Mohammad Mahdi Rahneshin

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Education

B.Sc. in Computer Engineering - FERDOWSI UNIVERSITY OF MASHHAD (FUM) 2019 – Ongoing Mashhad, IRAN

- Total GPA: **3.24 / 4 (16.20 / 20)**
- Last Two Years GPA: **3.3 / 4 (16.54 / 20)**
- Selected Courses:
  - Artificial Intelligence Fundamentals and Applications 18.5/20
  - Applied Linear Algebra 19.5 / 20
  - Differential Equations 18 / 20
  - Principles of Compiler Design 20 / 20
  - Operating Systems 19.21 / 20

High School Diploma - Shahid Beheshti High School 2016 – 2019 Gonabad, IRAN

- Total GPA 18.42 / 20
- Affiliated with National Organization for Development of Exceptional Talents (NODET) Diploma in Mathematics and Physics

Research Interests

- Deep learning & Machine Learning
- Graph Neural Networks
- NLP & Large Language Model
- Agentic AI and LLMs
- ML for Healthcare
- Data Mining

Selected Projects

Predicting VRLA Batteries Maintenance Using Deep Learning Models In progress

This is my Bachelor's final project, focusing on predicting VRLA battery failures using deep learning models.

Pure Parity Seeking-23 Red Black Binary Tree 2024

Implemented the data structure based on the paper *"Revisiting 2–3 Red–Black Trees with a Pedagogically Sound Yet Efficient Deletion Algorithm: Parity-Seeking."*. Designed with object-oriented principles for reusability and inheritance like a library

Data Integration and Cleaning for Video Game Analysis 2024

Merged and cleaned video game datasets using Python and pandas. Tasks included removing duplicates, dropping unnecessary columns, and preparing data for analysis.

Presentation: Competition-Level Code Generation with AlphaCode by DeepMind 2024

Final project presentation for the graduate-level Neural Networks and Deep Learning course, focusing on AlphaCode's LLM-based architecture, large-scale sampling, filtering techniques for solving competitive programming problems.

Automatic Scoring System for Programming Competition 2023

The project was initially implemented by Dr. Kamaledin Ghiasi-Shirazi, and I further developed it for use in the Dataleague contest and programming exercises in both the Data Structure and Algorithm Design courses.

Age Prediction with Transfer Learning 2023

Project for the graduate-level "Neural Networks and Deep Learning" course. Implemented an age prediction model using transfer learning with VGG16 and PyTorch. Added custom ReLU and dropout layers, fine-tuned select layers, and preprocessed facial images to reduce noise.

Seizure Signal Classification 2022

Developed a seizure signal classification system using SVM, Random Forest, and CNNs. Preprocessed EEG data, optimized features, and validated models with K-fold cross-validation and performance metrics.

Game Player Agent in Abalone Game 2022

Developed a smart agent to play Abalone using the GDScript language and the Minimax Alpha-Beta Pruning algorithm in the Fundamentals of Artificial Intelligence course.

AI Planning Framework 2022

Developed an AI planning framework in JavaScript for domains like BlocksWorld and Monkey-and Bananas. Implemented heuristic strategies (e.g., ignoring delete lists) and search algorithms (e.g., forward and backward search) for efficient problem-solving by modeling actions and states.

Teaching Experience

Teaching Assistant (Team Leader), Data Structures by Dr. Ghiasi-Shirazi, FUM 2022 - present (5 semesters)

Teaching Assistant (Team Leader), Algorithm Design by Dr.Nouri-Baygi, FUM 2022 – present (5 semesters)

Work Experience

Dataleague[2] Data Structure National-level Contest **(Exercise Design Team Lead)** 9/2024 – Ongoing Mashhad, IRAN

Managed the exercise design team for a national-level Data Structures contest using Sepehr, an automatic scoring system I developed, and occasionally contributed to exercise implementation, all under the supervision of Dr. Kamaledin Ghiasi-Shirazi.

Dataleague[1] Ferdowsi University Data Structures Contest **(Exercise Design Team Lead)** 11/2023 – 3/2024 Mashhad, IRAN

Served as head exercise designer, managed the design team, implemented exercises (e.g., AVLBinaryTree, IndexedLinearList, BinaryTree), and contributed to website development, all under the supervision of Dr. Kamaledin Ghiasi-Shirazi.

Part Research Institute Summer 2023 Mashhad, IRAN

I developed an automatic scoring system (Sepehr) for programming exercises, particularly for data structure and algorithm design tasks, all under the supervision of Dr.Kamaledin Ghiasi-Shirazi.

Ramouz co 1/2022 – 4/2022 Mashhad, IRAN

Interned as a front-end developer, building a messenger application with Vanilla JavaScript.

Skills

Programming Languages: C, CPP, Java, python (Proficient) - HTML/CSS, js, Lua (Familiar)

Database: MySQL, SQLite, PostgreSQL

Libraries: Pytorch, Pandas, Dask, Numpy

Tools and Frameworks: Junit, Django & DjangoRestFramework, Git, Jupyter Notebook, Trello

Soft skills: Teamwork, Leadership and Management

Operating Systems: Windows, Linux

Languages

- Persian : Native
- English : TOEFL 86/120
  (Reading: 23, Listening: 23, Speaking: 20, Writing: 20)

Honors & Awards

Ranked among the top 2% of participants in undergraduate university entrance exam 2019

Full 4-year Scholarship Ferdowsi University, Top-ranked in Iran, for Undergraduate Studies 2019 – present

References

Dr. Modjtaba Rouhani

- Associate Professor, Computer Eng. Department, Ferdowsi University Of Mashhad
- modjtaba_rouhani@yahoo.com

Dr.Kamaledin Ghiasi-Shirazi

- Associate Professor, Computer Eng. Department, Ferdowsi University Of Mashhad
- K.ghiasi@um.ac.ir

Dr. Mostafa Nouri-Baygi

- Assistant Professor, Computer Eng. Department, Ferdowsi University Of Mashhad
- nouribaygi@um.ac.ir