



Innovation through Research

BUILDING THE VIRTUAL FACTORY OF THE FUTURE ON RESEARCH

IMPROVE brings together leading scientists in the fields of automation technologies and IT in Europe and beyond. Together, they work on ground-breaking solutions related to simulation & optimization, condition monitoring, and alarm management to pave the way for new industrial technologies. Solutions within the project have been implemented in demonstrators and already been tested in industry.

IMPROVE's key findings:

- Development of a novel tool combining simulation & optimization techniques:
 - Automating tasks in modelling development to reduce resources
 - Tool configures the simulation model automatically based on a model library
- Development of an underlying machine learning framework used for condition monitoring:
 - Enhancement of existing machine learning methods for application in industrial machines/CPPS
 - Providing a learning framework with flexible data acquisition applicable in modern technologies such as OPC UA, but also as a retrofit in existing industrial plants





- Development of an algorithm in the field of alarm management:
 - First algorithm based on case-based-reasoning (CBR) and data-driven similarity learning integrating expert knowledge
 - Combining similarity measure learning, offline case-base construction, semi-supervised learning, online flood detection, and CBR
- 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.

Contact

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