

Amirhossein Mesbah

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

Education

University of Tehran

M.SC. IN ARTIFICIAL INTELLIGENCE AND ROBOTICS

- Overall GPA: 19.48/20 (4/4)

Tehran, Iran

2020 - present

University of Tabriz

B.S. IN COMPUTER ENGINEERING

- Thesis: news scrapping dashboard using Scrappy and Django frameworks for news clustering
- Overall GPA: 18.23/20 (3.79/4)
- 3rd Rank among Graduated Bachelor Students based on Overall GPA among 70 students

Tabriz, Iran

2016 - 2020

Research Interests

Reinforcement Learning

Social Reinforcement Learning

Deep Learning

Theory of Deep Learning

Explainable AI

Adversarial Attacks

Computational Neuroscience

System Neuroscience

Research Experience

Research Assistant

COGNITIVE SYSTEMS LAB, UNIVERSITY OF TEHRAN

- Compared different methods of Social Reinforcement Learning in a systematic review. (Link)
- Exploring the role of Free Energy and Sub-spaces to find bottleneck states faster.

Tehran, Iran

2021 - present

Publications

Who to follow: A Policy-gradient Social Reinforcement learning Method for Multi-armed bandit

Reinforcement Learning

B.KARIMIAN, *A.MESBAH, *E.MIRZAEI, M.NILI, R.HOSSEINI, P.SHARIATPANAH (* EQUAL CONTRIBUTION)

2022

- Ready to be Submitted. (Link)

Teaching Experience

Regular Teaching Assistant

UNITED STATES (ONLINE)

- Selected as TA for full-time supervision on the learning of 16 students from different countries, and leading 2 research group projects during 3 weeks in English for Computational Neuroscience.

Neuromatch Academy

2022

Mentor

UNIVERSITY OF TEHRAN, TEHRAN, IRAN

- Group collaboration with 7 other mentors for educating 80 students during 14 workshops on Data Analytics and Machine Learning.

HooshBaaz Summer School

2022

Teaching Assistant for Graduate Courses

SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING, COLLEGE OF ENGINEERING, UNIVERSITY OF TEHRAN, TEHRAN, IRAN

- TA of advanced courses like Advanced Deep Learning, Interactive Learning, Machine Learning, and Data Analytics.

University of Tehran

2021-2022

Projects

Deep Learning & Machine Learning Projects

2022

- Utilizing federated learning methods (FedAVG, FedADMM) for image segmentation task
- Training Distributed Deep Neural Networks for Fashion MNIST classification
- Implementing Generative Cooperative Network
- Setting up a Machine translation system with transformers (English to Persian)
- Implementing an Image captioning Deep Network
- Performing Semantic segmentation on Camvid Dataset
- Detecting Parkinson disease using signals of speech data with ensemble learning

Reinforcement Learning Projects

2022

- Implementing Multi-Agent Reinforcement learning algorithms for grid Environment
- Training Deep Reinforcement Learning Agents for turning the forest fires off
- Finding the best route in a network with multi armed bandit algorithms

Neuroscience Projects

2022

- Implementing multiple Neural Dynamic models of single cell and population models
- Evaluating Discrete-Time Neural Signals
- Studying Continuous-Time Neural Signals for different data modalities
- Analyzing behavioral data of subjects collected by designing a Psychopy task
- Investigating the role of Imitation and Emulation in Decision Making

BigData Projects

2022

- Launching a real-time data pipeline on the Crypto and Stocks market
- Using Apache Spark for NLP, Social Networks Analysis and dimensionality reduction tasks

Skills

Theoretical Experience

Statistical Machine learning, Reinforcement Learning, Deep Learning, Design of Algorithms and Databases

Programming & Scripting

Python, SQL, HTML, CSS, JavaScript, Matlab, C, C++ and Java and \LaTeX

Libraries and Frameworks

PyTorch, Tensorflow, Keras, Numpy, Scipy, Scikit-learn, Pandas, BeautifulSoup, NLTK, Opencv, Django and Scrapy

Languages

English

Fluent

Persian

Native

Turkish

Native

Academic Courses

Principles of cognitive science, 19.49/20

2022

Massive Data Analysis and Systems, 20/20

2022

Data Analysis, 19.5/20

2021

Distributed Optimization and Learning (Special Topics in Control Eng), 19/20

2021

Biological Computing, 19.6/20

2021

Interactive Learning (Special Topics in Control Engineering 1), 18.5/20

2020

Machine Learning, 19.9/20

2020