



CUSTOMER CASE STUDY

Accelerating Troubleshooting with a Fault Annotation Library

Empowering Subject Matter Experts with Real-Time Anomaly Detection and Profile Recognition

Solution: Fault Annotation Library

Industry: Industrial Operations

Use Case Focus: Anomaly Detection & Troubleshooting

GOALS

- Automate real-time operational issue detection for subject matter experts.
- Build a centralized database of custom annotations and unique data profiles.
- Clarify the primary objective described in the source.
- Align the initiative with stated business priorities.

SOLUTIONS

- Deploy a Fault Annotation Library integrating anomaly detection and profile recognition.
- Provide a simple interface for subject matter experts to respond to manual or machine-learning
- Automatically categorize real-time anomalies and metadata based on historical process patterns.
- Apply the described approach to the core problem.

CHALLENGES

- Relying on human memory to identify and react to complex historical process anomalies.
- Managing the high volume of real-time data generated by advanced monitoring systems.
- Address the key constraints noted in the source.
- Reduce manual effort across the current process.

RESULTS

- Created an organization-specific database of custom annotations and unique process profiles.
- Automated responses by matching real-time process data with pre-configured annotations.
- Enabled operators to immediately access historical periods of interest and associated KPIs.
- Improved clarity over the previous approach.

EXECUTIVE SUMMARY

Modern industrial monitoring generates vast amounts of data, making it difficult for subject matter experts to manually track and recall past operational anomalies. The Fault Annotation Library solves this challenge by automating real-time issue detection through profile recognition and custom annotations. By capturing human and machine-learning insights in a unified database, the library allows operators to instantly identify recurring issues and accelerate troubleshooting.

The Challenge of Modern Process Monitoring

Industrial operations generate massive amounts of real-time telemetry data through advanced monitoring and analytics systems. While these monitoring tools provide valuable insights, they also create a significant information management challenge for operators on the plant floor. Subject matter experts must quickly interpret complex alerts, a task that historically relied on individual memory to recall previous occurrences of similar issues. This heavy reliance on human memory often leads to inconsistent responses and extensive delays, as technicians spend critical hours manually searching through historical data to diagnose root causes.

Introducing the Fault Annotation Library

The Fault Annotation Library addresses these analytical challenges by introducing advanced anomaly detection and automated profile recognition directly into the daily operational workflow. This collaborative solution compiles a centralized, organization-specific database of custom annotations and data profiles captured from both human expert analyses and automated machine-learning algorithms. When new anomalies occur, the system automatically correlates them with existing metadata and historical profiles. This simple, intuitive user interface allows subject matter experts to rapidly respond to real-time operational deviations with absolute confidence.

Accelerating Troubleshooting Timelines

Integrating this robust annotation database with live process data dramatically accelerates troubleshooting timelines across the entire enterprise. When real-time process data matches an established profile, the library triggers automated alerts and guides users directly to the precise period of interest. Subject matter experts no longer need to waste valuable hours isolating historical trends or manually configuring key performance indicators. Instead, operators can jump straight to critical resolution steps, which drastically reduces unexpected downtime and ensures that industrial facilities maintain optimal productivity.