

Algorithm Development

Extract Information & Real Added Value from your Data

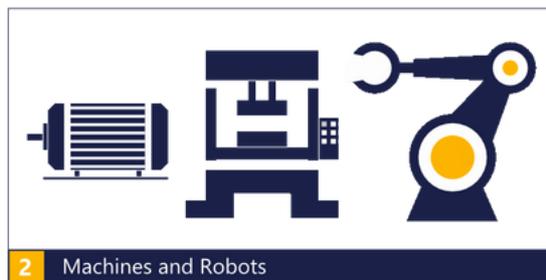
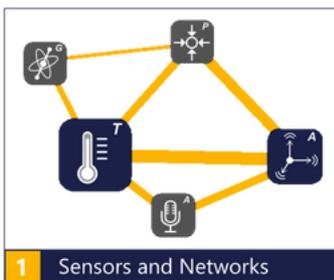
Algorithm Development

We specialize in the research and development of **algorithms for solving complex mathematical problems**, such as those required for **sensor fusion** or **automatic data analysis**. In this context, algorithms that are able to process noisy and disturbed sensor data in a robust way play an important role.

Our unique selling point is our extensive expertise and many years of experience in sensor fusion, automatic data analysis and the development of high quality software for various technical areas. In addition to the integration of the developed algorithms, security and quality aspects play an important role in our development. As a solution provider, we focus on the successful integration of the developed algorithms as well as on security and quality aspects.

Range of Applications

Wherever it is important to extract information, knowledge and ultimately added value from the sensor and machine data, algorithms are necessary for processing the data. The spectrum ranges from individual sensors through networks of sensors to devices and machines and ultimately entire processes and factories.

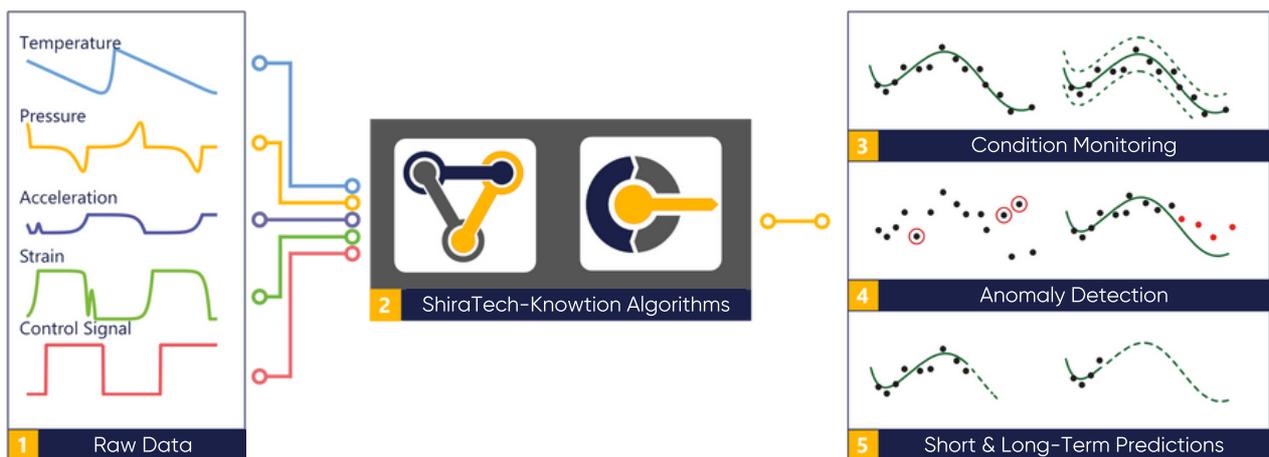


More than 100 successfully completed customer projects have confirmed that the available data, the required information and the existing boundary conditions are very different for each individual application - for these different applications it is important to find the most optimal algorithms and thus provide the most added value for our customers.

Results & Benefits

- Increase in accuracy
- Verification of data in real time
- Early detection of outliers, faults and errors
- Calculation of unmeasured quantities possible
- Reduced personnel costs due to adaptive and self-learning algorithms
- Increase in coverage and reliability through combination of several sensors
- Interpretation of the data; e.g. "Is the machine still OK?", "Has something changed?"

The algorithms we use and develop have a wide range of **applications in machine, system and process monitoring** - from **anomaly detection** to **complex fault diagnosis** and **automated troubleshooting**. Vibration, noise and other operating conditions of various industrial machines and systems can be monitored. This is only possible with an intelligent measurement system with, for example, an integrated microphone, acceleration, magnetic field and temperature sensors and the algorithms required to process the sensor data.



By combining various sensor systems with the appropriate algorithms, process conditions, bearing or rotor and stator damage, control electronics failures, and unknown changes in system behavior can be automatically detected.

If a predictive model exists for certain types of damage, it can even be predicted. This allows maintenance actions to be taken in time to prevent unnecessary damage and downtime.

If there is no predictive model, **data-driven algorithms** can help to gradually learn the behavior of machines and derive a more comprehensive model for **predictive maintenance** over time. In addition, the algorithms can be used to optimize complex manufacturing processes to achieve higher yields or better product quality.