

# Development and Optimization of a PID-Feed-Control for an Industrial Fermentation Process

## Internship (5 ECTS) - Start in October 2024

The most common bioprocess mode in the industry is the fed-batch process. Therefore, an accurate and reliable feed control is essential because the product yield is highly dependent on the availability of nutrients. Gravimetric feed control is achieved by using balances to measure the weight of the nutrient solution as it is added to the bioreactor, allowing for precise control over the nutrient concentration. Gravimetric feeds are particularly useful for large-scale bioprocesses. This project aims to integrate a PID control for the gravimetric feed of an industrial bioprocess.

### Responsibilities:

- Coding a PID-Controller in Python
- Testing the PID-Controller in a 2-L bioreactor (IKA Habitat)
- Optimization of the PID-Controller

### Requirements:

- Previous experience in Coding
- Ability to work independently
- TUM student

### We offer

- Insight into an industrial bioprocess
- Brand new lab equipment
- A friendly work environment
- A 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.

### Privacy policy

As part of your application for a position at the Technical University of Munich (TUM), you submit personal data. Please note our privacy policy pursuant to Art. 13 General Data Protection Regulation (GDPR) for the collection and processing of personal data in the context of your application <http://go.tum.de/554159>. By submitting your application, you confirm that you have taken note of TUM's privacy policy. In the case of a written application, we ask you to only submit copies to us, as we are unfortunately unable to return your application documents after the procedure has been completed.