



## Parsa Mojarad

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## Awards

**Iran's National Elite Foundation**  
2018

**Iran's University Entrance Exam**  
2017  
ranked 22nd among 140000 participants

## Skills

- C/C++
- Java/Android
- Python
- HTML/CSS/JavaScript
- AVR/Arduino
- Matlab
- LaTeX, Microsoft Office

## Languages

- Farsi
- English
- French

## Education

- 2017 – now **B.Sc. in Electrical Engineering** Sharif University of Technology  
Cumulative GPA: 3.03 / 4.00
- 2014 – 2017 **Diploma in Physics and Mathematics** Allameh Helli 5 (NODET)  
Cumulative GPA: 4.00 / 4.00

## Interests

- Neuroscience**  
Brain Visual Cortex & Motor Cortex, EEG Analysis & TMS studies
- Image Processing**  
3D Reconstruction of Medical Images, Processing, Segmenting and Registering Images
- Robotics**  
Programming and Designing Robotic Parts and Systems

## Work Experience

- 2020 – now **IPM, School of Cognitive Sciences** Research  
– Worked on MRI of Macaque monkeys  
– Reconstructed the images for TMS studies  
Supervisor: Prof. Ghazizadeh
- 2017 – now **Mobile Telecommunication Company of Iran (MCI)** Profession  
– Member of robotics team in MCI for "Telecom" and "Iran Digital"  
– Received Honorary award from MCI CTO  
Supervisor: Prof. Khalaj, Prof. Ravanshid
- 2020 **Sharif University of Technology** Teaching Assistant  
– Teaching Assistant in Object Oriented Programming Course  
Instructor: Prof. Vosoughi Vahdat
- 2019 – now **Allameh Helli 5 (NODET) high school** Teacher  
– Programming and Algorithm's Teacher

## Notable Courses

- Grad**
  - Foundations of Blockchain** Dr. Maddah Ali
  - Medical Image Analysis & Processing** Dr. Fatemizadeh
  - Medical Imaging Systems** Dr. Vosoughi Vahdat
  - Data Networks** Dr. Pakravan
  - Modelling of the nervous system** Dr. Vosoughi Vahdat
- Undergrad**
  - Foundations of Neuroscience** Dr. Ghazizadeh
  - Signals & Systems** Dr. Khalaj
  - Machine Learning** Dr. Mohammadzadeh
  - Discrete-time Signal Processing** Dr. Karbasi
  - AI & Biological Computation** Dr. Hajipour

# Notable Projects

2020–now	<b>Neuronavigation Mobile Application</b> <span>📍 B. Sc. Project</span> Developed an Android application from scratch to reconstruct 3D images from MR Images in an augmented reality (AR) environment. This application is being used as a replacement to a full set of Neuronavigation device in school of cognitive sciences, IPM, in order to conduct TMS studies. <ul style="list-style-type: none"><li>- Developed an AR compatible android application</li><li>- Used volume rendering methods to render a 3D object with medical images</li><li>- added Brain Segmentation used in Brain Atlases to the application</li></ul>
2020	<b>Image Segmentation</b> <span>📍 MIAP course</span> Implementing a segmentation method introduced in Song Y, Peng G (2019) "A fast two-stage active contour model for intensity inhomogeneous image segmentation." PLoS ONE 14 (4)
2019	<b>ECG signal processing</b> <span>📍 AI &amp; Biological Computation</span> Processed raw dataset belonging to Physionet, Implemented different fuzzy systems and neural nets in order to classify diseases
2019	<b>Sphero Bolt race</b> <span>📍 MCI</span> Simulated a 5G network in order to show one of its core concepts, "Edge Computing". Two controlling devices were used in this project, an EEG headset <a href="#">Emotiv Insight</a> , and a <a href="#">Leap Motion</a> sensor. After processing, speed and direction of the robot were extracted from the data and then, the packet was sent to Sphero Bolt previously placed in a maze. <ul style="list-style-type: none"><li>- Developed Java wrapper for Leap Motion</li><li>- Completed Sphero Bolt's python API</li></ul>
2018	<b>Dobot Painter</b> <span>📍 MCI</span> Simulated a 5G network in order to show two of its core concepts, "Reliability" and "Ultra low latency". In the show case part, used a android sketching app fully developed from scratch with two methods and a robotic arm called <a href="#">Dobot</a> to show the two concepts above. In the first method, the painting was sent to the arm after its completion to draw a perfect copy of the painting. The other method was online drawing in which the arm copied the exact movement of finger touch in the application. <ul style="list-style-type: none"><li>- Developed the painting Application with both methods</li><li>- Developed a data handling server to connect the app to the robotic arm</li></ul>
2018	<b>EEG Racing Cars</b> <span>📍 MCI</span> Simulated a 5G network in order to show one of its core concepts, "Edge Computing". In the show case part, used an EEG headset <a href="#">Emotiv Insight</a> , to gather controlling signals. After processing the data, actions were extracted and then sent to a racing toy car via a specific SIM card placed in mobile phone inside the car. <ul style="list-style-type: none"><li>- Designed the toy racing car internal system with a Raspberry pi 3</li><li>- Developed a Python wrapper for Emotiv Insight</li></ul>

## Other Projects

2019	<b>EEG data analysis</b> <span>📍 Signal and Systems Course</span> Analyzing raw EEG data with MATLAB and specifying an action to the test data
2020	<b>Libet Experiment</b> <span>📍 Neuroscience course</span> Researched on an aspect of Libet Experiment concerning free will, gathered brain signals as data and processed them in order to prove or deny the famous Libet Experiment
2019	<b>Robot with EOG Controller</b> <span>📍 Computer Structure Course</span> A tri-wheel robot working with pre-analyzed EOG data
2015	<b>Zarf-al-Asal</b> <span>📍 Allameh Helli 5 (NODET)</span> A Persian Puzzle Game about proverbs designed for android phones