

Parham Saremi

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Education

McGill University

M.Sc. in Electrical and Computer Engineering

Montreal, Canada

2024 – Present

Sharif University of Technology

B.Sc. in Computer Engineering

- Overall GPA: 18.70/20

- Overall Major GPA: 19.15/20

Tehran, Iran

2018 – 2023

Research Interests

- Machine Learning
- Generative Modeling
- Medical Imaging
- Computer Vision

Publications

"Towards Reliable Human Pose Forecasting with Uncertainty" - IEEE - RA-L

S. Saadatnejad, **P. Saremi***, Z. TehraniNasab*, M. Mirmohammadi*, M. Daghyani*, A. Alimohammadi*, Y. Zoroofchi Benisi*, T. Mordan, A. Alahi

"Reconstruction of 3D Interaction Models from Images using Shape Prior" - ICCV-2023 R6D

M. Mirmohammadi, **P. Saremi**, Y.L. Kuo, X. Wang

Research Experience

Eidgenössische Technische Hochschule Zürich (ETH)

Human Object Interactions, AIT Lab

Supervisors: Dr. Xi Wang, Dr. Yen-Ling Kuo

Zurich, Switzerland

Jul 2022 – Jul 2023

- Designed and implemented pipelines to generate **Human Object Interactions** from single monocular images while reasoning about their interaction using novel methods.
- Jointly reconstructing object 3D shape and human-object interaction.
- Accepted work at **ICCV-2023 R6D Workshop**

École polytechnique fédérale de Lausanne (EPFL)

Human Motion Prediction, VITA Lab

Supervisors: Saeed Saadatnejad, Prof. Alexandre Alahi

Lausanne, Switzerland

Dec 2021 – Jul 2022

- Developed and maintained **Posepred**, the most extensive library in **Human Motion Prediction**.
- Designed and evaluated a method for Human Motion Prediction models that can improve the results of various models on different datasets from **2% to 5%**.
- Submitted to **IEEE RA-L**

University California Irvine & Sharif University of Technology

Cuisine Prediction from Ingredients, B.Sc. Project

Supervisors: Armin BehnamNia, Prof. Hamid Reza Rabiee, Prof. Ramesh Jain

Tehran, Iran

Nov 2021 – Jul 2022

- Joint research project between the **Sharif University of Technology (SUT)** and the **University of California Irvine (UCI)**
- Designed and developed a **GNN-Transformer** model to predict a dish's cuisine based on that dish's ingredients that achieved **top-3 accuracy of 80%** and beat the state-of-the-art works.

Imperial College London

Verification of Neural Networks, Research Intern

London, England

Jul 2021 - Oct 2021

Supervisors: Patrick Henriksen, Prof. Alessio Lomuscio

- Investigated and experimented with new methods for the **verification of Neural Networks**.

Work Experience

CommaMed (previously AIMed)

Tehran, Iran

Breast Image Pre-processing, Medical Imaging Research Intern

March 2023 - June 2023

- Implemented and investigated multiple preprocessing methods for DDSM breast cancer dataset to enhance the images and make the tumors more visible.

Projects

Single Cell Representation Learning Project: Implemented SimCLR, BYOL, MOBY, MOCO methods and applied them on BBBC021 and BBBC022 datasets for representation learning from single cell images using contrastive methods.

PosePred: Human Pose prediction library using PyTorch comprising ten models, three datasets, and six metrics. Implemented and tested three models and two datasets. Fixed and maintained various parts of the code base, such as main training and evaluation functionality. Implemented a new DataLoader, which improved the library's output results.

Recommender System ML Course: Implemented and tested several models for the ML course project. Deployed the best model using MLFlow. In addition, used MLFlow for tracking and visualizing our metrics.

Computer Vision Course: In this course, I implemented several new and classic computer vision methods, such as Harris Edge Detector, RANSAC for finding optimal Homography, HoG for face detection, and AlexNet for scene recognition.

MIR Course Crawler: Implemented a Crawler that retrieves title, abstract, year, and ... of papers using selenium library from Microsoft Academic website.

Honors & Awards

Ranked 115th Among More Than 140,000 (Top 0.1%) Participants: Iranian Nationwide University Entrance Exam, Mathematics and Physics Discipline, 2018

Skills

ML Skills: Python, Pytorch, Pytorch3D, Numpy, Pandas, Sklearn, Matplotlib

Other Programming Skills: F#, Django, C/C++, Java, C#, Node JS, HTML, CSS, JS

Languages: Persian (Native) , English (Fluent: TOEFL[111] → R[29], L[30], S[24], W[28])

Others: Management , Google Sheets , Linux , \LaTeX , Git , GitHub

Selected Courses

Computer Vision (19.8/20) , Machine Learning-Grad Course (19.1/20) , Stochastic Processes in Bio-Grad Course (20/20) , Artificial Intelligence (20/20) , Advanced Information Retrieval (18.4/20) , Design of Algorithms (20/20) , Linear Algebra (19.0/20) , Deep Learning, NYU (Audited) , Visual Recognition and Computer Vision, Stanford (Audited) , Deep Learning Specialization, Coursera ([Certificate](#)) , Machine Learning, Coursera ([Certificate](#))

Volunteer Teaching Assistants

- Game Theory, Prof. MohammadAmin Fazli Spring 2023
- Stochastic Processes (Grad Course), Prof. Hamid Reza Rabiee Fall 2022
- Machine Learning (Grad Course), Prof. Mahdiah Soleymani Fall 2022
- Artificial Intelligence, Prof. Mahdiah Soleymani Fall 2022

- Design of Algorithms, Prof. Hamid Zarrabi-Zadeh Fall 2022
- Artificial Intelligence (Head), Prof. Mohammad Hossein Rohban Spring 2022
- Artificial Intelligence (Head), Prof. Mohammad Hossein Rohban Fall 2021
- Design of Algorithms, Prof. Hamid Zarrabi-Zadeh Fall 2021
- Artificial Intelligence (Head), Prof. Mohammad Hossein Rohban Spring 2021
- Advanced Programming (Head), Prof. MohammadAmin Fazli Spring 2021
- Discrete Structures, Prof. Hamid Zarrabi-Zadeh Spring 2021
- Computer Structure and Language (Head), Dr. Laleh Arshadi Spring 2021
- Probability and Statistics for Engineering, Prof. Ali Sharifi-Zarchi Fall 2020
- Fundamentals of Programming (Head), Dr. Reza Fakouri Fall 2020
- Computer Structure and Language, Dr. Laleh Arshadi Fall 2020
- Artificial Intelligence, Prof. Mahdiah Soleymani Fall 2020
- Probability and Statistics for Engineering, Dr. Naeemeh Omidvar Spring 2020
- Advanced Programming, 4 AP professors Spring 2020