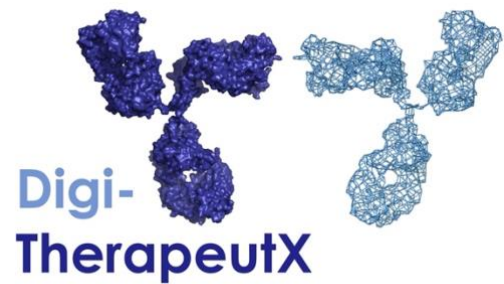


PhD position (bioinformatics / computational biology)

Interpretable machine learning for digital twins of biopharmaceuticals

The group: The PhD student will be part of the Computational Systems Biology group at the University of Salzburg, which is headed by Nikolaus Fortelny (<https://plus.ac.at/fortelny>), a young PI and group with a very strong track record (see Google Scholar link below). The group develops interpretable machine learning models based on prior biological knowledge to explain relationships in big biological data. We use this expertise and various other methods from Data Science to study biomedical questions ranging from immunity to cancer. The focus lies on algorithms that produce robust and reliable results, and on enabling interpretations from black-box algorithms.

The project: The PhD student will be embedded into the DigitherapeutX consortium. DigitherapeutX is a joint effort of multiple Austrian research groups with expertise in analytical chemistry, bioprocessing, omics profiling, and computational modeling. The consortium is collecting large datasets to study the production of biological drugs (antibodies), including bioprocessing parameters (pH, glucose concentration, ...), multi-omics of host cells, and molecular attributes of the product (glycosylation).



The PhD position is centered on developing computational approaches to understand the relationships between bioprocessing, multi-omics data, and drug quality parameters using various algorithms from molecular modeling, data science, and machine learning, specifically focused on making black box models interpretable.

The place: The city of Salzburg has ample natural and cultural attractions as well as fast connections to Vienna and Munich. It is surrounded by beautiful lakes and mountains in the Salzkammergut, with various opportunities for recreational and sports activities. The university has 18 000 students, and a highly collaborative research environment in both biomedical and computational sciences.



Qualifications:

- M.Sc. degree in bioinformatics, biotechnology, computer science, statistics, physics, or similar
- Excellent scientific thinking and communication
- High level of motivation and drive
- Programming skills (Python, R, or similar)
- Experience with and interest in machine learning, statistics, and/or other quantitative sciences
- An understanding of basic biological concepts
- Excellent English and communication skills

Details:

- Start date: As soon as possible
- Fixed-term: 4 years
- Salary and work hours according to Austrian funding regulations:
<https://www.fwf.ac.at/en/research-funding/personnel-costs>
- Place of work: Salzburg, Austria

Our offer:

- Computational research in modelling biological processes relevant for industrial applications
- Cutting-edge environment (<https://scholar.google.at/citations?user=IHjaqgkAAAAJ>)
- Being part of an international, interdisciplinary, and fun team (<https://plus.ac.at/fortelny>)
- Opportunities for self-growth (various courses for hard and soft skills)
- Participation in conferences and project meetings
- Excellent social benefits of working in Austria (holidays, health insurance, ...)
- Environment that values a healthy work / life balance

Enthusiastic young scientists, who are motivated to systematically study and dissect biological processes using cutting-edge computational approaches are encouraged to apply. Please send a letter describing your motivation to pursue a PhD (one page), CV, and names of 2-3 reference contacts to nikolaus.fortelny@plus.ac.at, writing "PhD position DigitherapeutX" in the subject line.

Deadline: September 10th, 2023.

We look forward to hearing from you!