

Industry 4.0

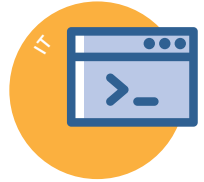
IT SOFTWARE FOR THE VIRTUAL FACTORY OF THE FUTURE

Industry 4.0 is a growing market and new solutions are required to face the global competition in production chains. Within the IMPROVE project, 13 partners from software development, industry, and academia have developed new data-based solutions in the fields of simulation & optimization, condition monitoring, and alarm management to boost the efficiency in production plants.

IMPROVE's solutions:

- Provide a simulation-optimization round trip solution:
 - First tool combining simulation & optimization techniques on the market
 - First tool educating operators with augmented reality (AR) experience in the fields of process/machine KPI, machine documentation, instructional content with video/audio
- Provide an innovative self-learning condition monitoring solution that prevents producers from unexpected breakdowns or product degradation:
 - Realising data-driven condition monitoring: models are learned from data and are then used to detect and localise anomalies within the versatile production system
 - Different software options are based on the self-learning tool and can be implemented in various industrial surroundings as condition monitoring knowledge can be combined with existing management systems such as Zenon, TT Enterprise Data Server, and SAP
 - Condition monitoring software can be adjusted to manufacturers' and producers' needs





- Provide the first alarm management algorithm based on case-based-reasoning (CBR) and data-driven similarity learning that integrates expert knowledge:
 - Combining similarity measure learning, offline case-base construction, semi-supervised learning, online flood detection, and CBR
 - Suggesting solutions in case an alarm flood occurs (identification of the flood, repair instructions, etc.)
 - Algorithm can be used by industrial software developer and be added to existing software or to a data management platform
- Provide a decision support system (DSS) visualising results and assisting the operator to take the right choices in the manufacturing process
- Develop knowledge acquisition methods to translate implicit knowledge into explicit models of the machines represented by so-called cause and effect graphs and include it into data mining for efficient feature selection

Interested in learning more about our tools?

Please do not hesitate to contact us for further information.

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