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Internship / Master's Thesis

Assessment of Machine learning models within Upstream process development

ROLE OVERVIEW

Upstream processes generate significant amounts of data to monitor the cell culture state. Currently, such dataset is mostly used at quite high level, from graphical representation to simple linear regression models. Nowadays such databases can be also used to feed more complex models, such as machine learning (ML) algorithms, to better capture the variations in the different parameters and better understand our processes, to predict the outcomes early on or to identify areas for optimization.

During this internship we propose to assess the useability of such model, in partnership with a third party offering the ML application, and to develop one model in particular to predict the final titer for a specific monoclonal antibody production process.

RESPONSIBILITIES

- Compare different kinds of ML algorithms and assess the most suitable one(s).
- Develop a "proof of concept" model to predict final titer of a specific project.
- Put in place the documentation related to the software use and the development of such models.
- Depending on the advancement of the project and priorities, develop different softsensors and assess the feasibility of developing DigitalTwin for one of our processes.
- Perform data analysis and documentation.
- Present the results to the team on a regular basis.

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EDUCATION AND DESIRED EXPERIENCE

- Highly motivated and rigorous student on master's thesis in Data science, bio-informatic, statistics with interest for biotech field, or similar close to the end of his / her studies.
- Strong scientific and technologic curiosity and good knowledge of English.
- Global understanding of statistics, machine learning and Python.

LOCATION

You will join the USP team in the city of La Chaux-de-Fonds, Neuchâtel, Switzerland. Possibility to partially work from home.

This is a unique opportunity to join our growing scientific team at the very start of something special.

General information

Timelines of the project: Start around April 2022 (flexible)

Type of Contract: ~6 month paid internship

Contact

TBD