Mersad Esalati

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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 - Sep. 2023*

- Thesis Title: **Unsupervised Parallel Corpus Creation using eBooks for Persian-English**
- Overall: **18.84** (lowest grade: 0, highest grade 20).
- Selected Courses:
  - Machine Learning **19.30/20**
  - Neural Networks and Deep Learning **19.72/20**
  - Natural Language Processing **18.50/20**
  - Massive Data Analysis and Systems **18.50/20**

Ferdowsi University of Mashhad *Mashhad, Iran*

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING *Sep. 2015 - Jan. 2020*

- Thesis Title: **Review Text-to-Speech System with Focus on Tacotron2**
- Overall: **17.51/20** (lowest grade: 0, highest grade 20).
- Selected Courses:
  - Artificial Intelligence and Expert Systems: **19.75/20**
  - Data Structures and Algorithms: **18.30/20**

Field of Interest

RESEARCH

- Machine Leaning & Deep Learning
- Natural Language Processing
- Generative AI

APPLICATION

- Multilingual Machine Translation
- Large Language Models

Skills

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

Research Experience

University of Tehran *Tehran, Iran*

RESEARCHER AT NATURAL LANGUAGE PROCESSING LAB *Jun. 2021 - Sep. 2023*

- Conduct Experiments on Various Sentence Alignment Models for English-Persian Language Pair
- Develop Pipeline for Parallel Corpus Creation via Sentence Alignment
- Author a Scientific Paper titled " ESPOSITO: An English-Persian Scientific Parallel Corpus for Machine Translation "
- Train and Deploy Multilingual Neural Machine Translation Models for Scientific Domains

Publications

ESPOSITO: An English-Persian Scientific Parallel Corpus for Machine Translation *Torino, Italy*

SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING AT UNIVERSITY OF TEHRAN *LREC-COLING - May, 2024*

Mersad Esalati, Hesham Faili, and Mohammad Javad Dousti

Teaching Experience

University of Tehran *Tehran, Iran*

TEACHER ASSISTANT

- **Natural Language Processing**, presented by Dr. H. Faili.
- **Neural Networks and Deep Learning**, presented by Dr. A. Kalhor.
- **Massive Data Analysis and Systems**, presented by Dr. M. J. Dousti.

HooshBaaz Summer School
MENTOR
- Educating Students During 14 Workshops on Data Analytic and Machine Learning. (2022)
- Educating Students During 14 Workshops on Deep Learning. (2023)

Tehran, Iran

Ferdowsi University of Mashhad
TEACHER ASSISTANT
- **Artificial Intelligence**, presented by Dr. S. Abrishami.
- **Data Structures**, presented by Dr. K. Ghiasi-Shirazi.

Mashhad, Iran

Work Experience

Part Software Group
DATA SCIENTIST
- Develop and Deploy Audio-Visual Speech Recognition Service for User Authentication
- Worked on Liveness Detection Service during User Authentication

Mashhad, Iran
Jul. 2023 - PRESENT

Faraazin
MACHINE LEARNING ENGINEER
- Develop Pipeline for Parallel Corpus Creation via Sentence Alignment
- Train and Deploy Various Neural Machine Translation Models for Different Domains

Tehran, Iran
Jan. 2022 - Apr. 2023

Ferdowsi Cloud Laboratory
BACK-END DEVELOPER
- Develop Server for Working with Openstack Services
- Deploy Openstack Cluster

Mashhad, Iran
Jun. 2019 - Jun. 2017

Rajman Information Structures
ANDROID DEVELOPER
- Worked on "Neshan Navigator" android client.
- Develop Bus Live Location Feature
- Develop Multi Language Feature

Mashhad, Iran
Jul. 2018 - Dec. 2019

Academic Project Highlights

LunarLander
COURSE PROJECT OF REINFORCEMENT LEARNING
- Solve LunarLander environment using DQN model

Tehran, Iran
Dec. 2021

Frozen Lake Path Planning
COURSE PROJECT OF REINFORCEMENT LEARNING
- Implement model-free algorithm Off-Policy MC, Q-Learning, SARSA, N-Step Tree Backup for solving frozen lake problem.

Tehran, Iran
Dec. 2021

Neural Machine Translation (NMT) for Persian-English Translation
COURSE PROJECT OF NATURAL LANGUAGE PROCESSING
- Train transformer-based machine translation system using Fairseq/OpenNMT

Tehran, Iran
May. 2021

Sentiment Analysis for Twitter Data using RNNs
COURSE PROJECT OF NATURAL LANGUAGE PROCESSING
- Fine-tune transformer-based different embedding models like BERT, ElMo for classification of tweets

Tehran, Iran
April. 2021

Classify CIFAR10 Dataset using Neural Networks in Keras
COURSE PROJECT OF NEURAL NETWORK AND DEEP LEARNING
- Build and tune Convolutional Neural Network hyper-parameters then use Data Augmentation methods for improving model
- Fine tune EfficientNet for classify CIFAR10 (Transfer Learning)

Tehran, Iran
April. 2021

Detecting Parkinson's disease from speech signal with ensemble learning
COURSE PROJECT OF MACHINE LEARNING
- Try dimensionality reduction using different methods like PCA, LDA, auto-encoder and classify data using SVM and ensemble learning.

Tehran, Iran
Dec. 2020

Solving a Board Game Based on Uninformed and Informed Search
COURSE PROJECT OF ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS
- Implemented Uninformed search algorithms (BFS, UCS, DFS, and IDS) to solve the game.

Mashhad, Iran
May. 2018