LTIMindtree

Digitization of Data Platform to Cloud-Based Data Hub for a Major Japanese Multinational Automotive Company

Client

The client is a multinational conglomerate based in Japan that produces automobiles, motorcycles, and power equipment. The headquarters of the company is located in Minato, Tokyo, Japan. It has been the world's largest motorcycle manufacturer since 1959.

Business Challenges

- High cost of on-premises landscape
- Increased management and support expenses
- Absence of Machine Learning (ML) models for predicting automotive part lifespans
- Lack of an automated data pipeline for efficient data insights
- Absence of real-time data for precise decision-making

LTIMindtree Solution

- Created a framework for one-time data ingestion from the on-prem data lake to the cloud data lake.
- Developed a micro-batch data pipeline in AWS Glue in Python to ingest structured and semi-structured data from various sources efficiently.
- Built a multi-layered data hub on Amazon Simple Storage Service (S3), providing data to data scientists and business analysts.
- Implemented a robust framework for creating an on-the-fly Elastic MapReduce (EMR) cluster to process data in the curated zone.
- Trained ML models for predictive maintenance, including failure detection and Remaining Useful Life (RUL) estimation for car parts.
- Leveraged LTIMindtree Scarlet's data validator for automatic data validation during migration from source to target.

Business Benefits

| Migrated over 30 TB of data from on-premises to the cloud | Automated approximately 80% of data validation scenarios | Managed more than two million semi-structured files, with a daily data volume ranging from 30 to 40 GB | Achieved a 60% cost reduction compared to on-premises operations |

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