Transforming Data Center Reliability

THROUGH ALARM PREDICTION

Client Profile

Our client is a global technology powerhouse serving millions of customers worldwide. Their data storage, data protection, and cloud solutions are critical to the operations of many of the world's largest organizations.

By partnering with us, they wanted to further enhance their ability to deliver reliable, scalable, and secure solutions to their customers without any service disruption.

The Challenge

Our client generates massive volumes of operational data. However, traditional monitoring systems often fell short, leading to:

Reactive Instead Of Preventive Maintenance Strategies

Prolonged System Downtimes

Financial Losses

Unexpected Service Disruptions

Mantra's
Data-Driven Approach

Data Processing

Data Ingestion

Collected and processed a massive dataset of event logs from nearly **300 customer-reported callbacks.**

Feature Engineering

Developed **event log parsing mechanisms** from ~1Terabyte of unstructured text data to identify patterns and correlations

Predictive Modeling

Time Series Analysis

Employed time series analysis techniques such as **ARIMA**, and **Holt-Winters models** to identify patterns and trends in the data.

Model Development And Testing

Established a stable code branch and conducted comprehensive performance tests under simulated customer environments to ensure the model's accuracy and reliability.

Machine Learning Algorithms

Tested advanced machine learning algorithms, including **LSTM** with 20 layers, to build predictive models capable of forecasting critical alarms.

Model Validation And Optimization

Rigorously tested and fine-tuned our models on simulated loads that predicted **6 alarms with 85-92%** accuracy.

Real-Time Monitoring And Alerting

Real-Time Monitoring

Implemented a real-time monitoring system to continuously track system health and identify potential issues.

Proactive Alerts

Generated timely alerts to notify the operations team of impending critical alarms, enabling proactive intervention.

The Impact

Our predictive models not only identified critical alarms but also provided actionable insights to the operations team. For instance, if the model identified **three critical alarms** within a three-hour window, it triggered an immediate alert, indicating a high probability of a major service disruption within the next six hours. This **early warning system** enabled the client to take proactive measures, such as initiating maintenance procedures or escalating the issue to higher-level support.

Accelerated Incident Response:
Timely Alerts Enabled Faster Incident Response And Resolution.

25% Drop In The Critical Alarms:
Reducing Service Disruptions And Minimizing Downtime.

Accurate And Timely Predictions:
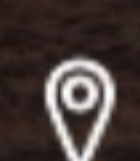85-92% Accuracy In Prediction With Early Warning Ranging From 30 Minutes To 4 Hours.

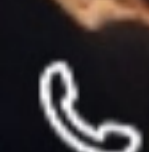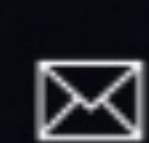ACHIEVE
OUTCOMES

THAT
MATTER
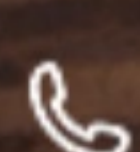
📞 +91 987- 033- 3426

✉ hello@mantralabsglobal.com

📍 India | Bengaluru, Kolkata

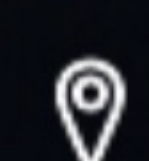📞 +1- 872- 362- 0414

✉ parag@mantralabsglobal.com

📍 USA | North Carolina