Sara Saberi Moghadam

MSc. in Artificial Intelligence

PERSONAL DETAILS

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RESEARCH INTERESTS

Deep Learning	Paradigms
Semantic Segmentation	Generative Adversarial Networks
Computer Vision	Artificial intelligence in medicine
Object Tracking	Generative Adversarial Networks
Image/Video Super-resolution Learning	Edge inference and mobile AI

EDUCATION

M.Sc. in Artificial Intelligence 2018-2020

Department of Computer Engineering, Alzahra University, Tehran, Iran
GPA: 18:33/20
Supervisor: Dr. Reza Azmi

Bachelor of Science in Computer Engineering (Software) 2011-2015
Abrar University, Tehran, Iran
GPA: 15.95/20

Diploma in Mathematics and Physics 2009-2013
Salam Resalat School, Tehran, Iran
GPA: 18:30/20

HONORS & AWARDS

Ranked 1st among the postgraduate students of Artificial Intelligence in Computer Engineering Department at Alzahra University with **GPA: 18.33/20**. 2021

Ranked 3rd among 36 teams in the second **Algorithmic Trading competition** in the problem-solving section, which includes the prediction of the required financial parameters.2020

RESEARCH EXPERIENCES

Master's Thesis   2018-2020
Application of texture synthesis in image to image translation in the field of fashion AI
   Supervision : Under Dr. Reza Azmi
   In this research, we had presented a generative model called WBT-GAN for texture synthesis
   problem, which was an extension of the existing Texture-GAN network using a four-level
   wavelet transform and error definition based on it in the objective function of the model.

WORK EXPERIENCES

Researcher and Developer   2018-present
   Project 1: SnapMode (Iranian Smart Fashion Search Engine)

   - Designed and developed a Low Latency Scalable Focused Web Crawler to ex- tract fashion
     data from E-commerce websites using Apache Storm, Solr, Kafka and Milvus. (+10M
     Product Pages)

   - Developed a visual embedding model using Resnet-18-v2 (fine-tuning on DeepFashion2,
     Platform: Mxnet) and Hnswlib (library for fast approximate nearest neighbors).

   - Developed a Triplet-based deep model to learn similarity using Resnet-152-v2.

   Project 2: Rasad(University News Analysis and Tracking System)

   - Designed and developed a news analysis and monitoring system that leveraged from BERT
     model for sentiment analysis and improved negative comments detection with 82% accuracy
     rate.(Focusing on university news)

   C and C++ Developer, Pooyandegan Rah Saadat SAADAT CO.   2015-2017

   - Development Central monitoring system.

TEACHING EXPERIENCES

Teacher Assistant Neural Networks Course   Winter 2021
Alzahra University, Tehran, Iran
Dr. Reza Azmi

Teacher Assistant Pattern Recognition Course   Spring 2021
Alzahra University, Tehran, Iran
Dr. Reza Azmi

COURSE PROJECTS

Data Mining
Image retrival on fashion dataset

   - Collected fashion dataset using Storm Crawler from Pinterest (Distributed Crawler Plat-
     form).

   - Developed a visual embedding model using Resnet-18-v2 (fine-tuning on DeepFashion2,
     Platform: Mxnet) and Hnswlib (library for fast approximate nearest neighbors).

   - Developed a Triplet-based deep model to learn similarity using Resnet-152-v2.

Speech Recognition
Emotion Recognition in Speech

- Feature extraction by PyAudioAnalysis.
- Classification speech of Persian dataset in four main categories: Happy, Sad, Angry, and Neutral using SVM, KNN, and Gradient Boosting algorithms.
- Extracting the Spectrogram Diagram as a feature and using CNN for classification.
- Deploying as a service using Django framework.

Image Processing
Deception Detection on Video

- Extracting Facial action units using the OpenFace.
- classifying the frames by Stack LSTM on real-life trial dataset.
- Deploying as a service using Django framework.

Pattern Recognition
OCR Persian Alphabet

- Feature extraction using by LOCI algorithm.
- Dimension reduction by Singular Value Decomposition(SVD).
- classification by Bayesian classifier.

Machine Learning
Stock Prediction

- Making Data stationery.
- Convert Time Series Data to Supervised Model.
- Prediction Stock value using SVM algorithm.
- Stock trading volume using LSTM, RNN, Prophet algorithms.

Neural Network
Gender and Style Detection

- Crawling Instagram profile image(selenium) and making dataset.
- Preprocessing (OpenCV).
- Fine-Tuning ResNet50, DenseNet, SeNet and Vgg19 (Keras platform) on our dataset.

JOURNAL PUBLICATIONS

Narges Norouzi,Reza Azmi,Maral Zarvani,**Sara Saberi Moghadam**, **"SnapMode: Distributed Large-scale Fashion Image Retrieval Platform based on Big Data and Deep Learning Technologies,"** Submitted to *Big Data Research Journal*, October 2021.

Maral Zarvani, **Sara Saberi Moghadam**, Reza Azmi, Seyed Vahab Shojaedini, **"Residual Learning: A New paradigm to Improve Deep Learning Based Segmentation of Left Ventricle in MRI Cardiac Images,"** Published in *Journal of Medical Signals and Sensors*, vol. 11, no. 3, pp. 159-168, July 2021.

Sara Saberi, **Maral Zarvani**,Reza Azmi, Hamid abbasi **"Multimodal Predicting the Severity of Covid 19 Patients using deep learning"**, In press.

Maral Zarvani, Sara Saberi,Reza Azmi **"Improved Produced Mask with MultiResolution approach in MaskR-CNN"**, In press.

CONFERENCE PUBLICATIONS

Sara Saberi Moghadam, Reza Azmi, Maral Zarvani, **"WBT-GAN:Wavelet based Generative Adversarial Network for Texture Synthesis,"** *11th International Conference on Computer and Knowledge Engineering (ICCKE)*, Mashhad, Iran, 2021, pp. 1-last page.

Sara Saberi Moghadam, Maral Zarvani, Paria Amiri, Reza Azmi, Hamid Abbasi, Member IEEE, **"Deep Learning Classification Schemes for the Identification of COVID-19 Infected Patients using Large Chest X-ray Image Dataset ,"** in *42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'20)*, Montreal, Canada, 2020, pp. 1-last page.

TECHNICAL SKILLS

Programming Languages: C/C++, Python, Java Script, Java
Deep Learning Platforms and Libraries: Keras, Pytorch, MXNet
Data Science Python Libraries Data Science: NumPy, Pandas, Matplotlib, SciKit-Learn, Streamparse, Pysolr, Beautiful Soup, Selenium, SciPy, PyAudioAnalysis, Request, CV2, Pillow, OpenFace
Search Engines: Apache Solr
Database: MySQL, SQL-SERVER, PostgreSQL
Distributed Stream Processing Platforms: Apache Storm
Web developing: Vuejs, HTML, Css, Adobe XD, Django, FastApi
Development Environment: VSCode, Spyder, Jupyter Notebook, PyCharm
Platforms: Linux(Ubuntu), Windows
Typesetting: LaTeX, Microsoft Word
Version control Tools: Git

LANGUAGE SKILLS

Persian (mother tongue)
English(Last TOEFL Mock Test: 90/120 (Reading:23, Listening:22, Speaking:23, Writing:22)

RELATED COURSE

Neural Networks 20/20
Language and Speech Processing 18.5/20
Advanced Data Mining 18.5/20
Evolutionary Computing 18/20
Advanced Programming 20/20

SOFT SKILLS

Adaptability	Teamwork
Critical Thinking	Positively
Communication	Creativity

REFERENCES

Dr. Reza Azmi
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Dr. Hamid Abbasi
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Auckland,New Zealand
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Dr. Seyed Vahab Shojaedini
Iranian Research Organization for Science and Technology
Tehtan,Iran
shojaeddini_va@yahoo.com
Phone: (+9) 02156276311,

EXTRA CURRICULAR ACTIVITIES

1. Member of Society of Imam Ali's Popular Students Relief Society
2. Swimming