

Fortune 50 Company Enhances **Anomaly** Detection by **97 Percent**

■ Case Study



Overview

Detecting anomaly patterns

A Fortune 50 multinational digital communications technology conglomerate, with 77,500 employees and an annual revenue of \$50 billion, was looking for an efficient solution to address issues with call anomalies.

The huge number of parameters was making it difficult for the human eye to capture different anomaly and non-anomaly patterns accurately, especially for two product families that were integral to its collaboration solutions.

Zensar's brief:

Deliver a solution to efficiently identify calls that need further investigating and analyze calls that have similar behaviors.

Beyond the brief:

In addition to designing the solution with proven methodologies and cutting-edge technologies, we leveraged cloud capabilities that helped simplify and streamline the process and enhance the outcomes.



Challenges

Ineffective manual process

The client's service engineers and customer administrators were overwhelmed with having to manually look through a huge quantity of diverse call logs to identify calls that need further investigation. The call logs included audio, video, and instant messaging (IM) sessions.



Solution

Enhancing the anomaly detection process and outcomes

We designed an anomaly detection solution, bringing into play an assortment of key enablers:

- **Machine learning (ML):** We built auto-tuned statistical models leveraging ML to identify anomaly calls within the two product families.
- **Similarity engine:** We used a similarity engine to identify calls that are similar in nature to anomaly or non-anomaly patterns.
- **Subject matter experts (SMEs):** We shared the results of the anomaly detection with SMEs and collaborated with them to ensure that the detected anomalies were accurate and meaningful.
- **Out-of-time validation method:** We also checked the anomaly detection results against data from different time periods to ensure that the anomaly detection model was robust and that it could perform well over time — not just on the data it was initially trained on.

Leveraging Google Cloud Platform (GCP)-native services and proven approaches, we deployed the solution in two phases. While the first phase used an approach based on sparsity, the second one used an approach based on SIP-sequence deep learning.

Google solution enablers

- Google Vertex AI, a fully-managed, unified AI development platform, was used to deploy machine learning models as web services, so they can be used for real-time inference and predictions.
- Google Vertex AI Notebooks was used to provide fully managed, scalable, enterprise-ready compute infrastructure with security controls and user management capabilities.
- Google AutoML was used to automate the tasks involved in applying machine learning (ML) to real-world problems, combining automation and ML.
- Google Natural Language AI was used to reveal the structure and meaning of text with thousands of pretrained classifications.
- Google Speech to Text was used to convert audio into text transcriptions and integrate speech recognition into applications with easy-to-use APIs.



Impact

Greater business confidence

According to internal benchmarks, these results were delivered:

- ~97 reduction in time spent on analysis and detection
- ~15 percent decline in error rates
- Over 90 percent accuracy in predictions

Business outcomes:

The solution enabled resource optimization and process efficiencies, resulting in greater business confidence.

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