

Detectiv.ai

Real-time AI solution for anomaly detection.

Using artificial intelligence for real-time **detection of anomalies (outliers) in time series** from sensors placed in the field and other structured data.

1 DETECT ANOMALIES

Identify anomalies overlooked by traditional threshold system, through machine learning techniques, considering the interaction between all input variables.

2 CUSTOMIZE DASHBOARDS AND ALERTS

Display the outliers through customized monitoring dashboards and configurable alerts, in order **to have full observability on their evolution over time and the gravity of potential process drift**. With an API for easy integration with existing systems.

3 GENERATE BUSINESS VALUE RIGHT AWAY

Effortlessly switch to best model for the ongoing production, automatically creating a new one on specific data if needed, **reducing the time spent collecting data and minimizing the system configuration**.

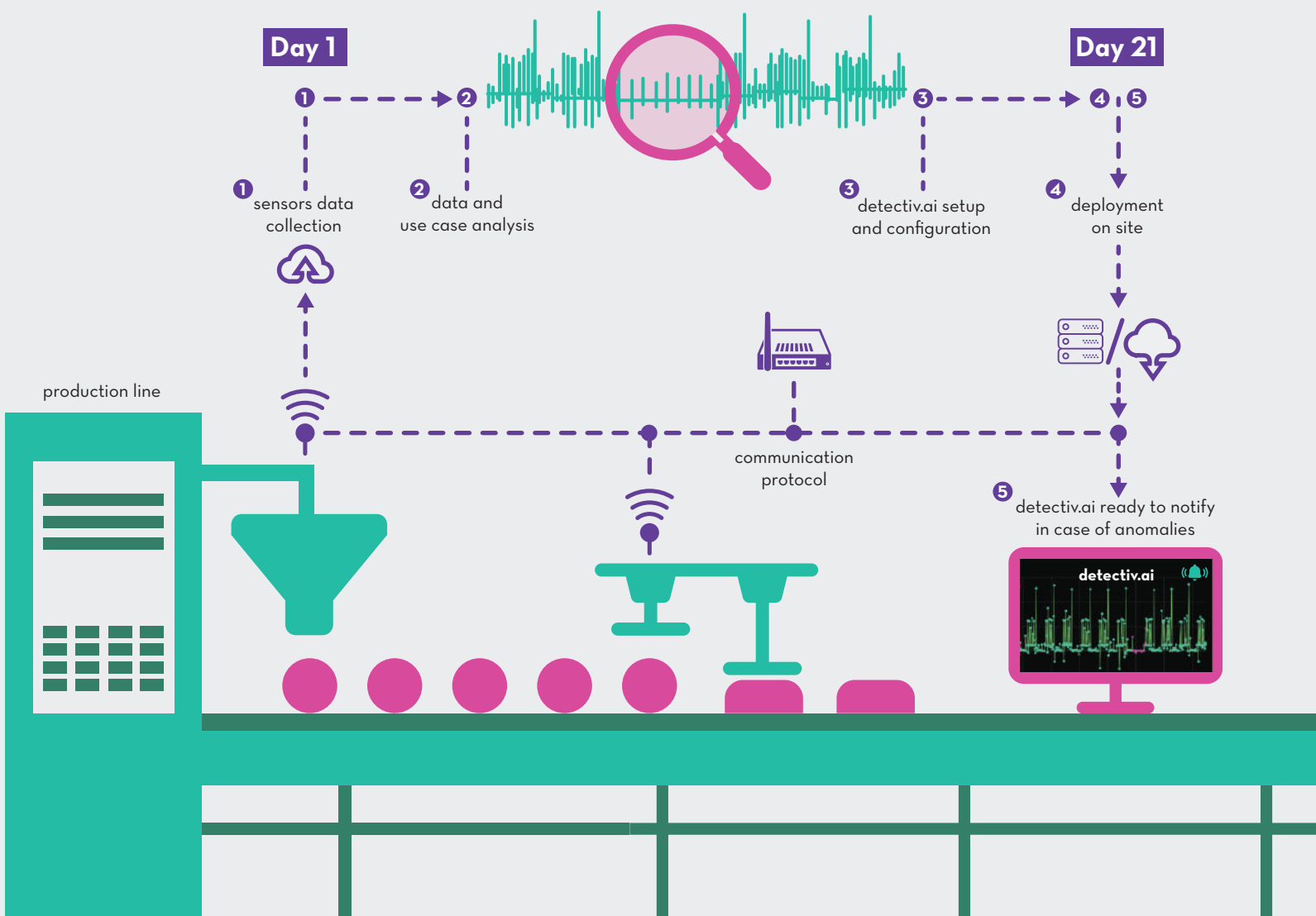
4 IMPROVE PERFORMANCE OVER TIME

Support for continuous training, to keep improving performances as more data becomes available.





Anomaly detection Predictive maintenance



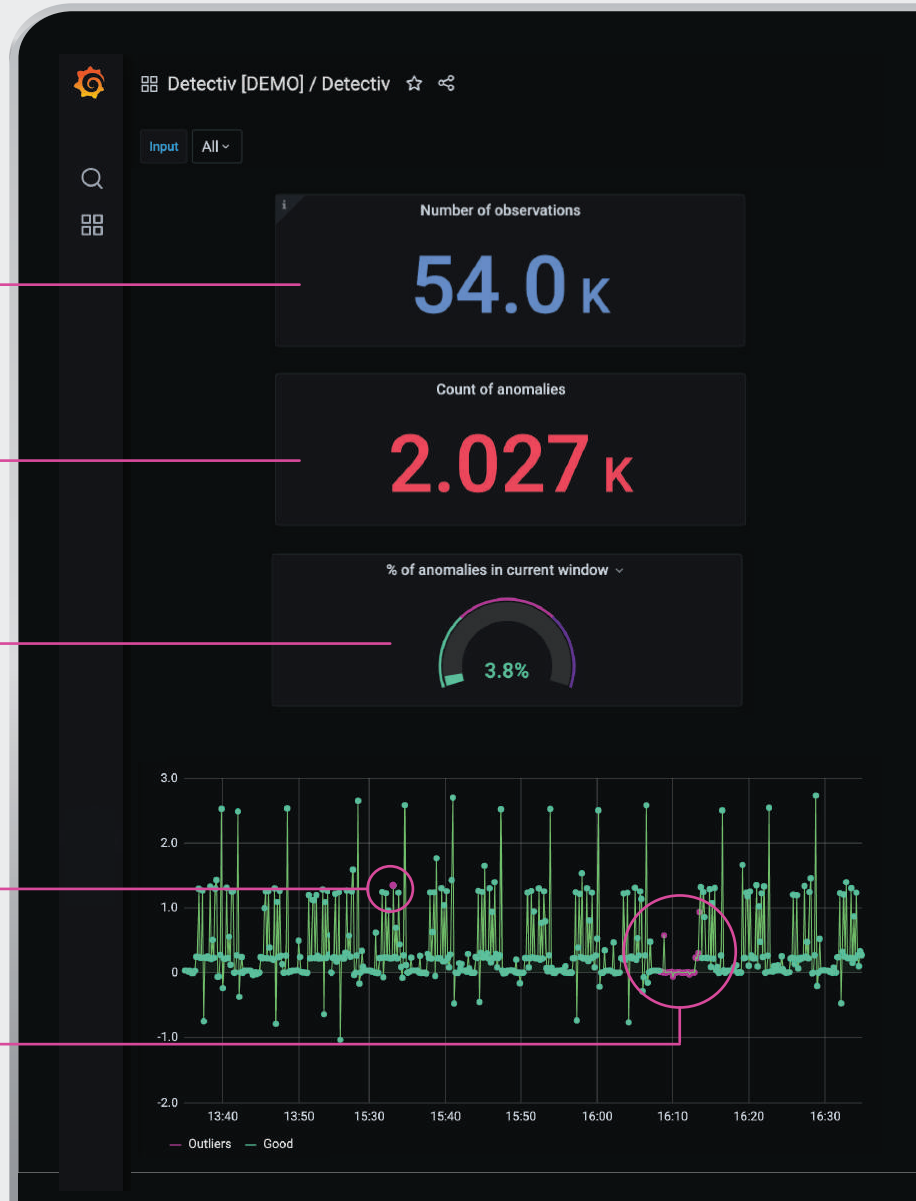
Total number of observations in the time window selected.

Total number of anomalies encountered in the time window selected.

Percentage of anomalies in the time window selected.

Input data.
Anomalous observations are marked with a dot.

Anomalous pattern detected.





Overall number of input signals currently ingested in Detectiv.ai.

Current alert evaluation on overall Anomaly Score. If the Anomaly Score goes above the user selected threshold, this alarm is triggered.

Current Anomaly Score evaluation.

Identification of the most similar anomalous event already faced, proposing a solution on the basis of past experiences. Automatic calculation of a similarity measure.

User-defined alarm threshold.

Anomaly Score value on the selected time interval.

Latest alarm triggered.

01 // Predictive quality and maintenance Food & Beverage

TASKS

Data analysis
Anomaly detection
Prediction

INDUSTRY

Food and beverage
OEM original equipment
manufacturer

TECHNOLOGIES

detectiv.ai
Invariant.ai®

REQUEST

To realize an **anomaly detection system on data coming from heterogeneous sensors** placed on the electric motors of the fans used to dry the pasta and subject to failures. **Predict the quality** (final moisture level) of pasta at the end of production process, **with only the machine's input parameters available**.

STARTING POINT

Currently maintenance is carried out when a fault is detected (i.e. after a downtime on the production line). Interpreting the data collected by the sensors is not easy because **the anomaly and the final quality of the product is not detectable using a single sensor but only through the interaction between some variables**. Moreover, the frequent production changes (pasta format) make the data non homogeneous.

RESULTS

Increased OEE from 5% to 15%
(availability, performance, quality)



Reduced Unplanned Downtime from 15% to 30%
Improved forecasting of planned shut-downs
Reduce time for maintenance (by helping users to understand what is happening)



Improved Quality from 10% to 35%
Increased customer satisfaction with improved ability to make deliveries on-time and to improve quality



Reduced Maintenance Costs from 20% to 30%
Enhanced spares planning and inventory optimization



Increased Throughput and OTD from 10% to 20%
Reduced buffer WIP due to increased reliability

