

AMULYA ALVA

Senior AI Engineer

PROFESSIONAL SUMMARY

Senior AI Engineer with 10+ years of experience building production-grade data and AI systems in enterprise environments. Experienced in developing LLM-powered applications, including RAG pipelines, AI-assisted workflows, and evaluation metrics to improve reliability and operational efficiency. Proven ability to take ideas from concept to production, integrating AI solutions with existing platforms and data systems. Strong foundation in Python, agent-based AI patterns, and enterprise data platforms, with hands-on experience operating systems in production.

- Designed and deployed LLM-powered agentic workflows using Python and LangChain/LangChain-style abstractions.
- Built RAG pipelines combining Trino-based structured retrieval with semantic grounding to improve response accuracy and reduce hallucinations.
- Implemented AI handoff and fallback logic for safe escalation.
- Hands-on experience designing AI service integrations using FastAPI and event-driven workflows through training and internal experimentation.
- Developed automated AI evaluation frameworks to ensure production reliability and quality.
- Built and operated enterprise-scale Azure data platforms (ADF, ADLS, Synapse, Databricks).
- Delivered end-to-end automated pipelines using Azure Functions, Logic Apps, and event-driven orchestration for secure, reliable data movement.
- Developed high-performance Spark and Delta Lake pipelines, applying ACID guarantees, schema enforcement, streaming ingestion, and performance optimization.
- Worked in Agile environments, delivering clean, reusable code in close collaboration with cross-functional teams.

TECHNICAL SKILLS

- **AI & Agentic Systems:** LLMs, Agentic AI, RAG, Conversational AI (chat, voice-ready architectures), LangChain-style agents, tool calling, multi-step reasoning, Prompt engineering , guardrails

- **AI evaluation:** task success metrics, hallucination & bias detection
- **Backend & Integration:** Python, FastAPI, MCP-style orchestration, REST APIs, Workflow automation, event-driven systems, escalation/fallback logic
- **Data & Platforms:** PySpark, Spark SQL, Delta Lake, Databricks
- **Azure data engineering stack** (ADF, ADLS, Synapse, Event Hub)

PROFESSIONAL EXPERIENCE

Infosys Pvt Ltd, Richardson, TX

Client: Apple

Nov 2024 - Present

Role: Senior AI DataOps Engineer

- Architected AI-driven anomaly detection and decisioning systems using PySpark, LLMs, and RAG pipelines to automate detection, validation, and remediation workflows.
- Built agent-like orchestration logic to dynamically route jobs, retries, validations, and alerts based on system state and AI-driven decisions.
- Developed Streamlit-based AI configuration and control portals, enabling non-technical users to safely interact with AI-backed pipelines.
- Designed automated evaluation and monitoring mechanisms to validate AI outputs, detect failure modes, and ensure production reliability.
- Integrated AI workflows with enterprise CI/CD pipelines, enabling rapid, weekly feature delivery with safe rollbacks and auditability.
- Collaborated closely with cross-functional stakeholders to translate operational requirements into scalable AI-enabled systems.
- Enforced dataset locking and immutability for all onboarded datasets, preventing ad-hoc changes and ensuring consistent, trusted data consumption.

Technologies: PySpark, Streamlit, Splunk, GitHub, Rio CI/CD pipelines, LLM, RAG, GENAI.

IT Spin Inc. Dallas, TX

Client: Concora Credit, Portland, OR

May 2021 – Nov 2024

Role: Sr. Data Engineer

- Designed and scaled enterprise Azure data platforms supporting regulatory and business analytics workloads.
- Built high-performance PySpark batch pipelines for large-scale structured and semi-structured data processing.
- Orchestrated end-to-end batch ETL workflows using Azure Data Factory and Azure Databricks, ensuring data accuracy and reliability.

- Implemented Medallion Architecture (Bronze, Silver, Gold) and enforced governance using Databricks Unity Catalog.
- Optimized Delta Lake storage and Databricks clusters for performance, cost efficiency, and schema evolution.

Environment: PySpark, Azure Databricks, Azure Data Factory, ADLS, Azure Blob Storage, Delta Lake, Snowflake, Azure Synapse Analytics

Luxoft, Dallas, TX

Client: AT&T

May 2018 – Feb 2021

Role: Sr. Data Engineer

- Improved data processing speed in Spark using Python and Spark SQL API, enhancing overall efficiency.
- Built and optimized Spark-based data pipelines using Python and Spark SQL for large-scale enterprise datasets.
- Developed batch and real-time ingestion workflows using Azure Data Factory, Databricks, Apache Kafka, and Azure Event Hubs.
- Improved processing efficiency and data quality through Spark optimizations and custom PySpark transformations.
- Automated build and deployment workflows using Azure DevOps CI/CD pipelines, ensuring reliable releases.

Environment: Apache Spark, Python, Azure Data Lake, Databricks, MongoDB, Apache Kafka, Azure Event Hubs, Azure DevOps

ITSpin Inc., Dallas, TX

Jun 2014 – Apr 2018

Role: Data Engineer

- Led migration of large-scale Hadoop workloads to Microsoft Azure, ensuring data integrity and minimal downtime.
- Designed and implemented Azure Data Lake and Azure SQL-based data solutions, supporting enterprise analytics use cases.
- Optimized system performance post-migration through tuning, automation, and efficient resource utilization.
- Implemented security and compliance best practices, including access controls, encryption, and auditing.

Environment: Hadoop, Azure Data Lake Storage, Microsoft SQL Database, Power BI, REST APIs, Monitoring Tools

Client: Satyam Computers

Feb 2007 – Apr 2009

Role: Software Engineer

- Developed a new portfolio of applications with a modern design while ensuring compatibility with existing systems.
- Implemented custom authentication and role-based authorization using JSP for secure user access.
- Designed and developed interactive interface screens using Web Forms, JSP, HTML, CSS, and JavaScript for seamless client-server interaction.

Environment: HTML, CSS, JavaScript, DOM, JSP, MySQL, XML

EDUCATION

Bachelor of Technology (2005)

JNTU Hyderabad, Telangana

CERTIFICATIONS:

Databricks Certified: Data Engineer Associate

Databricks Certified: Data Engineer Professional

Azure Data Engineer Associate (DP-203)

Microsoft Certified: Azure Fundamentals (AZ-900)

Azure Data Fundamentals (DP-900)

Azure AI Fundamentals (AI-900)

Databricks Certified: Generative AI Fundamentals