

Negar Honarvar Sedighian

Shahid Beheshti University, Tehran, Tehran, Iran

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Education

Shahid Beheshti University

Tehran, Iran

Bachelor of Science in Computer Engineering

Sep. 2020 to Feb. 2025[Expected]

- Cumulative GPA: 17.42/20 (3.67/4)
- GPA of last two years: 18.23/20 (3.78/4)

Relevant Courses: GPA: 4/4

- | | | |
|-----------------------------------|---------------------------|------------------------------|
| - Fundamentals of Computer Vision | - Machine Learning | - Computer Simulation |
| - Fundamentals of Robotics | - Artificial Intelligence | - Statistics and Probability |
| - Deep Reinforcement Learning | - Algorithms Design | - Data Structures |

Farzanegan 1 Secondary School

Mashhad, Iran

High School Diploma in Mathematics

Sep. 2017 to Jun. 2020

- Diploma GPA: 19.98/20 (4.0/4.0)

Research Interests

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|---|---|
| - Application of Deep Learning Methods in Health Care | - Graph Neural Networks Methods and Application |
| - Accelerated MRI Reconstruction | - Image Super Resolution and Denoising |

Research Experience

B.sc Thesis

Shahid Beheshti University

IMAGE PROCESSING AND DISTRIBUTED SYSTEMS LAB

Sep. 2024 to Feb. 2025

- Diploma GPA: 19.98/20 (4.0/4.0)
- Proposing a Dynamic Attentive Graph Neural Network for Cardiac MRI Reconstruction in a cascading manner.
- Under Supervision of Dr. Mohsen Ebrahimi Moghaddam.

Work Experience

Network Security Assistant

Tehran, Iran

Dotin

Jun. 2023 to Oct. 2023

- Management of access levels for company members in various departments to available resources and information in each section by utilizing Windows Azure, as well as identifying and analyzing potential weaknesses and breaches in the network.

Network Security Intern

Tehran, Iran

Dotin School

Jun. 2023 to Oct. 2023

- Internship at dotin school boot camp for Network Security.
- Learned about different types of security vulnerabilities, How to Identify risks, Respond to incidents and Perform penetration testing.

Honors and Awards

- Ranked 2nd among 90 in admission among accepted students in the Computer Engineering department, Shahid Beheshti University, 2023.
- Ranked 321st in National entrance exam for B.Sc Studies among 160,000 students, 2020.
- Ranked 1st in National Organization for Development of Exceptional Talents Secondary School Entrance Exam in Khorasan , 2017.

Projects

- Dynamic Attentive GNN for Cardiac MRI Reconstruction** **On Going**
GitHub Repository
- Proposing a Dynamic Attentive Graph Neural Network for Cardiac MRI Reconstruction in a cascading manner.
 - Sensitivity map calculation is done according to Compressed Sensing theory using a UNet.
- Deep Reinforcement Learning Algorithms** **May. 2024**
GitHub Repository
- A Complete Collection of Deep RL Famous Algorithms implemented in Gymnasium's most Popular environments.
 - Implementation of SARSA and DQN with boltzman in CartPole.
 - Implementation and comparison of DQN, D3QN, and Enhanced D3QN Agents in Lunar Lander environment.
 - Implementation of Proximal Policy Optimization algorithm in Swimmer, with clipped objective PPO and adaptive kl PPO agents.
- Enhanced Farsi News Classification** **Mar. 2024**
GitHub Repository
- The goal of this project is to develop an enhanced neural network model to classify Farsi news articles into their respective categories.
 - The dataset has been preprocessed with Tokenization and Feature Extraction.
- Classic Computer Vision** **Feb. 2024**
GitHub Repository
- Application of Classic Computer Vision Techniques such as Filtering, Transformation, and Feature Extraction for image interpretation.
- Guidance of a Quadcopter for Object Detection** **Mar. 2024**
GitHub Repository
- Designed a controller for a quadcopter to control its flight over boxes in an urban environment, automatically taking precise images of boxes and interpreting the images using Computer Vision Deep Learning-Based Approaches.
 - After interpreting the image, the quadcopter determines whether the item matches the target item; if matched, the quadcopter lands beside the box and turns on its front LEDs.
- Bug Algorithms** **Jan. 2024**
GitHub Repository
- Implementation of Bug1, Bug2, and Wall-following algorithms for GCTronic's e-puck in the Webots environment.
 - Each algorithm successfully guides the robot through a maze.
 - Map of the maze is generated with Bug2 and split-and-merge algorithms.
- Machine Learning Algorithms** **Jan. 2024**
GitHub Repository
- This repository includes famous classification and regression algorithms, each applied to solve a related problem.
 - Each problem includes Feature Engineering methods to prepare raw data by transforming it into relevant features.
 - Algorithms include K-Nearest Neighbors, Support Vector Machine (SVM), Decision Tree, and Gradient Descent for supervised learning; DBSCAN is used as an unsupervised algorithm.
- Robotics** **Dec. 2023**
GitHub Repository
- Controllers for e-puck in Webots environment using popular Localization, Planning, and Navigation algorithms.
 - The controllers range from simple to complex, providing beginners with a better understanding of the control process.
- Tron Game Agent** **May. 2023**
GitHub Repository
- The algorithm devised for this game is a combination of a Genetic Algorithm and Minmax, where Minmax is used as the fitness function for the Genetic Algorithm.
 - This game consists of two real-time agents that try to create more walls than their opponent while avoiding collisions with each other and the boundary walls. The Unity framework used is based on Chillin's monitor games.

Referrers

- **Dr. Farshad Safaei**
Associate Professor, Faculty of Computer Science and Engineering, Shahid Beheshti University
- **Dr. Dara Rahmati**
Assistant Professor of Computer Science and Engineering, Shahid Beheshti University

- **Dr. Shahabedin Nabavi**
Faculty of Computer Science and Engineering, Shahid Beheshti University
- **Dr. Mojtaba Vahidi-Asl**
Assistant Professor of Software Engineering, Shahid Beheshti University
- **Dr. Armin Salimi-Badr**
Assistant Professor of Software Engineering, Shahid Beheshti University
- **Dr. Mehran Alidoost Nia**
Assistant Professor of Computer Engineering, Shahid Beheshti University

Teaching Assistant Experience

○ Artificial Intelligence	Sep. 2024 - Present
- Lectured by: Dr. Armin Salimi-Badr	
○ Discrete Mathematics	Sep. 2024 - Present
- Lectured by: Dr. Farshad Safaei	
○ Algorithms Design	Sep. 2024 - Present
- Lectured by: Dr. Ramak Ghavamizadeh	
○ Software Engineering	Feb. 2024 - Jul. 2024 (6 mos)
- Lectured by: Dr. Mehran Alidoostnia	
○ Technical English	Sep. 2023 - Jul. 2024 (11 mos)
- Lectured by: Dr. Vahidi Asl	
○ Computer Architecture	Sep. 2023 - Jan. 2024 (5 mos)
- Lectured by: Dr. Rahmati	
○ Advanced Programming	Sep. 2023 - Jan. 2024 (5 mos)
- Lectured by: Dr. Vahidi Asl	
○ Artificial Intelligence	Sep. 2023 - Jan. 2024 (5 mos)
- Lectured by: Dr. Mehrnoush Shamsfard	
○ Compiler Design	Sep. 2023 - Jan. 2024 (5 mos)
- Lectured by: Dr. Mehran Alidoostnia	
○ Computational Intelligence	Sep. 2023 - Jan. 2024 (5 mos)
- Lectured by: Dr. Shahabedin Nabavi	
○ Operating Systems Laboratory	Sep. 2023 - Jan. 2024 (5 mos)
- Lectured by: Dr. Shahabedin Nabavi	
○ Statistic and Probability	Sep. 2023 - Jan. 2024 (5 mos)
- Lectured by: Dr. Farshad Safaei	