



Postdoctoral position on real-time layer-fMRI at 7T

The Max Planck Institute for Human Cognitive and Brain Sciences (MPI CBS) in Leipzig (Germany) invites applications for a **Postdoctoral Researcher Position** in the Department of Neurophysics with Dr. Romy Lorenz and Prof. Dr. Nikolaus Weiskopf.

We are looking for an ambitious postdoc interested in pushing the frontiers of high-resolution fMRI with the aim to resolve laminar activation in higher-level cognitive brain regions in *real-time*. In this novel and highly ambitious project, we want to combine real-time fMRI at 7T with machine learning (i.e., neuroadaptive Bayesian optimization) to advance our understanding about the specific functional role of different layers in higher-level brain regions. The postdoc will develop methods for and conduct *offline* (i.e., not real-time) and *online* (i.e., real-time) experiments with healthy human participants undergoing different cognitive tasks in the 7T scanner. The postdoc will compare different MR acquisition sequences (e.g., gradient-echo BOLD and VASO) and develop offline as well as real-time laminar analyses pipelines of 7T fMRI data. Dr. Romy Lorenz is also affiliated with the University of Cambridge and Stanford University; the postdoc will have the opportunity to benefit from our network of international collaborators. This project is funded by the Klaus Tschira Foundation (PI: RL) and the Max Planck Society.

The ideal candidate should have a strong interest in research on high-level cognition and curiosity for real-time and closed-loop experimentation with machine learning. A strong background in fMRI data analysis is essential. The candidate needs to be proficient in MRI data acquisition (i.e., can operate the scanner and modify scanning protocols) as well as MRI data analyses packages (e.g., FSL/SPM and Freesurfer). Strong programming skills in Bash, Matlab and/or Python are required. Prior experience with 7T functional imaging is highly desirable but not necessary. Equally, experience with machine learning-methods and data/code sharing platforms (e.g. GitHub) are desirable. Candidates are expected to have a PhD in physics, computer science, mathematics, biomedical engineering, or cognitive (neuro)science and psychology.

The Max Planck Institute offers a world-leading research environment and the postdoc will have access to the latest cutting-edge MRI hardware (including a Siemens Terra 7T, Prisma 3T, Verio 3T and 3T Connectom equipped with 300mT/m gradients) and other excellent research facilities (306-channel MEG, EEG, virtual reality, eye-tracking, TMS/tES). Dedicated support staff will assist with the recruitment of study participants and a team of MR physicists will support the postdoc in the technical realisation of the project. The Institute offers a vibrant and engaging community of international researchers. The working language is English. Leipzig has been called “Germany’s new cultural hot spot” (The Guardian) and is located just a little over an hour train ride south of the center of Berlin.

The starting date for the position is **1st September 2020**. The duration of the post is **2 years**. Remuneration is based on the pay scale of the Max Planck Society. Female and international applicants are particularly encouraged to apply. The Max-Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals.

To apply, please submit a single PDF file containing a curriculum vitae (including publication list), personal statement (describing your personal qualifications, research interests and motivation for applying), contact information of three referees and academic certificates (PhD, Diploma/Master, Bachelor certificates). Please submit your application via our online system at <http://www.cbs.mpg.de/vacancies> (subject heading: “**PD 05/20**”). The deadline for application submission is **6th July 2020**. Interviews of shortlisted candidates will take place likely via Zoom between 13th-17th July 2020.

In case of questions, please contact Romy Lorenz at lorenzr@cbs.mpg.de.