

# Mohammadreza Mofayezi

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## Education

### Sharif University of Technology

Tehran, Iran

Bachelor of Science in Computer Engineering

Sep. 2019 - Current

- **GPA:** 18.39/20.0 (Major: 18.69/20.0 | Last Year: 19.01/20.0)
- **Selected Courses:** Artificial Intelligence | Machine Learning | Modern Information Retrieval | Bioinformatics | Linear Algebra | Probability and Statistics | Design of Algorithms | Signals & Systems | Advanced Programming
- **Online Courses:** CS231n: Convolutional Neural Networks for Visual Recognition - Stanford University | Fundamentals of Reinforcement Learning - University of Alberta ([Coursera certification](#))

## Publications

- Mohammadreza Mofayezi and Yasamin Medghalchi. Benchmarking robustness to text-guided corruptions. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2023
- Saeed Saadatnejad, Ali Rasekh, Mohammadreza Mofayezi, Yasamin Medghalchi, Sara Rajabzadeh, Taylor Mordan, and Alexandre Alahi. A generic diffusion-based approach for 3d human pose prediction in the wild. In *International Conference on Robotics and Automation (ICRA)*, 2023

## Research & Work Experiences

### Max Planck Institute for Informatics (MPII)

Remote

Undergraduate Research Assistant Under the Supervision of Prof. Adam Kortylewski | GVRL Lab

Dec. 2022 - Mar. 2023

- Proposed a novel benchmark for evaluating the robustness of image classifiers to text-guided corruptions.
- Utilized diffusion models to edit images to different domains.

### École polytechnique fédérale de Lausanne (EPFL)

Remote

Undergraduate Research Assistant Under the Supervision of Prof. Alexandre Alahi | VITA Lab

Oct. 2021 - July 2022

- Formulated the task of human motion synthesis with a diffusion process that starts from a Gaussian noise and generates a human pose.
- Proposed a novel deep generative diffusion model for human motion reconstruction and prediction from incomplete and noisy data that outperforms SOTA models.
- The work resulted in a paper accepted at ICRA 2023 and NeurIPS 2022 Workshop on Score-Based Methods.

### MadLlama

Tehran, Iran

Augmented Reality Developer

Oct. 2020 - Jan. 2022

- Worked on Mobile AR Games with ARCore, ARKit and Unity.
- Developed a fully automated system for generating a Japanese-style environment for the game.
- Implemented an optimized road mesh generation tool with the ability to compress or decompress the mesh.
- Published 2 Games to App Store.

## Voluntary Teaching Experiences

**Artificial Intelligence**, Instructor: Prof. Rohban and Soleymani

Spring 2022 - Fall 2023

Head TA of the course (S2023, F2023). Designed and graded assignments (S2022 and F2022).

**Probability and Statistics**, Instructor: Prof. Sharifi-Zarchi

Fall 2021

Designed and graded assignments, quiz and created educational materials.

**Data Structures and Algorithms**, Instructor: Prof. Safarnejad

Fall 2021

Designed and graded assignments.

**Fundamentals of Programming (C, C++)**, Instructor: Prof. Fazli and Fakouri

Fall 2020, Fall 2021

Designed and graded assignments. Created reading materials.

## Research Interests

### Computer Vision

- Representation Learning
- Generative Models
- Robust Learning

### Natural Language Processing

- Multi-Modal NLP
- Causal Reasoning

## Other Experiences

### Machine Learning Challenge (MLC)

Organized the first Machine Learning Challenge in AI course of Sharif University of Technology.

Tehran, Iran

June 2023

### Reviewer at ICML 2023

Reviewed paper for ICML 2023 Workshop on Structured Probabilistic Inference & Generative Modeling

Online

June 2023

### Made in Lobby 2021

Created technical content about Unity Engine for the Game Design Workshop at Made in Lobby.

Tehran, Iran

Summer 2021

### Gamein 2020 Contest

As a member of the Technical Staff, developed a large-scale multiplayer game with Unity3D and C#

Tehran, Iran

Summer 2020 - Fall 2020

## Notable Projects

### RobuText

CVPRW 2023

- Official implementation of "Benchmarking Robustness to Text-Guided Corruptions". [GitHub Link](#)

MPIL, Germany

Spring 2023

### DePOSit

ICRA 2023

- Official implementation of "A generic diffusion-based approach for 3D human pose prediction in the wild". [GitHub Link](#)

EPFL, Switzerland

Fall 2022

### Breast Cancer Survival Prediction

Machine Learning Course, Prof. Sharif-Zarchi

- Implemented different ML models breast cancer survival prediction. [GitHub Link](#)

Tehran, Iran

Spring 2023

### Hand Gesture Detection

Hardware Lab Course, Prof. Ejlali

- Developed a hand gesture detection system on Raspberry Pi. [GitHub Link](#)

Tehran, Iran

Spring 2023

### WeTube

Computer Networks Course, Prof. Jafari

- Developed an online streaming app with Django framework. [GitHub Link](#)

Tehran, Iran

Spring 2022

### Secure Messenger

Data and Network Security Course, Prof. Amini

- Developed a secure console messenger inspired by the Signal Messenger using Django framework. [GitHub Link](#)

Tehran, Iran

Spring 2022

### Social Network

Data Structures and Algorithms Course, Prof. Safarnejad

- Developed a simple yet efficient representation of social network graphs in Python.
- Implemented a fast cache reply system using the heapq library. [Github Link](#)

Tehran, Iran

Spring 2021

## Honors and Awards

2019 **Winner**, 2nd Team in Spaghetti Code Contest

2019 **Top 20**, University Entrance Exam; 1st rank among more than 50k students, 15th among 250k students

## Skills

### Programming

Python, C#, C/C++, Java, R, SQL.

### Machine Learning Tools

PyTorch, Tensorflow, NumPy, Pandas, Scikit-learn, Matplotlib.

### Game Engine

Unity for Game and Cinematic.

### Data Management & Databases

PostgreSQL, MySQL, MongoDB, Redis.

### Graphical Design Tools

CorelDraw, Adobe Photoshop, Adobe Illustrator.

### Frameworks & Programming Knowledge

Spring Framework, Rest API, WebSocket.

### Miscellaneous

Linux,  $\text{\LaTeX}$ , Microsoft Office, Git.

## Languages

### English

Professional proficiency

### Persian

Native proficiency

### German

Elementary proficiency