

Mojan Izadkhah

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Education

Sharif University of Technology

B.Sc. in Electrical Engineering, GPA: 17.20/20

Tehran, Iran

Sept.2017 - July.2021

Young Scholars Club

Official Preparation Course for National Mathematics Olympiad

Tehran, Iran

Summer.2016

Farzanegan High School

Diploma in Mathematics and Physics Discipline

Tehran, Iran

2013–2017

Awards and Honors

Konkur

National Mathematics and Physics University Entrance Exam with 148,429 candidates

Ranked top 0.3%

Summer.2017

IMO

Iranian Mathematics Olympiad

Bronze Medal

Summer.2016

IGO

Iranian Geometry Olympiad

Silver Medal

Summer.2016

Khwarizmi Awards

National Science Competition(Mathematics Group)

Semifinalist

Spring.2016

IGO

Iranian Geometry Olympiad

Gold Medal

Summer.2014

National Organization for Development of Exceptional Talents

Got accepted in the national high school of exceptional talents entrance exam

Fall.2013

Research Experience

Developing a Deep Neural Network for speech decoding of sEEG data

EEG signal processing, Deep Learning, remote internship at University of Vienna

Fall.2021

This project entails comparing a stand-alone deep learning model with a model based on a pre-trained speech-recognition neural network for the task of decoding speech (audio or text) from the Stereo-EEG neural data.

Functional organization of face responsive regions in lateral prefrontal cortex

Neuroimaging, fMRI signal processing, Supervised by Reza Rajimehr at the University of Cambridge

Summer.2021

After analyzing the movie watching data of Human Connectome Project, we are investigating some new face-selective areas to understand their roles in face processing.

Investigating value memory using visual stimuli in virtual reality environment

Cognitive Neuroscience, Sharif Neuroscience Laboratory

Spring.2021

We recorded subjects' EEG signals and their performance while playing in a virtual reality environment (implemented for this purpose), in order to investigate value association in humans. An alike paper was conducted with monkeys called: Object-finding skill created by repeated reward experience.

Classifying depression patients and normal subjects using EEG signals

EEG signal processing, Atieh Neuroscience Clinical Center

Summer.2020

Extracting features from EEG signals taken from clinical patients and classifying them with Neural networks.

Evaluation of auditory attention using EEG signals when performing motor and visual tasks

EEG signal processing(HCI purposes), Sharif University Human & Machine Interfaces Lab

Summer.2019

In order to model the human auditory system and evaluate auditory attention while doing visual or motor tasks(using EEG, eye-tracker, and the glove), we defined different tasks so that we could measure the subject's attention and the brain's response to unexpected events and also find brain source localization.

Course Projects

Lumbar vertebrae registration

Image Registration, Medical Image Analysis & Processing, final project

Spring.2021

Using the CPD algorithm, explored different solutions in order to improve performance of the algorithm on real world data and decrease interpenetration of spines mid-registration.

Further Analyses & Comparison of Different Modes of Decision-making

EEG signal processing, Foundations of Neuroscience, final project

Winter.2020

Using available data from Libet experiment, we conducted more investigation to test our hypothesis about the basis of the decision-making process in the human brain.

Forecasting stock market prices

Machine Learning (Python), Introduction to Machine Learning, final project

Fall.2020

Using statistical parameters and special python libraries such as fasti, ARIMA, and prophet I implemented machine learning algorithms to forecast the future values of the given data.

Investigating an fMRI signal

Machine Learning (Matlab)

Fall.2020

I analyzed and labeled the available data from the paper(The spatiotemporal neural dynamics underlying perceived similarity for real-world objects).

Teaching Experience

Department of Electrical Engineering: Teaching assistant in Foundations of Biomedical Engineering, *Fall.2021*

Department of Electrical Engineering: Teaching assistant in Special topics in Biomedical Engineering: EEG Signal Processing, *Fall.2021*

Department of Electrical Engineering: Teaching assistant in AI & Biological Computations, *Fall.2021*

Department of Electrical Engineering: Teaching assistant in Machine Learning, *Spring.2021*

Department of Electrical Engineering: Teaching assistant in Engineering Statistics & Probabilities, *Fall.2021 & Spring.2021*

Department of Electrical Engineering: Teaching assistant in Data Structure & Algorithm, *Spring.2021*

Farzanegan 1 High School: Teaching Mathematics Olympiad, *Spring.2018*

Related Attended Courses

- Special topics in Biomedical Engineering: EEG Signal Processing
- Medical Image Analysis & Processing
- Neural Networks
- Foundations of Neuroscience
- Foundations of Biomedical Engineering
- Introduction to Machine Learning
- AI & Biological Computations
- Digital Signal Processing
- Probability & Statistics
- Signals & Systems

Skills

English: Advanced, TOEFL IBT:(104/120)(Reading:28, Listening:30, Speaking:22, Writing:24)

Programming Languages: Matlab, Python, C/C++, Assembly Mips

Familiar with: LaTeX, TeX, Unity, Comsol Physics, Altium, Simulink, git, HTML

Other Activities

Sharif University Mountain Climbing Group: Leader of a mountain climbing trip to Duna summit(3674m)

Resana(Main Association of Electrical Engineering): Member of the Central Council

Sharif University Mountain Climbing Group: Member of Main Committee

IGO-2019 (Iranian Geometry Olympiad): Member Executive Team

IGO-2018 (Iranian Geometry Olympiad): Member of Grading Team

Mabna Group(Designing Questions of Mathematics Olympiad): Member of the team