



Bachelor-/Master Thesis

Optimization of a Python pipeline for the analysis of data from time series



Motivation

As in many other industries, the food industry is moving towards more automation and autonomous process control. In process control, the difference between a desired target value and the actual measured or observed value is usually used to adjust the process accordingly so that the resulting product meets certain requirements. The process should therefore be in a "steady-state" as far as possible in order to keep variations to a minimum. To this end, various parameters are monitored using various sensors, for example. But there is room for improvement. It is often not possible to fully explain fluctuations and the resulting effects in the processes. One reason for this may be that more data needs to be recorded and analyzed.

Goals

The aim is to optimize an existing pipeline in Python by implementing additional methods and revising existing methods. To test the pipeline, data sets from current research of the research group Life Science Informatics (150L) on the topic "Interpretable data-driven analysis of product quality fluctuations" will be provided. Previous knowledge of programming with Python can be acquired in advance. The required depth and scope will be determined in consultation with the supervisors depending on the degree objective (Bachelor or Master)..

We offer

- **Work in the environment of innovative research**
- **Possibility of practical work related to machine learning**
- **Excellent working environment and intensive support**

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