

Master student in Bioinformatics or similar (f/m/diverse)

We are seeking a motivated student (ideally in bioinformatics, mathematics, computer science, or equivalent degree program) to perform a master thesis in our mass spectrometry imaging research lab at the Helmholtz Zentrum München. The Research Unit Analytical Pathology (AAP) links basic research with diagnostic application, subsequently translating the findings of experimental and molecular pathology into procedures for the classification of diseases and predictive diagnostics dealing with tissue. In the foreground is to develop and apply models based on multi-level MALDI imaging metabolite and digital histology image data from patients to address unresolved questions of differential diagnostics or molecular clarification of therapeutic decision making.

The student in this position will work on a project for the master thesis with a focus in developing and implementing algorithms for processing and evaluating mass-spec data and apply statistical methods for data analysis. Additionally, the student will gain experience in mass spectrometry imaging, microscopy imaging, and differential scanning modalities.

Your objectives/tasks

- You help to develop and implement new bioinformatics, computer-aided methods for automated data analysis in high-resolution imaging mass spectrometry
- Your activity includes the statistical and bioinformatics analysis
- You contribute to develop and establish software pipelines for quality control, processing, supervised and unsupervised machine learning as well as pathway and network analysis of metabolomics data
- Identify molecular biomarkers and correlate them with clinical data

Your qualifications

- Fluent in programming, preferably in Python, MATLAB or R and tools for exploratory data analysis
- Experience in working with experimental data and application of mathematical and statistical procedures for data analysis
- Previous experience with mass spectrometry data, e.g. raw data processing and data management, is a plus
- Ability to learn and use new statistical methodology, excellent analytical skills

Curious? If you have further questions, simply contact Dr. Achim Buck on achim.buck@helmholtz-muenchen.de, who will be happy to be of assistance.