

**Job advertisement no. 001/2025**

The department of Systems Immunology, led by Prof. Dr. Meyer-Hermann, at the Helmholtz Centre for Infection Research (HZI), is offering the position of a

**Postdoc (f/m/d)  
in “Data Scientist for AI-assisted clinical diagnostics”**

As a member of the Helmholtz Association, the Helmholtz Centre for Infection Research, based in Braunschweig, conducts top-level research in the field of infectious diseases.

Scientists at the HZI develop strategies to better combat infectious diseases. Their goal is to develop novel approaches for the prevention, diagnosis, and therapy of infectious diseases. To this end, they study bacterial and viral pathogens and their interaction with the immune system and explore new active ingredients.

You will work in a dynamic and interactive group of interdisciplinary researchers. The training of the Department members comprises physics, mathematics, bioinformatics, engineering, machine learning, systems theory, and biology. Our research projects are strongly linked to data from partners in experimental labs or clinics. Our group is embedded in the Helmholtz Centre for Infection Research, one of the premier research organizations for infection research in Germany.

The position is offered in the context of the “**DETECT-ME/CFS**: AI-assisted Diagnosis Enhancement Tool for the Evaluation of Clinical Typologies in Patients Referred for Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS)” project funded by the Federal Ministry of Health (BMG) as part of the initiative ‘research and strengthening needs-based care for long-term consequences of COVID-19 (Long COVID)’.

The project aims to enhance the screening and diagnostic processes for ME/CFS, a debilitating condition often triggered by infections, including COVID-19. ME/CFS affects millions worldwide, with a rising prevalence post-pandemic. Diagnosis is challenging due to the absence of biomarkers and relies heavily on labor-intensive exclusion-based differential diagnosis. This project develops an innovative clinical decision support system (CDSS) that integrates clinical expertise, machine learning (ML), advanced algorithms, and expert systems to enhance diagnostic accuracy and efficiency. By leveraging patient data analysis, automated literature mining for symptom-disease networks construction, and novel feature engineering, the CDSS aims to transform the differential diagnosis process.

Collaboration with project members from renowned clinical centers, the Charité Fatigue Centre (CFC) and Münchner Chronische Fatigue Centrum für junge Menschen (MCFC), ensures access to high-quality datasets and real-world clinical applications. The project’s outcomes will not only alleviate diagnostic burdens on specialized clinics but also serve as a model for addressing other complex diseases. This cutting-edge research has the potential to revolutionize clinical diagnostics and significantly improve healthcare outcomes.

**Responsibilities:**

- Develop and optimize machine learning models for the diagnosis of ME/CFS
- Implement expert and inference systems to enhance decision-making in the CDSS
- Design and integrate data pipelines for clinical and laboratory datasets
- Lead efforts in feature engineering and literature mining using Natural Language Processing (NLP) techniques

- Validate and refine models through cross-validation and real-world testing with clinical data from partner centers
- Contribute to high-impact publications and present findings at national and international conferences
- Collaborate closely with clinical and computational experts to bridge AI and healthcare

**Requirements:**

- A university degree in a scientific discipline with a PhD in physics, data science, computer science, engineering, bioinformatics or a closely related computational field
- Strong programming skills, particularly in languages such as Python, R or C++, and may include solid experience with ML frameworks
- Proficiency in developing data-driven models
- Strong foundational knowledge in statistical/probabilistic modelling, data integration and data visualization
- Proficiency in managing and analyzing complex data sets, particularly those derived from clinical or biomedical contexts

**Advantageous for this position:**

- Experience working with clinical data sets, particularly in the context of chronic disease research
- Familiarity with AI-based diagnostic tools, CDSS and advanced modelling techniques such as cross-validation, model selection and ensemble methods
- Knowledge of expert systems and an understanding of the challenges of integrating data-driven insights into clinical workflows
- Strong communication skills and the ability to translate complex data into actionable insights for multidisciplinary teams
- Fluency in written and spoken English will be highly regarded and strong writing and presentation skills

**We offer you:**

- An attractive and varied job in a future-oriented research institute with an international environment at the Braunschweig Integrated Centre of Systems Biology (BRICS) in Braunschweig
- A state-of-the-art infrastructure and the latest technologies
- Flexible working hours, part-time models and the option to work remotely
- A corporate culture of appreciation and promotion of equal opportunities
- Extensive training and continuing education opportunities to develop professional knowledge and personal skill
- A family office to support family and career as well as childcare offers
- Interesting additional public service benefits
- Possible subsidy of the job-ticket

People with severe disabilities and equivalent professional qualifications who are suitable for the position are given preference. In order to protect your rights, we ask you to provide us with a clearly recognizable reference to the existence of a degree of severe disability in your cover letter or resume.

The HZI is actively committed to equality, diversity and integration. For this reason, the HZI pursues the goal of professional equality between women and men and expressly welcomes applications from qualified women. The position is suitable for part-time work.

<b>Starting date:</b>	As soon as possible. Initially limited for two years.
<b>Salary:</b>	E 14 TVöD Bund
<b>Working time:</b>	39 hours per week
<b>Place of work:</b>	Braunschweig
<b>Probation period:</b>	6 months
<b>Published:</b>	13.02.2025
<b>Closing date:</b>	12.03.2025

For further information please contact Michael Meyer-Hermann by email: [jobs@theoretical-biology.de](mailto:jobs@theoretical-biology.de).

**How to apply:**

When sending us your application documents, **please confirm** that you have read our privacy policy and that you agree to the processing of your personal data. Please use the text module in our [privacy policy](#) for this purpose. **Without these declarations we cannot consider or process your application** and will immediately delete any application documents already received after the application deadline.

**Please include** a cover letter, resume, (employment) references, certificates, and (if available) work samples or reference projects with your application materials. Please refrain from sending a photo.

**Please send** your complete application, quoting the **reference number 001/2025**, to the Helmholtz Centre for Infection Research GmbH, Human Resources Department, Inhoffenstr. 7, 38124 Braunschweig, Germany or by [e-mail](#). If you send your application in electronic form, please provide a **summary in one single (1) pdf document**.

We look forward to receiving your application!