PostDoc Position (24 Months) possibly PhD (36 Months) in the **Laboratory for Mental Health Mapping! University of Tübingen - earliest starting date is 1. November 2024**
https://mhm-lab.github.io

Position

We are seeking a **highly motivated Postdoctoral Researcher or PhD candidate** with expertise **in time series analysis, dynamic systems, and/or machine learning** to join our multidisciplinary team at the **University of Tübingen's Laboratory for Mental Health Mapping**. This 24-month (Postdoc) or 36-month (PhD) position offers an exciting opportunity to contribute to a **newly funded BMBF project on Long COVID and digital phenotyping**, with a focus on advanced machine learning, digital phenotyping, and medical brain imaging.

Project Overview

The project aims to **investigate individual differences in Long COVID** by integrating ecological momentary assessment (EMA), imaging biomarkers, digital phenotyping, and machine learning. The successful candidate will develop and apply advanced machine learning techniques to analyze large-scale datasets. This will include the integration of subjective and objective physiological markers (e.g., heart rate, activity, location) collected via mobile devices to train machine learning models.

More details regarding your responsibilities will involve working closely with large datasets, developing predictive models, and applying dynamic systems theory to better understand the complex interactions underlying Long COVID and its mental health impact.

The key goals
- Developing psychometric network models for normative prediction.
- Creating normative models for patient trajectories using generative approaches.
- Implementing these models on large clinical and EMA databases.
- Disseminate a research paper on the heterogeneity of Long COVID patients.

Your team: You will join an interdisciplinary team at the **Laboratory for Mental Health Mapping**, led by **Dr. Wolfers,** and contribute to a large BMBF-funded project in collaboration with research partners across Germany. Internationally, we will work closely with **Dr. Dinga** from the University of Tilburg, an expert in machine learning applications in psychiatry. Within our department, we will collaborate with **Prof. Hauser**, an expert in digital phenotyping. On the methodological side, we will collaborate with **Prof. Durstewitz**, an expert in dynamic system's modeling. Your PostDoc/PhD position will be embedded in a vibrant local research environment, with access to excellent national and international collaborators, providing a rich platform for career development.

Key Responsibilities:
- Develop and implement machine learning models to predict health trajectories based on psychometric and physiological data.

- Integrate multimodal data from large clinical databases (e.g., brain imaging, EMA, wearable device data).
- Conduct research on heterogeneity mapping and personalized treatment strategies for Long COVID patients.
- Collaborate with interdisciplinary teams.
- Publish research findings in high-impact journals and present at international conferences.

Optimal Qualifications:
- PhD in data science, computer science, neuroscience, psychology, or a related field.
- Strong expertise in one or more of the following areas:
  - Machine learning, data analysis, or statistical modeling.
  - Experience with big data processing, particularly in health or mental health contexts.
  - Familiarity with digital phenotyping or data from wearable devices (desirable but not essential).
- Excellent communication skills, with a demonstrated ability to work in collaborative, interdisciplinary teams.
- Career development opportunities: The position is embedded within a vibrant research environment with access to both national and international collaborators.

This is a scientifically and technically interdisciplinary project suitable for candidates from a wide range of academic backgrounds. Applicants are not required to meet all criteria but should demonstrate strengths in several key areas.

What We Offer:
- A dynamic and supportive research environment.
- Access to computational resources, including HPC for large-scale machine learning projects.
- Collaboration with leading experts in digital health, machine learning, and computational psychiatry.
- The opportunity to publish in high-ranking journals and contribute to the development of novel approaches in mental health research.

If you are passionate about advancing mental health research through innovative data-driven approaches and meet the qualifications outlined above, we encourage you to apply.

Application Process: Please submit your application (CV, letter of motivation, and references) to dr.thomas.wolfers@gmail.com. Review of applications will begin immediately and continue until the position is filled.

Position Duration: 24 months (*PostDoc*) / 36 months (*PhD*)
Salary: TV-L E13 (*German Public Service Salary Scale*) For further inquiries, please contact Dr. Wolfers at dr.thomas.wolfers@gmail.com