

# Kiomars Sharifi

✉ sharifikiomars@gmail.com    📁 kiomarssharifi.github.io    🏠 kiomars sharifi    in kiomars sharifi

## Education

- 2018 – 2021  
Tehran, Iran    **Sharif University of Technology (Full Scholarship), M.Sc., Biomedical Engineering** [↗](#)
- **Thesis:** Neural Encoding of Reward Learning: A Deep Learning Study on fMRI Data
  - **Supervisor:** Dr. Ali Ghazizadeh [↗](#)
- 2013 – 2017  
Isfahan, Iran    **University of Isfahan (Full Scholarship), B.Sc., Biomedical Engineering** [↗](#)
- **Thesis:** Developing BCI Applications for Autism Neurofeedback Treatment
  - **Supervisor:** Dr. Amin Mahnam [↗](#)

## Publications

- Farmani, S., **Sharifi, K.**, & Ghazizadeh, A. Cortical and subcortical substrates of minutes and days-long object value memory in humans, **Cerebral Cortex**, 2024-1 [↗](#) (PDF) [↗](#)
- Alizadehgoradel, J., Molaei, B., Barzegar Jalali, K., Pouresmali, A., **Sharifi, K.**, ... & Salehinejad, M. A. Targeting the prefrontal-supplementary motor network in obsessive-compulsive disorder with intensified electrical stimulation in two dosages: A randomized, controlled trial, **Translational Psychiatry**, 2024-1 (Accepted) [↗](#)
- Hallajian, A.H., **Sharifi, K.**, Rostami, R., ... & Salehinejad, M.A. Investigating neurocognitive effects of prefrontal stimulation on cognitive deficits in SCZ: a protocol for a randomized sham-controlled tDCS-fMRI study, 2024-1 (under revision for **PLOS One**)
- Hallajian, A. H., Dehghani-Arani, F., Sima, S., Heydari, A., **Sharifi, K.**, ... & Salehinejad, M. A. Enhancing Implicit Mentalizing in Autism Spectrum Disorder with Theta-burst Stimulation of the Right Temporoparietal Junction: A Randomized Sham-controlled Double-blind Crossover Study, 2024-1 (Submitted to iBrain) [↗](#)

## Conference Presentations

- Sharifi, K.**, Abbaszadeh, M., & Ghazizadeh, A. (2024) Value Pop-out Results from Spatial Enhancement of Object Processing in Prefrontal Cortex. **COSYNE** (Forthcoming on BioRxiv) [↗](#)
- Farmani, S., **Sharifi, K.**, & Ghazizadeh, A. (2022). Exploring the Neural Bases of Stable Value Learning and Memory of Objects in Humans Using fMRI and EEG, **Journal of Vision** [↗](#)
- Sharifi, K.**, Khoshvishkaie, A., & Ghazizadeh, A. (2021). Value-driven efficient search is accompanied by differential visual processing area for high-vs low-value objects, **Journal of Vision** [↗](#)

## Research Interests

- Neuroscience (vision, learning, sensorimotor)
- Machine Learning in Neuroscience
- Real-time Computation
- Brain-computer interfaces and Neuroprosthetics
- Signal Processing and Code Implementation

## Research Experience

- Jul 2018 – present  
Tehran, Iran    **Research Assistant,**  
*Institute for Research in Fundamental Sciences (IPM), School of Cognitive Science* [↗](#)
- Bayesian methods in value-based decision-making using Multi-Alternative DDM
  - Reward learning's impact on visual perception and neural representation using deep learning for fMRI data analysis
  - Analysis of visual processing areas in efficient value-oriented search
  - Exploring value learning and memory retention using neuroimaging techniques
- Dec 2020 – Apr 2023  
Tehran, Iran    **Graduate Student Researcher,**  
*Centre For Convergent Technologies Research, University of Tehran* [↗](#)
- tDCS efficacy in OCD using EEG signal processing and correlation analysis
  - Exploring brain stimulation in schizophrenia cognitive impairment using tDCS-fMR

Sep 2016 – **Undergraduate Researcher**, *Isfahan Neurotechnology lab* [\*↗\*](#)  
Apr 2019  
Isfahan, Iran

- Developed a neuro/biofeedback-based serious game to enhance attention, empathy, and social skills in autistic children

## **Industrial Experience**

Jun 2019 – **Co-Founder and Technical Lead**, *Cardano Trader*  
Nov 2021  
Tehran, Iran

- A startup focused on implementing AI and ML techniques in the Tehran Market.
- Gathered comprehensive market tick data continuously, employing Umap and HDBScan for temporal clustering of symbols.
- Utilized diverse ML and DL algorithms, such as Random Forest, CNN, RNN, and Transformer network, to identify price trends as positive or negative over various periods.

May 2019 – **Linux Systems Administrator**, *Sharif University of Technology, Neuroscience Lab*  
present  
Tehran, Iran

- Managing and maintaining servers for MATLAB, AFNI, Python, AI, and remote access

## **Teaching Experience**

Oct 2019 – **Teaching Assistant**, *Sharif University of Technology*  
present  
Tehran, Iran

- **Advanced Neuroscience (Systems and Computational)** [\*↗\*](#) (3 semesters)
- **Neuroscience Lab** [\*↗\*](#) (2 semesters)
- **Foundations of systems and computational neuroscience** [\*↗\*](#)

Aug 2020  
Tehran, Iran

- **Summer School**, *Intelligent Learning, held at Institute for Research in Fundamental Sciences (IPM)* [\*↗\*](#)  
Led and organized [\*↗\*](#) a four-day summer school, delivering lectures and workshops on machine learning, deep learning, machine vision, and reinforcement learning.

Mar 2019  
Tehran, Iran

- **Workshop**, *held at the SNS symposium, [audience: MA and PhD students]* [\*↗\*](#)
  - Functional MRI, Principles and Practice [\*↗\*](#)
  - Deep Learning in Neuroscience, Advanced Applications [\*↗\*](#)

## **Skills**

**Python**, *OOP, Multiprocessing, Threading, AsyncIO, Sysv-IPC, PyTorch, TensorFlow, OpenCV, SciKit-Learn, SciPy, Requests, Selenium, Redis, Plotly, Dash, PyQt, Tkinter.*

**MATLAB**, *Brainstorm, EEGLAB, FieldTrip, SPM, Psychtoolbox, Optimization, Parallel Computing, Signal Processing, Image Processing.*

**Linux**, *Shell Scripting, User Management, 3D Remote Access, Networking and firewalls, Logs, Hardware Setup and Troubleshooting, Monitoring.*

**AFNI**, *Analysis of Functional NeuroImages* [\*↗\*](#)

## **Selected Course Projects**

- Investigation of Cortical Traveling Waves (Phase propagation) in Array Dataset
- Neural Encoding: Leaky Integrate and Fire Model
- Neural Encoding: Population Code and Low Dimensional Embedding
- Tuning Curve and Noise Correlation, Population Coding and Computation
- Implement Kalman Filter Method to Explain Blocking and Unblocking in Conditioning
- Learning the Water Maze: An Example of Generalized Reinforcement Learning
- Simulation of Evidence Accumulation Model and Studying the Relationship Between Accuracy and RT
- Learning to Predict where Humans Look using Eye-Tracking Database
- Study the Sparse Representation of Natural Image Statistics as the Receptive Fields of simple cells in V1
- Simulations in Multivariate Pattern Analysis of fMRI
- Joint Object Detection and Depth Estimation Using DNN
- Matching the 3D CT Scan Image of the Patient's Spine on the Atlas Using Image Registration