

# Shiv Prakash

Senior Engineering Leader, Red Hat | AI Platforms, Data & Agentic Systems | Supply Chain Expert | Ex-Walmart

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Engineering Leader with 15+ years of experience, architecting high performance, scalable distributed systems, data platforms, AI and ML solutions that drive business transformation at scale. Led 10+ highly successful US retail holiday seasons at Walmart. Driving high velocity Agentic, Gen AI and AI transformation at Red Hat. Scaled teams from 8 to 40+ associates including engineers, architects & managers across 6 geographies. Built high-velocity engineering cultures delivering zero-defect systems. Patent holder (2 US patents), MS in Machine Learning (Georgia Tech, in progress).

## Recent Highlights

- Driving **Next Gen Data Mesh Based Data & Agentic AI Platform and Digital workforce** for > 200 data products and 20K users.
- Delivered **6 autonomous agents (3 production, 3 beta)**: enterprise research, governance, metadata enrichment, SRE automation, DSR compliance, access control.
- Led a zero to one, CTO-driven **inventory optimization** solution saved Walmart **\$75M**.
- Built zero-defect, elastic **communications platform scaling to 500K TPS for Walmart's global markets**
- Built **Stores Data platform** replacing mainframes based data usages across **4,000+ stores**.
- **Conceptualized and Re-architected demand forecasting** for **40% cost savings and 500% throughput gains**
- Designed **tier-0 availability and inventory services** with **high TPS and sub-50ms latency**

## Skills

- **Agentic AI & GenAI**: Multi-Agent Systems (MCP, A2A), Orchestration (LangGraph, LlamaIndex, FastMCP), RAG, Fine-tuning, & Vector Stores (Weaviate, Milvus, PGVector), Dev Kits - ( OpenAI, Claude SDK, Google ADK, Vertex AI)
- **Data Platforms**: Data Mesh Strategy, Governance (Catalog, Quality), Discovery, Querying, Big Data & ETL (Spark, Kafka, Airflow, DBT, Fivetran), & Warehousing (Snowflake, BigQuery, Cassandra).
- **Cloud & Distributed Systems**: Google Cloud Platform (GCP), Azure, Kubernetes, Microservices (Spring Boot, Reactive, Java, Python, Go) & Event-Driven Architecture.
- **Databases** : Oracle RDBMS, Postgres, MySQL, Cassandra, Cosmos DB, Elasticsearch, Solr, Redis (Cache)
- **Observability, Evals & MLOps**: Grafana, Prometheus, Splunk, LangFuse, MLFlow, KubeFlow, DeepEval, RAGAS
- **Functional Domains**: Supply Chain (Forecasting, Replenishment, Inventory, Logistics, Fulfillment, Care & Returns), Retail/eCommerce, Omni-channel platforms & Compliance (SOX, CCPA, GDPR, POPIA, Secure Code).
- **Strategic Leadership**: AI Platform Strategy, Technical Roadmap, Executive Stakeholder Management, High-velocity/performance teams, Indirect management, Vision setting.

## Experience Details

### Red Hat | Senior Manager – Data & AI (July 2025 – Present)

As the Data and AI Platform Lead for India, I have built a high-performance engineering organization by sourcing top-tier AI talent from elite colleges and startups. I have successfully **closed hiring for 11+ FTEs, including 6 intern conversions**, while **driving the AI acceleration** roadmap. Currently leading a team of **15 direct reports, 6 interns & 7 indirect reports [28 total]**, including a mix of **Manager and Senior Architects** based in **Bangalore, Pune and Cork (Ireland)**.

My focus is solving for **Structured, Semi-Structured, and Unstructured Data, enabling Enterprise Deep Research through Multi-Agent Systems**. Managing strategic collaboration with leaders and partners across **APAC, EMEA, and the US**, and delivering **unified global platform experiences**.

Scaling **Data Access and Identity**, overseeing the end-to-end redesign of critical pillars including **Data Catalog, Discovery, Observability, and SRE Agentic automation** into a **simplified, scalable, and agent-native architecture** while **executing in rapid AI powered velocity**.

## STRATEGIC PORTFOLIOS

### Data Mesh Platform

Scaled to handle over 3 TB of curated data. Now serves as the central place for quarter end reconciliation company wide. **Reduced the cost of closing quarter from \$140k to \$8k. Launched version 1.2, 1.3 for platform and compliance certification for IBM ASCA & SOX.**

### Data Mesh - Agentic Platform (Dataverse) & Digital workforce

#### Production Agents (3):

- Dataverse Agent: NL-to-SQL research system, multi-system context retrieval, and row-level security, 80% analytics reduction, duration reduced from 2 weeks to 3 days for report generation.

- Platform Review Agent: Governance automation, 30% review volume reduction
- Metadata Enrichment Agent: Fine-tuned PHI-3 model, 100% adoption in 2 weeks, built in line with CI/CD

#### Beta Agents (3):

- SRE Agent: On-call assistance with dynamic knowledge learning & auto provisioning.
- DSR Agent: GDPR DSR Compliance request orchestration with full audit trails
- PBA Autonomous Agent: Policy-based access (PBA) control and provisioning automation

#### AI Acceleration

Led the adoption of Gen AI tools like **Cursor, Claude CLI, Gemini Enterprise**. Increased the adoption rate to 100% in AI assisted productivity in the org of 129 associates. Led the evaluations for **models – Sonnet, Opus, Gemini Pro, Kimi (instruct) and Grok for coding and agentic integration**. Running evals for **coding review agents – Code Rabbit, Claude, Gemini**.

#### Developer Experience

Designing Programmable Dashboards, Visualizations, and UX interfaces for AI interaction - Programmable dashboards took care of meeting **SOX compliant dashboard**. Visualization solution solves for **next gen solution replacing Tableau, saving \$2.3 million, AI interface acts as a hub for all agent interactions and orchestrations**.

### Walmart | Architect - Senior Software Engineering Manager II (Aug 2019 – June 2025)

Recruited into the Replenishment organization to solve critical operational challenges. I led the vision, formation, and execution of the Inventory Placement charter. Built the team from the ground up, **hiring 5 FTE and 5 interns**, orchestrating collaboration and alignment across **Data Science, Product, Engineering, and Business Leadership up to the SVP level across geography**. I led its entire engineering charter from Bangalore. Managed a layered team of total **22 FTEs including Sr Architects & Manager while driving global execution with partner teams**.

#### STRATEGIC PORTFOLIOS

##### Inventory placement

An **optimization system** that solved for **optimal inventory placement across Walmart Shipping Nodes**. **Realized \$75M of projected \$500M impact** in phase 1 & 2. It enabled next generation pixel-based demand forecasting and scaling next gen AI based automated FCs.

##### GenAI Placement Optimization Agent

Built assistant **agents for placements analysis and approval using multi-agent orchestrations**. Improved weekly analysis, partial or full approval of **placement decision to under 4 hours from 48 hours**.

##### Ops and Engineering Excellence

**Realized 31% reduction in operating cost** for the existing replenishment lake via continuous monitoring of cost, migration, re-architecture, compression and optimization. Drove the engineering excellence horizontal for Replenishment. Identified and improved code, agile, incidents and productivity metrics. Improved metrics by **15% overall in code quality & builds**. **Managed 100% compliance to CVE and zero day exploits**.

##### Care and Returns squad and Centralized Comms platform

Led **5 backend engineers and 14+ cross functional team members in UX, UI, Mobile, Analytics, Big Data & QA**. Drove the roadmap for the product. Built Central comms platform which is **used in UK, Massmart(SA), CA, MX and Chile markets**. **GDPR, POPIA and CCPA compliant**. It **reduced the operations cost by 21.2% and allowed Walmart to use bulk licenses** for multiple comms channels with at least one channel view promise. **Improved CSAT score by 33.83%**

- Enhanced Integrated chatbot using inhouse conversational APIs (**Reduction in contact rate by 32 %**)
- Maintained & Enhanced Refund and Self-Service experiences for UK Grocery & SA
- Led the **hiring of 10+ FTE in the org**.

##### US Walmart Stores Data Platform

Led the design, development, and delivery of automated Data Governance policies and systems, **servicing 34 domain verticals** across stores. Coded and implemented key parts of the E2E solution. Established both **automated and static Schema Governance**, enabling **self-service schema onboarding, policy verification, and standardization, reducing onboarding time from 1.5 weeks to 2 days**.

**Designed and developed a comprehensive Data Catalog and Data Quality framework** to manage **data lineage, classification, discovery, and quality scoring for ingestion and data lakes**. This system reduced data discovery time maintained a clean and healthy data lake and facilitated effective data management and product development. **Daily ingestion of > 10TB**.

Led **SOX and CCPA compliance certification**, architecting and coding necessary changes across the entire store systems data platform. Additionally, developed and implemented a **Confluent-compliant Schema Registry**, ensuring faster, schema-compliant ingestion into the data lake, with a **99.99% uptime metric**. Contributed to a **Hot Store, Cold Store, ingestions router, control plane and Query routing layer**. **Led cross-geo, cross function teams in India and US and drove the Roadmap**.

### Demand Forecasting Solution - AIMS & Data Platform

Built Automated Inventory Management System (AIMS), the **next gen demand forecasting platform**. Laid foundation for Functional and technical analytics platform. Made data modular and sharable. **On-boarded 2 more customers for our data in Walmart and improved processes**. Built a sharable library for ML and Cloud transfers, adopted by 6+ companywide teams. **Consolidated 5 systems into 1 platform, code bases from 35 repos to 3**. Improved developer productivity by 300%. Release time by 500%. It brought in cost savings of 40% increasing throughput by 500%.  
**Key win at the India Leadership and Global CTO level. Led cross-geo team in India and US and drove the Roadmap with cross functional teams.**

### Replenishment Systems

**Built and Managed a 1 TB ES cluster for forecasting analytics and search query. Processed TB and Billion records for replenishment processes** including – Ingestion from both streaming & static, aggregation and cleaning of Data. **Refreshed > 10TB of delta loads over week and 100GB daily. Solved Forecasting for newly launched items**, improving forecasting by upto 35% in some categories. Managed a collection of > 12 microservices which was a mix of Low latency, high TPS, Data access, batch and file uploads services.

### Walmart | SDE 2 - Staff Software Engineer (October 2012 - August 2019)

*Progressed from SDE 2( level 2) to Architect role( level 5) by August 2019, building foundational inventory, replenishment and data platforms.*

**High-Scale Distributed Systems:** Architected Tier-0 Global and Node-level inventory services achieving sub-3ms latency at 13k TPS and an Ingestion Orchestrator processing 4 million updates/hr across 22M items.

**Infrastructure Transformation:** Led the "zero-to-one" migration of 1,200+ VMs to OpenStack/OneOps in under 2 months. Established the CI/CD backbone for 35+ service clusters, ensuring High Availability (HA) and Disaster Recovery (DR).

**Performance Engineering:** Built the IMS Mosaic microservices orchestration framework and optimized core workflow parsers by 500%, significantly driving down computational overhead.

### Best Buy ( Accenture BBTG) | Programmer - Senior Programmer (Aug 2010 – October 2012)

**Retail systems modernization:** Led Sterling SSFS upgrade (7.11 to 9.1), built mobile carrier activation platform, and optimized omnichannel inventory availability, expanded capability in order managements systems for e-commerce and stores.

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### Patents

- Chain of Fallback Customer Communications using Composite and Concurrent State Machines - US11973637B1
- Database System for Distribution Center Fulfillment Capacity Availability Tracking and Method - US20170091683

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### Education

- Masters in Science - Machine Learning (Part Time), [Georgia Institute of Technology, Atlanta, USA](#) 2027 (In Progress)
- Bachelors in Engineering - Computer Technology, [Yeshwantrao Chavan College of Engineering, Nagpur, INDIA](#)

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