MANJIT SINGH

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Professional Summary

- **Senior Software Engineer (Java 17 / Spring Boot 3)** with ~3 years of experience building **high-availability, mission-critical back-end systems** for capital markets and financial services.
- **Expert in microservices architecture, REST APIs, and event-driven messaging** (**Solace PubSub+**, MQBridge), with deep experience in **CI/CD automation** using GitHub Actions & JFrog Artifactory.
- **Proven record of cutting market data latency, saving six-figure annual vendor costs, and driving platform reliability** through robust observability (**ITRS Geneos, Grafana**).
- Strong background in **containerization** (**Docker, Podman**) and **Linux automation** (**AutoSys, Shell**), delivering seamless deployments and operational efficiency.

Skills

- **Languages / Tools:**Java 17, Python, Shell, Maven, JUnit 4/5, Git, IntelliJ IDEA
- **Frameworks / Infra / Platforms:**Spring Boot 2/3, Spring MVC, Spring JDBC, REST APIs, Catalys FIX Engine, Apache Tomcat, Docker, Podman, Design Patterns, Unix/Linux
- **Messaging / Integration / Data:**Solace PubSub+, Solace MQBridge, FIX, SFTP, Kafka, Oracle DB, Databricks, Redis, NGINX, F5 Load Balancer
- **DevOps / Monitoring / Scheduling:**GitHub Actions, JFrog Artifactory, AWS, Confluence, AutoSys, ITRS, Grafana

Experience

Senior Software Consultant – Fixed Income, Capital Markets **09/2023 to 06/2025**
CIBC **Toronto, Canada**

- **Modernized and re-architected a suite of event-driven microservices (Java 8 → 17, Spring Boot 2 → 3),** reducing average API and job execution times by **20%**, containerizing applications with Docker/Podman for rapid scaling, and improving uptime and cost-efficiency by migrating from IBM Solaris to RHEL servers.
- **Enhanced system scalability, security, and reliability** by introducing NGINX and F5 load balancers for high availability, implementing IP whitelisting and audit logging for secure API access, and supporting maintainability through thorough system documentation.
- **Migrated 300+ AutoSys jobs & shell scripts during the IBM Solaris → RHEL cut-over,** ensuring zero downtime and boosting production workflow availability to **99.99%** for critical batch and integration processes.
- **Reduced market data latency by 30%** through end-to-end event-driven processing: integrated Bloomberg FIX streams (Catalyst FIX → Solace Topics), and implemented Redis caching to optimize bond price distribution—accelerating thousands of **price updates from 6 minutes to 4 minutes** and enabling real-time data propagation.
- **Designed and implemented data streaming architectures** for Settlement, Allocation, and Inter-company Messaging using Solace PubSub+, secured external data flows via Solace MQBridge and SFTP.
- **Decommissioned legacy OMGEO (Allocation Trading System) and GLOSS & ARROW (Back-Office Settlement Systems);** introduced modern SFTP + ARROW-based microservices, saving **over $100K in annual costs** and modernizing data exchange patterns.
- **Co-authored a pluggable, self-service reporting microservice framework**—enabling BAs to onboard and schedule custom data extracts (CSV, XML, JSON) for external consumption via SFTP, email, or API, without dev intervention.
- **Designed, developed, and maintained RESTful APIs consumed by 10+ internal teams, processing over 10,000+ daily transactions across trades, positions, securities, and prices with 99.99% uptime,** enabling reliable access to critical capital markets data and powering automated integration workflows.
- **Developed comprehensive JUnit 4/5 test suites (90%+ coverage)** for all core microservices, integrated into CI/CD (GitHub Actions, JFrog Artifactory) for automated, production-grade releases.
- Leveraged **GitHub Copilot** and **CIBC's proprietary LLM-based AI tools** to accelerate development workflows, automate repetitive coding tasks, and enhance code quality—resulting in faster feature delivery and improved team productivity.

Functional QA / Technical Tester – Virtual Reality (VR) **03/2023 to 09/2023**
Keyword Studios **Montreal, Canada**

- Designed & executed test plans for **Meta Quest (Oculus) VR titles** in Unity/C#, using Quest dev tools for performance telemetry.
- Logged reproducible defects with **"Action – Expected – Result"** Jira titles; prioritized severity and tracked **100 +** issues across sprints.
- Built comprehensive regression suites and collaborated with engineers to validate hot-fixes in CI builds.
- Facilitated cross-disciplinary daily syncs (design, QA, engineering), accelerating **bug resolution** and ensuring on-time milestone delivery.

Software Developer & Machine-Learning Intern **01/2020 to 06/2020**
SASE Laboratory, DRDO **Chandigarh, India**

- Developed a Python-based backend service and automated ML pipeline to predict **snow-avalanche risk** for Indian Army bases using KNN, SVM, and ANN (**83 % accuracy**).
- Implemented **data ingestion and auto-preprocessing flows** from high-altitude sensors, enabling real-time decision support.
- Built a GUI-based model configuration interface allowing users to select algorithms and train models using **(5/10/20) years** of historical data.
- Designed and **deployed scheduled pipelines** to generate daily avalanche forecasts and **CSV** reports.
- Delivered **visual dashboards** in Jupyter using Matplotlib for defense analysts to interpret risk scores.

Education

MEngg.: **Software Engineering** **08/2022**
Concordia University Montreal

B.E.: **Computer Science & Engineering** **09/2020**
Punjab University Chandigarh

Manjeet Singh – Complete Experience Portfolio (Detailed Narratives + Refined Points)

Software Developer & Machine Learning Intern – Snow Avalanche Study Establishment (SASE), DRDO, Chandigarh, India (Jan 2020 – Jun 2020) I worked at the Snow Avalanche Laboratory (DRDO) on a defense-critical project to predict snow avalanches in the Himalayas for Indian Army planning. Full Story: • Instruments installed in high-altitude avalanche-prone regions recorded weather parameters (temperature, humidity, wind speed, snow depth) and transmitted them to Chandigarh. • Built automated data pipelines for cleaning and preprocessing 30+ years of sensor data. • Faced highly imbalanced datasets (1:1000 avalanche to non-avalanche). Using Python's imblearn package and resampling techniques (e.g., SMOTE), I balanced it to 1:10, creating synthetic samples and drastically improving accuracy. • Developed ML models including ANN, SVM, KNN, Logistic Regression, and Linear Regression, reaching 83% accuracy. • Built a GUI where scientists could select a date and receive avalanche probability forecasts. • Visualization & Reporting: Designed dashboards in Jupyter (Matplotlib/Seaborn), scheduled daily forecasts, and exported CSV reports. • Collaboration: Worked with high-level scientists, engineers, and soldiers to ensure solutions were practical and usable. • Impact: Enabled the Army to plan troop movements in avalanche-prone zones more strategically, saving lives and improving logistics.

Functional QA / Video Game Tester – Keyword Studios, Montreal, Canada (Mar 2023 – Sep 2023) At Keyword Studios, I worked as a tester focusing on Meta Oculus VR titles developed in Unity/C#. Full Story: • Tested VR games extensively, checking gameplay, performance, and usability issues. • Collaborated with developers to reproduce and validate fixes for critical issues. • Reported bugs in Jira in structured format: Action (steps), Expected Result, Actual Result. • Contributed to regression testing cycles, sprints, and daily standups in Agile environment. • Specialized in VR testing (motion tracking, immersion quality, device stability). • Impact: Delivered stable and immersive VR experiences by ensuring critical issues were resolved before release.

Senior Software Consultant – Fixed Income, Capital Markets, CIBC, Toronto, Canada (Sep 2023 – Jun 2025) I modernized mission-critical systems in CIBC's Fixed Income Capital Markets division, working across migrations, market data optimization, trade settlement, reporting, and security. Full Story: • Modernization & Migration: - Migrated multiple apps from Java 8 → Java 17 and Spring Boot 2 → Spring Boot 3. - Migrated infrastructure from IBM Solaris servers to RHEL Linux servers. - Built Docker images and deployed apps on Podman rootless containers, cutting boot times and job execution by ~20%. - Improved security with F5 load balancers, reverse proxies, and IP masking. • Batch & Job Orchestration: - Migrated 300+ AutoSys jobs from Solaris to Linux. - Designed FileWatcher jobs across two servers (Panda & Second Gate), triggering downstream jobs only when files arrived on both servers. This enabled load branching and removed single-server dependencies. • Market Data Latency Optimization: - Initial system polled the DB every minute for Bloomberg updates before sending to FISBOND vendor. - Replaced DB polling with Redis cache lookups, enabling instant comparisons and faster propagation. - Next, bypassed DB entirely by directly connecting Bloomberg streams to the FISBOND Solace pipeline, achieving near real-time updates. - Reduced vendor data latency from 6 minutes to under 4 minutes. • Trade Settlement & Allocation: - Decommissioned Broadridge GLOSS (costing >$100K annually) and migrated to Paramax Arrow microservices for trade settlement. - Developed microservices to route trades by region and business type for settlement. - Decommissioned Omgeo allocation system, migrated

allocations to SFTP-based transfers, simplifying architecture and reducing vendor reliance. • Reporting Automation – Pluggable Framework: - Business analysts and finance/audit teams relied on devs for custom reports. - Built a self-service reporting framework with GUI configuration: report name, data source (SQL, API, file), output format (CSV, XML, JSON), and delivery (Email, SFTP, FeedHub). - Analysts could create reports “on the go,” automating 100+ reports without dev intervention. • Software Engineering Practices: - Followed SOLID principles and ACID properties. - Implemented Strategy, Observer, Singleton, and Chain of Responsibility patterns to ensure decoupled, maintainable, and scalable code. • Collaboration, AI Productivity & QA: - Partnered with BAs, QA, and support teams to translate business requirements into robust implementations. - Used GitHub Copilot and proprietary LLM tools to improve productivity by ~30%. - Achieved 90%+ test coverage using JUnit 4/5. • Security & High Availability: - Configured F5 load balancers and NGINX reverse proxies for availability and failover. - Introduced IP whitelisting to secure production APIs. - Implemented Blue-Green deployments for zero-downtime rollouts. • Event-Driven Architecture & Messaging: - Designed event-driven integrations using Solace PubSub+ and MQBridge. - Ensured secure vendor communication via MQBridge proxy, isolating internal Solace topics from external vendors. - Enabled scalable real-time trade, price, and position distribution. • CI/CD Automation: - Integrated services with GitHub Actions and JFrog Artifactory pipelines. - Automated build, test, snapshot/release deployments with version traceability. - Reduced manual steps and accelerated delivery cycles. • Crisis Management: - Handled a 2 a.m. production outage caused by Bloomberg file misnaming in date-roll mechanism. - Diagnosed issue, coordinated with QA for rerun, restored job chain. - Implemented FileWatcher safeguard to prevent recurrence. • Results & Impact: - 99.99% uptime for production services. - Reduced data latency, cut vendor costs, automated reporting, improved security posture. - Built scalable, maintainable systems supporting capital markets trade lifecycle end-to-end.