

Industrial Data Analysis

Automated Data Analysis and Predictive Maintenance

Equipping a manufacturing company for the challenges of the future requires new concepts in order to keep up with the rapid digitization and networking of processes. In particular, these concepts revolve around the automatic analysis of measurement and process data as the basis for intelligent condition monitoring and quality assurance.

After all, companies are already collecting untold quantities of data but rarely exploit its full potential. With an efficient structure, self-learning systems and novel approaches based on big data and artificial intelligence (AI), this potential can be converted into strategic competitive advantages – and Fraunhofer IIS/EAS is on hand to support you in these efforts.

Our Services

- Planning and support of digitization projects
- Analysis, classification and visualization of existing measurement and process data
- Pattern recognition in databases thanks to machine learning
- Trend analyses with respect to tolerance limits, quality KPIs and wear effects
- Development of customer-specific stand-alone or embedded software
- Dedicated algorithm development
- Implementation of individual cloud solutions from the sphere of AI

Your Benefits

- Interdisciplinary data analysis for product development, quality assurance and predictive maintenance
- Increased productivity
- Reduced downtime
- Cost savings thanks to better planning of repairs

More information



Part of



*right:
The Fraunhofer IIS/EAS approach to predictive maintenance:
We extract generic features from both measurement data and process data. The relevant conditions for monitoring the machine or system are learned independently with the help of AI algorithms. Automatic feature reduction allows the separation of various system conditions, revealing a characteristic relationship between conditions and features. This provides our basis not only for classification but also for the reliable identification of target/actual deviations.*

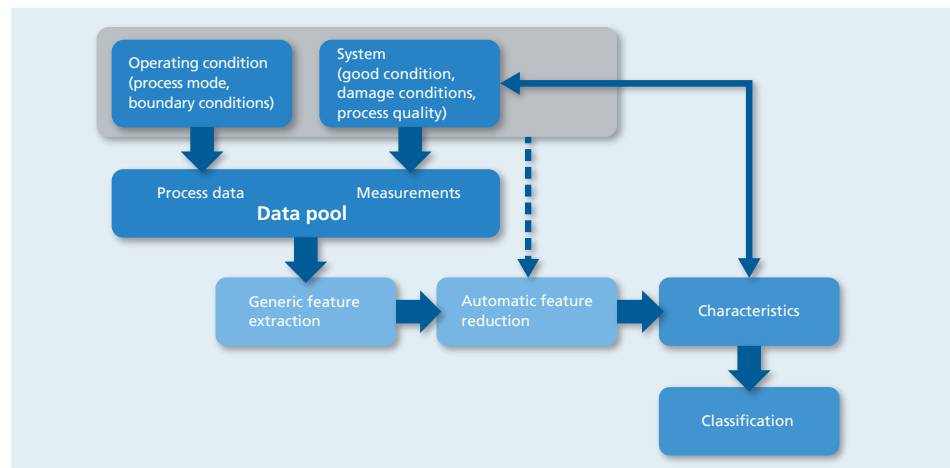
Industrial Data Analysis

In order to meet the growing need for maximum flexibility and efficiency in production, more and more companies are seeking to create close links between automation and computer technology. This entails the intensive exchange of all kinds of data.

As well as production and quality data, this includes data from condition monitoring systems, which are increasingly finding a way into shared data pools. Data of this kind contains valuable information about the production run, product quality, and wear on machine and system components.

Using distributed data analysis algorithms and machine learning approaches from the field of artificial intelligence, this information can be filtered out and put to use. Machine learning methods can recognize patterns in data and use them to derive information that is relevant to predictive maintenance and quality assurance.

The successful application of intelligent data analysis in industry requires a combination of technical insight, mathematical expertise and modern information technology.



The Seminars We Offer

You too can unleash the potential of your data. We offer one- and two-day seminars on the following topics (on request also as in-company seminars):

- Predictive maintenance as the maintenance strategy of the future
- Quality monitoring thanks to the analysis of existing databases
- Targeted analysis of your measurement and process data
- Automated data analysis and self-learning systems
- Roadmap for the introduction of AI-based solutions

Contact

Dr. Olaf Enge-Rosenblatt
Computational Analytics
Phone +49 351 45691-360
olaf.enge-rosenblatt@eas.iis.fraunhofer.de

Fraunhofer Institute for Integrated Circuits IIS
Division Engineering of Adaptive Systems EAS
Muenchner Strasse 16
01187 Dresden, Germany
www.eas.iis.fraunhofer.de/en.html