Poorya MohammadiNasab

PhD Student in Applied Medical Science,
Medical University of Vienna

Contact

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Research Interests

Medical Imaging | Medical Image Reconstruction | Medical Image Analysis
Optimization | Deep Learning | Machine Learning

Education

PhD in Applied Medical Science

Nov. 2024 – Present | Vienna, Austria

Medical University of Vienna (MUV) [QS ranking]

PhD Thesis

Novel Methods for Ultra-low-dose cone-beam computed tomography in Angiography imaging
Supervisors: Dr. Sepideh Hatamikia and Dr. Wolfgang Birkfellner

M. Sc. in Artificial Intelligence

Sep. 2021 – Jul. 2024 | Tehran, Iran

Iran University of Science and Technology (IUST) [QS ranking]
CGPA: **17.56 / 20 (3.75 / 4)**

Selected Courses

Computer Vision (20 / 20) | Medical Image Analysis (18.2 / 20) | Deep Learning (18.48 / 20)
Machine Learning (17 / 20) | Image Processing (17.9 / 20) | Artificial Neural Networks (18.5 / 20)

Master's Thesis

A self-supervised method for tumor detection in 3D automated breast ultrasound (ABUS) images
Supervisor: Dr. Mohsen Soryani

B. Sc. in Computer engineering

Sep. 2017 – Sep. 2021 | Kashan, Iran

University of Kashan [U.S. News ranking]
CGPA: 17.33 / 20 (3.55 / 4)

Selected Courses

Artificial Intelligence (20 / 20) | Data Mining (20 / 20) | Computational Intelligence (20 / 20)
Signals and Systems (18.4 / 20) | Internet of Things (19.5 / 20) | Design of Algorithms (17.5 / 20)

Bachelor's Thesis

Medical image analysis: An overview of techniques and improvements in brain tumor segmentation using image processing algorithms - University of Kashan (2021) - dx.doi.org/10.13140/RG.2.2.16553.52324
Supervisor: Dr. Hossein Ebrahimpour

Publications

1. P. MohammadiNasab, A. Khakbaz, E. Kozegar, H. Behnam, M. Soryani, "**A multi-task self-supervised approach for mass detection in automated breast ultrasound using double attention recurrent residual U-Net**", Computers in Biology and Medicine, 188, 109829, doi.org/10.1016/j.compbiomed.2025.109829

2. T. Tan, C. Lu, L. Yu, T. Zhang, P. MohammadiNasab, H. Zhang, M. Soryani, R. Mann, E. Kozegar, L. Bao, "**AI in Breast Imaging: A Systematic Review of Reader Studies Evaluating Design, Performance, and Clinical Impact**", Medical Physics (Accepted for publication)

3. B. Samieiyan, P. MohammadiNasab, M. A. Mollaei, F. Hajizadeh, and M. Kangavari, "**Novel optimized crow search algorithm for feature selection**," Expert Systems with Applications, vol. 204, p. 117486, Oct. 2022, doi.org/10.1016/j.eswa.2022.117486.

4. B. Samieiyan, P. MohammadiNasab, M. A. Mollaei, F. Hajizadeh, and M. Kangavari, "**Solving dimension reduction problems for classification using Promoted Crow Search Algorithm (PCSA)**", Computing, vol. 104, no.6, pp.1255–1284, Jan. 2022, doi.org/10.1007/s00607-021-01037-2

5. M. Jiang, C. Lam, Z. Zhang, P. MohammadiNasab, H. Chang, T. Tong, Z. Yuan, and T. Tan, "**ADbNet: Adaptive Dual-branch Network for Denoising and Artifact Removal in MR Images**", IEEE Transactions on Computational Imaging, (Under Review)

Honors

1. Top **2%,** Iranian university entrance exam for master's degree in Computer Engineering – Artificial Intelligence, **Ranked 171**th among nearly 10,000 participants, September 2021

2. Top **10%**, Achieving one of the highest GPAs among all university Computer Engineering **undergraduate** students, **Ranked 4**th among 45 undergraduate students, February 2021

Languages

Persian: Native
English: Proficient (C1) 15 Jan. 2024 | Tehran, Iran

- IELTS Results (**Overall: 7**, Listening: 7.5, Reading: 7.5, Speaking: 6, Writing: 6)

Research Experience

Reviewer at IEEE Transactions on Medical Imaging Jan 2025 – Present | United States

Reviewer at IEEE Transactions on Image Processing Aug. 2025 – Present | United States

Reviewer at Expert Systems with Applications journal (View Certificate) May 2022 – Present | United Kingdom

Reviewer at Medical Image Analysis journal (View Certificate) May 2023 – Present | Netherlands

Reviewer at Computer Methods and Programs in Biomedicine (View Certificate) Mar. 2023 – Present | Ireland

Reviewer at Pattern Recognition journal (View Certificate) Nov. 2023 – Present | United Kingdom

Reviewer at Applied Soft computing journal (View Certificate) Aug. 2023 – Present | Netherlands

Reviewer at Computers in Biology and Medicine journal (View Certificate) Jan. 2024 – Present | United Kingdom

Reviewer at Computational and Structural Biotechnology (View Certificate) Mar. 2024 – Present | Sweden

Work Experience

Scientific Researcher
Nov. 2024 – Present | Wiener Neustadt, Austria
Clinical AI-Research in Omics and Medical Data Science (CAROM) Group, Danube Private University (DPU)
Supervisor: Dr. Sepideh Hatamikia

Research Assistant
Sep. 2021 – Jul. 2024 | Tehran, Iran
Image Processing Lab (IPL), Iran University of Science and Technology (IUST)
Supervisor: Dr. Mohsen Soryani

Teaching Assistant
Sep. 2022 – Jan. 2023 | Tehran, Iran
Iran University of Science and Technology (IUST)
Courses

1. Pattern Recognition (Dr. Mohammad Reza Daliri)
2. Computer Vision (Dr. Mohsen Soryani)
3. Artificial Neural Network (Dr. Nasser Mozayani)

Teaching Assistant
Feb. 2018 – Jun. 2021 | Kashan, Iran
University of Kashan
Courses

1. FPGA and ASIC (Dr. Hossein Karimiyan)
2. Artificial Intelligence (Dr. Hossein Ebrahimpour)
3. Microprocessors (Dr. Hosein Sabaghian)
4. Computer Architecture (Dr. Salman Goli)
5. Logic Circuits (Dr. Salman Goli)
6. Advanced programming (Dr. Mahsa Shamaee)

Skills

Concept and Technology

Medical Imaging	Medical Image Reconstruction	Medical Image Analysis
Optimization	Machine Learning	Git / GitHub

Language and Software

Python	MATLAB	C/C++
LaTeX	QT framework	Verilog

Projects

Pneumonia Detection Using Deep Convolutional Neural Networks (View Project) Aug. 2023 – Sep. 2023

In this study, a deep learning approach to pneumonia detection in chest X-rays was investigated. The ResNet18 architecture was employed, and training was conducted on the RSNA Pneumonia Detection dataset. An Artificial Intelligence interpretability technique was utilized to gain insights into the decision-making processes of the model.

Breast Tumor Segmentation and Shape Classification in Mammograms (View Project) Feb 2022 - Jul. 2022

In this project, a conditional Generative Adversarial Network (cGAN) was used for breast tumors segmentation in 2D mammograms, aiming to support radiologists. A CNN-based shape descriptor is proposed for classifying tumor shapes into four categories. INbreast and DDSM datasets were used to train and evaluate the model.

Brain Tumor Segmentation (View Project) May 2021 - Sep. 2021

In this project, fuzzy c-means algorithm and a classical threshold method were used to segment brain and tumor area in x-ray brain images, respectively. The output of these two methods were combined to generate the final binary mask of tumor.

Certificates

1. Introduction to Machine learning (Duke University, Apr. 2021)
2. Computer Vision Basics (University at Buffalo, Apr. 2021)
3. Image and Video Processing (Duke University, May 2021)

References

1. Dr. Sepideh Hatamikia (Head of CAROM Group at Danube Private University DPU)
2. Dr. Wolfgang Birkfellner (Associate Professor in Medical Physics and Biomedical Engineering at Medical University of Vienna)
3. Dr. Mohsen Soryani (Associate Professor in Artificial Intelligence group at Iran University of Science and Technology)