

# Amin Saberi

PhD Student at Cognitive Neurogenetics Lab  
Max Planck Institute for Human Cognitive and Brain Sciences  
Institute of Neuroscience and Medicine (INM-7), Research Center Jülich  
Institute of Systems Neuroscience, Heinrich Heine University Düsseldorf

email: [saberi@cbs.mpg.de](mailto:saberi@cbs.mpg.de)  
[a.saberi@fz-juelich.de](mailto:a.saberi@fz-juelich.de)  
[amnsbr@gmail.com](mailto:amnsbr@gmail.com)  
website: [amnsbr.github.io](https://amnsbr.github.io)

## EDUCATION

2021–      Ph.D., Heinrich Heine University Düsseldorf  
2011–19    M.D., Mashhad University of Medical Sciences

## PROFESSIONAL EXPERIENCE

2021–      Max Planck Institute for Human Cognitive and Brain Sciences / Research Center Jülich  
              *Doctoral Student*  
2018–21    Institute of Medical Science and Technology, Shahid Beheshti University  
              *Researcher*  
2017–18    Mashhad University of Medical Sciences  
              *Medical Intern*

## RESEARCH AREAS

Brain imaging, Computational neuroscience, Psychiatry, Cortical microstructure, Brain development

## SKILLS

Programming (Python, C/C++, CUDA, R & Matlab), Structural and functional MRI analysis, Whole-brain dynamical modelling, Neuroimaging and clinical meta-analysis, Statistical analysis, High performance computing

## PUBLICATIONS

- 2024      Küchenhoff, S., Bayrak, Ş., Zsido, R. G., **Saberi, A.**, Bernhardt, B. C., Weis, S., ... Valk, S. L. \* "Relating sex-bias in human cortical and hippocampal microstructure to sex hormones." *Nature Communications*, 15(1), 1–19. doi:10.1038/s41467-024-51459-7
- 2024      Elberse, J. D., **Saberi, A.**, Ahmadi, R., Changizi, M., Bi, H., Hoffstaedter, F., ... Tahmasian, M.\* Alzheimer's Disease Neuroimaging Initiative. "The interplay between insomnia symptoms and Alzheimer's Disease across three main brain networks." *Sleep*, zsa145. doi:10.1093/sleep/zsa145
- 2024      **Saberi, A.**, Wischnewski, K. J., Jung, K., Lotter, L. D., Schaare, H. L., Banaschewski, T., ... Valk, S. L.\* "Adolescent maturation of cortical excitation-inhibition balance based on individualized biophysical network modeling." *bioRxiv*. doi:10.1101/2024.06.18.599509

- 2024 Wan, B., **Saberi, A.**, Paquola, C., Schaare, H. L., Hettwer, M. D., Royer, J., ... Valk, S. L.\* "Microstructural asymmetry in the human cortex." *bioRxiv*. doi:10.1101/2024.04.08.587194
- 2024 John, A., Hettwer, M. D., Schaare, H. L., **Saberi, A.**, Bayrak, Ş., Wan, B., ... Valk, S. L.\* "A Multimodal Characterization of Low-Dimensional Thalamocortical Structural Connectivity Patterns." *bioRxiv*. doi:10.1101/2024.02.01.578366
- 2023 **Saberi, A.**, Ebneabbasi, A., Rahimi, S., Sarebannejad, S., Sen, Z. D., Graf, H., ... Tahmasian, M.\* "Convergent functional effects of antidepressants in major depressive disorder: A neuroimaging meta-analysis." *medRxiv*. doi:10.1101/2023.11.24.23298991
- 2023 **Saberi, A.**, Paquola, C., Wagstyl, K., Hettwer, M., Bernhardt, B.C., Eickhoff, S.B., Valk, S.L.\* "The regional variation of laminar thickness in the human isocortex is related to cortical hierarchy and interregional connectivity." *PLOS Biology*. doi:10.1371/journal.pbio.3002365
- 2023 Lotter, L. D., **Saberi, A.**, Hansen, J. Y., Misic, B., Barker, G. J., Bokde, A. L. W., Desrivieres, S., Flor, H., Grigis, A., Garavan, H., Gowland, P., Heinz, A., Brühl, R., Martinot, J.-L., Paillère, M.-L., Artiges, E., Orfanos, D. P., Paus, T., Poustka, L., ... Dukart, J.\* "Human cortex development is shaped by molecular and cellular brain systems." *bioRxiv*. doi:10.1101/2023.05.05.539537
- 2023 Maleki Balajoo, S., Eickhoff, S. B., Masouleh, S. K., Plachti, A., Waite, L., **Saberi, A.**, Bahri, M. A., Bastin, C., Salmon, E., Hoffstaedter, F., Palomero-Gallagher, N., Genon, S.\* "Hippocampal metabolic subregions and networks: Behavioral, molecular, and pathological aging profiles." *Alzheimer's & Dementia*. doi:10.1002/alz.13056
- 2022 Hettwer, M. D., **Saberi, A.**, Fan, Y.-S., Valk, S. L.\* "Schizophrenia and Macroscale Brain Structure: Genes in Context." *Biological Psychiatry*, 92(4), 258–260. doi:10.1016/j.biopsych.2022.06.010
- 2022 Kamalian, A., Khodadadifar, T., **Saberi, A.**, Masoudi, M., Camilleri, J. A., Eickhoff, C. R., ... Tahmasian, M.\* "Convergent regional brain abnormalities in behavioral variant frontotemporal dementia: A neuroimaging meta-analysis of 73 studies." *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring*, 14(1), e12318. doi:10.1002/dad2.12318
- 2022 Ghodsi, H., Rahimi, H. R., Aghili, S. M., **Saberi, A.**, Shoeibi, A.\* "Evaluation of curcumin as add-on therapy in patients with Parkinson's disease: A pilot randomized, triple-blind, placebo-controlled trial." *Clinical Neurology and Neurosurgery*, 107300. doi:10.1016/j.clineuro.2022.107300
- 2022 Rahimi Jafari, S., Sareban Nejad, S., **Saberi, A.**, Khazaie, H., Camilleri, J. A., Eickhoff, C. R., Eickhoff, S. B., Tahmasian, M.\* "Is there any consistent structural and functional brain abnormality in narcolepsy? A meta-analytic perspective." *Neuroscience & Biobehavioral Reviews*, 132, 1181–1182. doi: 10.1016/j.neubiorev.2021.10.034
- 2021 **Saberi, A.**, Mohammadi, E., Zarei, M., Eickhoff, S. B., Tahmasian, M.\* "Structural and functional neuroimaging of late-life depression: A coordinate-based meta-analysis." *Brain Imaging and Behavior*, 16, 518–531. doi: 10.1007/s11682-021-00494-9
- 2021 **Saberi, A.**, Abdolalizadeh, A., Mohammadi, E., Nahayati, M. A., Bagheri, H., Shekarchi, B., Kargar, J.\* "Thalamic shape abnormalities in patients with multiple sclerosis-related fatigue." *Neuroreport*, 32(6), 438–442. doi: 10.1097/WNR.0000000000001616
- 2021 Tahmasian, M.\*, Aleman, A., Andreassen, O. A., Arab, Z., Baillet, M., Benedetti, F., Bresser, T., Bright, J., Chee, M. W. L., Chylinski, D., Cheng, W., Deantoni, M., Dresler, M., Eickhoff, S. B., Eickhoff, C. R., Elvsåshagen, T., Feng, J., Foster-Dingley, J. C.,

- Ganjgahi, H., ... **Saberi, A.**, ... Zarei, M. "ENIGMA-Sleep: Challenges, opportunities, and the road map." *Journal of Sleep Research*, e13347. doi: 10.1111/jsr.13347
- 2021 Bijari, M., Jangjoo, S., Emami, N., Raji, S., Mottaghi, M., Moallem, R., Jangjoo, A., **Saberi, A.\*** "The Accuracy of Visceral Adiposity Index for the Screening of Metabolic Syndrome: A Systematic Review and Meta-Analysis." *International Journal of Endocrinology*, 2021, e6684627. doi: 10.1155/2021/6684627
- 2021 Ghodsi, A., Bijari, M., Alamdaran, S. A., **Saberi, A.**, Mahmoudabadi, E., Balali, M. R., Ghahremani, S.\* "Chest computed tomography findings of COVID-19 in children younger than 1 year: A systematic review." *World Journal of Pediatrics*, 17, 234–241. doi: 10.1007/s12519-021-00424-1
- 2021 Khorrampazhouh, N., Omranzadeh, A., Fazeli, B., Zarifian, A., Ghodsi, A., Amirkhanlou, F., **Saberi, A.**, ... Moghadam, M. D.\* "A Systematic Review and Meta-analysis of Clinical Studies on Ankylosing Spondylitis and Neutrophil to Lymphocyte Ratio." *Current Rheumatology Reviews*, 18, 160-167. doi: 10.2174/1573397117666210921114431
- 2020 Rezaeitalab, F., Esmaeili, M.\*, **Saberi, A.**, Vahidi, Z., Emadzadeh, M., Rahimi, H. R., Ramezani, N., Mirshabani-Toloti, S. Z. "Predictive value of inflammatory markers for functional outcomes in patients with ischemic stroke." *Current Journal of Neurology*, 19(2), 47–52. doi: 10.18502/cjn.v19i2.4940
- 2017 Ganji, A., Esmaeilzadeh, A., Ghanaei, O., **Saberi, A.\***, Taherzadeh, D., Sazgarnia, S., Mayabi Joghali, Z., Zirak, M., AbdollahRamazani, S., Zarifmahmoudi, L. "Predictive value of red blood cell distribution width for mortality in patients with acute pancreatitis: A systematic review and meta-analysis." *Medical Journal of the Islamic Republic of Iran*, 31, 124. doi: 10.14196/mjiri.31.124

## INVITED TALKS

- 2024 "Adolescent maturation of cortical excitation-inhibition balance based on individualized and GPU-accelerated biophysical network modeling." *Gradients of Brain Organization Workshop* (Seoul, South Korea)

## CONFERENCE PRESENTATIONS

- 2024 "cuBNM: GPU-Accelerated Biophysical Network Modeling." *30<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping* (Seoul, South Korea).
- 2024 "Adolescent maturation of cortical excitation-inhibition balance based on individualized biophysical network modeling." *30<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping* (Seoul, South Korea).
- 2023 "Whole-brain dynamical modeling of the adolescent developing brain." *32<sup>nd</sup> Annual Computational Neuroscience Meeting* (Leipzig, Germany), *29<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping* (Montreal, Canada) & *7<sup>th</sup> BigBrain Workshop* (Reykjavík, Iceland).
- 2022 "Laminar thickness covariance in the BigBrain in association to cortical hierarchy and connectivity." *qMRI Conference* (Online).
- 2022 "Organization of laminar thickness covariance in the human cortex." *6<sup>th</sup> BigBrain Workshop* (Zadar, Croatia) & *28<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping* (Glasgow, United Kingdom).

- 2020 “Brain mediators of the vicarious facilitation of pain.” *7<sup>th</sup> Iranian Human Brain Mapping Congress* (Tehran, Iran).
- 2019 “A coordinate based meta-analysis on the brain functional and structural changes in late life depression.” *6<sup>th</sup> Iranian Human Brain Mapping Congress* (Tehran, Iran).
- 2017 “Neutrophil to lymphocyte ratio as a prognostic marker in glioblastoma multiforme: a systematic review and meta-analysis.” *The 1<sup>st</sup> International Neuroinflammation Congress* (Mashhad, Iran).
- 2016 “Cerebral blood volume as a prognostic marker in glioblastoma patients treated with bevacizumab: a systematic review.” *1<sup>st</sup> International Razavi Cancer Congress* (Mashhad, Iran).
- 2012 “The effect of stress on working memory in individuals with different personality traits.” *1<sup>st</sup> International Anxiety Congress* (Mashhad, Iran).

## SOFTWARE DEVELOPMENT

“cuBNM”, a toolbox for biophysical network modeling on GPUs.

“NiMARE-GPU”, GPU-accelerated activation likelihood estimation meta-analysis.

“Review Speed Analytics”, an app for extracting and presenting peer review speed data of journal articles

## TEACHING & SUPERVISION

- 2024 Co-supervisor for BSc internship of Delaram Roozbehani
- 2024 “Methods in Neuroscience” (1 session, co-taught), Leipzig University, Leipzig, Germany
- 2023 Co-supervisor for BSc internship of Anna-Lea Beyer
- 2022 Co-supervisor for MSc internship of Marie Rademacher
- 2022 Co-supervisor for BSc internship of Julia Rakowski
- 2021 “Python for Data Science” (10 sessions), Online
- 2020 “NeuromatchAcademy, an international computational neuroscience crash course” (15 days, teaching assistant), Online
- 2017 “Meta-analysis of prognostic and diagnostic studies workshop” (1 session), Mashhad University of Medical Sciences, Mashhad, Iran

## GRANTS AND AWARDS

- 2024 Heine Research Academies Travel Grant (1500 €), Germany
- 2023 Granted access to Jülich Supercomputing Center, Germany
- 2015 Awarded membership of National Elites Foundation, Iran

## PEER REVIEW

Reviewed academic journal articles for *Nature Reviews Neuroscience* (as co-reviewer), *Brain Structure and Function*, *Translational Neuroscience* and *Scientific Reports*.

## **PROFESSIONAL MEMBERSHIPS**

Organization for Computational Neurosciences

Organization for Human Brain Mapping

ENIGMA-Sleep group

Iranian Medical Council