Curriculum Vitae

PERSONAL

Saba Amiri, Eng., Ph.D.

Date of Birth: 23.09.1983

Nationality: Iranian

Marital status: Married

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Research Gate: www.researchgate.net/profile/Saba-Amiri-4

Google Scholar: scholar.google.com/citations?user=Ir1PORYAAAAJ&hl=en

HIGHER EDUCATION

2021 Biomedical Engineering (Ph.D.), Tehran University of Medical Sciences

2013 Biomedical Engineering (M.Sc.), Shiraz University of Medical Sciences

AREAS OF EXPERTISE

- Biomedical Engineering
- Neural Engineering
- Medical Imaging and signal processing
- Neuroimaging
- Neuroscience
- Neurorehabilitation
- Machine learning
- Deep Brain Stimulation
- Expert systems: Artificial Neural Network

SUMMARY OF PROFESSIONAL POSTIONS:

2022-2023 **Assistant professor,** Neuroscience Research Center, Shahid Beheshti University of Medical Science, Tehran, Iran

2018-2021 **Research Assistant**, Neural Engineering and Rehabilitation Research Center, Tehran University of Medical Sciences, Tehran

2016-2021 **Clinical Researcher**, Imam Komeini Hospital Complex, Tehran University of Medical Sciences

2019-2020 **Clinical Researcher**, Hazrate Rasoole Akram Hospital, Iran University of Medical Sciences

2018-2020 **Clinical Researcher**, Rozbeh Hospital, Tehran University of Medical Sciences

2017-2022 **Research Collaborator**, National Brain Mapping Laboratory

2017-2022 **Research Collaborator**, Iran University of Medical Sciences

2021-2022 **Research Collaborator,** University of Antwerp

2017-2018 **Clinical Trainee**, neuroanatory and neurophysiology, Baghiyatollah Hospital, Tehran

2016-2018 **Research Assistant**, Neural Engineering and Rehabilitation Research Center, Noorafshar Hospital, Tehran

2022-2023 **Lecturer**, Neuroscience Research Center, Shahid Beheshti University of Medical Science, Tehran, Iran: Artificial intelligent in Neuroscience

2022-2023 **Lecturer**, Neuroscience Research Center, Shahid Beheshti University of Medical Science, Tehran, Iran: Clinical Neuroimaging

2012-2013 **Lecturer**, Azad University, Kazeroon Branch: Medical Physics, Protection and safety and general standards in the hospital, Electronics Lab, Control lab

2012-2013 **Lecturer**, Pasargad Higher Education Institute, Shiraz: Switching, Principles of signaling

2011-2013 **Lecturer**, Fazel Higher Education Institute, Shiraz: Signal processing

HONORS AND AWARDS

2022. First rank in the competition of "Value Creation of Clinical Research", 6th Brain Mapping Symposium, Iran

2022. The winner best platform presentation award for poster at the 2nd faculty scientific meeting, Iran.

2015. Ranked first in national Ph.D. Entrance exam in Biomedical Engineering, Iran

2010. Ranked 7th in national M.Sc. Entrance exam in Biomedical Engineering, Iran

2021. Ranked second among Ph.D students in Biomedical Engineering, Tehran University of Medical Sciences

2013. Ranked second among M.Sc students in Biomedical Engineering, Shiraz University of Medical Sciences

RESEARCH PROJECTS

Shahid Beheshti University of Medical Science (SBMU) 2022-2023

Differential diagnosis of the role of Heschl's gyrus in creating auditory hallucinations between schizophrenia patients and methamphetamine abusers

Shahid Beheshti University of Medical Science (SBMU) 2022-2023

Prediction of post operative cognitive dysfunction using structural MRI

Shahid Beheshti University of Medical Science (SBMU) 2022-2023

Automatic segmentation and analysis of western blot produced protein bands using image processing

Shahid Beheshti University of Medical Science (SBMU) 2022-2023

The Effect of Transcranial Direct Current Stimulation Alone and in Combination with Cognitive Rehabilitation on Cognitive Functions and Neuronal Plasticity in Patients with Multiple Sclerosis by Diffusion Tensor Imaging

Tehran University of Medical Sciences (TUMS) 2015 –2022

Prediction of Appropriate Targets and Parameters of Deep Brain Stimulation (DBS) for a Rapidly-Acting Treatment of Treatment-Resistant Depression

Tehran University of Medical Sciences (TUMS) 2020 – 2022

Brain functional and effective connectivity in individuals with psychogenic nonepileptic seizures

Tehran University of Medical Sciences (TUMS) 2020 – 2022

Brain structural connectivity in individuals with psychogenic nonepileptic seizures

Iran University of Medical Sciences (IUMS) 2020 – 2023

Emotional communication and default mode network connectivity before and after psychodynamic psychotherapy in patients with borderline personality disorder

University of Antwerp, Belgium 2021– 2023

Analysis of the longitudinal fMRI in Alzheimer Disease

Tehran University of Medical Sciences (TUMS) 2017 – 2020

Task design and implementation for abnormal activity detection of regional targets for Deep Brain Stimulation (DBS) treatment of individuals with Treatment Resistant Depression

Shiraz University of Medical Sciences (SUMS) 2010 – 2013

Automatic Cerebral Magnetic Resonance Image Segmentation using Artificial Neural Network

COMPUTER SKILLS

- Neuroimaging software:
  - Statistical Parametric Mapping (SPM),
  - FMRIB Software Library (FSL),
  - Data Processing & Analysis for Brain Imaging (DPAPI),
  - Data Processing Assistant for Resting-State fMRI (DPARSF),
  - Brain Analysis using Graph Theory (BRAPH),
- ExploreDTI,
- Trackvis,
- DSIstudio,
- Statistical Software: SPSS, Minitab
- Higher-level programming language: C#, Matlab, python
- Others: MS-OFFICE (WORD, EXCEL, POWERPOINT), Adobe Photoshop

CLINICAL SKILLS

- Getting familiar and gaining experience working with patients with mental disorders:
  - major depressive disorder (MDD),
  - treatment-resistant disorder (TRD),
  - psychogenic non-epileptic seizures (PNES),
  - epilepsy

- fMRI data collection
- DTI data collection
- Clinical interpretation of neuroimages
- Investigation of mechanisms underlying mental disorders using advanced neuroimaging analyses

LANGUAGES

Persian and English

SCHOLARLY BIBLIOGRAPHY

1. **Amiri S**, Mohammad Arbabi, Milad Rahimi, Mansour Parvaresh- Rizi, Mehdi M. Mirbagheri (2023): Effective Connectivity Between Deep Brain Stimulation Targets in Individuals with Treatment-Resistant Depression. *Brain Commun 5: fcad256*.

2. **Amiri S**, Fatemeh Sadat Mirfazeli, Jordan Grafman, Mehrdad Eftekhar, Nazila Karimzad, Maryam Mohebbi, Homa Mohammadsadeghi, Shabnam Nohesara (2023): Default mode network connectivity as a possible biomarker for emotional self-awareness improvement in borderline personality disorder. *Ann Gen Psychiatry 22:1–12*.

3. **Amiri S**, Arbabi M, Kazemi K, Parvaresh-Rizi M, Mirbagheri MM (2021): Characterization of brain functional connectivity in treatment-resistant depression. *Progress in Neuro-Psychopharmacology and Biological Psychiatry* 110346.

4. **Amiri S**, Arbabi M, Rahimi M, Badragheh F, Zibadi HA, Asadi-Pooya AA, Mirbagheri MM (2021): Effective connectivity between emotional and motor brain regions in people with psychogenic nonepileptic seizures (PNES). *Epilepsy & Behavior* 122: 108085.

5. **Amiri S**, Mirbagheri MM, Asadi-Pooya AA, Badragheh F, Zibadi HA, Arbabi M (2021): Brain functional connectivity in individuals with psychogenic nonepileptic seizures (PNES): An application of graph theory. *Epilepsy & Behavior* 114: 107565.

6. **Amiri S**, Monica Van Den Berg, Mohammad-Reza Nazem-Zadeh, Marleen Verhoye, Mahmood Amiri, Georgios A. Keliris (2022): Nodal Degree Centrality in the Default Mode Like Network of the Tgf344-Ad Alzheimer's Disease Rat Model as a Measure of Early Network Alterations. *Journal of Alzheimer's Disease* (submitted).

7. **Amiri S**, Mehvari-Habibabadi J, Mohammadi-Mobarakeh N, Hashemi-Fesharaki SS, Mirbagheri MM, Elisevich K, Nazem-Zadeh M-R (2020): Graph theory application with functional connectivity to distinguish left from right temporal lobe epilepsy. *Epilepsy Research* 167: 106449.

8. Arbabi M, **Amiri S**, Badragheh F, Mirbagheri MM, Asadi-Pooya AA (2020): 22 Whole-brain functional connectivity based on the graph theory analysiisn Psychogenic Non-Epileptic Seizures (PNES). BMJ Publishing Group Ltd.

9. **Amiri S,** Arbabi M, Kazemi K, Parvaresh-Rizi M, Mirbagheri MM (2019): Resting-State Functional Connectivity in Popular Targets for Deep Brain Stimulation in the Treatment of Major Depression: An Application of a Graph Theory. *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS* 4334–4337.

10. Zareie M, Parsaei H, **Amiri S**, Awan MS, Ghofrani M (2018): Automatic segmentation of vertebrae in 3D CT images using adaptive fast 3D pulse coupled neural networks. *Australasian Physical and Engineering Sciences in Medicine* 41. https://doi.org/10.1007/s13246-018-0702-3

11. Rasooli AH, Ashtiyani M, Birgani PM, **Amiri S**, Mirmohammadi P, Deevband MR (2018): MRI segmentation using Fuzzy C-means and radial basis function neural networks. *Current Science* 115: 1091–1097.

12. **Amiri S**, Movahedi MM, Kazemi K, Parsaei H (2017): 3D cerebral MR image segmentation using multiple-classifier system. *Medical and Biological Engineering and Computing* 55: 353–364.

13. Parvin S, Mansouri M**, Amiri S,** Marzbani H, Kharazi MR, Mirbagheri MM (2016): Contribution of reflex hyper-excitability to muscle stiffness in children with cerebral palsy. *Biomedical Engineering and 2016 1st International Iranian Conference on Biomedical Engineering (ICBME), 2016 23rd Iranian Conference On* 89–92.

14. Marzbani H, Parvin S, **Amiri S**, Lotfian M, Kharazi MR, Azizi S, Mirbagheri MM (2016): The correlation between transcranial magnetic stimulation parameters and neuromuscular properties in children with cerebral palsy. *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS*, vol. 2016-Octob 2016-Octob: 5473–5476.

15. **Amiri S**, Movahedi MM, Kazemi K, Parsaei H (2013): An automated MR image segmentation system using multi-layer perceptron neural network. *Journal of biomedical physics & engineering* 3: 115.

REFERENCES

- Prof. Mehdi M Mirbagheri (Tehran University of Medical Science, Tehran, Iran, E-mail: Mehdi.northwestern@gmail.com)
- Prof. Mohammad Arbabi (Psychiatry, Psychosomatic Medicine Research Center Department, Tehran University of Medical Sciences, Tehran, Iran, E-mail: arbabimo@sina.tums.ac.ir, marbabid@gmail.com)
- Prof. Mansor Parvaresh-Rizi (Neurosurgery Department, Iran University of Medical Sciences (IUMS), Tehran, Iran, E-mail: parvareshrizi.m@iums.ac.ir , m_parvaresh@icloud.com)
- Prof. Kamran Kazemi (Electrical and Electronics Engineering Department, Shiraz University of Technology, Shiraz, Iran, E-mail: kazemi@sutech.ac.ir)
- Dr. Mohammad R Nazemzadeh (Medical Physics and Biomedical Engineering Department, Tehran University of Medical Sciences(TUMS), Tehran, Iran, E-mail: mnazemzadeh@tums.ac.ir)