Mr Amir Hossein Dakhili

PhD Candidate

Neuroscience of Addiction & Mental Health Program, HBMRC

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Google Scholar | ResearchGate | Linkedin | GitHub

RESEARCH BACKGROUND

I am a PhD Candidate at the Australian Catholic University, focused on characterizing and modulating the neurocircuitry of cannabis cue-induced craving using fMRI and real-time neurofeedback. My research aims to uncover fundamental neurobiological mechanisms of addiction, including Cannabis and Methamphetamine Use Disorders. To date, 2-year into my PhD, I have attracted a grant value of 112,000 A$ from all awards and scholarships. I have been involved in 9 projects to date across distinct mental health disorders and using multi-modal imaging and neuromodulation tools, such as fMRI neurofeedback. I have published four papers in journals such as *Drug and Alcohol Dependence* (IF = 3.6), *Journal of Neuroradiology* (IF = 3.3), *BMJ open* (IF = 2.4), and *Scientific Reports* (IF = 3.9; H-index: 2, Citations: 43), including two as lead author. I currently have additional manuscripts, including three as lead author.

EDUCATION

PhD Candidate, Neuroscience of Addiction & Mental Health Program March 2024 - 2027
HBMRC, Australian Catholic University, Melbourne, Australia

- Thesis: Characterizing and modulating the neurocircuitry of cannabis cue-induced craving using functional MRI and real-time neurofeedback
- Principal Supervisor: Prof. Valentina Lorenzetti.
- Co-Supervisors: Dr. Chao Suo, Dr. Govinda Poudel.

M.Sc. Medical Imaging Technology Sep 2019 - Sep 2022
Iran University of Medical Sciences, Tehran, Iran

- Thesis: Investigating the influence of pleasant and unpleasant odors on functional connectivity among the areas participating in decision making, using Functional Magnetic Resonance Imaging (fMRI).
- Thesis Supervisor: Dr. Arash Zare Sadeghi.
- Thesis Advisors: Dr. Ali Shakeri-Zadeh, Dr. Malake Malekzadeh.
- GPA: 17.28/20

B.Sc. Radiology Technology Sep 2014 - Jun 2018
Tabriz University of Medical Sciences, Tabriz, Iran

- GPA: 16.61/20

SKILLS

Medical Image Modalities

- Hands-on experience with MRI, CT Scan, and Radiography during apprenticeships at hospitals affiliated with Iran University of Medical Sciences and Tabriz University of Medical Sciences.

Neuroimaging:

- Hands-on experience with fMRI, including Proficiency in analyzing fMRI data using neuroimaging analysis tools (eg., CONN, FSL, and SPM).
- Proficiency in analyzing neuroimaging data using various analysis tools.
- Expertise in fMRI preprocessing techniques using fMRIprep to ensure data quality and reliability.
- Experience with Turbo_BrainVoyager software for real-time neurofeedback analysis.
- Skilled in fMRI experiment design, including task design using MATLAB.

Data Handling, Integration, & Analysis:

- Basic knowledge of integrating diverse datasets, such as clinical assessments with neuroimaging data, for holistic analysis.
- Adept at employing statistical methods for data analysis and drawing meaningful insights.
- Understanding of models predicting disease progression based on varied input data.
- Competence in utilizing tools to visualize complex datasets in an accessible manner.
- Basic proficiency in Python and MATLAB for data processing, with a foundational knowledge of R.

Psychological Assessment:

- Familiarity with adminstration of a range of psychological and behavioral assessments, including Wechsler Abbreviated Scale of Intelligence (WASI), Structured Clinical Interview for DSM-5 for Cannabis Use Disorder (SCID for CUD), and Timeline Followback (TLFB).

Operating system:

- Proficiency in Linux (Ubuntu) and Windows.

RESEARCH EXPERIENCE

Research Assistant Jan 2025 – Dec 2026
Melbourne University, Melbourne, Australia

◇ Assist with technical setup and neurofeedback protocols for emotion regulation in depression, contributing to the study design and data collection.

◇ Supervisors: Dr. Elena Pozzi, Prof. Valentina Lorenzetti, Dr. Chao Suo

Research Assistant Apr 2020 – Mar 2022
Neuroimaging Analysis Group (NIAG), Tehran University of Medical Sciences, Tehran, Iran

◇ Contributed in designing the methodology, implementing formal fMRI analysis, data management and writing the manuscript of fMRI Drug Cue-Reactivity(FDCR) study

◇ Supervisors: Dr. Hamed Ekhtiari, Dr. Amir Hossein Batouli

Research Assistant Mar 2020 – Nov 2021
Virtual Collaborative Networks (ViCoNs), Online

◇ Organized Neuroimaging team

◇ Held congress panel on Methodological and Conceptual Aspects of fMRI Cue Reactivity Studies in 14th International Addiction Science Congress (ASC), December 2020.

◇ Supervisor: Dr. Hamed Ekhtiari

PUBLICATIONS

In Preparation

1. **A Dakhili**, E Murphy, S Ganesan, A Zalesky, R Glarin, H Thomson, A Paloubis, B Moffat, G Poudel, C Suo, V Lorenzetti. Investigating upregulation of craving in Cannabis Use Disorder using real-time fMRI neurofeedback at ultra-high field MRI.

2. **A Dakhili**, E Murphy, S Ganesan, A Zalesky, R Glarin, H Thomson, A Paloubis, B Moffat, G Poudel, C Suo, V Lorenzetti. An fMRI-neurofeedback system to train the reward neurocircuitry in ultra-high field MRI.

3. E Murphy, **A Dakhili**, S Ganesan, A Zalesky, R Glarin, H Thomson, A Paloubis, B Moffat, S Kamboj, G Poudel, C Suo, V Lorenzetti. Exploring fMRI-neurofeedback to reduce craving-related brain activity in people with Cannabis Use Disorder: a feasibility study.

4. I Goodwin, D Oliver, E Chesney, A Gaillard, S Wang, A Wong Koo, K Petrilli, M Skumlien, **A Dakhili**, S Wigroth, S Obreshkova, S Yusufzai, R Vandrey, M Krausz, T Freeman, P McGuire, J Strang, V Lorenzetti, A Englund. The subjective effects of cannabis: A dose-response meta-regression.

5. **L Greenwood**, G Abbott, J G Bartschi, S Dunsford, I Goodwin, **A Dakhili**, A Paloubis, M Quinones Valera, E McTavish, A Verdejo-Garcia, J Cousijn, N Solowij, V Lorenzetti. The neuro-circuitry of cannabis cue-induced craving in Cannabis Use Disorder.

Under Review

6. V Lorenzetti, H Thomson, I Goodwin, **A Dakhili**, N Solowij, M Yucel, E Christensen. A new, co-designed repository of cannabis images from street cannabis: the CANNA dataset. OSF Link

Accepted

7. **A Dakhili**, S.K Kamrava A Zare-Sadeghi (2026). Smelling decides: fMRI evidence reveals the influence of pleasant and unpleasant odors on risky decision-making. *Journal of Neuroradiology, 53, 101529.*
DOI: 10.1016/j.neurad.2026.101529. **Impact Factor: 3.3 (Q1)**.

8. **A Dakhili**, A Sangchooli, S Jafakesh, M Zare-Bidoki, G Soleimani, S A H Batouli, M A Oghabian, K Kazemi, A Faghiri, H Ekhtiari (2022). Cue-induced craving and negative emotion disrupt response inhibition in methamphetamine use disorder: Behavioral and fMRI results from a mixed Go/No-Go task. *Drug and Alcohol Dependence, 233, 109353.*
DOI: 10.1016/j.drugalcdep.2022.109353 **Impact Factor: 3.9 (Q1)**.

9. E Murphy, **A Dakhili**, S Ganesan, A Zalesky, R Glarin, H Thomson, A Paloubis, B Moffat, S Kamboj, G Poudel, C Suo, V Lorenzetti (2025). CannChange: A protocol for a feasibility study using fMRI-based neurofeedback to change the neurobiology of craving in Cannabis Use Disorder. *British Medical Journal open, 31;15(8):e105854.*
DOI: 10.1136/bmjopen-2025-105854 **Impact Factor: 2.4 (Q1)**.

10. S Jafakesh, A Sangchooli, A Aarabi, M S Helfroush, **A Dakhili**, M A Oghabian, K Kazemi, H Ekhtiari (2021). Temporally Dynamic Brain Activity During Drug Cue Reactivity and Response Inhibition in Methamphetamine Use Disorder. *Scientific Reports, 12(1), 1-18.*
DOI: 10.1038/s41598-022-05619-8 **Impact Factor: 3.8 (Q1)**.

PRESENTATIONS

SYMPOSIUM

V Lorenzetti, C Suo, R Glarin, S Ganesan, E Murphy, **A Dakhili**, E Pozzi (Brisbane, Australia, June 2025).
fMRI-based neurofeedback: a tool to probe & target neurocircuitry across health & disease (Brisbane, Australia, June, 2025)
Organization for Human Brain Mapping (OHBM) International Conference.

ORAL PRESENTATION

A Dakhili, E Murphy, S Ganesan, G Poudel, A Paloubis, S Lin, B Moffat, A Zalesky, R Glarin, C Suo, V Lorenzetti (Melbourne, Australia, November 2025).
Probing the Craving Neurocircuitry in Cannabis Use Disorder Using Real-Time fMRI Neurofeedback.
Australasian Cognitive Neuroscience Society (ACNS) Conference.

A Dakhili, H Ekhtiari, A Sangchooli, H Mohaddes Ardebili, A Khojasteh, S Jafakesh (Online, October 2020).
Methodological and Conceptual Aspects of fMRI Cue Reactivity Studies: Example of a Mixed Go-No Go Drug Cue-Reactivity Study.
14th International Addiction Science Congress (ASC).

POSTER

A Dakhili, E Murphy, S Ganesan, G Poudel, A Paloubis, S Lin, B Moffat, A Zalesky, R Glarin, C Suo, V Lorenzetti (Canberra, Australia, November 2025).
Probing the Craving Neurocircuitry in Cannabis Use Disorder Using Real-Time fMRI Neurofeedback.
Australasian Society of Psychophysiology (ASP) Conference.

A Dakhili, E Murphy, S Ganesan, G Poudel, A Paloubis, S Lin, B Moffat, A Zalesky, V Manning, H. Valerie Curran, A Honnedevasthana Arun, C Suo, V Lorenzetti (Melbourne, Australia, November, 2025). Mapping & Modulating the Activity of the Craving Neurocircuitry in Cannabis Addiction: A Real-time fMRI Neurofeedback Setup.
OHBM Australian Chapter Meeting and Maths in Brain.

A Dakhili, E Murphy, S Ganesan, G Poudel, A Paloubis, S Lin, B Moffat, A Zalesky, V Manning, H. Valerie Curran, A Honnedevasthana Arun, C Suo, V Lorenzetti (Melbourne, Australia, November, 2025). Mapping & Modulating the Activity of the Craving Neurocircuitry in Cannabis Addiction: A Real-time fMRI Neurofeedback Setup.
OHBM Australian Chapter Meeting and Maths in Brain.

A Dakhili, E Murphy, S Ganesan, G Poudel, A Paloubis, S Lin, B Moffat, A Zalesky, R Glarin, C Suo, V Lorenzetti (Brisbane, Australia, June, 2025). A setup for real-time fMRI Neurofeedback for Cannabis Craving: A Pilot Study
OHBM International Conference.

A Dakhili, E Murphy, S Ganesan, G Poudel, A Paloubis, S Lin, B Moffat, A Zalesky, V Manning, H. Valerie Curran, A Honnedevasthana Arun, C Suo, V Lorenzetti (Melbourne, Australia, November, 2024). Mapping & Modulating the Activity of the Craving Neurocircuitry in Cannabis Addiction: A Real-time fMRI Neurofeedback Setup.
Organization for Human Brain Mapping (OHBM) Australian Chapter Meeting and Maths in Brain.

A Dakhili, I Pesianian (Tehran, Iran, May 2017). CT Scan cancer risks.
33rd Iranian Congress of Radiology.

TEACHING EXPERIENCE

Guest Speaker – Biomedical Science Seminar Sep 2025
Australian Catholic University

- ◇ Invited by faculty to share insights on research methods and academic pathways with final-year Bachelor of Biomedical Science students.

Guest Lecturer – Psychology Honours Seminar Aug 2025
Australian Catholic University

- ◇ Delivered a lecture on fMRI and neurofeedback applications in addiction research to Psychology Honours students.

Workshop Tutor Apr 2021
Online Workshop on fMRI Analysis Tools

Teaching Assistant Sep 2020 – Dec 2020
Fundamentals of Cognitive Neuroscience International Course, Online

- ◇ Assisted Dr. Hamed Ekhtiari, an investigator at the Laureate Institute for Brain Research (LIBR), in test administration, curriculum development, and grading assignments. Additionally, provided students with relevant course materials and literature.

AWARDS AND SCHOLARSHIPS

- Australian Catholic University Research Travel Grant 2025: Awarded one of ten $500 competitive grants to support research-related travel.
- Best 2024 PhD presentation Award, Healthy Brain and Mind Research Center conference Day, Australian Catholic University 2024.
- International Society for Biomedical Research on Alcoholism (ISBRA) Conference Scholarship 2024: Awarded $500 to support attendance at the ISBRA conference.
- Research Training Program (RTP) Scholarship 2024: Awarded a competitive scholarship of $37,000 per annum from the Australian Government to undertake PhD research.
- 14th International Addiction Science Congress (ASC) 2020: EZAMA Addiction Medicine Diploma of Honor
- Iran national university entrance for M.Sc. 2019: Ranked 15 among more than 2000 candidates in university admission national exam to M.Sc. Medical Imaging Technology
- Iran national university entrance for B.Sc. 2014: Ranked top 1% candidates in university admission national exam to B.Sc. Radiology Technology

COURSES AND CERTIFICATES

- Applied Suicide Interventions Training (ASIST) May 2024
- Positive psychology by Pennsylvania University, Coursera Apr 2022
- Artificial Intelligence by DeepLearning.AI Aug 2023
- Positive psychology by Pennsylvania University, Coursera Apr 2022
- Python Programming by Michigan University, Coursera Aug 2021
- Computational Neuroscience Summer School by Neuromatch Academy Jul 2021
- Cognitive Neuroscience by Dr. Hamed Ekhtiari, Online Nov 2020
- Basic and Advanced Neuroscience by Sharif University, Online Oct 2020

OTHER ACTIVITIES

Student Representative Feb 2026 – Dec 2027
Organization for Human Brain Mapping (OHBM), Australian Chapter

- ◇ Represent student members within the OHBM Australian Chapter.
- ◇ Contribute to student-focused initiatives, outreach activities, and conference-related events.

Mentor Feb 2026 - Present
OHBM, Student and Postdoc Special Interest Group (SP-SIG)

- ◇ Serve as a mentor within the global SP-SIG community, providing guidance on professional development support to international early-career researchers.

Founder and Instructor Dec 2015 – Jun 2018
Rise and Shine English Club, Tabriz University of Medical Sciences, Tabriz, Iran

- ◇ Directed a team comprising 50 language professionals, including the managing directors and editorial board of the Rise and Shine club.
- ◇ Delivered English instruction to over 200 students from Tabriz Medical University as a second language.
- ◇ Published 9 issues of an English magazine for teaching and learning English, spanning three levels: basic, intermediate, and advanced.
- ◇ Honored with the Student Affairs Center Award for outstanding club performance in 2018, standing out amongst 20+ university clubs.

REFERENCES

- Dr. Valentina Lorenzetti, Professor, Australian Catholic University, Melbourne, Australia
  PhD Principal supervisor
  Email: Valentina.lorenzetti@acu.edu.au
- Dr. Chao Suo, Research Fellow, Monash University, Melbourne, Australia
  PhD Co-supervisor
  Email: chao.suo@monash.edu
- Dr. Govinda Poudel, Research Fellow, Monash University, Melbourne, Australia
  PhD Co-supervisor
  Email: govinda.poudel@acu.edu.au
- Dr. Arash Zare Sadeghi, Assistant Professor, Iran University of Medical Sciences, Tehran, Iran
  Masters supervisor
  Email: zare.a@iums.ac.ir
- Dr. Hamed Ekhtiari, Affiliate Investigator, Laureate Institute for Brain Research, Tulsa, OK
  Research supervisor
  Email: hekhtiari@laureateinstitute.org
- Dr. Ali Shakeri-Zadeh, Assistant Professor, Johns Hopkins University, Baltimore, Maryland
  Masters Co-supervisor
  Email: ashaker3@jhu.edu