

Mahyar Maleki

(+98) 938-489-2621 | m4hyarm@gmail.com | m4hyarm.github.io
github.com/m4hyarm | linkedin.com/in/mahyar-maleki-1ba5a8166

EDUCATION

University of Tehran

Tehran, Iran

Master of Science in Computer Engineering - Artificial Intelligence

Sep 2021 – Sep 2024

- Thesis title: "Comparing Representation of Video and Still Images in Brain with EEG Signals"
- Supervisor: **Dr. Mohammad-Reza A. Dehaqani**
- Overall GPA: 3.65/4 (17.73/20)

Imam Khomeini International University

Qazvin, Iran

Bachelor of Science in Mechanical Engineering

Sep 2015 – Sep 2019

- Overall GPA: 3.3/4 (15.78/20)

RESEARCH INTERESTS

- Computational Neuroscience
- Deep Neural Networks
- Visual Perception
- Data Science

EXPERIENCE

Research Assistant

Sep 2022 – Present

Convergent Technologies Research Center, University of Tehran

- Under supervision of **Dr. Mohammad-Reza A. Dehaqani**

Teaching Assistant

Course: Computational Neuroscience

Neuromatch Academy - July 2023

- Mentoring students with course materials covering Machine Learning, Dynamical Systems, and Stochastic Processes. Additionally, offered high-level support for their final project completion.

Course: Introduction to FieldTrip

CuttingEEG Conference - October 2023

- Mentoring students in the basics of FieldTrip, a powerful MATLAB toolbox for MEG and EEG analysis, during a workshop at the CuttingEEG conference held in Tehran Garden.

Course: Deep Neural Networks

University of Tehran - Spring 2023

- Instructor: **Dr. Kalhor**
- Created instructional videos for students to effectively utilize applying advanced PyTorch skills in the context of Convolutional Neural Networks (CNNs).

Course: Statistical Inference

University of Tehran - Spring and Fall 2023

- Instructors: **Dr. Abolghasemi, Dr. Vahabie**
- Mentoring students in understanding important probability distributions and their practical applications in real-world problems (using R language).

Course: Trustworthy AI

University of Tehran - Spring 2024

- Instructor: **Dr. Tavassolipour**
- Designed a homework assignment on identifying and mitigating backdoor attacks based on implementing the "Neural Cleanse" paper.

ACADEMIC PROJECTS

Thesis Project:

M.Sc. Thesis

- Title: "Comparing Representation of Video and Still Images in Brain with EEG Signals"
- My thesis explores how the brain processes videos versus static images using EEG signals, revealing that disrupting the temporal sequence of videos makes brain activity similar to that of viewing static images, highlighting the importance of temporal information in visual processing.

Course Projects:

Data Analysis

Autumn 2021

- Analysing Corona virus infection
- Scraping Alibaba and MrBilit tickets and analysing the prices
- Web crawling and data cleaning: Obtaining Laptop Listings from Digikala

Introduction to Cognitive Neuroscience

Spring 2022

- Designing a cognitive task to explore spatial heterogeneity in face perception, collecting data from participants, and conducting in-depth data analysis.
- Implementation of various dynamical neuronal models to explore and analyze functional patterns of neurons.
- Analysing neural data gathered by methods of EEG, LFP, fMRI and single cell recording

Deep Learning and Applications

Spring 2022

- Saliency map prediction using deep neural networks
- Implementation of a deep fully connected network for inverting visual representations of a Convolutional Network
- Medical image segmentation Using U-net architecture
- Implementing Hubert architecture for automatic speech recognition
- Replicating "DeepGUM: Learning Deep Robust Regression with a Gaussian-Uniform Mixture Model" paper
- Musical instruments' audio classification and clustering by classical machine learning methods

Trustworthy AI

Spring 2023

- Robust Representation using Angular loss
- Enhancing Model Interpretability by leveraging LIME and SHAP for Comprehensive Explanations
- Out-of-Distribution Detection: Enhancing Model Robustness and Generalization

PUBLICATIONS

- M Maleki, MRA Dehaqani. (2025). Comparing Representation of Video and Still Images in Brain with EEG Signals. (in Progress)
- AH Fadaei, M Maleki, MRA Dehaqani. (2025). Invariant Representations in Video Understanding. (in Progress)

SELECTED COURSES

• Machine Learning	4.0,(20.00/20)	• Trustworthy AI	4.0,(17.10/20)
• Advanced Robotics	4.0,(19.88/20)	• Deep Learning	4.0,(17.00/20)
• Statistical Inference	4.0,(18.20/20)	• Cognitive Neuroscience	4.0,(16.93/20)
• Data Analysis	4.0,(17.75/20)		

HONORS

- Ranked 42nd in The Masters Level University Entrance Exam (Among Approximately Twelve Thousand People)
- Among the top 2% of Iran Universities Entrance Exam
- Exemption from tuition fees for master's level studies

TECHNICAL SKILLS

Programing Languages: Python, Matlab, R, SQL

Libraries: Pandas, NumPy, Matplotlib, Pytorch, PsychoPy, Psychtoolbox, EEGLab, FieldTrip

Mechanical Softwares: Catia, SolidWorks, Abaqus

Typesetting: Microsoft Office, L^AT_EX

Languages: Persian(Native), English(Proficient - TOEFL Overall Score: 93, Reading: 27, Listening: 23, Speaking: 23, Writing: 20)