UKE HAMBURG

Institute for Systems Neuroscience

Postdoc position in Cognitive Computational Neuroscience for a project on "Recursive Theory of Mind during cooperative and competitive interactions"

This project is part of the recently DFG-funded Collaborative Research Center (SFB) 1528 "Cognition of Interaction" primarily located at the University of Göttingen and will be conducted in the lab of Dr. Jan Gläscher (research group "Valuation and Social Decision-Making") at the Institute for Systems Neuroscience of the UKE (headed by Prof. Christian Büchel) in Hamburg, Germany.

Research Project

Theory of Mind describes a set of abilities that enables humans to think about the others and their actions, goals, and beliefs. In essence, it describes the **ability to construct a mental model** of others that can be used to make predictions about their next actions. However, these models can include models that the others build of ourselves at which point they become recursive ("I think that you think that I will do X."). We are investigating the construction of such **recursive mental models** in the context of a cooperative and competitive social foraging task. We will employ **computational modeling of behavior** and **model-informed analyses of EEG data** to identify the neural representation of mental models and **RSA and other hyperscanning analyses** to detect and characterize within- and between brain connectivity during cooperative and competitive play.

Available position

A **postdoc position for 2 years** (until the end of 2025) is available to carry out this ambitious research project under the supervision of myself together with a PhD student working already on the project and in collaboration with other projects of the CRC 1528 in Göttingen. Salary depends on experience and is based on German regulations TVöD-VKA-13 with a factor of 100%.

Start date: March 2024 or a 1-3 months later

Research environment

The CRC 1528 "Cognition of Interaction" chaired by Prof. Alexander Gail and consists of PIs Behavioral Biology, Cognitive Psychology, Computational Neuroscience, and Systems Neuroscience. The unit integrates world-class experts in computational modeling and cutting-edge neuroscience research in humans and primates. All projects work on related questions with a lot of opportunities to work and interact with other groups in Göttingen.

The "Valuation and Social Decision-Making" group is one of currently 11 research groups at the Institute for Systems Neuroscience at the University Medical Center Hamburg-Eppendorf (UKE), Germany. The institute provides a vibrant, multidisciplinary, and highly international research environment with many interactions between its members and several regular common events (e.g. methods meetings, lecture series). Our graduate school is a member of the Hamburg Brain School and the Network of European Neuroscience Schools (NENS). The lab language is English. The institute hosts a 3T PRISMA MRI scanner, an EEG hyperscanning and eye-tracking lab, TMS, virtual reality and behavioral labs that allow us to easily and quickly acquire data from a variety of complementing modalities.

Requirements for the position

- Strong motivation and diligence to carry out a challenging and complex, but also exciting research project.
- Ph.D. in cognitive neuroscience or a related field.
- Strong experience in programming (MATLAB, R, Python)
- Some prior experience in computational cognitive modeling and neuroimaging analyses

Application

Applications are accepted until the position is filled. If you are interested, please send a single PDF document including your CV, a brief statement of research interest and research experience (including your modeling experience), and the contact details of two academic references to Jan Gläscher (glaescher@uke.de). Informal inquiries are welcome.