

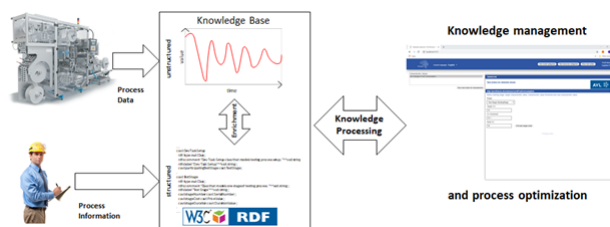
Open Thesis / Project

Tools for model-driven analysis for industrial processes

Motivation

Whether they are manufacturing physical products or delivering virtual services, corporations engage in a wide variety of processes that are interrelated within and across different phases along the product/service lifecycle, each of which yields information. Corporations have started collecting and storing this information, expecting that the data might be useful to extract valuable insights about the product and the production process in the future (e.g., for improving individual process steps and individualizing the product/service for customers). One way of achieving this is by means of active analysis and utilization of process data. For this, a foundation of tools is required that allows the creation and management of data-related models, as well as a way to link such models with whatever process data is available.

The goal of this thesis is to develop tools for model-driven analysis, which enable a combination of semantic technologies and machine learning. Tools should support the creation and management of models, on the one hand, learning from data generated within complex industrial processes, on the other hand, and their integration using semantic relationships. Utilization of model-driven analysis will make possible to leverage and combine the strength of the respective technologies to enable smart data acquisition and processing.



Goals & Tasks

- Investigate the available tools for model-driven analysis.
- Develop tools for model driven analysis.
- Evaluate the developed tools in the context of a use case.

Required Prior Knowledge

- Background in statistics and data analytic.
- Background in semantic web technologies and web service development .
- Programming skills in Java, Python.
- Interested in cloud computing.

Used Tools & Equipment

- OpenAPI, Rest.
- RDF, SPARQL.
- Flux, InfluxDB.
- Eclipse, PyCharm.

Start Date & Duration

- start date: As soon as possible
- duration: 6 months

Target Group

Students in ICE/Telematics and Comp. Science.

Thesis Type

Bachelor Thesis / Master Project.

Contact Person

- Dr Konrad Diwold
kdiwold@tugraz.at
- MSc Katarina Milenković
katarina.milenkovic@pro2future.at

