Negar Honarvar Sedighian

Shahid Beheshti University, Tehran, Tehran, Iran

(+98) 903 020 4891 Homepage Email GitHub LinkedIn

Education

Shahid Behehshti 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
- Fundamentals of Robotics
- Deep Reinforcement Learning
- Machine Learning
- Artificial Intelligence
- Algorithms Design
- Computer Simulation
- Statistics and Probability
- 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

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

Research Experience

B.sc Thesis **Shahid Beheshti University**
IMAGE PROCESSING AND DISTRIBUTED SYSTEMS LAB *Sep. 2024 to Feb. 2025*

- 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 Labratory** Sep. 2023 - Jan. 2024 (5 mos)
  - Lectured by: Dr. Shahabedin Navabi
- **Statistic and Probability** Sep. 2023 - Jan. 2024 (5 mos)
  - Lectured by: Dr. Farshad Safaei