AMIR HESAM SALIMNIA

Machine Learning Researcher & Engineer

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RESEARCH EXPERIENCE

Graduate Research Assistant
University of Western Ontario

📅 Sep 2021 – Dec 2022　　　📍 London, ON

Multi-Source-free Domain Adaptation for Emotion Recognition
- Proposed adomain adaptation method to transfer knowledge from multiple source (previous subjects) models to the target (new subject) model without accessing to source data
- Developed an channel-wise attention layer to increase the classification performance
- Achieving comparable performance to domain adaptation state-of-the-art methods which additionally have access to source data

| Domain Adaptation | EEG | Unsupervised Learning | Attention |

Cross-Modal Generation
- Producing corresponding audio to a video by mapping auditory latent vectors obtained by VQVAE to the visual latent vectors using transformers
- RGB frames have been combined with optical flow to achieve distinct spatiotemporal representations.

| Computer Vision | Audio Signal Processing | Generative Models |
| Cross-Modal Representation Learning | Transformers |

Multi Resolution Memory for Anomaly Detection
- Proposing open-set anomaly detection method based on distilling multi-resolution knowledge into a cloner
- Memory unit is used to quantize intermediate features

| Computer Vision | Anomaly Detection | Image Segmentation |

Physics-Informed Neural Networks
- Solving partial differential equations using a data-driven solution
- Utilizing recurrent neural networks to extract features from time-series data

| Time-Series Data | RNN |

Machine Learning Research Assistant
AVIR AI

📅 May 2020 – Dec 2020　　　📍 Tehran, Iran

Multiple Object Tracking
- Designing and implementing a tracking system to solve Multiple Object Tracking paradigm
- Improving the performance of re-identification, and thus MOTA, by 14.6 percent via segmentation head

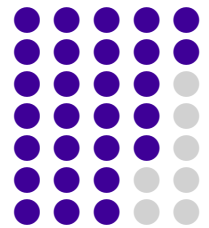| Computer Vision | Image Segmentation | Object Detection |
| Faster-RCNN |

Image and Video Restoration

TECHNICAL

Programming

Python, Java, C/C++
MATLAB, Shell Scripting　●●●●●

ML Platforms

Numpy, Pandas, SciPy
Matplotlib, Scikit-learn
PyTorch, Lightning
TensorFlow, Keras, JAX
OpenCV, FFmpeg, PIL
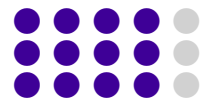**Hugging Face, NLTK**
Weights & Biases, SLURM

Data Management

MySQL, MongoDB
Elasticsearch　●●●○○

Web/Software Development

HTML, CSS, Bootstrap
Django, JavaScript
Docker, Git

EDUCATION

M.Sc. in Computer Science
University of Western Ontario

📅 Sep 2021 – Present

GPA: 4/4

B.Sc. in Electrical Engineering
University of Tehran

📅 Sep 2016 – Jan 2021

GPA: 18.78/20

Minor Degree in Computer Engineering
University of Tehran

📅 Sep 2017 – Jan 2021

GPA: 17.92/20

- Recovering low-quality images with a domain translation network converting degraded photos into clean ones.
- Employing variational autoencoders (VAEs) to construct two latent spaces for old photos and clean ones.

`Computer Vision` `Domain Translation` `Image Enhancement`

Machine Learning Research Intern
HARA AI

📅 May 2019 – Sep 2019   📍 Tehran, Iran

- Designing an identification system for Persian musics Pitch-frequency histogram and Metric Learning methods such as Geometric Mean Metric Learning.
- Developing and evaluating the proposed method on a music dataset containing more than 500,000 Persian songs

`Information Retrieval` `Metric Learning`

TEACHING EXPERIENCE

University of Western Ontario

📅 Sep 2021 – Dec 2022   📍 London, ON

Computer Science Fundamentals I and II (CS1026, CS1027, CS1033)
- Teaching lab sessions
- Grading assignments, and exams

University of Tehran

📅 Sep 2018 – Jan 2021   📍 Tehran, Iran

- Designing and grading assignments projects and exams
- Holding TA classes and conducting lab sessions

HONOR AND AWARDS

- Vector Scholarship In AI ($17,500)
- Graduate Financial Package from Western University ($46,000)
- The University of Tehran M.Sc. Fellowship Award (exempted from the graduate entrance exam)
- Best Thesis Award, University of Tehran
- Ranked 2th (among top 10 percent) among about 120 undergraduate students of Electrical Engineering, University of Tehran
- Silver Medal in Iranian National Physics Olympiad
- Member of Iran's National Elites Foundation

SELECTED COURSES

Undergrad Courses

- Artificial Intelligence
- Engineering Probability and Statistics
- Advanced Programming
- Design Algorithm
- Data Structure and Algorithm
- Digital Signal Processing
- Linear Algebra

Graduate Courses

- AI Ethics
- Brain-Inspired AI
- Advanced Artificial Intelligence
- Neural Networks
- Unstructured Data