

Amin Saberi

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Max Planck Institute for Human Cognitive and Brain Sciences
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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 Wan, B.* , **Saberi, A.**, Paquola, C., Schaare, H. L., Hettwer, M. D., Royer, J., . . . Valk, S. L.* “Microstructural asymmetry in the human cortex”. *Nature Communications*, 15(1), 10124. doi:10.1038/s41467-024-54243-9
2024 Magielse, N.* , Manoli, A., Eickhoff, S. B., Fox, P. T., **Saberi, A.**[†], Valk, S. L.^{†*} “Bias-accounting meta-analyses overcome cerebellar neglect to refine the cerebellar behavioral topography”. *bioRxiv*. doi:10.1101/2024.10.31.621398
2024 **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.” *Molecular Psychiatry*. doi:10.1038/s41380-024-02780-6

- 2024 Lotter, L. D., **Saberi, A.**, Hansen, J. Y., Mistic, B., Paquola, C., Barker, G. J., ... Dukart, J.* “Regional patterns of human cortex development correlate with underlying neurobiology.” *Nature Communications*, 15(1), 7987. doi:10.1038/s41467-024-52366-7
- 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*, zsae145. doi:10.1093/sleep/zsae145
- 2024 **Saberi, A.**, Wischniewski, 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 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.**, 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 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

* corresponding author, † equal contribution

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." *30th Annual Meeting of the Organization for Human Brain Mapping* (Seoul, South Korea) / *8th BigBrain Workshop* (Padua, Italy) / *Bernstein Conference* (Frankfurt, Germany)
- 2023-24 "Adolescent maturation of cortical excitation-inhibition balance based on individualized biophysical network modeling." *29th Annual Meeting of the Organization for Human Brain Mapping* (Montreal, Canada) / *32nd Annual Computational Neuroscience Meeting* (Leipzig, Germany) / *7th BigBrain Workshop* (Reykjavík, Iceland) / *30th Annual Meeting of the Organization for Human Brain Mapping* (Seoul, South Korea) / *Bernstein Conference* (Frankfurt, Germany)
- 2021-23 "Laminar thickness covariance in the BigBrain in association to cortical hierarchy and connectivity." *5th BigBrain Workshop* (Online) / *28th Annual Meeting of the Organization for Human Brain Mapping* (Glasgow, United Kingdom) / *6th BigBrain Workshop* (Zadar, Croatia) / *qMRI Conference* (Online)

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