Sudeep Batra

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Profile

Profile Summary
Dynamic CTO at Altcase, spearheading the architecture and development of the FD and IFA platform (Web, App Store, and Play Store), upcoming unlisted IPOs, and the International Equity platform, which includes a wealth platform as a service and 24K (MF)

Profile Experience
Hardcore Java programmer with over 24 years of IT experience, specializing in GoLang, Java, Spring Boot Framework, Python, and Rust, with approximately 22 years dedicated to Investment Banking. Expertise as an Enterprise Architect, with extensive experience in Java Message Service (JMS) for reliable messaging and XML for data integration and exchange in high-demand financial applications.

Core Expertise:

- **Platform Development:** Designed and implemented the backend architecture of the Altcase Fixed Deposit (FD) and IFA platform using GoLang, ensuring high performance and scalability.
- **Cloud Infrastructure Management:** Leveraged Kubernetes on AWS to orchestrate containerized applications, enhancing deployment efficiency and operational reliability.
- **Data Processing and Messaging**: Integrated Apache Kafka and Java Message Service (JMS) for real-time data processing and messaging, facilitating seamless communication between services.
- **High-Performance, Low-Latency Applications**: Developed quantitative trading applications in Java and Python, specializing in reactive and event-driven programming. Proficient in asynchronous WebSocket, XML-based data handling, and performance tuning for Java and Python applications.
- **Architectural Leadership:** Architected, designed, and launched the Magnifi Trading Platform (https://magnifi.com/) from the ground up, employing a microservices architecture with Apache Kafka, Cython, AsyncIO, and integration of APEX Clearing's fractional/notional trading APIs for trade execution.
- **Hyper Velocity Trading Engine (HVTE)**: Designed and developed a low-latency, high-frequency trading engine capable of executing trades across numerous stocks at exceptional speeds, implementing diverse limit order book processing and trading strategies.
- **Automated Portfolio Management:** Implemented a robo-rebalancer module to automatically adjust portfolio weights, enhancing asset allocation efficiency.
- **Algorithmic Trading System:** Developed a comprehensive algorithmic trading system based on technical analysis, featuring plug-and-play functionality for various strategies. Capable of analyzing multiple strategies across thousands of scripts through event-driven processing.
- **Data Streaming and Processing**: Executed parallel/concurrent processing of streaming data via WebSockets and XML to maximize hardware utilization and improve trading execution efficiency.
- **HFT Strategies:** Developed high-frequency trading strategies leveraging order book movement, enabling real-time monitoring and trading across multiple markets.
- **Module Development:** Contributed to various HVTE modules, including the Alpha Module for generating buy/sell signals, Order Manager, Portfolio Manager, Risk Manager, and Cost Manager.

Investment Banking Experience:

- Worked in NY for ~10 years in Major IB's - **Goldman Sachs**, **Citibank, Bank of America** in a consulting role (through https://www.mitchellmartin.com/)
- Extensive contributions to open-source projects on GitHub.
- Strong expertise in the investment banking domain for over 22 years, with a deep understanding of equities, derivatives (F&O), and MBS/ABS, complemented by a solid grasp of technical analysis for securities.

Education:

- B.E. in Electronics and Telecommunications from Mumbai University, graduated with First-Class honors.

Technical Summary

Java | Spring Boot | Spring Framework | Docker | Kubernetes | Algorithms + Data Structures | Ultra-Low-Latency Systems | High-Throughput Systems | Reactive Programming | Python3 | JPA | Hibernate | GoLang | Rust Lang | Micronaut Framework | Project Reactor 3.x | Reactive Spring Security 5.1 | WebSockets | TimeSeries Databases | Redis/Memcache/Guava | Sybase/Oracle SQL Databases | Profiler Tools | Visual VM | InfluxDB | US Equity Option, Index, Futures Markets | Market Data Management | Order management | HFT strategies | HTML, CSS, JS

Work experience

05/2024 – present
Pune, India

CTO (Director of Engineering)
Altcase

- **Leadership & Strategy**: Spearheaded the technology vision and strategy for Altcase, focusing on innovation and excellence in financial technology solutions.
- **Platform Development**: Designed and implemented the backend architecture of the Altcase Fixed Deposit (FD) platform using **GoLang**, ensuring high performance and scalability.
- **Cloud Infrastructure Management**: Leveraged **Kubernetes** on **AWS** to orchestrate containerized applications, enhancing deployment efficiency and operational reliability.
- Integrated **Apache Kafka** for real-time data processing and messaging, facilitating seamless communication between services.
- **AWS Services Implementation**: Utilized various AWS services, including **AWS Load Balancer**, **Amazon API Gateway**, and **RDS**, to create a robust and scalable infrastructure.
- **Data Caching & Storage Solutions**: Implemented **Redis** for in-memory data caching, improving response times and overall system performance.
- **Mobile & Web Application Development**: Oversaw the development of mobile applications for both iOS and Android platforms using **Flutter**, and led the development of the web application using **React.js**, ensuring a consistent and engaging user experience across all platforms.
- **Wealth Management Solutions**: Directed the design and development of a comprehensive Wealth Platform as a Service, enabling financial advisors and institutions to optimize their service offerings.
- **Unlisted IPOs & 24K Mutual Fund Solutions**: Led initiatives to support upcoming unlisted IPOs and the 24K (Mutual Fund) solutions, positioning Altcase as a key player in the FinTech landscape.
- **International Equity Platform**: Leading the initiative of an International Equity platform, facilitating access to global markets for clients and partners.
- **Team Development**: Fostered a high-performance culture within the technology team, promoting continuous learning and collaboration to drive innovation.

02/2023 – 05/2024
Pune, India

Principal Architect
Persistent Systems Ltd

- Developed a **highly available, scalable solution** tailored for DriveWealth's SaaS offering.
- Spearheaded the **migration from AMQ to Kafka** as part of the extended program.
- Design and implementation of key BKAAS components, including **FanIn, Recon, reports, and post-trade processing**.
- **Aeron Cluster** to ensure ultra-low latency for Orders API within the BOAPI platform.

Work experience

- **Kafka whitepaper**, addressing client-specific technical requirements.
- Designed and executed the **migration strategy** for lifting and shifting core components into the SaaS architecture.

02/2020 – 02/2023
Pune, India

Senior Software Architect
TIFIN GROUP

- Architect, Design and launch of **Magnifi Trading Platform (**https://magnifi.com/) from scratch using Microservices Architecture, Apache Kafka, Cython, AsyncIO and integration of **APEX Clearing Fractional/Notional API's for execution of trades**
- Implementation of the ability to execute a Basket of Trades with conversion of Notional amount to execution quantities and execution of the trades using the Apex Fractional API.
- Integration of **Polygon API** for pricing feed for real time prices for Magnfi
- APEX Events API (Event Log which sorts system events by service-specific topic) magnifi implementation to get notifications(events) from APEX services and processing of the different event types.
- **Automated complete Start of Day processing** for reconciliation of APEX files/data with the magnifi trades, Account Balances, execution prices and quantities, automated blocking of the Apex Accounts based on the various flags, etc to generate a clear report of any mismatches or areas of concerns.
- Implementation of various Account Level checks such as Good Faith Violation, Buying Power calculation, Short Sell Check, etc.
- Account opening integration with APEX to offer many new account types, fixed income trading, options trading, and more than 15,000 new securities.
- pandas to highlight, sentry, graylogs, slack, celery, sod, implementation of new account opening form.
- Designed and built high availability DevOps solutions at scale on AWS.
- Hired solid talent across multiple teams.

11/2011 – 02/2021
Pune, India

Sr. Technical Project Manager
SYNECHRON TECHNOLOGIES

AQR Capital Management (Applied Quantitative Research) is a global investment management firm based in Greenwich, Connecticut, United States with ~$250 billion* in assets under management

- Architect, Design and Development of **Hyper Velocity Trading Engine** (**Low Latency/HFT**)
- Hyper Velocity Trading Engine is an **Algorithmic Trading** platform that is engineered to be a very **low latency** (microseconds) **Event-Driven** Real Time Market data processing, strategy, and order submission engine and is able to trade large number of stocks at warp speeds.
- **Hyper Velocity Trading Engine** incorporates a full Fledged Algorithmic Trading System which was designed and implemented as a distributed, high-capacity trading system which supported a variety of trader-configurable algorithmic trading strategies and was used daily by clients for executing live and simulated trades.
- **Parallel/Concurrent** Processing of Streaming Data through WebSockets to maximize the utilization of the available hardware.
- **HFT Strategies** based on the movement of the Order Book. Ability to monitor the Order Book at very High Speeds and based on the opportunity, buy and sell across multiple markets.
- Extensive **Performance Tuning** of Java applications.
- Architecture, design, and implementation of the firm's P&L systems.
- **Detail P&L calculations** by instrument, strategy and account and NAV generation and ROR calculations

05/2010 – 11/2011
New York, USA

Technical Architect/Lead
BANK OF AMERICA (Consultant, Mitchell Martin Inc)

SoFIA (Suite of Fixed Income Analytics) - Desk Export and Desk Position's Risk Calculator.

Work experience

SoFIA is the primary portal tool for delivering Prices and Risk analytics for Structured Finance Products like Mortgage Backed Securities (MBS) and Asset Backed Securities (ABS) to Traders (Desk and Desk support), Research Group and Risk Management team

- Design the Desk Position Export Loader using Java, JDBC, and Java Collections Framework, etc to process the various Desk feeds and load the position data into the Sybase SQL Database
- Design and Implementation of the **Risk Calculator Module** responsible for the calculates of the various Risk Measures like Price, Effective DV01, Partials (2,5,10,30Yr), oas, duration, convexity, cpr-projections, eSpread etc for all trading desk positions for different pricing inputs, models and scenarios.
- Design and develop the Response Handler Module, which receives the Risk Data (JMS) from the Middle tier and stores the risk data in the Risk Database. (More than 2 million records on every nightly batch run.)
- Design and implement the standalone Hedge Calculator which reads the Hedge Positions and calculates the risk measures by calling the C++ Analytics library and stores the data into the Risk Database.

07/2007 – 05/2010
New York, USA

Senior Software Analyst
CITIGROUP EQUITY RESEARCH (Consultant, Mitchell Martin Inc)
DataCentral

Datacentral is a product of Citigroup Investment Research and Systems Development Department for the Storage of Market Data, Analytical Data and Investment Research Notes.

- Implementation of Market Data loader using Core Java, Multithreading, JDBC, XML, etc for loading the different market data feeds from Reuters and Thompson into the Datacentral. These feeds include share prices, trading volumes, currencies, indices and commodity prices.
- Implementation of Client Data feeds (using Core Java, JDBC, Multithreading, Java Collections Framework, J2EE, XML, JavaMail, etc) for automated delivery of products to global clients through Email and FTP. This also involved implementing Java scheduler to run the feeds at preconfigured times.
- Designed and developed the CSS Module, which consumes the messages from the JMS Queue and based on which restricts/un-restricts the Companies in Datacentral. This restriction of the company is then forwarded on to the GEO Website, which is used to suppress the Analyst Publications for the Company on the website

2004 – 10/2006
New York, USA

Senior Technical Specialist
GOLDMAN SACHS, PRIME BROKERAGE (Consultant, Infosys Technologies Ltd)
Java Reporting Engine

Implementation of a new Java Datafile engine and use of a third party tool called Aware for Goldman Sachs Prime Brokerage Reporting Section for generation of various Custody, Stock Loan, Risk, PRISM and Geneva On-Demand and Nightly reports.

- Design the Datafile engine using Core Java, Multithreading, JDBC, RMI, XML, etc to process the raw data from Sybase and present it in a format necessary for Aware to generate the on Demand and Nightly Custody, Geneva, Stock Loan, Prism, Risk, etc Prime Brokerage reports.
- Design the PDF and XLS compare tools (UNIX scripts) to extract the information from Actuate, Aware Generated PDF and Excel reports; compare the Actuate and Aware reports to ensure the correction of Aware report in automated fashion.
- Design and implement the customizable PB Recon Engine using Core Java, Multithreading, JDBC, XML, Collections Framework Implementations, etc. to

Work experience

- perform in memory Reconciliation of Custody Account Positions.

06/2002 – 02/2004
Milwaukee, USA

Programmer Analyst
NORTHWESTERN MUTUAL (Consultant, Infosys Technologies Ltd)
Project: New Securities System

The New Securities System initiative was a program designed to select and implement an IT solution to support NM Public and Private Securities investment accounting processes.

- Implementation of Java Engine for loading the different feeds for Futures, Forwards, Swaps, Options, etc into PAM Database

04/2000 – 06/2002
Bangalore, India

Programmer
RIVERSTONE NETWORKS(Consultant, Infosys Technologies Ltd)
Project: Riverart

Automated testing of the Riverstone Smart Switch family of routers ensuring that they were compliant with the routing protocol, Layer 2 and Layer 3 standards (RFC's and IEEE specs)

- Prepared the test plan based on the RFC's, IEEE specs and UNH test case series for each of the protocols that the router implemented.
- Designed a WYSIWG Tool for the automated generation of TCL/TK scripts to be run on a Unix Based Operating System for automated testing of Riverstone Routers.

Education

05/1995 – 1999
Mumbai, India

Bachelors in Engineering in Electronics and Telecommunication
Mumbai University

B.E. In Electronics and Telecom (Mumbai University) with First-Class.