MathCo × databricks

USE CASE · RETAIL · INSIGHT ORCHESTRATION

Advanced Unified Response Analytics (AURA)

A Databricks-powered intelligent analytics ecosystem enabling **self-serve, real-time decision-making** across business functions.

The Challenge

A US-based global apparel retailer managing massive volumes of data across .com, mobile apps, stores, and partner platforms

- **Siloed Data:** Fragmented data across channels limiting unified customer insights
- **No Real-Time Personalization:** Inability to deliver real-time, personalized experiences at scale
- **Manual Processes:** Slow, manual processes delaying decision-making and limiting supply chain agility
- **Inefficient Campaign Execution:** Fragmented data slowed activation and reduced responsiveness across audiences

The Solution

Built a **domain-driven analytics ecosystem powered by Databricks Genie** and intelligent orchestration for real-time, self-serve decision-making.

- Established dedicated Genie spaces for each business domain for context-aware data retrieval
- Developed web app with intelligent query routing and custom agents for visualization & analysis
- Enabled conversational chatbot for on-demand KPI access, reducing analyst dependency
- Strengthened the data foundation with Delta Lake, real-time streaming, lineage tracking, and autoscaling

Core Capabilities

1. **Conversational KPI Intelligence**
   Natural language queries for business metrics, trend analysis, and deep-dive exploration across domains.

2. **Multi-Agent Decision Orchestration**
   Coordinates Genie and custom-built agents across sales, CRM, and analytics workflows for unified decisioning.

3. **Domain-Aware Insight Generation**
   Contextual, accurate responses grounded in domain-specific data models and business logic.

4. **No-Code Agent Management**
   UI-driven framework to create, configure, and govern agents without engineering dependency.

Proven Business Impact

15–20%
Campaign ROI Uplift
With ~12% increase in conversions among high-intent audiences

~30%
Compliance Audit Time Saved
Automated data lineage and end-to-end traceability across pipelines

~25%
Infrastructure Cost Optimization
Efficient autoscaling and right-sized cluster management

$150K
DBU Attributed
On-demand conversational KPI access empowering stakeholders with instant insights

Why MathCo + Databricks

- **Conversational Analytics Layer Built on Databricks Genie** — converts natural language into governed, domain-aware KPIs and decisions via intelligent orchestration and multi-agent workflows
- **Domain-Specific Genie Spaces for Scalable Enterprise Intelligence** — reusable, governed domain setups across Sales, Marketing, and Digital enabling consistent and contextual insight delivery
- **Multi-Agent Insight Orchestration Across Analytics Functions** — unified orchestration of visualization, statistical analysis, and reporting agents to deliver end-to-end insight generation
- **Real-Time, Self-Serve Decision Intelligence Layer** — enables instant access to KPIs, streaming signals, and insights with conversational interfaces driving faster, autonomous business decisions

Architecture & Technical Highlights

- AURA multi-agent orchestrator routes queries to domain-specific Genie spaces achieving 98% accuracy with intelligent caching and load balancing
- Knowledge Store powered by Delta Lake enables disambiguation, nudging, business rules integration, and execution plan management
- Modular scalability with isolated QPM allocation — add new domains independently without impacting existing spaces
- End-to-end governance with Unity Catalog, MLflow versioning, automated data lineage, and domain-level access controls