Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

The chair for Artificial Intelligence in Computational and Theoretical Biology at the Center for Computational and Theoretical Biology (CCTB) and the Center for Artificial Intelligence and Data Sciences (CAIDAS), University of Würzburg, Germany are inviting applications for a

Doctoral Researcher Position

part-time (65%) starting as soon as possible. The contract will be a fixed-term contract for 3.5 years. Remuneration will be based on the "Tarifvertrag für den öffentlichen Dienst der Länder "(Collective Agreement for the Public Service of German Federal States, TV-L). The position is intended to qualify young scientists and offers the possibility of a PhD.

Project description:

Spatial interactions are key processes for the development and maintenance of multicellular systems. Disturbances in interactions lead to developmental disorders or diseases. In many cases, the details of the process are not yet fully understood. Mechanistic learning, the combination of mathematical mechanistic modelling and machine learning, enables a data-driven investigation of the processes underlying spatial interactions.

The aim of this project is to establish machine learning methods for multicellular systems and then combine them with an existing mechanistic model of our research group. The project involves close collaboration with experimentalists who provide the relevant data. Machine learning methods will be applied to link experimental (imaging) data to a mechanistic model. The results of the project will advance our understanding of the general principles of spatial interactions in multicellular systems. In addition, new hypotheses will be generated that can then be tested experimentally.

Qualifications:

- Completed academic university degree (Master level) in mathematics, computer sciences, physics or a related discipline
- Knowledge of programming, machine learning methods, mechanistic modelling and image analysis
- Good English language skills (spoken and written)
- Ideally, prior publications
- Ideally, prior knowledge of biology
- Enthusiasm for communication with experts from other disciplines is essential
- Interest in teaching courses

We are looking for a highly motivated candidate who is team-oriented and willing to learn and work independently and precisely.

We offer a friendly working environment, excellent computing infrastructure, and supportive supervision.

The JMU aims to reduce the underrepresentation of women and, therefore, explicitly encourages qualified women to apply.
Severely handicapped applicants will be given preferential consideration in the case of broadly equal suitability, ability and professional achievements.

Applications in English or German, including a letter of motivation, research experience, and a CV with degree certificates and grades, should be sent **by 31/10/2025**, preferably by email in a single PDF document, to sabine.fischer@uni-wuerzburg.de or

Prof. Dr. Sabine Fischer
CCTB, Universität Würzburg
Klara-Oppenheimer-Weg 32
97074 Würzburg

Please do not send any original documents to us; only send photocopies. As we need to save costs, we will not be able to return your documents to you. They will be shredded shortly after a hiring decision has been made. If you enclose a postage-paid return envelope, we will return your application documents to you three months after a hiring decision has been made.