

Solution Brief

Smart Manufacturing
Artificial Intelligence



Streamlining Digital Transformations through Data-Driven Manufacturing Insights with the Profet AI AutoML Platform

The Profet AI AutoML Platform is an industrial AI solution powered by Intel® Core™ and Xeon® processors that harnesses the Intel® Distribution of OpenVINO™ Toolkit to help manufacturers revolutionize their business practices and use key operational insights to position themselves at the forefront of industrial modernization.

Getting More from Industrial Data with AI-enabled Data Analysis

The Fourth Industrial Revolution, combined with rapid developments in industrial technology, has created a landmark shift in the manufacturing landscape. Manufacturing companies are increasingly turning to IoT technologies to help improve visibility into their operations. Using IoT sensors, monitoring technology, or intelligent equipment, many companies have been able to collect large amounts of data from their day-to-day processes.

However, although capturing data has become commonplace, only a fraction of manufacturing companies have been able to implement the internal infrastructure to glean insights from their data. Without the right approach to data analysis, workforce or budget to implement data scientist teams, the point of collecting big data becomes obsolete. Big data without a cutting-edge analysis platform will not produce valuable insights.

Lack of easy-to-understand and actionable insights leave manufacturers unable to identify problematic processes and areas for operational improvement. As a result, inefficient legacy processes are maintained and issues such as error-prone manual inspection, unoptimized staffing, and equipment malfunctions can all negatively impact ROI and lead to unrealized profits. Despite understanding what's at stake without analytics, beginning a digital transformation to address these challenges can seem daunting and expensive.

To help manufacturers overcome these barriers to entry, Profet AI created the AutoML Platform: An easy and cost-effective digital transformation solution that enables customers to get more out of their manufacturing data.



About Profet AI

Profet AI is a leading brand in the field of AutoML manufacturing and uses their more than 20 years of experience to transform the way manufacturers utilize their data in enterprises. Dedicated to making AI machine learning more accessible and affordable, Profet AI is helping manufacturers modernize and improve operational efficiencies by getting the most from their data.

Reducing Complexity While Enhancing Data Analysis with the Profet AI AutoML Platform

Seeing a large population of manufacturers with an abundance of data but a lack of intelligent tools to derive insights from the collected data, Profet AI strove to empower these manufacturers with an easily deployable analytics solution. The result is the AutoML Platform, which offers a no-code machine learning platform that removes the usual challenges associated with large scale data analysis.

Traditionally, defining manufacturing parameters often requires a trial-and-error approach that leads to wasted time and resources, cutting into profits and ROI. With Profet AI, digital transformation is made quick and simple with machine learning models that automatically analyze a customer's data and identify parameters of manufacturing efficiency.

Typically, this type of digital transformation for manufacturers is expensive and complex, requiring teams of data scientists and costly technology. The AutoML Platform solves these problems by acting as a virtual data scientist with no coding experience required. With simple algorithm training and easy integration, the AutoML Platform uses data captured from equipment to provide customers with key insights into their day-to-day operations in as little as a week after deployment. This rapid operational visibility equips customers with capabilities such as predictive maintenance, equipment tracking, inventory management, and more.



Key End Customer Benefits



Optimize manufacturing processes

Customers can use the AutoML Platform to identify areas in their manufacturing process that can be improved with data analysis. The insights derived from data sets give managers increased visibility into resource consumption, factory throughput, workforce utilization, and more, helping managers make better, data-driven business decisions.



Streamline digital transformation

Manufacturers can realize the benefits from modernizing industrial practices in as little time as a week thanks to the AutoML Platform's simple plug-and-play deployment to help customers begin maximizing their data rapidly. With no code experience required, the AutoML platform replaces the need for complex model development and data science expertise.



Reduce costs and save time

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How The Profet AI AutoML Platform Works

To implement the AutoML Platform, customers first discuss their computing capabilities with Profet AI to assess their specific needs. If a customer does not have enough server power, Profet AI will work with their hardware channel partners to ensure customers are equipped with the right technology requirements. These requirements do not include expensive GPUs, making the platform hardware much more affordable.

Once hardware requirements have been met, installation is fast and convenient. Because the AutoML Platform does not require any coding on the customer's end, the first step is simply familiarizing the customer with the AutoML Platform. This process is made easy thanks to Profet AI's training session they provide to every customer to ensure they are comfortable and confident with the system.

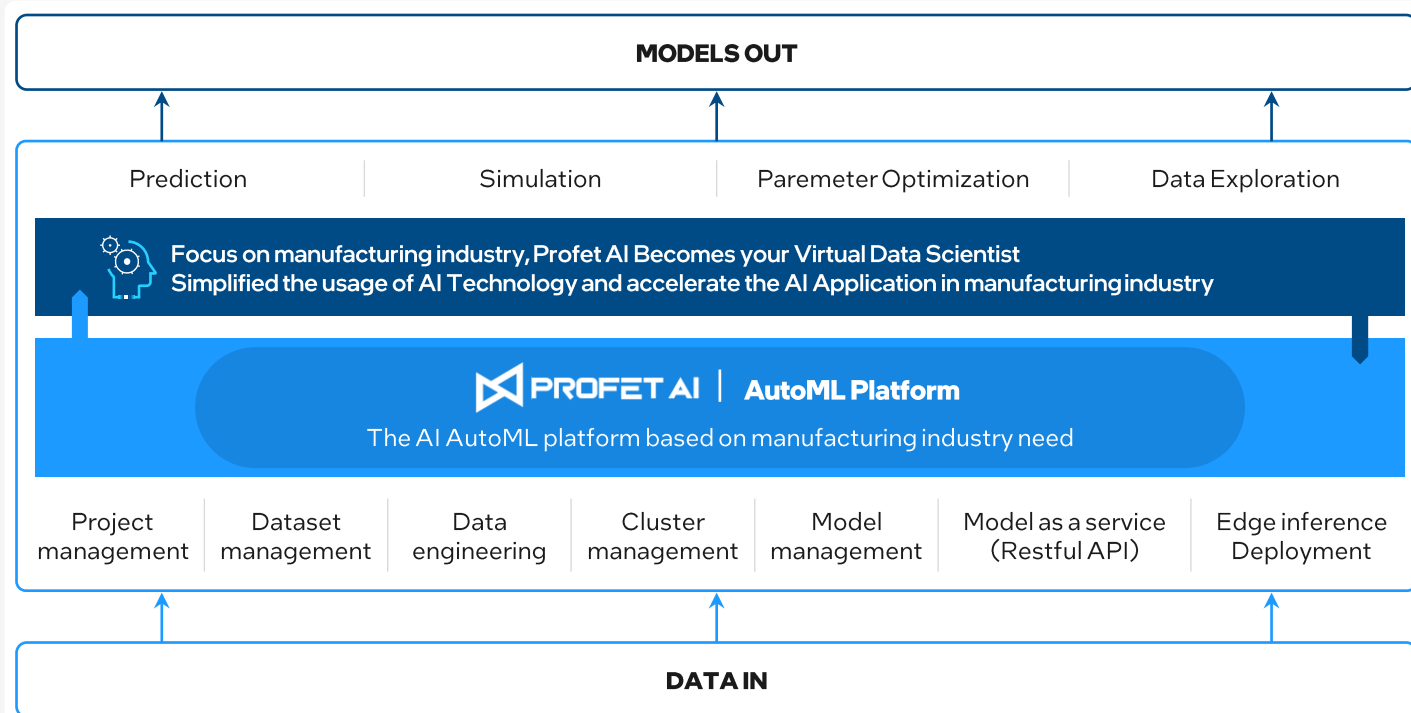
After the AutoML Platform has been installed, manufacturers upload their data to the on-premises platform. This data can be collected from virtually any area of the manufacturing process, from equipment performance and product inspection to supply chain management and worker staffing.

Once the data has been uploaded, the platform will automatically generate an AI model that caters to the specific needs of the customer to predict, simulate, and identify key factors within a sales, manufacturing, or procurement process by identifying parameters of efficiency. If there is any issue with captured data or there is not enough data, customers have the option to utilize Profet AI's digital consulting service to help them identify the problem with their datasets and receive collaborative support to ensure the issues are solved.

After the prediction models have been automatically generated from the data, the insights are made accessible to customers to help identify key manufacturing parameters, predictive maintenance for equipment, and more.

Finally, Profet AI consistently updates the AutoML Platform to provide customers with new use cases. This enables customers to easily see what opportunities they can pursue with their data sets and scale into new use cases as they continue to grow their data.

The Profet AI AutoML Solution Diagram



Profet AI Harnesses the Power of Intel Technology to Deliver Value to Manufacturers

In developing the AutoML Platform, Profet AI decided to partner with Intel to ensure the Platform was as fast and reliable as possible. Profet AI chose to leverage the Intel® Distribution of OpenVINO™ toolkit, which gave them the ability to optimize their time series models without having to redevelop based on processor type.

By optimizing the AutoML Platform with the OpenVINO toolkit, Profet AI was able to increase data inferencing speeds when running on recommended Intel® Core™ or Intel® Xeon® processors. The combination of the innovative AutoML Platform with reliable and powerful Intel technology provides manufacturers with faster time to insights and a higher throughput of data.

Customer Success Story: PCB ENIG Manufacturers Can Identify Parameters to Save Money and Reduce Material Waste

Challenge: Within the manufacturing of Printed Circuit Boards, the ENIG (Electroless Nickel Immersion Gold) process is used to apply a surface plating to protect the materials from corrosion and other abnormalities. This process uses expensive materials, such as gold, and using the right amount of them in production is essential to keeping costs down and avoiding waste.

Solution: The Profet AI AutoML equipped a manufacturer with automatically built AI prediction models that provided improved visibility into their ENIG manufacturing processes. After the data was uploaded to the AutoML Platform, the AI-based analyses identified critical parameters of material usage and helped ensure expensive materials, such as gold, were not wasted.

Result: After running the ENIG data through the Profet AI AutoML Platform, the pre-trained models were able to identify manufacturing efficiency parameters and equip manufacturers with data-driven insights that informed decisions. After the Profet AI AutoML Platform was deployed, the manufacturer saw a reduction in costs of metal material, enhanced product quality, and a decrease in testing time and costs. Overall, the AutoML Platform helped streamline their manufacturing process and led to better output of products.

Typical Manufacturing and Industrial Applications



Predictive maintenance



Real-time analytics



Rapid deployment



Parameter prediction models



Electricity consumption monitoring



Anomaly detection



Product inspection



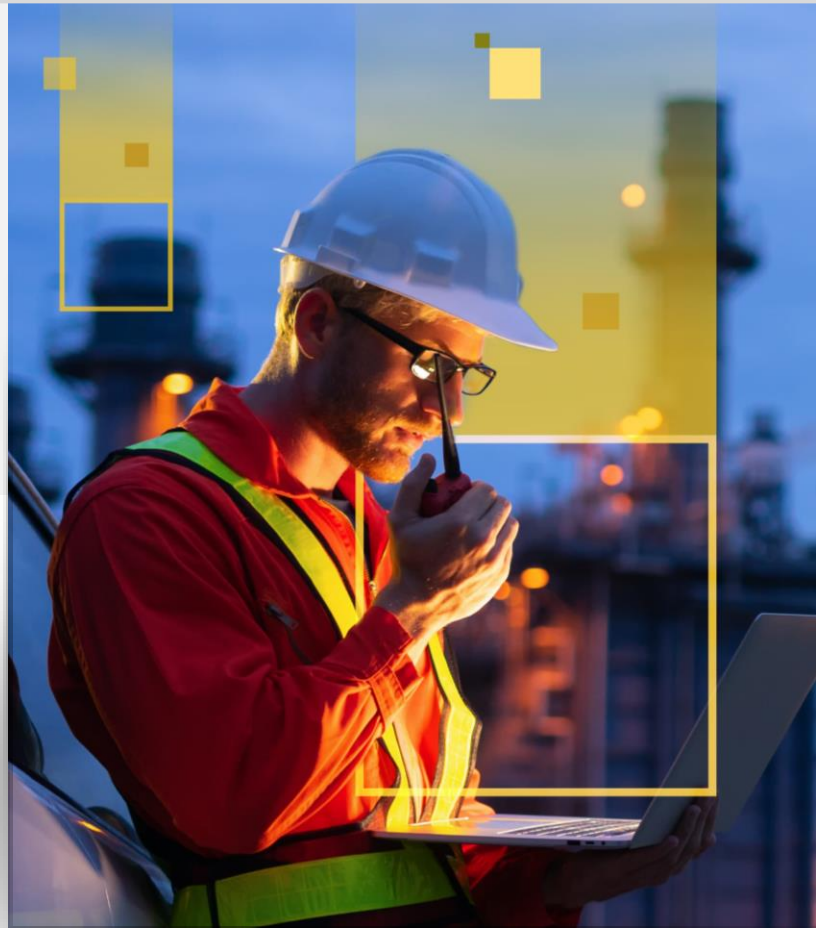
No-code model training

In Summary

Modernizing operations and implementing digital transformation is becoming a requirement for manufacturers to stay competitive and efficient. Profet AI is empowering manufacturers of all sizes to begin their digital transformation by removing the complexity of AI-algorithm coding and simplifying the integration of machine learning models. With the AutoML Platform, manufacturers gain virtually limitless potential from their data and can position themselves at the forefront of the ever-changing manufacturing industry.

Learn More

1. [Profet AI Website](#)
2. [Profet AI AutoML Webpage](#)
3. [Intel® Distribution of OpenVINO™ Toolkit Product Page](#)
4. [Intel® Xeon Scalable Processor Product Page](#)
5. [Intel® Core™ Processors Product Page](#)



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