

# Mersad Esalati

School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran

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“Be the change that you want to see in the world.”

## Education

### University of Tehran

Tehran, Iran

MASTER OF SCIENCE IN ARTIFICIAL INTELLIGENCE AND ROBOTICS

Sep. 2020 - PRESENT

- Thesis Title: **Unsupervised Parallel Corpus Creation using eBooks for Persian-English**
- Overall: **18.84/20** (Overall GPA: **4/4**).
- Selected Courses:
  - Machine Learning **19.30/20**
  - Data Analysis **17.75/20**
  - Neural Networks and Deep Learning **19.72/20**
  - Natural Language Processing **18.50/20**
  - Massive Data Analysis and Systems **18.50/20**
  - Statistical Inference **18.80/20**

### Ferdowsi University of Mashhad

Mashhad, Iran

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

Sep. 2015 - Jan. 2020

- Thesis Title: **Review TTS System with Focus on Tacotron2**
- Overall: **17.51/20** (Overall GPA: **3.57/4**).
- Selected Courses:
  - Artificial Intelligence and Expert Systems: **19.75/20**
  - Data Structures and Algorithms: **18.30/20**

## Skills

<b>Programming</b>	Python, Java, Bash Script
<b>Soft Computing</b>	PyTorch, Keras
<b>Big Data</b>	Hadoop, Airflow, Kafka, Spark
<b>DevOps</b>	Linux, Docker
<b>Development Tools</b>	Git
<b>Languages</b>	Persian (native), English (fluent)

## Field of Interest

### RESEARCH

- Machine Learning & Deep Learning
- Natural Language Processing
- Massive Data Analysis and Systems

### APPLICATION

- Machine Translation
- Computational Neuroscience

## Research Experience

### University of Tehran

Tehran, Iran

RESEARCHER AT NLP LAB

Jun. 2021 - PRESENT

- Neural Machine Translation
- Multilingual Sentence Alignment

## Teaching Experience

### University of Tehran

Tehran, Iran

TEACHER ASSISTANT

Jun. 2021 - PRESENT

- **Neural Networks and Deep Learning**, presented by Dr. A. Kalhor.
- **Massive Data Analysis and Systems**, presented by Dr. M. J. Dousti.
- **Data Analysis**, presented by Dr. M. A. Sadeghi and Dr. M. R. Abolghasemi Dehghani.

### HooshBaaz Summer School

Tehran, Iran

MENTOR

Aug. 2022 - Sep. 2022

- Educating Students During 14 Workshops on Data Analytics and Machine Learning.

- **Artificial Intelligence**, presented by Dr. S. Abrishami.
- **Data Structures**, presented by Dr. K. Ghiasi-Shirazi.
- **Microprocessor and Assembly Language**, presented by Dr. Y. Sedaghat.

## Work Experience

### Faraazin

MACHINE LEARNING ENGINEER

Tehran, Iran

Jan. 2022 - PRESENT

- Develop Pipeline for Parallel Corpus Creation via Sentence Alignment
- Train and Deploy Various Neural Machine Translation Models for Different Domain

### Ferdowsi Cloud Laboratory

BACK-END DEVELOPER

Mashhad, Iran

Jun. 2019 - Jun. 2017

- Develop Server for Working with Openstack Services
- Deploy Openstack Cluster

### Rajman Information Structures

ANDROID DEVELOPER

Mashhad, Iran

Jul. 2018 - Dec. 2019

- Worked on "Neshan Navigator" android client.
- Develop Bus Live Location Feature
- Develop Multi Language Feature

## Academic Project Highlights

### Double DQN and Actor-Critic

COURSE PROJECT OF INTERACTIVE LEARNING

Tehran, Iran

Dec. 2021

- Solve LunarLander environment using DQN
- Robust actor by using double DQN trick

### Frozen Lake Path Planning

COURSE PROJECT OF INTERACTIVE LEARNING

Tehran, Iran

. 2021

### Neural Machine Translation (NMT) for Persian-English Translation

COURSE PROJECT OF NATURAL LANGUAGE PROCESSING

Tehran, Iran

May. 2021

- Study and compare different neural machine translation frameworks like OpenNMT, Fairseq, Marian
- Train transformer-based machine translation system using Fairseq

### Sentiment Analysis for Twitter Data using RNNs

COURSE PROJECT OF NEURAL NETWORK AND DEEP LEARNING

Tehran, Iran

April. 2021

- Preprocess and clean data using tweet-preprocessor library
- Study about different word embedding methods like BERT, EIMO
- Fine-tune Transformer-based model like BERT for classification tweets

### Classify CIFAR10 Dataset using Neural Networks in Keras

COURSE PROJECT OF NEURAL NETWORK AND DEEP LEARNING

Tehran, Iran

April. 2021

- Study about different advanced optimization methods (Momentum-based Gradient Descent, AdaDelta, RMSProp, Adam)
- Study about different regularization methods (Dropout, L1/L2 Regularization, Early Stopping)
- Tune Feed Forward network and Convolutional Neural Network hyper-parameters
- Using Data Augmentation methods for improve model
- Fine tune EfficientNet for classify CIFAR10 (Transfer Learning)

### Detecting Parkinson disease from speech signal with ensemble learning

COURSE PROJECT OF MACHINE LEARNING

Tehran, Iran

Dec. 2020

- Data cleaning
- Try dimensionality reduction using different method like PCA, LDA, auto-encoder
- Classify data using SVM and ensemble learning.

### Solving a Board Game Based on Uninformed and Informed Search

COURSE PROJECT OF ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

Mashhad, Iran

May. 2018

- Modeled a simple chess-like board game in Python.
- Implemented Uninformed search algorithms (BFS, UCS, DFS and IDS) to solve the game.
- Implemented Informed search algorithms (GBFS, A\* and IDA\*) to solve the game.