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IDENTIFYING THE EXISTENCE OF ANOMALIES IN THE PRODUCTION PROCESS

Many of the assets used on production lines require constant monitoring to ensure their regular operation in factory production processes. However, it becomes difficult to analyze line by line and guarantee their reliability with 100% certainty due to their volume.

Our client, a manufacturing company with a large representation worldwide in cork production and great technological maturity in its production processes, faced this difficulty and decided to ask for Noesis' assistance on the issue.

Sector:
Industry

Business Unit:
Data Analytics & AI

Solution:
Anomaly Detection and Real Time Monitoring

1
Milion events per day

3
Consultants (1 data scientist + 2 data engineers)

Near real time algorithm classification

80%
Assertiveness on anomaly detection

THE CHALLENGE

The challenge of this project was the lack of a system capable of showing "in one-view" the essential process indicators in real-time and in parallel that could identify at different moments the existence of anomalies in the production process.

GOALS

The main goal of this project was to create a system capable of assisting and complementing, through information and alerts, in the identification of anomalies in the process of classifying the qualities of the products produced by the assets in question. With an optimization in this process, the shop floor teams focused on the most crucial events that need to be re-intervened.

SOLUTION

The solution developed was a system with two valences:

Real-Time Monitoring | This system has the ability to collect data from the production lines in real-time, either indicators of the assets themselves or the production process, store them, and make them available in a front-end prepared with KPIs that show, in a simple way, the performance of the production lines;

Anomaly Detection System | Using the data collected in the previous system, a set of algorithms were built that, based on the behavior patterns of the assets and their production process, can identify outlier indicators and classify them as anomaly justifying the reason. There were also some features of the different stages of the production process to help classify the anomaly's cause.

THE RESULT

The results of this development had an impact at various levels, from the modernization of the KPI monitoring process in real-time (screens were placed on each production line with dashboards that allow operators to analyze performance) to the use of Machine Learning processes for anomaly detection with an 80% assertiveness level, which allowed us to focus on the true positives, optimizing the factury's resources.

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Noesis is an international tech consulting company offering services and solutions to support clients in their business and digital transformation. Noesis solutions focus on infrastructures, software, quality, and people. The organization is based on highly specialized talents, operating in nine business units and six countries: Portugal, Spain, the Netherlands, Brazil, Ireland, and The USA. Since 2020, Noesis has joined Altia, listed on The Alternative Equity Market, an organization with over 2000 employees, 3 Datacenters, and 20 offices.

StreamSets
A SOFTWARE AG COMPANY

StreamSets is a modern data integration platform dedicated to building the smart data pipelines needed to power DataOps across hybrid and multi-cloud architectures. By automating as much as possible and abstracting away the "how" of data pipeline implementation, StreamSets shifts data engineering time and resources to the "what" of the data, so data teams spend less time fixing and more time doing.