![Stellenticket logo]

Charité - Movement Disorders & Neuromodulation Unit at the Neurology Department Charité Universitätsmedizin Berlin (Campus Mitte)

![CHARITÉ UNIVERSITÄTSMEDIZIN BERLIN logo]

Data Scientist / Tech Student For Neuroscience
Classification and prediction of hyperkinetic movement in Parkinson's disease patients with a novel magneto-encephalography method (OPM-MEG)

City: Berlin; Starting Date: At the earliest possible; Duration: 6 months; Renumeration: € 13 / hour; Closing date: 29/11/24

Working field
Neuroscience
Write your master thesis in combination with a student job at our new project:
- Collaborative project between the Movement Disorders & Neuromodulation Unit at the Neurology
Department Charité Campus Mitte and the MEG Research Group at the
Physikalisch-Technische Bundesanstalt (PTB) Berlin
- Dyskinesia are abnormal, involuntary movements and are a common side effect of common
medication in Parkinson's disease
- Project aim 1: Understanding cortical neurophysiology within the development of treatment-
induced dyskinesia in Parkinson patients.
- Project aim 2: Predicting dyskinetic states in both movement absence and movement
presence based on cortical features extracted from OPM-MEG data.
- Patients will be recorded with a novel magneto-encephalography method (optically-pumped
magnetometers, OPM-MEG), combined with kinematic analysis and clinical assessments.

Requirements
Your project tasks:
- Gain knowledge on neurophysiology (especially OPM-MEG) and Parkinson's disease
- Develop workflow to pre-process OPM-MEG data, using available open-source packages (i.e.,
MNE python)
- Develop workflow to combine OPM-MEG data with individual neuro-anatomy (MRI)
- Extract spectral features per cortical region and characterize and classify movements and
dyskinetic states using machine learning methods
- Code development preferably in Python

Requirements:
- At least basic experience in Python programming
- Interest in computational neuroscience
- Advanced English, as we are an international research group (but direct supervisors speak German)

What We Offer

- Dedicated post-doctoral supervision regarding neuroscience, neurophysiology, machine learning,
programming, and project management
- Flat hierarchies and a safe and supportive research atmosphere
- Working space at Charité Campus Mitte
- Being part of inter-regional Research Collaboration ReTune and it's educational activities
- Part-time appointment as "Hi-Wi" (€ 13 / hour, 40 – 60 hours per month) for 6 months
- Results and Methods will be used for scientific publication(s)
No guarantee on project finishing timelines, co-authorship possible.

Application
Send your questions or directly apply by sending your motivation letter and CV to both of us:
Dr.-Ing. Christina Salchow-Hömmen: **christina.salchow@charite.de**
and
Jeroen Habets, MD PhD: **jeroen.habets@charite.de**

More information at https://stellenticket.de/189105/
Offer visible until 05/12/24