Mohammad Matin Momeni Ravandi

Student · Developer

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Summary

Computer Science undergraduate at Shahid Beheshti University (GPA: 18.2/20, top 0.5% nationwide). Passionate about robotics, interested in reinforcement learning, computer vision, and cybersecurity. Currently working on a bachelor's thesis focused on browser fingerprinting. Teaching assistant for several AI- and robotics-related courses. Holder of an IELTS Band 8 certificate, with strong motivation to pursue graduate research in robotics and intelligent systems.

Education

Shahid Beheshti University — *Tehran, Iran*

B.S. in Computer Science and Engineering — *2021 – Present*

- Cumulative GPA: 18.20/20
- Relevant Coursework: Fundamentals of Robotics (19.91/20), Robot Construction Lab (20/20) Artificial Intelligence and Expert Systems (18.75/20), Fundamental of Computer Vision (19.25/20), Signals and Systems (19.8/20), Introduction to Machine Learning (18.5/20), Fundamentals of Cybersecurity (20/20), Computer Networks (20/20).

National Organization for Development of Exceptional Talents (Sampad) — *Kashan, Iran*

Diploma in Physics and Mathematics Discipline — *2018 – 2021*

- Cumulative GPA: 19.49/20

Publications

Development of a Decision Tree-Based Artificial Intelligence Model for Enhancing Acute Appendicitis Diagnosis in Pediatric Patients

2nd International Congress on Artificial Intelligence in Medical Sciences (AIMS)

Conference Paper

- A.Ghattan; M.M.Momeni; A.Bozorgnia; H.Ebrahimpour; M.Shabani.

Academic Experience

Shahid Beheshti University — *Tehran, Iran*

Teaching Assistant

- Fundamentals of Robotics, Dr. Salimi-Badr - Head TA
- Artificial Intelligence and Expert Systems, Dr. Salimi-Badr
- Signals and Systems, Dr. Salimi-Badr
- Artificial Intelligence and Expert Systems, Dr. Shamsfard
- Formal Languages and Automata Theory, Dr. GhavamiZadeh - Head TA
- Fundamentals of Compiler Design, Dr. Alidoost Nia
- Introduce to programming, Dr. AliAkbary

Certificates

2023 **ML**, DeepLearning.ai
2023 **SQL**, Shahid Beheshti University, Scientific Association of Computer Engineering
2023 **Introduction to Git**, Faradars
2022 **Introduction to Linux**, Shahid Beheshti University, Scientific Association of Computer Engineering
2022 **Advanced Python**, Faradars
2022 **Introduction to Python**, Faradars

Notable Projects

Quadcopter Controller With Vision

GitHub: Quadcopter-Controller-With-CNN

- Programmed a controller for the Mavic 2 Pro in the Webots simulation environment.
- Designed and trained a CNN model for the Mavic to give it the ability to recognize the objects in the environment.

Differential Drive P Controller

GitHub: Differential-Drive-PController

- Implemented a P controller for the Differential-Drive Robot.
- Simulated the trajectories of the robot starting from multiple initial positions with great visualization.

Bug Algorithms in a Maze Environment

GitHub: Bug-Algorithms

- Implemented classical Bug1, Bug2, and Wall-Following algorithms to navigate through a maze environment and reach a target point.
- Visualized the paths generated by each algorithm, highlighting differences in efficiency and routing behavior.

Solving CartPole with Reinforcement Learning

GitHub: Solving-CartPole-Using-RL

- Implemented and compared multiple reinforcement learning algorithms (Deep Q-Learning and SARSA) on the CartPole-v1 environment.
- Explored different exploration strategies (Epsilon-Greedy, Boltzmann/Softmax) and evaluated their impact on agent performance.

Solving LunarLander with Deep Reinforcement Learning

GitHub: Solving-LunarLander-Using-RL

- Implemented DQN and advanced Dueling Double Deep Q-Network (D3QN) algorithms for the LunarLander-v2 environment.
- Explored algorithmic variations, including an experimental approach with adaptive γ, to improve long-term reward optimization.

AI Referee for Rock–Paper–Scissors with Cheat Detection

GitHub: Rock-Paper-Scissors-Game

- Developed an interactive computer vision system that uses a custom-trained YOLOv8 model to recognize Rock, Paper, and Scissors gestures in real time from webcam input.
- Created a dedicated gesture dataset by combining self-collected images with public datasets to improve robustness across angles, lighting, and skin tones.
- Implemented automated refereeing logic with advanced cheat detection, identifying both lack of motion during countdowns and post-reveal gesture changes.
- Enhanced user engagement by adding augmented visual effects such as crowns for winners and masks for cheaters.

Honors & Awards

2021	**top 0.5%, ranking in the national university entrance exam (Konkur)**	*Iran*
2019	**Passing the first stage, Qualified for the first stage of National Mathematics Student Olympiad**	*Iran*

Skills

Technical Skills

- Robotics & Simulation: Webots, ROS, Gazebo.
- Programming: Python, Java, C/C++, PyQt, Solidity, C Sharp.
- ML/DL Frameworks: PyTorch, TensorFlow, Scikit-learn.
- Computer Vision: OpenCV, CNNs, generative models.
- Reinforcement Learning: PPO, DQN, imitation learning.
- Data Processing: MATLAB, NumPy, Pandas.
- Crawling: REST API, Selenium, Postman, Scrapy, requests
- Systems: Linux, Git, Docker

Language Skills

- Proficient in English (IELTS Band 8.0).
- Learning German (CEFR A2)
- Native speaker of Persian.