Aarash Feizi

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INTERESTS

- Multimodal Learning
- Representation Learning
- Self-Supervised Learning
- OOD Robustness

EDUCATION

MCGILL UNIVERSITY

PH.D. IN COMPUTER SCIENCE
2019 - present | Montréal, Canada
GPA: 4/4

SHARIF UNIVERSITY OF TECH.

B.SC. IN SOFTWARE ENGINEERING
2014 - 2019 | Tehran, Iran
GPA: 18.87/20

HONORS

Received the **Fonds de recherche du Québec – Nature et technologies (FRQNT)** doctoral scholarship 2022

Received **Graduate Research Enhancement and Travel (GREAT)** Award 2022

Ranked 3rd in **DataJam Against Exploitation Canada** competition 2021

Received **School of Computer Science Scholarship** from Mila, Quebec AI Institute 2019

Ranked 100th out of over 220,000 students in the National University Entrance Exam 2014

SKILLS

PROGRAMMING

Python • R • Java • Matlab • LaTeX

FRAMEWORKS

PyTorch • Lightning • TensorFlow • Keras • NetworkX

WORK EXPERIENCE

SERVICENOW | VISITING RESEARCHER

Summer-Fall 2024 | Montreal, Canada

- Worked in multimodal foundation model team and was supervised by a Senior Machine Learning Scientist
- Proposed a multimodal benchmark for evaluating state-of-the-art large multimodal models
- Designed efficient evaluation pipelines for large foundation models

RECURSION | MACHINE LEARNING RESEARCH INTERN

Summer-Fall 2023 | Montreal, Canada

- Worked in the Data Science group and was supervised by a Senior Machine Learning Scientist
- Designed models to learn gene representations for data-centric drug discovery
- Applied multi-modal models with self-supervised learning techniques to better integrate sequential and visual modalities of gene-perturbations to learn better gene representations

UNIVERSITY OF TORONTO | RESEARCH ASSISTANT

Summer 2018 | Toronto, Canada

- Worked in a group under the supervision of Professor Plataniotis
- Project goal was to improve the robustness of convolutional neural networks (CNNs) against adversarial attacks

PROJECTS AND PAPERS

GUIDED POSITIVE SAMPLING FOR SELF-SUPERVISED LEARNING

Fall 2023

- Designed a novel method, namely *GPS-SSL*, for integrating a priori knowledge into any self-supervised learning (SSL) model
- GPS-SSL performs positive sampling by *approximating* strong augmentations
- The method encourages the base SSL method to be more robust against untuned data augmentations when applied to under-studied and/or real-world datasets
- *Submitted to* **TMLR**

REVISITING HOTELS-50K AND HOTEL-ID

Spring 2022

- Revisited two image datasets, Hotels-50K and Hotel-ID, and proposed new training and evaluation splits with different levels of difficulty
- Proposed evaluation splits based on the images' class and super-class information to imitate real-world scenarios
- **Accepted** paper for the **ICML 2022 DataPerf** workshop

STRUCTURE-AWARE NEGATIVE SAMPLING IN KNOWLEDGE GRAPHS

Spring 2020

- Design and implementation of a novel efficient negative sampling method with low computational cost for knowledge graphs
- Method based on considering the local neighborhood of each node when selecting the negative samples
- **Accepted** paper for the **EMNLP 2020** conference