Join Our Research Team: Engineering the Mind

Research Positions Available (m/f/d)

Are you passionate about understanding the intricacies of the human mind and advancing mental health treatments? Do you thrive in an interdisciplinary environment that combines engineering, physics, psychology, and medicine? If so, we invite you to apply for research positions in our lab at the University of Marburg.

Our lab. Our research lab is dedicated to unraveling the engineering principles behind behavioral, neural, and psychological dynamics in humans. We aim to understand how these dynamics are altered in psychiatric disorders and leverage this knowledge to improve individualized treatments through innovative closed-loop interventions. Our work spans dynamical systems theory, network control theory, and machine learning, utilizing a variety of data sources, including neuroimaging (fMRI, DTI, T1, EEG) and neural stimulation techniques (ECT, tVNS). We are part of the Department of Psychiatry and Psychotherapy at the University of Marburg and collaborate with renowned consortiums such as DFG SFB/TRR 393, The Adaptive Mind (TAM), SFB/TRR 393, Center for Mind, Brain, and Behavior (CMBB), and the National Center for Affective Disorders (NCAD).

Joining our team means engaging in groundbreaking research at the intersection of mental health, neuroscience, and artificial intelligence. You will work alongside experts from diverse fields, fostering a rich, collaborative environment. You will have access to state-of-the-art hardware, software, and large-scale neuroimaging and mental health datasets. Moreover, you will enjoy the flexibility and independence to pursue your research interests and develop your ideas with full support from our lab.

More info: https://www.psycontrol-lab.de/

The positions and your profile. We are seeking highly motivated researchers (interns, PhDs, Postdocs) with expertise in at least two of the following areas: Dynamical Systems Theory, Machine Learning, Generative AI, and Neuroimaging. A strong interest in mental health research, proficiency in coding, and a good command of English are essential. Positions are funded for 6 months to 4 years, with a flexible starting date between 01.10.2024 and 01.01.2025.

To determine if you are a good fit for our team, please review the research papers listed at the end of this page to see if you understand and are passionate about conducting similar research.

Application process. To apply, please send your detailed CV, highlighting your programming skills and previous publications, to hamidreza.jamalabadi@uni-marburg.de by 31.08.2024. For informal inquiries, feel free to contact Prof. Jamalabadi at the same email address.

References:

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3. Jamalabadi, H., Koppe, G., Nozari, E., & Hahn, T. (2023). Engineering the Mind: Actionable Technical Requirements for Innovation in Clinical Neuroscience.
4. Stocker, J. E., Koppe, G., Reich, H., Heshmati, S., Kittel-Schneider, S., Hofmann, S. G., ... & Jamalabadi, H. (2023). Formalizing psychological interventions through network control theory. Scientific Reports, 13(1), 13830.
5. Winter, N. R., Blanke, J., Leenings, R., Ernsting, J., Fisch, L., Sarink, K., ... & Hahn, T. (2024). A Systematic Evaluation of Machine Learning–Based Biomarkers for Major Depressive Disorder. JAMA psychiatry, 81(4), 386-395.
6. Stocker, J. E., Nozari, E., van Vugt, M., Jansen, A., & Jamalabadi, H. (2023). Network controllability measures of subnetworks: implications for neurosciences. Journal of Neural Engineering, 20(1), 016044.
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