Masoud Seraji

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Researcher and Lab Manager

- m.seraji@utexas.edu
- Linked in
- Google Scholar

Objective

Enthusiastic researcher with biomedical engineering background seeking a full-time PhD position

Research Interests

- Biological Signal Processing (EEG, ECG)
- Biological Image Processing (fMRI)
- Computational Neuroscience
- Cognitive Neuroscience
- Neural Networks
- Computational Modeling
- Brain Mapping
- Statistical Models
- Data Science
- Neuroimaging
- Functional Connectivity
- Visual Disorders
- Multiple Sclerosis
- Schizophrenia
- Depression
- Memory
- Aging
- Emotion

Research Experience

Memory and Aging Lab, UT Austin, Researcher and Lab Manager
Advisor: Prof. Audrey Duarte — Nov 2021 – Now

- Recorded, Preprocessed, and analyzed EEG data
- Recorded, Preprocessed, and analyzed fMRI data
- Designed and implemented cognitive tasks
- Worked with SPM, MarsBar, Psychopy, R, Brainvision, and Biopac systems
- Supervised and mentored more than six RAs in the Lab
- Solved multiple problems in sending triggers for the EEG rcordings

The NESH Lab, Research assistant
Advisor: Prof. Antje Ihlefeld — Jan 2021 – Aug 2021

- Worked with animals (gerbils)
- Trained gerbils in audio perception (go-No go) tasks
- Recorded behavioral data from gerbils

Krekelberg Neuroscience Laboratory, Rutgers University, Neuroscience researcher
Advisor: Prof. Bart Krekelberg — Jan 2020 – Jan 2021

- Recorded and analyzed EEG data with visual tasks as well as in resting state
- Designed and implemented visual tasks with *PsychoToolbox* in *MATLAB*
- Recorded and analyzed fMRI data from more than 30 subjects via eye tracker
- Worked with source localization (EGI), tACS, and tDCS (Neurostim) devices
- Designed Perceptual Echo task for controls and Schizophrenia patients
- Attended in CMBN workshops and seminars

The Cole Neurocognition Lab, Rutgers University, Research assistant
Advisor: Prof. Michael Cole — Aug. 2019 – Jan. 2020

- Analyzed and preprocessed fMRI data in MATLAB and Python
- Converted the Source localization codes from MATLAB to Python and Vise versa
- Worked on ActFlow Toolbox and CombinedFC method
- Attended in Brain Connectivity meetings

Biological Signal Processing Lab,K.N. Toosi University, Research assistant
Advisor: Prof. Maryam Mohebbi — Sep. 2015 – May 2018

- Recorded and analyzed EEG data from more than 40 subjects include normal and MS patients
- Worked with EEGlab, Fieldtrip, Brain Connectivity , and HERMES toolboxs
- Attended EEG workshop in National Brain Mapping Lab about recording and processing the data
- Designed specific visual tasks for Magno, Parvo, and Konio visual pathways in *Psychopy*
- Designed checkerboard tasks for MS patients
- Contributed in Kalman filter and ECG denoising projects

Teaching Assistant Experience

- Introduction to Neuroscince, Rutgers University — Fall 2020
- Medical Imaging Systems, K.N. Toosi University — Fall 2016
- Digital signal Processing, K.N. Toosi University — Fall 2015
- Signals and systems, Shahid Beheshti University — Fall 2013

Journal Review Activities

- Review Editor for Human Neuroscience in Frontiers in Human Neuroscience Journal
- Review Editor for Cognitive Neuroscience in Frontiers in Human Neuroscience Journal

Education

Rutgers University — Newark, NJ
M.S., Neuroscience — *Sep. 2018 – Aug 2021*
Graduate Coursework: MATLAB in Neuroscience (4.0), Critical Thinking (4.0)
Windows on Brain (4.0), Foundation in Neuroscience(4.0), (GPA: 3.9)
Thesis title: Transcranial Alternating Current Stimulation Affects Resting-state Functional Connectivity

K. N. Toosi University of Technology — Tehran, Iran
M.S., Biomedical Engineering — *Sep. 2015 – July 2018*
Graduate Coursework: Biological Signal Processing(4.0), Medical Imaging Systems(4.0)
Blind Source Separation(4.0), Pattern Recognition (GPA: 4.0)
Thesis title: Detection of Visual Pathways Disorders (Magno, Parvo, and Konio) in Patients with Multiple Sclerosis Using Visual Evoked Potential

Shahid Beheshti University — Tehran, Iran
B.S., Electrical Engineering — *Sep. 2010 – Jan 2015*
Thesis title: Sensitivity in Sigma-Delta Modulator

Honors and Awards

Rutgers research scholarship, Rutgers University, 2018 – 2021
Ranked 2nd selected M.Sc student, KNTU University of Technology, Tehran, Iran, 2018
Selected among top 1% of the SAT exam, Undergrad studies, 2010
Selected among top 5% of the SAT exam, Graduate studies, 2015

Technical Skills

- **Technical:**Preprocessing, Analyzing, and Interpreting EEG and fMRI Data
  Working with Psychopy, EEGlab, Fieldtrip, Brain Connectivity, FreeSurfer, MRIcroGL, SPM, Marsbar, HERMES, Brain Vison Analyzer toolboxes
- **Programming:** Python, MATLAB, C/C++, R
- **Document Creation:** Microsoft Office Suite, LaTex , Adobe Illustrator
- **Languages:** English (Fluent), Farsi, Arabic

Journal and Conference Papers

[1] E. Ebrahimzadeh, F. Fayaz, L. Rajabion, **M. Seraji**, M. Shmas, M. Asgarinejad, H. Soltanian-Zadeh, "Non-linear Processing of Extracted Components in Frontal Region and Machine Learning Approaches to Predict rTMS Treatment Response in Major Depressive Disorder,", Frontiers in Human Neuroscience (Submitted)
[2] E. Ebrahimzadeh, S. Saharkhiz, L. Rajabion, HB Oskouei, **M. Seraji**, F. Fayaz, S. Saliminia, S. Sadjadi, H. Soltanian-Zadeh, "Simultaneous electroencephalography-functional magnetic resonance imaging for assessment of human brain function,", Frontiers in System Neuroscience (2022)
[3] E. Ebrahimzadeh, M. Shams, **M. Seraji**, S. Sadjadi, L. Rajabion, H. Soltanian-Zadeh, "Localizing the Epileptic Foci through Simultaneous EEG-fMRI Recording: Template Component Cross-Correlation,", Frontiers in Neurology (2021)
[4] **M. Seraji**, M. Mohebbi, A. Safari, B. Krekelberg, "Multiple Sclerosis Reduces Synchrony of the Magnocellular Pathway,", PLOS ONE (2021)
[5] E. Ebrahimzadeh, M. Asgarinejad, S. Saliminia, S. Ashoori, **M. Seraji**, "Predicting Clinical Response To Transcranial Magnetic Stimulation in Major Depression Using Time-Frequency EEG Signal Processing,", Biomedical Engineering: Applications, Basis and Communications (2021)
[6] S. Sadjadi, E. Ebrahimzadeh, M. Shams, **M. Seraji**, H. Soltanian-Zadeh, "Localization of the Epileptic Foci using Simultaneous EEG-fMRI Recordings,", Frontiers in Neurology (2021)
[7] K. Raeisi, M. Mohebbi, M. Khazaei, **M. Seraji**, A. Yoonessi, "Phase-synchrony evaluation of EEG signals for Multiple Sclerosis diagnosis based on bivariate empirical mode decomposition during a visual task,", Journal of Computers in Biology and Medicine (2020)
[8] **M. Seraji**, M. Mohebbi, and A. Yoonessi, "Detection of Visual Pathways Disorders in Patients with Multiple Sclerosis Using Visual Evoked Potentials,", In BECNC 2018 conference Brain Function: From Experimental and Computational Neuroscience to Brain Engineering (2020)