

MANIAC

Intelligent data solutions for machines and production lines



CHALLENGES

Large automated production plants comprising several machines and robots require permanent maintenance due to a large number of wearing parts. **A common problem** in the manufacturing industry **is shortage of skilled workers**. As a result, workers are often responsible for the operation of multiple assembly lines at the same time. This leads to a high amount of worker stress and reactive behavior, since workers are often forced to turn into "*firefighting mode*", solving one critical problem after the other.

THE SOLUTION

The Manufacturing Analytics Copilot

Our software **captures sensor data and process parameters from PLCs** and other industrial data sources, analyzes **hundreds of data points per second** automatically and **detects potential problems** that affect production performance such as availability and quality.

To help workers prioritize their work, our software **auto-generated AI Data Stories**. Data stories consist of a situation description and several AI-generated charts which describe the problem, helping workers to understand **root causes** and discuss **potential solutions** with others.

A **feedback mechanism** helps our own-developed AI to learn from users, so the detected situations get better every day.



RESULTS

The **Manufacturing Analytics Copilot** is available as a new **Bytefabrik** product offering. The tool is available as a ready-to-use commercial plugin to **Apache StreamPipes**, the open source toolbox for industrial data analytics. In addition to the Data Story module, the copilot also includes an **intuitive chat interface** which allows process engineers to interact with data and analysis results in natural language.

EARASHI also enabled us to **extend the open source tooling with new features**. Highlights include improved **connectors for ROS**, an asset browser that allows users to **better organize industrial IoT resources** and their physical assets and overall improvements to pipeline management.

IMPACT

- Our solution greatly **improves human-AI collaboration**, reduces language barriers and helps companies to identify production problems much faster.
- Instead of manually looking at large volumes of historical data to identify situations that cause increased scrap, rework or reduced availability, the **Manufacturing Analytics Copilot** automates this task and presents users only with relevant anomalies and situations of interest.
- Process engineers can directly use the software to understand problems. The **integrated feedback mechanism** ensures that the system improves over time, ensuring high-relevant hints for workers to avoid stress and ad-hoc tasks.
- Being able to further contribute to the **open source project Apache StreamPipes**, which was originally created by the founders of Bytefabrik.AI, allowed us to **strengthen the European ecosystem** around open industrial IoT solutions.



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