



Student Assistant for Frontend Development in Systems Biology



Who are we?

Our group, the immuno-metabolism group (head: Prof. Karsten Hiller), located at the Braunschweig Integrated Center of Systemsbiology (BRICS), is interested in understanding cellular metabolism in health and disease using a combination of experimental and computational approaches. Mainly, we use mass-spectrometry-based methods to find mechanistic links between changes in intracellular metabolism and disease development or progression. To that end, we develop and apply algorithms to extract biological information out of mass-spectrometric data, with a focus on data obtained from stable-isotope labeling experiments.

Project background

Our project revolves around the field of systems metabolism, specifically focused on the analysis of stable-isotope labeling experiments in bacteria. To extract meaningful insights from this data, we employ state-of-the-art LC-MS techniques.

The primary objective of our project is to develop advanced algorithms for the analysis of targeted and untargeted data obtained from stable-isotope labeling experiments. These algorithms will enable us to determine mass isotopomer distributions accurately. Additionally, we aim to contextualize the untargeted metabolites within existing metabolic pathways.

To facilitate data analysis and interpretation, we are building a modular browser application. This application will serve as a user-friendly interface, allowing researchers to visualize and explore the results obtained from our algorithms. The browser application will be developed using JavaScript. Proficiency in JavaScript and knowledge of a JavaScript framework, preferably React, are essential requirements for this project. While programming skills are crucial, having a background in biochemistry or related disciplines would be a valuable asset.

Interested?

Please send your application via Email with your preferred starting date.

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