Ashkan Alvand

WORK EXPERIENCES

Ph.D. thesis **July 2018 - present**
Graph theory analysis of functional and structural connectivity: Link with Auditory Processing Disorder

Graduate Teaching Assistant (GTA) **Mar 2021 - present**
Assistant teacher in the course *Psych 202*, Biopsychology

Research Assistant **July 2018 – Dec 2021**
School of Psychology, University of Auckland, Auckland, New Zealand

Research Associate **Mar 2016 - Mar 2018**
Institute for Cognitive and Brain Sciences, Shahid Beheshti University, Tehran, Iran

EDUCATION

Qualification: Doctor of Philosophy in Psychology **July 2018 – present**
Provider: University of Auckland

Qualification: Master of Information Technology in Computer Networking **Oct 2014 – Aug 2016**
Provider: Azad University, Garmsar Branch

Qualification: Bachelor of Information Technology **Oct 2010 – Sep 2014**
Provider: University of Mazandaran

Publications/Conference posters/Invited talks

- Milham, M., Petkov, C. I., Margulies, D. S., Schroeder, C. E., Basso, M. A., Belin, P., ... & Messinger, A. (2021). **Towards Next Generation Primate Neuroscience: A Collaboration-based Strategic Plan for Integrative Neuroimaging. DOI:** https://www.sciencedirect.com/science/article/pii/S0896627321007832
- Farnaz Faridi, Ashkan Alvand, Reza Khosrowabadi (2020). **Brain structural correlates of intelligence in ADHD individuals**, *Basic & Clinical Neuroscience.* http://dx.doi.org/10.32598/bcn.2021.2244.1
- Milham, M., Petkov, C. I., Margulies, D. S., Schroeder, C. E., Basso, M. A., Belin, P., ... & Messinger, A. (2020). **Accelerating the evolution of nonhuman primate neuroimaging**. Neuron, 105(4), 600-603. **DOI:** 10.1016/j.neuron.2019.12.023

Poster presentation

- Ashkan Alvand, Reza Khosroabadi, Kaveh Kavousi "**Graph analysis of brain functional connectivity in ADHD using task-free fMRI**", the 5th international conference on basic and clinical neuroscience, Tehran, Iran, December 2016.
- Ashkan Alvand*, Suzanne C. Purdy, Reece Roberts, Tracy Melzer, Catherine Morgan, Lynette J Tippett, Ian J Kirk and the BRNZ Collaboration "**Large-Scale network analysis of functional connectivity in Individuals with Mild Cognitive Impairment and Alzheimer Disease"**, BRNZ conference, Queenstown, New Zealand, April 14-16, 2021.

Oral presentation

- Seventeenth annual InHouse symposium: ***graph theory analysis of functional connectivity, links with central auditory processing***. Organized by school of Psychology at the University of Auckland (Feb 21, 2020).
- Cogneuro talk series***, Brain Functional Organization of children with Auditory Processing Disorder: Network Neuroscience approach***, Organized by department of Psychology at the University of Auckland (June 18, 2021).

Training/Course

- **PRIME-DE Workshop** **Sept 5-6, 2019**
  Held by Child Mind Institute and National Institute of Health (NIH) at the Wellcome Trust in London.
- **Mini FSL course** **Feb 18-22, 2019**
  Held by the University of Oxford, Dunedin, New Zealand, Funded by the University of Auckland
- **MRI Course** **April-June 2016**
  Held by Institute for Cognitive and Brain Sciences, Shahid Beheshti University, Tehran, Iran,

SKILLS & ATTRIBUTES

Neuroimaging applications

- f/MRI data preprocessing and denoising: Using open-source and inhouse pipelines such as fmriprep, scrubbing, Spike regression, ICA-AROMA, ICA-FIX, CompCore, and GLM (General Linear Modelling) for cleaning f/MRI data
- Multi-echo fMRI data preprocessing
- Graph theory analysis including constructing brain connectivity matrix, brain graph, global and nodal measures analysis, Dynamic connectivity, Brain null models, Edge-centric connectivity
- ICA (Independent Component Analysis): Mathematical model for analyzing fMRI data
- Diffusion MRI data preprocessing using open-source methods such as QSIprep, MRtrix3, and FSL
- Tractography and fiber reconstruction
- Clinical Participant recruitment for MRI
- MRI data acquisition
- Quality control measure in fMRI and diffusion MRI processing
- Neuroimaging Statistical analysis

Neuroimaging Software

- FSL (FMRIB Software Library): Neuroimaging software for preprocessing and processing f/MRI data
- SPM: (Statistical Parametric Mapping): Neuroimaging software for f/MRI and EEG data processing
- AFNI (Analysis of Functional Neuro**i**mage): fMRI processing software
- FreeSurfer: Software for anatomical and functional surface-based analysis
- BrainNEt viewer: Software for visualizing f/MRI data
- BCT (Brain Connectivity Toolbox): MATLAB based graph analysis toolbox for analyzing functional connectivity
- MRIcron: Software for visualizing f/MRI data
- MRtrix3: Software for preprocessing, analysis, and visualization of DWI
- NBS: Network-based statistic
- DSI studio
- PALM: Permutation Analysis of Linear Models

Computer and IT skills

- Programming: MATLAB, Python, Shell scripting, git
- Windows (XP,7,8.1,10) and Office package (Word, Excel, Access, PowerPoint)
- Adobe Photoshop, After effects, lightroom, illustrator
- Linux Ubuntu
- GitHub Web developing

Honors/Awards

- Travel award for attending PRIME-DE workshop in September 2019
- Ranking first in GPA among all M.Sc. students at the Azad University of Garmsar, 2016

Membership

❖ Member of Post-Graduate Staff/Student Advisory Committee (PGSSAC)	**Nov 2020- present**
❖ Member of Organization of Human Brain Mapping (OHBM)	**April 2020 – present**
❖ Member of PRIMatE Data Exchange (PRIME-DE) group	**Sept 2019 – present**
❖ Committee member of Early Career Researcher (ECR) at Center for Brain Research (CBR)	**May 2019 - present**
❖ Member of Neuroimaging Research Group (NRG) at the University of Auckland	**July 2018 - present**
❖ Member of New Zealand Neurological Foundation	**July 2020 - present**
❖ Member of Eisdell Moore Centre (EMC)	**July 2018 – present**
❖ Member of Brain Research New Zealand (BRNZ) early career researcher	**July 2018 - present**