YASMIN NIKNAM

Data Scientist and Machine Learning Engineer

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yasminniknam | yasminniknam

SUMMARY OF QUALIFICATIONS

- Three years of research and industrial experience developing Machine Learning and Deep Learning models in the areas of Transfer Learning, Computer Vision, Recommendation Systems, Natural Language Processing (NLP), and Anomaly Detection.
- A proven track record of presenting works to stakeholders, analyzing a large volume of real-world data to identify the right data-driven objectives with tangible outcomes, and communicating effectively with subject-matter experts.
- Highly skilled in machine learning frameworks, data analysis and visualization tools, programming, Linux, and Shell Scripting.

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 | NLP | Real-World Data | Recommender System

Machine Learning Engineer Intern

Mitacs (In Collaboration with SkyDeploy)

November 2021 – May 2022 | London, ON

- Preprocessed, cleaned and analyzed drone-captured dataset of images and meta-data from a parking lot.
- Annotated real-world data for the project using AWS Mechanical Turk.
- Implemented a deep learning model for counting and localizing cars in a parking lot.

Computer Vision | Object Detection | Faster R-CNN | Real-World Image Data | AWS MTurk

Graduate Research Assistant

University of Western Ontario

March 2021 – December 2022 | 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.

TECHNICAL

Coding Languages

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

ML Libraries/Environment

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

Data Analysis and Visualization Tools

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

Web/Software Development

HTML, CSS, Bootstrap
JS, Node.js, Flask
Docker

EDUCATION

M.Sc. in Computer Science

University of Western Ontario

September 2021 – February 2023

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

- Improved the accuracy by 10% by presenting a method for solving the problem of data imbalance in sleep datasets.

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

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 a team of 20 TAs, 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

Machine Learning Engineering for Production (MLOps)

DeepLearning.ai

- Introduction to Machine Learning in Production

Google Data Analytics Professional Certificate

Google

- Foundations: Data, Data, Everywhere
- Ask Questions to Make Data-Driven Decisions
- Prepare Data for Exploration
- Process Data from Dirty to Clean

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