Weidmüller
Industrial AutoML ModelBuilder
Use Machine Learning without expert knowledge in data science

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Weidmüller Industrial AutoML
The most important facts at a glance

Build and deploy end-to-end machine learning model solutions faster. You only need your domain knowledge!

With Weidmüller Industrial AutoML, you can easily use advanced analytic functions to optimise operations, improve product quality and enable new business models. As a machine or process expert, you can build and run machine learning models quickly and easily without expert knowledge in data science. As machine builder, the AutoML tool enables you to transform your data and domain knowledge into ML models that add value to your business. In manufacturing environments, the models can be used in order to provide machine operators with real-time analysis and insight during operation, for example. The tool consists of 2 modules: ModelBuilder, which is used to build the models, and ModelRuntime, which is used to run and configure the models.

The benefits for you

Accelerated innovation
Leverage your existing machine data and domain knowledge and benefit directly from advanced analytics. Maintain sovereignty over your own data.

End-to-end solution
Build and continuously improve ML models with AutoML ModelBuilder. Make these ML models run with AutoML ModelRuntime, on-premises or in the cloud.

Build customer relationships and new business models
Increase customer satisfaction with improved products and services. Get a better understanding of your customers' needs.

Benefit from Machine Learning without prior knowledge in data science

Weidmüller Industrial AutoML in a two-minute animation - get a compact overview, a brief explanation of how it works and the key benefits.

Weidmüller Industrial AutoML
Benefit from machine learning without data sci...

Weidmüller Industrial AutoML ModelBuilder
From data to model in just a few steps

Features / building blocks of the ModelBuilder
The AutoML service is available as a cloud-based solution. The user is guided through
the following essential modules on the basis of prepared data.

Data acquisition and visualisation
Import of machine data from CSV files. Preprocessing of each incoming data track using
clean-up procedures appropriate to the data types. Visualisation of the individual data tracks
for viewing and checking the data quality.

Data enhancement
With feature engineering, particularly informative input data for the ML model is calculated
and selected from the imported data by means of mathematical transformations. The user
can directly create customised features based on his or her application knowledge.

When labelling data, the user can mark specific time ranges, e.g. by labelling as normal
behaviour or anomaly, and use them later as input for model building.

Model building
The tool trains and optimises the ML models automatically. To do this, the ML models
iteratively learn the statistical properties of the training dataset using a wide variety of
optimisation algorithms and check them against another test dataset. To further improve
the models, "hyperparameters" are also automatically adapted to the data set. The
hyperparameters determine the architecture and behaviour of the ML model.

Model optimisation
The user has the option to iteratively improve the ML models. This involves receiving
feedback, e.g. in relation to which input features most influenced the model response.
This helps the user evaluate whether the models represent the desired behaviour, as well
as providing additional insight into which measurement data and features are particularly
relevant and should be archived.

Model provisioning
The selected model, which is dependent on special ML code libraries, is put into an
encapsulated form to make it executable in a variety of ways such as directly at the machine
or in the cloud. This means that the models can be applied with just a few clicks. Models can
also be encrypted if necessary in order to protect the intellectual property of the machine
functionality during model transfer.

Weidmüller Industrial AutoML in use
What users say in practice

BOGE Compressors

Weidmüller Industrial AutoML
In use at BOGE Compressors

Applications
- Prediction of the wear behaviour of critical compressor modules
- Monitoring of compressed air availability

Advantages
- Provision of relevant data for process monitoring
- Optimised production processes and test procedures
- Enabling data-driven services

Weidmüller Galvanic

Weidmüller Industrial AutoML
in use at the Weidmüller Galvanic

Applications
- Monitoring of pumps in in a galvanic plant
- Data collection and processing, e.g. vibration, current, temperature

Advantages
- Simple and fast testing of the pump monitoring
- Speed: With the AutoML ModelBuilder, a model can be built in less than an hour
- Flexibility: "On-premises" deployment with the AutoML ModelRuntime

» With the help of Weidmüller's AutoML software, we were able to generate an initial model for detecting anomalies with fairly little effort. This has already identified 97 % of the anomalies in the actual process. We especially like how easy the software is to use. The ability to mark normal and abnormal time ranges for model building is very well implemented. «
Dr. Martin Roth, Data Scientist, MULTIVAC

» We were fascinated by the solution, as we have a lot of process engineers who are very familiar with the machines and who are, to a certain extent, able to interpret the data. With the help of Weidmüller, we can now transfer these findings into an algorithm. «
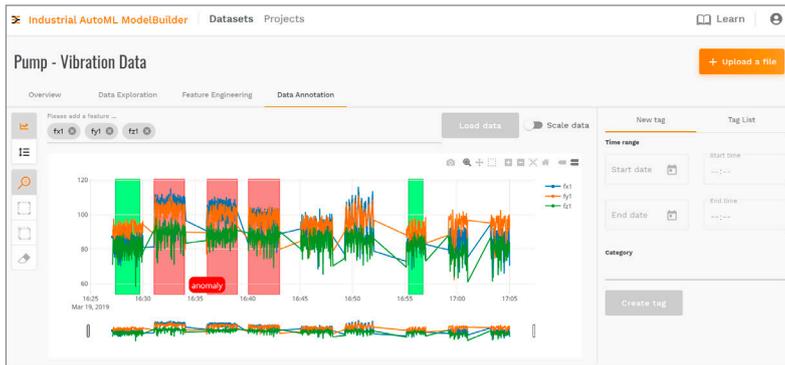*Matthias Heinrich, Manager Digital Solutions, GEA*

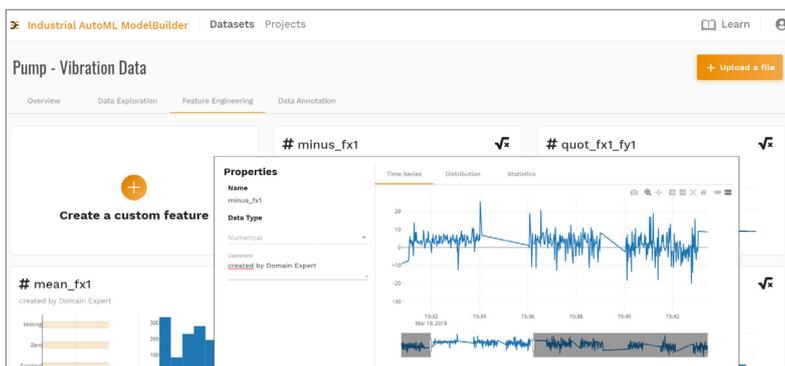### Award-winning industrial analytics solution

Weidmüller Industrial AutoML ModelBuilder
Step-by-step guidance through the process

Industrial AutoML ModelBuilder - intuitive use and visualisation. When labelling data, the user can mark specific time ranges, e.g. by labelling as normal behaviour or as anomaly.

Feature engineering based on expert knowledge. Enriching the data by creating appropriate features is another important input for model building.
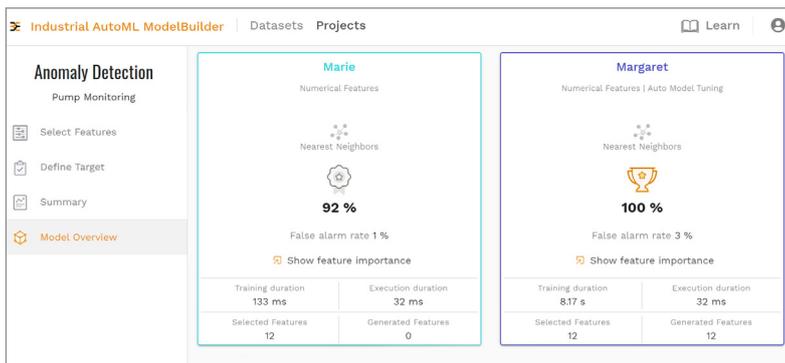
Visualisation of model behaviour. In addition to key figures such as model quality, execution time and feature importance, the model behaviour is clearly displayed for maximum transparency and traceability.

Weidmüller – Your partner in Industrial Connectivity

As experienced experts we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and useful solutions for their individual needs. Together we set standards in Industrial Connectivity.