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Plato Systems

Building a Scalable Data Platform for Manufacturing Intelligence

4X
Faster feature deployment

2 wks
To onboard new clients

Company

Plato Systems provides AI-driven manufacturing intelligence by processing data from specialized cameras that detect movement inside assembly lines. Their platform combines spatial data with machine telemetry to trigger alerts that keep production lines running and help staff respond to equipment issues faster.

The Challenge

Plato Systems needed to overhaul their client onboarding process. Each new manufacturing client brought unique camera systems and machine data formats, requiring manual, custom-built data pipelines—a time-consuming effort that slowed growth. This inefficiency was especially problematic in the manufacturing sector, where **unplanned downtime costs companies an estimated $50 billion annually**[1]. Plato's clients couldn't afford long integration timelines—they needed rapid deployment to minimize operational disruption. The core technical challenge was building a system flexible enough to handle diverse client configurations while combining spatial camera data with machine data in real-time.

The Solution

Through A.Team, Plato Systems matched with a senior data engineer who had built similar platforms across industries. The engineer mapped commonalities in client setups and designed a configurable ingestion layer to eliminate custom builds. They introduced a modular architecture separating ingestion, transformation, and algorithm execution, enabling fast changes without touching core pipelines. When a Databricks-pandas bug surfaced, they debugged it without blocking other streams. The result: a plug-and-play onboarding system that turned complex, bespoke integrations into streamlined configuration tasks.

[1] Deloitte

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Technologies used

- **PySpark:** Core framework for distributed data processing, handling high-volume spatial and machine data streams
- **Databricks:** Managed platform for running Spark jobs and orchestrating the data pipeline workflows
- **SQL:** Data transformation and aggregation logic for generating analytics and alert conditions
- **Python:** Algorithm development and custom processing logic for computer vision and anomaly detection
- **Golang**: High-performance data processing components for real-time stream handling

> **"I was able to simplify the design and generalize it to work with different clients—we could onboard a new client in two weeks."**
>
> — A.Team Data Engineer

The Results

The new modular architecture transformed Plato's ability to scale their platform while dramatically reducing the engineering effort required for each deployment.

Efficiency: New client onboarding time reduced to 2 weeks with the generalized system

Development Speed: New alerts and indicators now take 1 week to implement instead of at least a month

Simplified Operations: The modular design made the system easier to maintain and extend

Scalability: Platform can now support multiple clients without custom development for each

About A.Team

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