

Development of a Soft Sensor for an Industrial Bioprocess

Master thesis - Start in May 2024

Efficient fermentation processes are crucial for industrial biotechnology. Many process parameters can only be determined offline. The resulting time delay limits efficient real-time process control. A soft sensor can overcome this challenge. Based on a model, a soft sensor can continuously measure process parameters that cannot be measured directly with conventional hardware sensors. Therefore, an optimal control of a specific bioprocess and thus maximum yields in minimal fermentation time can be achieved.

The goal of this master's thesis is to optimize and adapt the current mechanistic and data-driven model further to get a complete soft sensor.

Responsibilities:

- Development of a SoftSensor in Python
 - Optimize and adapt the current mechanistic and data-driven model
 - Create a link between model and process control
 - Validation

Requirements:

- Passion for programming
- Previous experience in Python
- Ability to work independently
- TUM student

We offer

- Insight into an industrial bioprocess
- Brand new lab equipment
- A friendly work environment
- Your own workstation with a desktop computer

Application

If you are interested, please contact Dennis Beerhalter (dennis.beerhalter@tum.de).

I will be happy to answer any further questions you may have.

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