

Data Science for Industry



We are experts in data analysis, especially when it comes to industry. It would be our pleasure to help you transform your data into valuable information, that can be used to lower operation costs and increase incomes.

What do we do?

Usually our projects are focused on:

Predictive models of industrial processes

Predictive models can be used to predict an industrial process response to an input parameters change. Usually those models are a basis of advanced control and on-line optimization algorithms. We have made more than 150 implementations of software optimizers in different types of plants. Our systems operate in the North America, Europe and Asia. We are using different classes of predictive models, from linear models to sophisticated Fuzzy Artificial Neural Networks. Our customers sees ROI in less than one year, thanks to optimizers that uses accurate, self-adapting models.

Predictive Maintenance

Our algorithms are able to detect an unusual process state, that can cause a failure in the nearest future, or is an early symptom of a failure. The inference mechanism is based on an on-line analysis of data streams. Our algorithms are able to inform what is the most probable source of a failure and send a recommendation about possible actions that will minimize the risk of a failure. Moreover we usually automatically validate and model measurements signals. In case of sensor failure detection, the algorithm is sending a virtual measurement signal, that will help operators run the plant. We have 5 implementations of such systems in large power plants.

Forecasting models focused on electric energy, heat and gas demand

Accurate forecast of electric energy, heat or gas demand is one of key elements that decides about a success of industrial enterprise. We have made 9 implementations of such forecasting systems. Our accurate forecasting models are used by customers in a day to day business.

On-line updating of device characteristics

Over time characteristics of devices more and more differs from the characteristics provided by the manufacturer. Our algorithms updates characteristics based on the set of most recent measurements. It allows for better production planning and plant optimization.

Plant simulators

Plant simulators are based on very accurate, thermodynamics models of single devices and their connections. The simulator can be used for operators training, risk analysis and for planning of a further plant development. Together with our partner we have implemented 4 simulators of large power plants in USA.

These typical applications of data analysis methods do not exhaust the range of projects that we have completed for the industry. We are always open for new, challenges projects.



What is the data source?

In case of industrial projects we usually take the data from PLC, SCADA and DCS systems. We know how to work with these systems. On 4 continents we have implemented over 450 automation systems in large scale plants, basing on following solutions: Ovation, Delta V, InTouch/InControl, S7-300 to S7-1500, PCS7, ControlLogix and RX3i.

Often we add additional data sources to our models, such as weather information, the macroeconomic indicators and the price of substrates and products.



Identification experiments

In some projects there is a need to perform identification experiments. We know how to perform them, so that they are safe to the plant and they not affect the production plan. We use Design of Experiments methods to minimize the cost of identification tests. We have made such experiments in more than 100 large industrial plants.



What the customer gets?

By the end of a project we generate a report with data analysis results. Moreover we are formulating recommendation for improvement in plant operation. If there is such a need we are always happy to implement our statistical models in the customer environment. Usually our software communicates with a plant automation system or with an operation layer of the enterprise. Our computation algorithms can be also provided as a service in a cloud.



Why choose us?

For the last 25 years we are providing IT and control solutions for industry. We have our own portfolio of products for data acquisition, data analysis and plant optimization. Our experience comes from over 500 implementations in USA, Europe and Asia. The team responsible for the analysis of industrial data includes 4 PhD and 2 PhD students who regularly track the latest papers on data analysis algorithms, adapt them for industrial use and develop their own proprietary solutions.



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