YASMIN NIKNAM

Data Scientist and Machine Learning Engineer

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yasminniknam | yasminniknam

SUMMARY OF QUALIFICATIONS

- Three years of experience in research and industrial experience in Machine Learning and deep learning.
- Expertise in Transfer Learning, Computer Vision, and familiarity with Natural Language Processing (NLP).
- Highly skilled in programming, shell scripting, and experienced with data visualization tools.

ACADEMIC RESEARCH AND WORK EXPERIENCE

Machine Learning Research Assistant

Vector Institute

September 2021 – Present | Toronto, ON

- Collaborating in a conference-level video understanding project with a group of data scientists from different universities and companies.
- Pre-processing of a 2 TB untrimmed news video dataset from Thomson Reuters with over 7,000 samples.
- Analyzing the semantics of video samples and matching them with their corresponding pertinent captions.

Computer Vision | Natural Language Processing | Real-World Data | Transformers | Vision Transformers (ViTs)

Machine Learning Engineer Intern

Mitacs (In Collaboration with SkyDeploy)

November 2021 – May 2022 | London, ON

- Implementation of a deep learning model that can count and localize cars commuting in a parking lot using drone data.
- Annotated real-world data for the project using Amazon Mechanical Turk tool.

Computer Vision | Object Detection | Faster R-CNN | Real-World Image Data | Amazon Mechanical Turk

Graduate Research Assistant

University of Western Ontario

March 2021 – December 2021 | London, ON

Source-free Domain Adaptation for Sleep Stage Classification

- Designed and implemented a model capable of learning from a source domain and then performing well on a second domain, called the target domain, without accessing the source domain during training the target domain.
- Employed supervised contrastive learning and a novel data augmentation designed for EEG signals to improve the generalization performance of the source model.
- Presented a method for solving the problem of data imbalance in sleep datasets.

TECHNICAL

Coding Languages

Python, MATLAB, C/C++
Git, Java, LaTeX
SLURM, Shell Scripting

ML Libraries/Environment

Numpy, Pytorch, CUDA
Keras, TensorFlow
Weights and Biases
OpenCV, FFmpeg, PIL
Hugging Face, NLTK

Data Visualization and Management

Pandas, SciPy, Seaborn
Matplotlib, Scikit-learn
SQL, Tableau
Elasticsearch, MongoDB

Web/Software Development

Docker
HTML, CSS, Bootstrap
Java Script

EDUCATION

M.Sc. in Computer Science

University of Western Ontario

September 2021 – Present

GPA: 4/4
Thesis title: Source-free Domain Adaptation for Sleep Stage Classification

B.Sc. in Electrical Engineering

University of Tehran

September 2016 – January 2021

GPA: 18.25/20
Thesis title: Image and Video Restoration

Minor in Computer Engineering

University of Tehran

January 2018 – January 2021

GPA: 18.43/20

Transfer Learning | Contrastive Learning | Time-Series Data | Medical Data Analysis | Imbalanced Data | Unsupervised Learning

Cross-Modal Generation

- Used state-of-the-art deep learning models to generate corresponding audio of a given video through the use of discrete feature learning.
- Investigated various methods that can be used for matching discrete cross-domain feature matching.

Computer Vision | Audio Signal Processing | VQ-VAE | Cross-Modal Representation Learning

Machine Learning Research Assistant

AVIR AI

May 2020 – December 2020 | Tehran, Iran

Multiple Object Tracking

- Developed an object detector to utilize bounding boxes around people in crowded scenes.
- Improved the re-identification module through image segmentation techniques to track multiple people in a video.

Computer Vision | Image Segmentation | Faster R-CNN

Image and Video Restoration

- Restored old photos affected by severe degradation by training two variational autoencoders (VAEs) to construct two latent spaces, one for old photos and one for clean photos.
- Implemented a video restoration model based on the learned image restoration module and image quality assessment measures.

Computer Vision | Variational Autoencoders

Machine Learning Research Intern

HARA AI

May 2019 – September 2019 | Tehran, Iran

- Led to the development of a model for retrieving Persian music and songs from various authors.
- Extracted features from over 500,000 Persian songs and performed various similarity metrics in collaboration with a group of two data scientists.

Audio Signal Processing | Metric Learning | Real-World Audio Data

TEACHING EXPERIENCE

Teaching Assistant

University of Western Ontario

September 2021 – December 2022 | London, ON

- Conducted lab sessions, graded assignments, proctored and graded exams for Computer Science Fundamentals I and II.

Teaching Assistant

University of Tehran

September 2018 – January 2021 | Tehran, Iran

- Designed assignments, exams, and projects, and graded exams for various courses.
- Supervised and conducted lab sessions for over 300 students in a computer programming course.

HONOR AND AWARDS

- University of Western Ontario Graduate Financial Package of 46K CAD
- Mitacs Accelerate Fellowship of 15K CAD
- The University of Tehran M.Sc. Fellowship Award (exempted from the graduate entrance exam)
- Best Undergraduate Thesis Award from the University of Tehran
- Ranked 8^{th} (among top 10 percent) out of 120 undergraduate students, School of Electrical and Computer Engineering, University of Tehran
- Ranked 111^{th} (in the top 0.2 percent) among more than 200,000 participants in the Iranian National University Entrance Exam in 2016
- Member of Iran's National Elites Foundation

CERTIFICATIONS

Introduction to Machine Learning in Production

DeepLearning.ai

Ask Questions to Make Data-Driven Decisions

Google

SELECTED COURSES

Computer Science Courses

- Operating Systems
- Advanced Programming
- Data Structure and Algorithm
- Design Algorithm

AI Courses

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

Other Relevant Courses

- Unstructured Data
- Linear Algebra
- Digital Signal Processing
- Engineering Probability and Statistics