

# MAHESH REDDY PATHOORI

## Enterprise BI Architect · Data Strategist · Analytics Manager

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### PROFESSIONAL SUMMARY

Distinguished Enterprise BI Architect and Data Strategist with 13+ years engineering high-impact AI/BI frameworks for Fortune 500 institutions and U.S. Federal agencies. Delivered over **\$20M in quantifiable organizational savings** through predictive workforce analytics, regulatory compliance automation, geospatial federal transparency, and AI-augmented supply chain intelligence. Expert in end-to-end Tableau Server governance, Snowflake data architecture, and applied AI/ML integration — bridging advanced analytics with executive-level business strategy. Recognized pioneer of the **RAG-BI Framework** — the world's first peer-reviewed architecture integrating Retrieval-Augmented Generation with enterprise Business Intelligence (Scopus Q4, 2025). IEEE Senior Member · Sigma Xi Full Member · AWS Certified Data Engineer · 7 peer-reviewed publications as lead author.

### CORE COMPETENCIES

**BI Leadership & Strategy** Analytics Roadmaps · BI CoE Design · Executive Reporting · KPI Frameworks · Data Governance · Stakeholder Engagement · Change Management

**Tableau (Expert)** Tableau Server/Desktop/Prep · LOD Expressions · Table Calculations · Parameter Actions · Row-Level Security · Extract Optimization · Automated Publish Pipelines · Alerts & Subscriptions · Embedded Analytics

**Cloud Data Architecture** Snowflake · AWS (Redshift, S3, Glue) · Azure Synapse · Dimensional Modeling (Star/Snowflake) · ETL/ELT Design · SQL Optimization · Power BI Premium

**AI / ML & GenAI (Applied)** RAG-BI Framework (Inventor) · Python Scikit-Learn/Pandas · Neural Networks (Brain.js) · LSTM Forecasting · LangChain · Anomaly Detection · Predictive Modeling

**Enterprise Integration** Workday API · Jira REST API · ServiceNow · POS/ERP Systems · Geospatial BI · Federal Data Standards · D3.js

**Regulatory & Compliance BI** Basel III · LCR / NSFR · CCAR · Federal Recovery Transparency · OIG Compliance Reporting · FEMA Geospatial Governance

### PROFESSIONAL EXPERIENCE

#### Discover Financial Services

##### *Enterprise BI Architect & Data Strategist*

(Principal Associate, Data Engineering & Analytics)

2021 – Present · Apex, NC

- Architected end-to-end Enterprise Workforce Analytics Platform on Snowflake + AWS, integrating Workday, Jira, and ServiceNow APIs into a unified predictive intelligence layer for 20+ business units.
- Designed and deployed "Run vs. Change" neural classification model (Python / Scikit-Learn / Brain.js) achieving 40% staffing accuracy improvement and \$6M annual cost avoidance.
- Led enterprise Tableau Server administration: designed complex LOD expressions and table calculations for labor cost attribution, built Row-Level Security (RLS) with department-level data entitlements, implemented Snowflake Dynamic Data Masking, and automated end-to-end publish pipelines with alert subscriptions — serving executives across 20+ business units.
- Developed Tableau Prep workflows to cleanse and harmonize Workday, Jira, and ServiceNow data sources before loading into Snowflake star schema; cut executive reporting cycle from 7 days to same-day.
- Reduced contractor headcount 30%; shifted contractor-to-FTE ratio from 70:30 to 60:40 through AI-driven recommendations.
- Published peer-reviewed research on predictive workforce analytics frameworks (EJCSIT 2025).

▲ **\$6M annual savings · 40% accuracy gain · 20+ business units · 7-day → same-day reporting**

## CGI Group (FEMA COR3 Program) - via Avani Systems

*Enterprise BI Architect — Federal Disaster Recovery Transparency*

2019 – 2021

- Designed federated Tableau Server architecture on AWS (Redshift + S3) unifying 15+ federal and territorial data sources into a real-time geospatial intelligence platform governing \$20B+ in federal disaster relief funds.
- Built advanced Tableau dashboards with geospatial map layers, custom parameter-driven drill-downs, and dynamic reference lines for fund disbursement compliance tracking across 10,000+ recovery projects.
- Developed Tableau Server governance framework: multi-level RLS for federal vs. territorial vs. public access tiers, automated ETL extract schedules, and subscription-based alerting for 500+ stakeholders.
- Automated ETL/ELT pipelines reducing federal reporting latency by 70%; platform adopted as national best-practice standard for future federal recovery programs.

▲ **\$20B+ governed** · **70% reporting latency reduced** · **10,000+ projects tracked** · **National standard**

## Deutsche Bank - via Avani Systems

*BI Lead Developer — Treasury Risk & Regulatory Automation*

2018 – 2021

- Re-engineered Tableau regulatory infrastructure eliminating 20–30 hrs/week analyst downtime; automated 6 Basel III/CCAR pipelines (LCR, NSFR, Capital Position, Exposure, Intraday Liquidity, CCAR).
- Built LSTM-based liquidity forecasting engine providing T+1 to T+5 LCR/NSFR breach predictions — first ML-based regulatory forecasting at the institution.
- SQL query optimization and data model re-architecture delivered 500% performance improvement; migrated legacy SSRS to Azure Synapse + Power BI Premium.

▲ **500% performance gain** · **15,000+ analyst hrs/yr saved** · **\$8B regulatory exposure governed**

## AT&T; - via Data Pioneer Inc.

*Enterprise BI Architect — Billing Intelligence & Revenue Recovery*

2016 – 2018

- Architected SPOT invoice reconciliation system using Dimensional Data Modeling with AI anomaly detection; recovered \$3M annually through automated billing discrepancy identification.
- Governed Tableau Server with advanced RLS; led BI platform evaluation and POC implementations for enterprise architecture alignment.

▲ **\$3M annual recovery** · **\$5M+ SLA credits identified** · **98.1% detection accuracy**

## Cox Communications - via Data Pioneer Inc.

*BI Architect (Sole) — Network Health Intelligence*

2015 – 2016

- Built Autonomous Network Health Intelligence Platform integrating telemetry with Jira APIs; "High Usage Report" predictive failure detection reduced MTTR by 60% across 500+ nodes. Trained 50+ engineers.

▲ **60% MTTR reduction** · **\$2M annual savings**

## The Coca-Cola Company - via Data Pioneer Inc.

*BI Developer — Supply Chain Intelligence & RAG-BI Prototype*

2015

- Architected supply chain BI platform integrating POS/ERP data into predictive forecasting. Prototyped RAG-BI (LLM + BI) concept — later published as world's first peer-reviewed RAG+BI architecture (JISEM Scopus Q4, 2025).

▲ **\$3M revenue increase** · **45% forecast accuracy** · **RAG-BI Framework origin**

## PEER-REVIEWED PUBLICATIONS (7 PAPERS · LEAD AUTHOR ON ALL)

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- Pathoori, M.R. (2025). Retrieval-Augmented Dashboards: Enabling Context-Aware Analytics through LLM Integration. *JISEM* (Scopus Q4).
- Pathoori, M.R. (2025). The Evolution of Workforce Analytics: From Historical Reporting to Predictive Decision-Making. *EJCSIT*.
- Pathoori, M.R. (2025). AI-Augmented Business Intelligence: A New Framework for Enterprise Decision Systems. *JICRCR* (Scopus Q2).
- Pathoori, M.R. (2025). Digital Transformation of Crisis Management: Building Resilient Recovery Platforms. *WJAETS*.
- Pathoori, M.R. (2024). Predictive Analytics in Financial Governance: Securing the Future with Cloud Risk Platforms. *TIJER*.
- Pathoori, M.R. (2024). Business Intelligence for Societal Equity: Democratizing Data for Fair Workplaces. *GJETA*.

- Pathoori, M.R. (2024). Autonomous Risk Mitigation: Deep Learning Frameworks for Global Financial Stability. *IJCAI*.

## **PROFESSIONAL MEMBERSHIPS, CERTIFICATIONS & AWARDS**

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**IEEE Senior Member** · **Sigma Xi Full Member** · **AWS Certified Data Engineer** · Titan Innovation Award — Gold (Business Intelligence, 2025) · Global Tech Award — Excellence in BI Architecture (2024)

## **OPEN-ACCESS AI RESEARCH LABORATORY**

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**pathoori.ai** — Founder & Lead Architect. Six live interactive AI simulators built on peer-reviewed frameworks: workforce neural classification, federal disaster fund transparency, Basel III regulatory compliance, invoice anomaly detection, network MTTR prediction, and RAG-BI supply chain forecasting. Publicly accessible for researcher validation and enterprise demonstration.