Funded PhD position (m/f/d).

Clinical Data Science – Intelligent multi-modal sensor analysis of real-life behavior in neurological and psychiatric patients

Hertie-Institut für klinische Hirnforschung

Starting from 1.6.2025, the Section Computational Sensomotorics at the Hertie Institute for Clinical Brain Research (HIH), University of Tübingen, offers

a funded PhD position for 36 Months

in an interdisciplinary project with the Department of Child Psychiatry. Multi-modal wearable sensors (ECG, IMU movement, eye-tracker) and multivariate analysis methods will be used to study the behavior of children with obsessive-compulsive disorder (OCD) during cognitive therapy sessions via teletherapy and during unsupervised living at home. Analysis of the multi-model sensor data will provide a detailed and objective understanding of the situation causing the compulsions, quantify individual OCD behaviors, and evaluate and optimize treatment strategies.

Your research work

You will develop methods and pipelines for the analysis of uni- and multimodal sensor information in constrained and unconstrained home environments. The analyses using also methods of machine learning include, (i) the classification of movements in real-life, (ii) the detection of stress in different movement states, (iii) the analysis of eye fixation patterns in relation to certain stress-inducing objects and situations, (iv) predictive modeling of stress states.

Your background and skills

- A background in Biomedical Engineering, Computer Science, Movement science, or closely related
- A Masters degree (or near completion)
- Strong engagement and substantial interest in clinical data science
- Proficient programming experience in Matlab, Python, or similar
- Experience in signal-processing
- Experience with machine learning methods is an advantage, but not essential
- Good to very good grades
- Strong analytical skills
- Proficient oral and written English skills

We offer

- Your contract should start in the summer or autumn of 2025. The salary will be 75 % E13.
- You will work in an interdisciplinary team with computer scientists, engineers, neurologists and psychiatrists
- Our team is part of a dynamic neuroscience research environment for PhD students, with a strong focus on clinical neuroscience. This includes the NeuroCampus, the International Max Planck Research School (IMPRS), and the Cyber Valley AI Center.

To apply

Please send a cover letter and a CV by mail to:

Dr. Winfried Ilg
Hertie Institute for Clinical Brain Research, University Tübingen
Department N³: Neurorehabilitation | Neuroprosthetics | Neurotechnology
Section Computational Sensomotorics
email: winfried.ilg@uni-tuebingen.de

Deadline: 31.8.2025 (remains open until filled)