

# Mohammadreza Mofayezi

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## Education

### Sharif University of Technology

Tehran, Iran

Bachelor of Science in Computer Engineering

Sep. 2019 - Dec. 2023 (Expected)

- **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

### Sharif University of Technology (SUT)

Tehran, Iran

Bachelor Project Under the Supervision of Dr. Ehsaneddin Asgari

July 2023 - Current

- Working on text-guided human face generation and manipulation.
- Implementing a framework for generating and editing faces through facial landmarks and semantic segmentation.
- Introducing a large-scale multi-modal multilingual face dataset with more than 200K images.
- Under preparation for submitting to ICML 2024 conference.

### 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.
- Introduced a set of hand-engineered prompts for each ImageNet sub-class to generate better image manipulations.
- The work resulted in a paper accepted at the CVPR 2023 Workshop on Generative Models for Computer Vision.

### 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 generative diffusion model for human motion reconstruction and prediction from incomplete and noisy data.
- Conducted experiments on different aspects of the model, such as the diversity of the generated motion and its accuracy.
- The work resulted in a paper accepted at ICRA 2023 and NeurIPS 2022 Workshop on Score-Based Methods.

### MadLlama Game Studio

Tehran, Iran

Augmented Reality Developer

Oct. 2020 - Jan. 2022

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

## Research Interests

### Computer Vision

- Representation Learning
- Generative Models

### Vision and Language

- Multi-Modal Learning
- Vision-Language Reasoning

### Machine Learning

- Trustworthy and Safe ML
- Robust Learning and Fairness

## 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.

## Other Experiences

### Machine Learning Challenge (MLC)

Tehran, Iran

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

June 2023

### Reviewer at ICML 2023

Online

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

June 2023

### Made in Lobby 2021

Tehran, Iran

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

Summer 2021

### Gamein 2020 Contest

Tehran, Iran

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

Summer 2020 - Fall 2020

## Notable Projects

### RobuText

MPII, Germany

CVPRW 2023

Spring 2023

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

### DePOSit

EPFL, Switzerland

ICRA 2023

Fall 2022

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

### Breast Cancer Survival Prediction

Tehran, Iran

Machine Learning Course, Prof. Sharif-Zarchi

Spring 2023

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

### Hand Gesture Detection

Tehran, Iran

Hardware Lab Course, Prof. Ejlali

Spring 2023

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

### WeTube

Tehran, Iran

Computer Networks Course, Prof. Jafari

Spring 2022

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

## Honors and Awards

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

2019 **Award**, Scholarship Award of National Elites Foundation

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

TOEFL iBT 109 (R29, L27, S27, W26)

### Persian

Native proficiency

### German

Elementary proficiency

## References

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### **Prof. Alexandre Alahi**

École polytechnique fédérale de Lausanne (EPFL Switzerland)

**Email:** alexandre.alahi@epfl.ch    **Webpage:** people.epfl.ch/alexandre.alahi

### **Prof. Adam Kortylewski**

Max Planck Institute for Informatics (MPII Germany)

**Email:** akortyle@mpi-inf.mpg.de    **Webpage:** gvr1.mpi-inf.mpg.de

### **Dr. Ehsaneddin Asgari**

Volkswagen Group AI Expert Center at Data:Lab

**Email:** asgari@berkeley.edu    **Webpage:** llp.berkeley.edu/asgari/

### **Prof. Mohammad Hossein Rohban**

Sharif University of Technology (SUT Iran)

**Email:** rohban@sharif.edu    **Webpage:** sharif.edu/~rohban/