LMU KLINIKUM

Postdoctoral researcher for multimodal omics integration and analysis (m/f/d)

Institut für Schlaganfall- und Demenzforschung

The Hospital of the University of Munich, Germany, is one of the largest and most competitive university hospitals in Germany and Europe. 48 specialized hospitals, departments and institutions harbouring excellent research and education provide patient care at the highest medical level with around 11.000 employees.

WORKPLACE	Campus Großhadern	DATE OF ENTRY	01.04.2026
WORKING HOURS	Full time	APPLICATION DEADLINE	Swift
INSTITUTION	Institut für Schlaganfall- und Demenzforschung	REFERENCE NUMBER	2026-K-0037
DEPARTMENT	AG Spitzer		

Scope of duties

We are looking for a highly motivated postdoctoral researcher in multimodal omics data integration and analysis to join our growing team in the Spitzer lab at the Institute for Stroke and Dementia Research (ISD). This position offers the opportunity to shape the computational backbone of a large collaborative research center (CRC 1744) and work at the forefront of single-cell, spatial, and multimodal omics in neurovascular disease.

In the Spitzer lab, we integrate single-cell omics, spatial omics, histology, and neuroimaging data to better understand the brain in health and disease, with the long-term goal of enabling personalized diagnosis and treatments. We develop and apply state-of-the-art computational, statistical, and machine learning methods to analyse high-dimensional multimodal data. Within our newly DFG-funded CRC on neurovascular diseases, we lead the central omics and data integration hub, establishing state-of-the-art spatial omics analysis workflows, shared research data infrastructure, and novel computational methods for multimodal data integration. As part of this effort, you will work on data that many CRC projects rely on, giving your work broad scientific impact and strong opportunities for collaborations.

You will play an active role in collaborative and methodological projects across the CRC, integrating and analysing data from diverse omics layers (e.g. transcriptomics, proteomics, lipidomics, spatial imaging). Working closely with bioinformaticians, wet-lab scientists, and clinical researchers, you will:

- Perform advanced single-cell and spatial omics analyses
- Develop methods for (spatial) multi-omics data integration
- Adapt and optimize analysis workflows for diverse biological and disease contexts
- Contribute to the development of shared tools, pipelines, and reproducible workflows
- Support and advise collaborating projects across the CRC

You will also have the opportunity to drive your own methodological research, for example:

- Representation learning for unpaired multimodal data
- Spatial modeling and cell–cell interaction analysis
- Integration of omics with imaging data

For example, we recently developed a pipeline using optimal transport and demixing tools to extract cell-type specific lipid profiles from single-cell spatial transcriptomics and spot-based spatial lipidomics data – a framework we aim to extend and generalize.

Our requirements

- PhD degree in computational biology, bioinformatics, computer science, mathematics, or similar a related quantitative field
- Strong interest in neuroscience and applying data analysis and machine learning to study disease mechanisms or improving diagnostic procedures
- Experience with (spatial) omics analysis (e.g. scRNAseq, proteomics, Visium, MERFISH); experience with histological data analysis is a plus
- Solid understanding of machine learning or statistical modelling; experience with applied ML/ DL is a plus
- Strong programming skills in Python and/ or R
- Familiarity with Linux and HPC systems
- You are collaborative, self-motivated, and eager to work in interdisciplinary teams

Our offer

- We provide a highly collaborative and inspiring research environment. The lab is located in the brand-new Center for Stroke and Dementia Research building (CSD) with access to cutting-edge technologies in genomics, proteomics, metabolomics, immunology, molecular biology, imaging (from nano- to macroscale), and neuroscience in general.
- We are embedded within the vibrant biomedical and data science research landscape in Munich, and associated with the Computational Health Center in Helmholtz Munich, providing ample opportunities for local and international collaborations.
- We are also part of the Munich cluster for Systems Neurology (SyNergy), which offers a diverse and inclusive environment with comprehensive support for newcomers, including gender equality initiatives, mentoring, travel grants, post-doctoral awards, and family support.
- Remuneration is based on the Collective Agreement for the Public Sector of the Länder (TV-L) including all allowances customary in the public sector. The position is initially limited to 2 years with the possibility of extension.

Please apply with a single pdf containing cover letter, CV with publication list, and contact details for at least two referees or reference letters.

Offers and services of the employer

Further education and training	Job ticket
Company pension scheme	Discounts
Childcare services	Staff accommodation (if available)
Mobile work (if suitable)	

Frau Dr.rer.nat. Spitzer, Hannah Marina

089 4400 46173

Application format

Please use the Online-Form for your application

http://www.lmu-klinikum.de/9637239bf7905c1c

Disabled persons will be preferentially considered in case of equal qualification. Presentation costs cannot be refunded.

Please note that we cannot reimburse travel expenses incurred through interviews.

We ask you for your understanding that postal applications will not be returned, but will be destroyed in accordance with data protection regulations. The data usage information also applies to postal applications