

# Mohammad Hashemi

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## Education

### Ph.D. in Computer Science

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATICS, EMORY UNIVERSITY

- **Cumulative GPA: TBA**

Atlanta, Georgia, USA

Aug. 2023 - Present

### B.Sc. in Computer Engineering

FACULTY OF COMPUTER SCIENCE AND ENGINEERING, SHAHID BEHESHTI UNIVERSITY

- **Cumulative GPA: 3.85/4**

Tehran, Iran

Sep. 2018 - Feb. 2023

## Research Interests

Machine Learning | Graph Neural Networks | Computer Vision | AI for Healthcare

## Publications

### Automated Cardiac Coverage Assessment in Cardiovascular Magnetic Resonance Images using Explainable Salient Region Detection

IEEE TRANSACTION ON ARTIFICIAL INTELLIGENCE

- S Nabavi, **M Hashemi**, M Ebrahimi Moghaddam, AA Abin, AF Frangi
- This work is under review

IEEE Transactions on Artificial Intelligence

2022

### A Type-2 Neuro-Fuzzy System with a Novel Learning Method for Parkinson's Disease Diagnosis

APPLIED INTELLIGENCE (APIN)

- A Salimi-Badr, **M Hashemi**, H Saffari

Applied Intelligence (APIN)

2022

### A Neural-Based Approach to Aid Early Parkinson's Disease Diagnosis

2020 11TH INTERNATIONAL CONFERENCE ON INFORMATION AND KNOWLEDGE TECHNOLOGY (IKT)

- A. Salimi-Badr and **M. Hashemi**

IEEE Conference

2022

## Honors & Awards

2023 **1st Place**, Best B.Sc. thesis project

2020 **6th Place**, out of 131 undergraduate students studying Computer Engineering

2017 **Passing the first stage**, of Mathematics Olympiad for two years

2016 **5th Place**, Khawarizmi Youth Nationwide Contest as a Robotic Researcher

Iran

Iran

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Iran

## Experience

### RESEARCH EXPERIENCE

#### Graduate Research Assistant

IDEA LAB

- Proposing novel scalable and explainable **Graph Condensation and Distillation** methods for Graph Neural Networks.
- Under supervision of **Dr. Wei Jin**.

Emory University

Aug. 2023 - Present

#### B.Sc. Thesis

IMAGE PROCESSING & DISTRIBUTED SYSTEMS LAB

- Proposing novel **Deformable Image Registration (DIR)** using **GANs** for 4D CT lung images.
- Under supervision of **Prof. Mohsen Ebrahimi Moghaddam**.

Shahid Beheshti University

Sep. 2022 - Feb. 2023

#### Research Assistant

DATA SCIENCE AND MACHINE LEARNING LAB (DML)

- Proposing and implementing novel **Dynamic Graph Neural Networks (GNNs)** powered by self attention. **[Code]**
- Under supervision of **Prof. Hamid R. Rabiee** and his PhD student, **Mohammad Ostadmohammadi**.

Sharif University of Technology

Oct. 2021 - Jan 2022

## Research Assistant

Shahid Beheshti University

IMAGE PROCESSING & DISTRIBUTED SYSTEMS LAB

Feb. 2021 - Mar 2022

- Proposing and Implementing a novel interpretable framework for Automatic Assessment of Full Left Ventricular Coverage in Cardiac Cine Magnetic Resonance Imaging with **3D CNNs equipped with explainable machine learning methods**. **The paper of this work is under review.** [Link]
- Under supervision of **Prof. Mohsen Ebrahimi Moghaddam** and his PhD student, **Shahabedin Nabavi**

## Research Assistant

Shahid Beheshti University

RoIAA (ROBOTICS & INTELLIGENT AUTONOMOUS AGENTS) LAB

Oct. 2020 - Jun. 2021

- Proposing various Recurrent Neural Networks (RNNs) such as LSTMs, and GRU for sequence learning to have early detection of Parkinson's Disease. This work was **submitted as a conference paper and published in IEEE** [Link].
- In another research project, an interpretable classifier using an interval type-2 fuzzy neural network (IT2FCNN) for detecting patients suffering from Parkinson's Disease was proposed. This work also **resulted in a paper** [Link].
- Under supervision of **Dr. Armin Salimi-Badr**

## WORK EXPERIENCES

### Machine Learning Mentor

Tehran, Iran

RAHNEMA COLLEGE CO.

Jan. 2022 - Mar 2022

- Assisting several interns in carrying out a project in the field of Reinforcement Learning (RL). The project aimed to propose **a recommender system based on batch Reinforcement Learning** algorithms.

### Machine Learning Intern

Tehran, Iran

RAHNEMA COLLEGE CO.

May. 2021 - Jul. 2021

- Developing a web application powered by the ability to perform **Web Crawler Detection** using unsupervised algorithms for the Sanjagh Co. website which is one of the biggest e-commerce platform in Iran. [Code]
- Under supervision of **Dr. Seyed Ali Osia**, **Dr. Mahmood Karimian**, **Yasin Orouskhani**.

## Skills

**Programming Languages** Python, Java, MATLAB, C/C++, JavaScript, Assembly, Verilog

**Other Languages** HTML/CSS, SQL, Bash

**ML/DL Frameworks** PyTorch, TensorFlow2, Keras, OpenCV, Sickit-Learn, Pandas, Numpy, PyG, NetworkX

**DevOps** MacOS, Windows, Ubuntu, Git

## Workshop & Certificates

Jul. 2021 **Machine Learning Intern Certificate**, Rahnema College Co.

Rahnema College

Mar. 2021 **Introduction to Data Science**, Prof. Christopher Brooks

Coursera

Dec. 2020 **Certificate of Presentation**, IKT2020 conference

IKT2020

Aug. 2020 **Convolutional Neural Networks**, Prof, Andrew NG

Deeplearning.ai

Aug. 2020 **Structuring Machine Learning Projects**, Prof, Andrew NG

Deeplearning.ai

Jul. 2020 **Hyperparameter Tuning, Regularization & Optimization**, Prof, Andrew NG

Deeplearning.ai

Jul. 2020 **Neural Networks & Deep Learning**, Prof, Andrew NG

Deeplearning.ai

May. 2020 **Machine Learning**, Prof, Andrew NG

Stanford

## Services

### CONFERENCE EXTERNAL REVIEWER

2024 **AAAI Conference on Artificial Intelligence**, (AAAI)

### VOLUNTEERING

2024 **The International Conference on Learning Representations**, (ICLR)