concepts: Data Structures and Algorithms, Multithreading, Networking Protocols, MySQL

Tools: SVN, GitHub, Visual Studio

Education

Masai School **02/2022 – 12/2022**
Software Development Course *Bangalore, India*

Laxmi Chand Katori Devi **08/2016 – 10/2020**
Bachelor of Science (B.Sc.) Mathematics *Hathras, India*

Work Experience

Bombay Stock Exchange (BSE) **03/2023 – Present**
Software Developer *Mumbai, India*

- Designed and implemented a high-performance socket-based communication system, increasing message throughput by 30% and reducing latency by 20ms.
- Developed FIX protocol-based integration systems, enabling automated trading and processing 25K+ orders per second with 99% reliability.
- Optimized Solace API-based distributed messaging, improving system availability and ensuring zero data loss in high-volume transactions..
- Collaborated with a team of 10+ engineers, successfully delivering three major releases that enhanced system performance by 40%.
- Communicated effectively with managers to gather requirements and ensure project alignment with business goals.
- Monitored UAT processes and fixed 90% of critical bugs before production, preventing major downtime incidents.

Projects

FIX Protocol Communication Suite
Technologies Used: C++, MFC, FIX Protocol, Socket Programming, Multithreading

- Developed and deployed a suite of applications (Fix Client and Fix Server) to enable seamless communication between trading systems and financial exchanges via FIX Protocol.
- Fix Client: Designed to initiate and manage FIX sessions, handle outgoing order packets, and process acknowledgment responses from the exchange.
- Fix Server: Implemented to validate incoming FIX messages, manage session states, and ensure real-time order routing.
- Achieved low-latency communication between trading systems and exchanges, reducing transaction time.
- Enhanced system reliability by implementing multithreaded socket handling, minimizing message drops during peak trading hours.

Message-Oriented Middleware: Solace Pub/Sub Framework
Technologies Used: C++, MFC, Solace API, Multithreading

- Built a Solace Publisher to publish financial data to a message broker, ensuring secure, real-time delivery to multiple consumers.
- Developed a Solace Subscriber to process and consume published messages efficiently, leveraging multithreading for high throughput.
- Improved message delivery performance, ensuring robust real-time data propagation.
- Enhanced scalability by designing a system capable of handling millions of messages daily.

TCP-Based Communication Framework
Technologies Used: C++, MFC, Socket Programming, Networking Protocols

- Designed and implemented a TCP Client to establish connections with remote servers and exchange data packets reliably.
- Developed a TCP Server capable of handling concurrent client connections and maintaining consistent data exchange.
- Improved system efficiency through optimized socket programming techniques.
- Delivered a fault-tolerant system capable of handling thousands of simultaneous connections with minimal downtime.