

# Ashkan Alvand

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## Biography

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I completed my Bachelor of Science in Information Technology through the national university of Mazandaran (2014) and then received my master's degree in Computer Networking at Azad University (2016). During my master's program, I became familiar with graph theory in biological systems and developed a strong interest in this approach. Currently, I am doing my Ph.D. in Psychology under the supervision of Prof. Suzanne C. Purdy and Prof. Ian J. Kirk at the University of Auckland. My doctoral thesis investigates the topological networks of children with Auditory Processing Disorder using resting-state functional MRI and diffusion MRI.

## WORK EXPERIENCES

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<b>Ph.D. thesis</b>	<b>July 2018 - present</b>
Graph theory analysis of functional and structural connectivity: Link with Auditory Processing Disorder	
<b>Graduate Teaching Assistant (GTA)</b>	<b>Mar 2021 - present</b>
Assistant teacher in the course <i>Psych 202</i> , Biopsychology	
<b>Research Assistant</b>	<b>July 2018 – Dec 2021</b>
School of Psychology, University of Auckland, Auckland, New Zealand	
<b>Research Associate</b>	<b>Mar 2016 - Mar 2018</b>
Institute for Cognitive and Brain Sciences, Shahid Beheshti University, Tehran, Iran	

## EDUCATION

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<b>Qualification:</b> Doctor of Philosophy in Psychology	<b>July 2018 – present</b>
<b>Provider:</b> University of Auckland	
<b>Qualification:</b> Master of Information Technology in Computer Networking	<b>Oct 2014 – Aug 2016</b>
<b>Provider:</b> Azad University, Garmsar Branch	
<b>Qualification:</b> Bachelor of Information Technology	<b>Oct 2010 – Sep 2014</b>
<b>Provider:</b> University of Mazandaran	

## SKILLS & ATTRIBUTES

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### Neuroimaging applications

- f/MRI data preprocessing and denoising: Using open-source and inhouse pipelines such as fmripreg, 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

#### 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

#### Written and Verbal communication

- Demonstrated skills in preparing and presenting precise scientific information, specifically in the field of neuroimaging
- Interpersonal skills
- Report writing and data analysis

#### Publications

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- 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](https://doi.org/10.1016/j.neuron.2019.12.023)

#### Honors/Awards

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- 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

#### VOLUNTEER

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Volunteered presenter at Brain Day New Zealand	Aug 2018, Mar 2019
Committee member in Auckland University Rock and Alpine Club (AURAC)	Jan 2019 – Dec 2019
Red Crescent/cross Society volunteer	Jan 2007 – Jun 2015

#### INTERESTS AND HOBBIES

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- Rock climbing, bouldering, camping, hiking
- Night sky photography