

Amin Saberi

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EDUCATION

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

PROFESSIONAL EXPERIENCE

- 2025– Max Planck Institute for Human Cognitive and Brain Sciences, Germany
Postdoctoral Researcher
- 2025– Research Center Jülich, Germany
Guest Researcher
- 2021–25 Max Planck Institute for Human Cognitive and Brain Sciences / Research Center Jülich, Germany
Doctoral Researcher
- 2018–21 Institute of Medical Science and Technology, Iran
Research Intern
- 2017–18 Mashhad University of Medical Sciences, Iran
Medical Intern

RESEARCH AREAS

Brain imaging, Computational neuroscience, Psychiatry, Meta-analyses, Brain dynamics, Neurodevelopment

SKILLS

Programming (Python, C/C++, CUDA, R & Matlab), Functional and structural MRI analysis, Brain network modelling, Coordinate-based and effect-size-based meta-analyses, Statistical analysis, High performance computing, Git/GitHub, Datalad

PUBLICATIONS

- 2025 Saberi, A.*, Wan, B., Wischniewski, K. J., Jung, K., Sasse, L., Hoffstaedter, F., ... Valk, S. L.* “**cubNM: GPU-Accelerated Brain Network Modeling.**” *bioRxiv*. doi:10.1101/2025.11.13.688224
- 2025 Magielse, N.*, Manoli, A., Eickhoff, S. B., Fox, P. T., Saberi, A.†, Valk, S. L.†* “**A bias-accounting meta-analytic approach refines and expands the cerebellar behavioral topography.**” *Neuroscience & Biobehavioral Reviews*, 179, 106418. doi:10.1016/j.neubiorev.2025.106418

- 2025 Saberi, A., Wischnewski, K. J., Jung, K., Lotter, L. D., Schaare, H. L., Banaschewski, T., ... Valk, S. L.* “**Adolescent maturation of cortical excitation-inhibition ratio based on individualized biophysical network modeling.**” *Science Advances*, 11(23), eadr8164. doi:10.1126/sciadv.adr8164
- 2025 John, A.*, Hettwer, M. D., Schaare, H. L., Saberi, A., Bayrak, S., Wan, B., ... Valk, S. L.* “**A multimodal characterization of low-dimensional thalamocortical structural connectivity patterns.**” *Communications Biology*, 8(1), 1–15. doi:10.1038/s42003-025-07528-8
- 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 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., Misic, 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, S., 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
- 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 Joghah, Z., Zirak, M., AbdolahRamazani, S., Zarifmohmoudi, 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 & SYMPOSIUM PRESENTATIONS

- 2025 “Individualized biophysical network modeling for investigating excitation-inhibition ratio and its adolescent maturation.” *Computational Psychiatry Conference* (Tübingen, Germany)
- 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* (Online)[‡]
- 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)

[‡] contributed talk

SOFTWARE DEVELOPMENT

- “cuBNM”, a toolbox for brain network modeling on GPUs.
- “NiMARE-GPU”, GPU-accelerated activation likelihood estimation meta-analysis.
- “Review Speed Analytics”, an app for extracting and reporting peer review speed data of journal articles

TEACHING & SUPERVISION

- 2025 Co-supervisor for BSc internship of Klara Hamker
- 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 Compute Project (grant no. eidev) at 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), *Nature Human Behavior*, *Scientific Data*, *Brain Structure and Function*, *Translational Neuroscience*, *Scientific Reports*, *Communications Biology*, and *Imaging Neuroscience*.

PROFESSIONAL MEMBERSHIPS

- Organization for Human Brain Mapping
Iranian Medical Council