

# Mohammad Younesi

## COMPUTER SCIENTIST

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## Work Experience

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### Bayer

ON, Canada

DATA SCIENTIST

Dec. 2022 - Now

- Member of the digital phenotyping team
- Developed and trained a weed-detector model
- Developed and trained a diffusion model for increase the resolution of the field images from satellite view to UAV view

### OnsiteIQ

NY, USA

MACHINE LEARNING ENGINEER

May. 2022 - Aug. 2022

- Leveraged state-of-the-art models (YOLO) for object recognition and other tasks in construction
- Optimized the AI base image for AWS running using TF 2.9.1 base image
- Planned, structured, and wrote the code for executing data migration from Dataloop to Amazon S3

### Brain and Mind Institute (Western University)

London, Canada

MACHINE LEARNING RESEARCH ASSISTANT

Jan. 2021 - Apr. 2022

- Proposed and executed an end-to-end method for modifying and controlling the memorability score of different images by using Generative Adversarial Networks (GANs)
- Trained and introduced multiple assessors (deep models) for predicting memorability of face and object images using Tensorflow
- Generated 100k face images by StyleGAN1, StyleGAN2 and object images by BigGAN and used inverse mapping of GANs to acquire the latent vector of real images
- Developed a new method to modify the memorability score of objects and face images by modifying their latent vectors

### Digikala

Tehran, Iran

STUDENT PROJECT

Feb. 2019

- Used NLP techniques (mainly fasttext) to filter the inappropriate comments
- Created word clouds for appropriate and inappropriate comments

## Technical Skills

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<b>Programming</b>	Python, Tensorflow, Keras, PyTorch, C/C++, Java/JavaFX, Matlab, Sage, CUDA Programming, R, JavaScript, PySpark, Bash
<b>Technologies</b>	Docker, Git, Jupyter, PyCharm, Linux, AWS, Tableau, Google Cloud, Blockchain, Hadoop, MapReduce
<b>Databases</b>	SQL, MySQL, MongoDB, Spark
<b>Soft Skills</b>	Leadership, Team-working, Critical thinking
<b>Others</b>	GAN, Deep Learning, Image Processing, Signal Processing, Graph theory, Natural Language Processing, Reinforcement Learning, Information Theory, Statistics, ML theory

## Education

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### University of Western Ontario

London, Canada

M.Sc. IN COMPUTER SCIENCE

Jan. 2021 - Apr. 2022

- GPA: 97/100
- M.Sc. Thesis: Predicting and Modifying Memorability of Real and Unreal Images

### Sharif University of Technology

Tehran, Iran

B.Sc. IN ELECTRICAL ENGINEERING

2014 - 2019

- B.Sc. Thesis: Using Extensions of HMM for Sleep Stages Classification

### Sharif University of Technology

Tehran, Iran

B.Sc. IN COMPUTER SCIENCE

2014 - 2019

- GPA: 4/4 or 18.52/20

## Academic Experience

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### University of Western Ontario

London, Canada

TEACHING ASSISTANT

Jan. 2021 - Apr. 2022

- Teaching assistant for data analysis and visualization, data structure and algorithms, and discrete mathematics

- Tutor and exam designer for Signal and Systems, machine learning, and linear algebra

## Certifications

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- 2022 **Deploying Scalable Machine Learning for Datascience** - LinkedIn
- 2022 **Docker for Data Scientists** - LinkedIn
- 2022 **C++** - Sololearn
- 2022 **Training Neural Networks in C++** - LinkedIn
- 2022 **Problem Solving** - HackerRank
- 2022 **SQL** - HackerRank
- 2022 **Leading with Innovation** - LinkedIn
- 2022 **Learn to Lead** - Western University
- 2022 **The Founders Journey - An Entrepreneurial Process** - Morrisette Entrepreneurship
- 2020 **Neural Networks and Deep Learning** - DeepLearning.AI
- 2020 **Fundamental Neuroscience for Neuroimaging** - Johns Hopkins University
- 2019 **Critical Thinking** - LinkedIn

## Honors & Awards

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- 2022 **Ranked 2nd**, Best presentation award in Computer Science *London, Canada*
- 2020 **Scholarship**, Wining Vector Scholarship Award in Artificial Intelligence *Ontario, Canada*
- 2019 **Ranked 2nd**, Computer Engineering (AI) National University Entrance for M.Sc. among more than 15,000 graduate students *Tehran, Iran*
- 2014 **Ranked 36th**, National University Entrance Examination among about 200,000 students *Tehran, Iran*
- 2014 **Member**, National Iranian Elites Foundation since 2014 *Tehran, Iran*
- 2013 **Finalist**, Second step of Iran National Informatics Olympiad *Tehran, Iran*
- 2012 **Finalist**, Second step of Iran National Mathematics Olympiad *Tehran, Iran*

## Selected Projects

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- Predicting face memorability score with deep neural networks
- Controlling and modifying memorability of real and synthesized images by using GAN and deep models
- Implementing LCR leader election algorithm for an asynchronous ring
- Constructing a Merkle tree with SHA256 as its hash function
- Sleep-stages classification using HMM and its extensions
- Classification of product's consumer reviews and decide whether to show their reviews or not
- Detroit flight ticket compliance
- Proposing category-based memorability assessors using transfer learning
- Implementing Harris corner detector, Canny edge detector, and Lucas-Kanade algorithm for motion flow detection
- Branched neural network for object and scene processing
- Proposing and training a deep CNN for dog/cat classification
- Motion detection from Kinect dataset
- Implementing different CPU scheduling algorithms (First come first serve, shortest job first, shortest remaining time, round robin, FIFO, LRU)
- High-performance Discrete Fourier Transforms on graphics processors using CUDA ([link](#))
- Implementing various types of static and dynamic routing using GNS3
- Secure chat application
- Implementing different CPU scheduling algorithms

## Publications

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- Younesi, Mohammad, and Yalda Mohsenzadeh. "Controlling Memorability of Face Images." arXiv preprint arXiv:2202.11896 (2022).
- Younesi, Mohammad, and Yalda Mohsenzadeh. "Facememnet: Predicting Face Memorability with Deep Neural Networks." PsyArXiv, 24 Feb. 2022. Web.