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) — *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 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

Secure Messenger — *Tehran, Iran*
Data and Network Security Course, *Prof. Amini* — *Spring 2022*
- Developed a secure console messenger inspired by the Signal Messenger using Django framework. GitHub Link

Social Network — *Tehran, Iran*
Data Structures and Algorithms Course, *Prof. Safarnejad* — *Spring 2021*
- Developed a simple yet efficient representation of social network graphs in Python.
- Implemented a fast cache reply system using the heapq library. Github Link

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, LaTeX, Microsoft Office, Git.

Languages

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

Persian
Native proficiency

German
Elementary proficiency

References

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**: gvrl.mpi-inf.mpg.de

Prof. Mohammad Hossein Rohban

Sharif University of Technology (SUT Iran)

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