

Azure Movie Analytics Dashboard — Narrative Report

Purpose:

The Azure Movie Analytics Dashboard demonstrates how a document-oriented cloud database (Azure Cosmos DB for MongoDB) can power real-time analytics using Streamlit visualizations. The project transforms unstructured movie data into meaningful insights such as genres, audience trends, and text-based themes. It highlights how NoSQL databases can be leveraged for pattern discovery, narrative analytics, and user-driven exploration.

Analytical Value:

- Exploratory Data Analysis (EDA): Reveals genre distribution and popularity for content portfolio analysis.
- Time Trends: Tracks how viewer interests and IMDb ratings evolved across decades.
- Text Analysis: Extracts keyword frequency and linguistic patterns for storytelling insights.
- Topic Modeling (NMF): Discovers latent themes, grouping movies by narrative dimensions such as war, love, or family.

Decision-Making Impact:

- **Retail/Streaming:** Identifies trending genres and audience preferences to guide new title recommendations.
- **Education:** Demonstrates applied AI, ML, and data visualization concepts for data science learning.
- **IoT & Cloud Systems:** Showcases how scalable databases can enable real-time analytics dashboards with low latency.

This project reflects the core objectives of Big Data Platforms (DSA 508) — combining scalable cloud storage, NoSQL modeling, and interactive analytics delivery in a single integrated environment.