

Data Science for Manufacturing

Top 4 Use Cases to Accelerate Innovation

Overview

Manufacturing in today's digital world is all about staying one step ahead. From predictive process control to supply chain forecasting to predictive maintenance and image classification, leveraging data to innovate has become table stakes to stay in the manufacturing game. The best way to do this is with data science and machine learning. Data science helps you extract knowledge from your data so you can make fact-based business decisions and accelerate innovation.

Today, leading manufacturers are using data science to drive a number of innovative use cases. We've created this guide to help you identify areas where data science can take your manufacturing business to the next level.



Predictive Process Control

Production line optimization, maximize asset life including production data, asset data

- Improved Ability to Control Batch Creation Time
- Production Optimization

Outcome: Improved outcomes and increased revenue



Predictive Maintenance

Reduced failure rates, risk optimization including sensor stream data, retail data

- Real-time Anomaly Detection
- Predictive Analytics
- Industrial IoT

Outcome: Predictive analytics transforms growth



Image Classification

Asset inventory optimization, identification of non-complaint parts including sensor stream data, UAV's images, inventory data, production data

- Asset Monitoring
- Preventive Maintenance
- Smart Assets & IoT
- Field Service
- Reduction of "Bad Parts"

Outcome: Faster innovation for revenue growth



Supply Chain Forecasting

Reduced inventory cost, supply-chain optimization including transaction data, demographics, purchasing history, trends

- Retail Mobile Applications
- Vendor Management
- Lower Inventory Costs

Outcome: Optimize supply chain with machine learning

What is Data Science?

Data science is a combination of various tools, algorithms, formulas, and machine learning principles used to draw hidden patterns from raw data. Unlike rear-view reporting, data science reveals the why behind your data—not the how. Data science helps you:

- Find the best customers, charge the right price
- Allocate costs accurately
- Make data a key element of strategy
- Minimize work in progress and inventory
- Maximize innovation

Extract knowledge from data in any form

Data science initiatives can deliver significant value to enterprises when the right opportunities are identified, the business enables using data to make decisions, and new talents and technology are explored.