Hamed Karimi

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Education

Ph.D., Brain and Cognitive Sciences, 2021-present
Boston College, Boston, MA
Advisor: Stefano Anzellotti

M.Sc., Computer Science, 2020
Amirkabir University of Technology, Tehran, Iran
Advisor: Seyed-Mahdi Khaligh-Razavi

B.Sc., Computer Science, 2017
University of Tehran, Tehran, Iran

Academic Positions

PhD candidate, Social and Computational Cognitive Neuroscience lab 2021-present

Research Assistant at Royan Institute, Tehran, Iran 2017-2021

Professional Experiences

Data Science Intern, Cengage Group, Boston, MA 2022

Machine Learning Research Intern, Cognetivity Neurosciences ltd., London 2020-2021

Data Scientist, Pinket, Tehran, Iran 2020

Full Stack Software Engineer, System Group, Tehran, Iran 2019 - 2020

Honors and Awards

Boston College Donald White Teaching Excellence Award 2025

Best paper award at Iranian Symposium on Brain Mapping Updates 2019

7th place in Asia regional contest, ACM-ICPC, West Asia Site 2014

2nd place in National RoboCup Contest, 2D Soccer Simulation, Tehran, Iran 2010

In preparation Publications

Karimi, H., & Anzellotti, S. (2025). Neural basis of planar acceleration *(Under Review)*.

Journal Publications

Karimi, H., Wang, J., & Anzellotti, S. (2025). The representational organization of static and dynamic visual features in the human cortex. *Journal of Neuroscience* (journal cover).

Karimi, H., Marefat, H., Khanbagi, M., Vahhabi, Z., Kalafatis, C., Modarres, M. H., & Khaligh-Razavi, S.-M. (2022). Temporal dynamics of animacy categorization in the brain of patients with mild cognitive impairment. *PLOS ONE*.

Marefat, H., Vahabi, Z., Afzalian, N., Khanbagi, M., **Karimi, H.**, Ebrahiminia, F., Kalafatis, C., Modarres, M. H., & Khaligh-Razavi, S.-M. (2022). Brain representation of animal and non-animal images in patients with mild cognitive impairment and Alzheimer's disease. *Journal of Alzheimer's Disease Reports*.

Karimi, H., Marefat, H., Khanbagi, M., Karami, A., & Vahabi, Z. (2021). Drift diffusion model of animacy categorization task can detect patients with mild cognitive impairment and mild Alzheimer's disease. *Frontiers in Biomedical Technologies*.

Kalafatis, C., Modarres, M. H., Apostolou, P., Marefat, H., Khanbagi, M., **Karimi, H.**, Vahabi, Z., Aarsland, D., & Khaligh-Razavi, S.-M. (2021). Validity and cultural generalisability of a 5-

minute AI-based, computerised cognitive assessment in mild cognitive impairment and Alzheimer's dementia. *Frontiers in Psychiatry.*

Conference Proceedings

Karimi, H., & Anzellotti, S. (2025). Do masked autoencoders learn a human-like geometry of neural representation? Divergence and convergence across brains and machines during naturalistic vision. *NeurReps: NeurIPS Workshop on Symmetry and Geometry in Neural Representations.*

Karimi, H., & Anzellotti, S. (2024). Comparing representations in static and dynamic vision models to the human brain. *UniReps: NeurIPS Workshop on Unifying Representations in Neural Models.*

Karimi, H., & Anzellotti, S. (2024). Visual representations in humans and machines: A comparative analysis of artificial and biological neural responses to naturalistic dynamic visual stimuli. *Conference on Cognitive Computational Neuroscience.*

Teaching & Mentoring Experiences

Neuromatch Academy - Mentor and TA — July 2020, 2021

Boston College - Undergraduate thesis co-advisor

- Computer Science Department (Le You) — Fall, 2025
- Psychology & Neuroscience Department (Miryam Berkelaar) — Fall, 2024
- Psychology & Neuroscience Department (Obinna Onyekachiuzoamaka) — Fall, 2024
- Psychology & Neuroscience Department (Clare DiBiase) — Spring, 2024

Boston College - Course TA

- Brain, Mind and Behavior — Spring 2023, Spring & Fall 2024
- Cognitive and Neural Bases for Person Knowledge — Spring 2022
- Social Psychology — Fall 2021

Amirkabir University of Technology - Course Lecturer

- Introduction to Programming — Fall 2017

University of Tehran - Course TA

- Data Structures — Fall 2013
- Advanced Programming — Fall 2012

Invited Talks and Lectures

Machine Learning X-Lab Practicum, Boston University, Guest Lecturer — 2025

NeuroAI Lab (PI: Dan Yamins), Stanford University — 2025

Winter Retreat Seminars, Boston College — 2024

Academic Services

Invited Reviewer
Conferences: NeurIPS, ICLR
Journals: Frontiers in Neuroscience, Scientific Reports, PLOS ONE

Conference Abstracts

Karimi, H., Wang, J., Arangio, N., & Anzellotti, S. (2023). Modeling fMRI responses to complex dynamic stimuli with two-stream convolutional networks. *Vision Science Society.*

Karami, A., **Karimi, H.**, Peelen, M., & Piazza, M. (2022). Characterizing natural image processing in dorsal and ventral areas using fMRI: A pilot study. *Perception.*

Marefat, H., Ebrahiminia, F., Khanbagi, M., **Karimi, H.**, Modarres, M. H., Kalafatis, C., Vahabi, Z., & Khaligh-Razavi, S.-M. (2021). How animacy processing is affected in early stages of AD. *Alzheimer's & Dementia.*

Modarres, M. H., Kalafatis, C., Apostolou, P., Marefat, H., Khanbagi, M., **Karimi, H.**, Vahabi, Z., Aarsland, D., & Khaligh-Razavi, S.-M. (2021). A remote digital tool for diagnosis and monitoring of Alzheimer's disease. *Alzheimer's & Dementia*.

Karimi, H., Marefat, H., Khanbagi, M., Kalafatis, C., Vahabi, Z., & Khaligh-Razavi, S.-M. (2020). Electroencephalography (EEG) reveals a decrease in speed of animacy processing in mild cognitive impairment and an alteration in neural response patterns. *Alzheimer's & Dementia*.

Khanbagi, M., Marefat, H., **Karimi, H.**, Kalafatis, C., Vahabi, Z., & Khaligh-Razavi, S.-M. (2020). Association between integrated cognitive assessment (ICA) and measures of brain structure in mild cognitive impairment and mild Alzheimer's disease. *Alzheimer's & Dementia*.

Kalafatis, C., Modarres, M. H., Marefat, H., Khanbagi, M., **Karimi, H.**, Vahabi, Z., & Khaligh-Razavi, S.-M. (2019). Employing artificial intelligence in the development of a self-administered, computerised cognitive assessment for the assessment of neurodegeneration. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*.