Mahdi Darvish

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EDUCATION

Bachelor of Science in Computer Engineering
2018 – 2022(*Expected*)

Cumulative GPA : 3.82 / 4.00 till now via 110 credit (30 left) — *University of Mohaghegh Ardabili, Ardabil, Iran*

- Ranked 1st cumulative GPA within the top 2% of graduating class
- Capstone Project:"Towards Fine-grained Image Classification with Generative Adversarial Networks"

High School Diploma in Mathematical physics
2013 – 2017

Cumulative GPA : 4.00 / 4.00 — *Allameh Helli High School, Tehran, Iran.*

- Member of National Organization for Development of Exceptional Talents (NODET)

RESEARCH INTERESTS

Compuer Vision: Generative Models, Object Recognition, Optimization, Image Restoration, Segmentation, Object Detection and Tracking, Vision Transformers and Image generation
Natural Language Processing: Visual Description, Image Captioning, Text-to-Image Generation
Robotics: Motion Planning, Learning and Classification,Vision-aided Navigation

PUBLICATIONS

Towards Fine-grained Image Classification with GANs and Facial Landmark Detection
July 2021

Mahdi Darvish, Mahsa Pouramini, Hamid Bahador [PDF] [Code]

- Accepted on International Conference of Machine vision and Image Processing
- Boosted performance of StyleGAN2-ADA by manipulating datasets according to facial landmarks.
- Achieved state-of-the-art results in fine-grained classification with Vision Transformer models.

Art Generation in Deep Learning: A Survey
Sep. 2021 (Expected)

Mahdi Darvish, Ashkan Ganj, Mahsa Pouramini, Seyed Hamid Safavi — *In Preparation*

- A survey on different methods on generating illustrative arts with deep learning.
- Comparing Contrastive Unpaired Translation, Neural Style Transfer, GAN-based generators, etc.

PROJECTS

Comparative Analysis of ConvNet Architecture on Bird Species Dataset [Github] | *Python, Tensorflow*
March 2021

- Visualized and compared 5 convolutional neural network architecture
- Analysed models: AlexNet, VGG16, InceptionV3, ResNet and MobileNet

Instance Segmentation with Mask R-CNN [Github] | *Python, Keras, Tensorflow*
Jan 2021

- Fine-tuned Mask R-CNN on a certain category collected from OpenImages dataset
- Improved the model's performance with precise fine-tuning

YOLOv3 from Scratch: Analaysis and Implementation [Github] | *Python, Torch, OpenCV*
December 2020

- Implemented the famous model YOLO from scratch
- Experimented with the results and compared to the state-of-the-art benchmarks

COVID-19 Analysis and Visualization [Github] | *Python, Pandas, MatPlotLib, Seaborn, Plot.ly*
August 2020

- Tracked and visualized the spread of COVID-19 worldwide
- Used over 15 types of graphs and charts to analyse the data

TEACHING ASSISTANT

Design of Algorithms
Fall 2021

Instructor: Masumeh Kheyri — *Department of computer engineering, University of Mohaghegh Ardabili*

Database Systems Design
Winter 2020

Instructor: Ahmad TaghiNezhad — *Department of computer engineering, University of Mohaghegh Ardabili*

Discrete Mathematics
Winter 2020

Instructor: Masumeh Kheyri — *Department of computer engineering, University of Mohaghegh Ardabili*

Coursework

Robotics Specialization   September 2021 (Expected)
Offered by University of Pennsylvania through Coursera
- Courses Included: Aerial Robotics, Computational Motion Planning, Mobility, Preception, Estimation and Learning

Deep Learning Specialization   February 2021
authorized by DeepLearning.AI and offered through Coursera [Certificate]
- Neural Networks and Deep Learning
- Hyperparameter Tuning, Regularization and Optimization
- Structuring Machine Learning Projects
- Convolutional Neural Networks and Sequence Models

Machine Learning course   November 2020
Offered by Stanford University through Coursera [Certificate]
- Skills Gained : Logistic Regression, Artificial Neural Networks, Machine Learning Algorithms, Machine Learning

Honors & Awards

Awarded distinguished student in department of electrical and computer engineering   2018 - Current
University of Mohaghegh Ardabili   *Ardabil province, Iran*

Ranked 1st in the 2nd UMA Copa Code (programming contest)   Winter 2020
Held by department of computer science   *University of Mohaghegh Ardabili*

Ranked 3rd in the Code Cup of Mohaghegh (CCM)   Winter 2020
Held by department of electrical and compuer engineering   *University of Mohaghegh Ardabili*

Qualified in Level 2 of Iranian National Olympiad in Informatics   2015 & 2016
Young Scholars Club   *Tehran province, Iran*

Chosen Student For National Organization for Exceptional Talents Schools   2014
Allameh Helli High School   *Tehran province, Iran*

Technical Skills

Programming Languages: Python, R, C++, Octave, Matlab
Tools: Jupyter Notebook, SQL, LaTeX, Git, Docker
Python Libraries: Keras, Torch, Tensorflow2, Matplotlib, Seaborn, OpenCV, Numpy and Pandas
Operating Systems: Linux, Windows

Languages

Persian: Native
English: Fluent
- IELTS exam is scheduled for 20 Sep. 2021 (aimed band score: 8)

Refrences

- **Prof. Shahram Jamali**
  Professor - Faculty Member
  The department of computer engineering - UMA
  jamali@uma.ac.ir

- **Prof. Hamid Bahador**
  Associate Professor - Faculty Member
  The department of computer engineering - UMA
  hamid.bahador@uma.ac.ir