SARA S.M TEHRANI

Data Scientist

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ABOUT ME

MSc. graduated in AI with 2+ years of experience in researching and building applied machine learning applications. Cooperation in smart image retrieval startup with 168,000 active users and 680,496 active products. I am interested in cutting-edge technology, researching, and applying ML algorithms to solve real-world problems. Finally, I attempt to think critically and enjoy being creative, innovative, and working as a team member.

Key SKILLS

- Data Collection
- Data Analysis
- Image Retrieval
- Web Crawling
- Machine Learning & Deep Learning
- Computer Vision Model Development
- Creative
- Growth mindset
- Emotional intelligence

TECHNICAL SKILLS

Tools & Languages: Python, C/C++, Apache Storm, Apache Solr, Linux, Docker, SQL, Neptune

Packages: Scikit-Learn, NumPy, Pandas, OpenCV, OpenFace, Streamparse, BeautifulSoup, PySolr, Matplotlib, Request, FastAPI, Twint

Machine Learning: Classification, Clustering, Prediction

Deep Learning: PyTorch, Keras, CNN, GANs

WORK EXPERIENCES

Machine Learning Engineer

Feb '19 - Apr '22

ToobaTech Company (*Artificial Intelligence Lab 2015 until now, Tehran, Iran*)

- Project 1: ToobaMode (Iranian Smart Fashion Search Engine)
  1. Developed a distributed web crawling system using Apache Storm, Apache Solr, and Streamparse to extract fashion data from E-commerce websites (+10M Product Pages)
  2. Enhanced the content-based image retrieval capability using state-of-the-art Generative Adversarial Networks (InfoGAN) to feature vector extraction. (67% accuracy on the in-shop products)
- Project 2: Rasad (University News Analysis and Tracking System)
  1. Designed and developed a distributed web crawling system to extract data from news agencies' websites in the last decade (+6M news pages)
  2. Developed a social media scraping system for Twitter, Instagram, and LinkedIn
  3. Improved BERT model for sentiment analysis for negative comments detection with 82% accuracy rate.
  4. Designed and implemented an analytical dashboard using FastAPI and Vuejs

Researcher & Developer

Feb '15 - Nov '18

SAADAT Company (*Patient monitoring system producer 1998 until now, Tehran, Iran*)

- C and C++ Developer of Central monitoring system

EDUCATION

M.Sc. in Artificial Intelligence

Alzahra University (*Feb '18 - Oct '21, Tehran, Iran*)

GPA: 18.33 of 20 (first rank)

Thesis: Texture synthesis in the image-to-image translation in the field of fashion AI using Generative Adversarial Networks

Supervisor: Dr. Reza Azmi

Course Projects:

- Neural Networks (20/20) | Gender and Style Detection| Crawling Instagram profile images(selenium) and making the dataset | Face detection (OpenCV) | Fine-Tuning ResNet50, DenseNet, SeNet, and Vgg19 (Keras platform) on our dataset.
- Pattern Recognition (20/20) | OCR Persian Alphabet | Feature extraction using LOCI algorithm | Dimension reduction by Singular Value Decomposition(SVD) | Classification by Naive Bayesian classifier.
- Image Processing (20/20) | Segmentation of Left Ventricle in MRI Cardiac Images | Proposed the deep CNN model for medical image segmentation | Improved by 5%, 3.5%, 8.1%, and 11.4% compared to its deep alternatives in terms of Jaccard, Dice, Precision, and FPR indexes, respectively.
- Data Mining (18.5/20) | Visual Transformer and Deep CNN Prediction of High-risk COVID-19 Infected Patients using Fusion of CT Images and Clinical Data | Developing Visual Transformer and 3D Convolutional Neural Network (CNN) predictive models fed with a series of fusion datasets from patients' CT images and their clinical data | Preprocessing data: imputation(with KNN), feature extraction(PCA), data visualization(TSN-E algorithm) | Creating 3D CNN model for CT images.

Publications:

- Visual Transformer and Deep CNN Prediction of High-risk COVID-19 Infected Patients using Fusion of CT Images and Clinical Data, submitted to Information Fusion
- Distributed Large-scale Fashion Image Retrieval Platform based on Big Data and Deep Learning Technologies," Submitted to Big Data Research Journal, October 2021.
- CBIR-GAN: A Triplet Generative Adversarial Network for Content-based Image Retrieval" Submitted to Expert Systems With Applications, December 2021.
- 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
- Conferences: 42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'20), 20-24 July 2020, Montreal, Canada

B.Sc. Computer Engineering (Software)

Abrar University (*Feb '11 - Oct '15, Tehran,Iran*)

CERTIFICATION

Deploying Machine Learning Models in Production | Coursera

Deep Neural Networks with PyTorch | Coursera

LANGUAGE

English (Advance) and Persian (Native)