Fatemeh **Behrad**

Machine Learning Engineer

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Education

2023-2027 — **Ph.D. Researcher**

KU Leuven – Leuven

- Thesis title: Visual factors to predict human aesthetic preferences for images: A deep-learning approach based on Vision Transformers

2019-2022 — **Master of Science: Artificial Intelligence**

Tarbiat Modares University - Tehran

- GPA: 17.68/20
- Thesis title: Survival time prediction in patients with brain tumor using evolutionary deep learning

2015-2019 — **Bachelor of Science: Computer Software Engineering**

Alzahra University - Tehran

- GPA: 19.04/20 (Rank: 1/20)
- Final project title: Sentiment analysis on online product reviews

Projects and Experience

June 2022- March 2023 — **Computer vision engineer**

Revivoto - Tehran

- Image inpainting using state-of-the-art methods such as Lama, ZITS, Stable diffusion, Paella, and Repaint.
- Image enhancement (MAXIM).
- Image classification and segmentation (detectron2).

September 2022 — **Airway segmentation**

Freelancer - Tehran

- Airway segmentation in CT scans using U-Net.

Apr2022 — **Pricing Products**

Freelancer - Tehran

- Predicted the price of products according to the descriptions provided by sellers.

Oct 2021 - Jan 2022 **Neural Network Pruning**

Tarbiat Modares University - Tehran

- Pruned redundant filters of a U-Net-based network using different criteria, including l2-norm, APoZ, and the genetic algorithm, without performance degradation.

Dec 2020 - Sep 2021 **Brain Tumor Segmentation and Survival Time Prediction**

Tarbiat Modares University - Tehran

- Identified brain tumor sub-regions in MRI using a pruned CNN.
- Predicted overall survival time of patients using the pruned CNN and machine learning algorithms (XGBoost, Random forest, linear regression, and SVR).

Jul2020 **Object Detection Project**

Tarbiat Modares University - Tehran

- Car detection using the YOLO algorithm.

Oct 2019- Dec 2019 **Content Based Image Retrieval System**

Tarbiat Modares University - Tehran

- Developed a CBIR system using local features in images and SVM.

Jan 2018 -Aug 2018 **Data Science Intern**

Toobatech - Tehran

- Opinion mining and Sentiment analysis.
- Data visualization.

Publications

March 2023 Title: Evolutionary convolutional neural network for efficient brain tumor segmentation and overall survival prediction
Journal: Expert Systems with Applications (Q1, impact factor: 8.5)

August 2022 Title: An overview of deep learning methods for multimodal medical data mining
Journal: Expert Systems with Applications (Q1, impact factor: 8.5)

Skills

Deep learning, Machine learning, Python (Numpy, Pandas, Scikit-learn, OpenCV, etc.), Tensorflow, Keras, PyTorch, Computer vision, Image segmentation, Image inpainting, Object detection, Image enhancement, Image aesthetic assessment, Evolutionary computing, Docker, FastAPI, Linux, Git, Data visualization (Matplotlib, excel), Natural language processing (NLP), Weka.

Curriculum

Master's degree	Deep neural networks, Machine learning, Image processing, Digital signal processing, Evolutionary computing, Advanced data mining, Complex networks
Bachelor's degree	Computer basics, Software engineering, Advanced programming, Combinational circuits, Electronic circuits, Engineering mathematics, Data structures, Operating systems, Computer networks, Software testing, Artificial intelligence, Data base, Formal languages and automata

Certifications

June 2022	Introduction to Computer Vision and Image Processing, IBM
May 2022	What is data science?, IBM
Jan 2021	Getting started with Tensorflow 2, Imperial College London
Nov 2020	Build Basic Generative Adversarial Networks, Deeplearning.AI
Nov 2020	AI for Medical Prognosis, Deeplearning.AI
Jul 2020	Deep learning specialization, Deeplearning.AI
Jul 2020	AI for Medical Diagnosis, Deeplearning.AI

Languages

- Persian, Native
- English, IELTS Overall band score: 8
- French, A2