Mobina Sedaghat

Prospective Student

DoB: 31 oct, 1999

☐ (+98) 9022022323 | ✉ mobinasedaghat@gmail.com | ⌨ MobinaSedaghat | % mobinasedaghat.github.io

Education

B.Sc. in Computer Science   *2018 - 2023*
Kharazmi University   *Tehran, Iran*

  GPA: 15.37/20.00 (Faculty Graduation Year GPA: 13.94) | Final 2-year GPA: 17.03

Research Interests

Theoretical and Applied Machine Learning and Deep Learning| Theoretical foundations and real-world applications.
Algorithmic Quantum Computing| Development and analysis of quantum algorithms and their intersection with AI.
Computational Biology and Neuroscience| Modeling and analyzing biological and neurological systems.

Skills

Programming Languages

Python, Matlab, SQL, Java, C, C++

Artificial Intelligence

Machine Learning (supervised, unsupervised, DL)- Numpy, Pandas, Scikit-learn, Tensorflow, Matplotlib

Others

LaTeX, Adobe Photoshop, Microsoft Office

Soft Skills

- **Critical Thinking and Problem-Solving:** Analyzing problems and developing effective solutions.
- **Teamwork and Collaboration:** Working effectively with teams and sharing ideas.
- **Adaptability:** Quickly adjusting to new challenges and environments.
- **Attention to Detail:** Ensuring accuracy and thoroughness in tasks.

Selected Projects

Artificial Intelligence / Machine Learning:

- **Predict Student Performance from Gameplay - Kaggle Competition** (Predicting student performance during game-based learning in real-time using Random Forest, with an accuracy of 0.73.)
- **Gen AI job simulation** - **BCG**
- **N-Queens problem** (using Hill Climbing, Simulated Annealing, Genetic Algorithms)
- **N-Puzzle problem** (using Depth-first, A*, Hill Climbing algorithms)

Computational Biology:

- **Amino Acid Analyzer** (Bioinformatics course)
- **Molecular dynamics simulation** (Lennard Jones Potential)
- **Some of the `www.rosalind.info` Problems** including:
  Rabbits and Recurrence Relations, Computing GC Content, Counting Point Mutations, Mendel's First Law, Translating RNA into Protein Finding a Motif in DNA, Finding a Shared Motif, Locating Restriction Sites

Other Class Projects:

- **Airport Management System** (DataBase course Project)
- **Conway's Game of Life**
- **Connect four game** (Java Advanced Programming course)

Honors and Awards

Iran's Ministry of Science, Research, and Technology   *2018*
Full Scholarship (Tuition Waiver) for studying B.Sc. in Computer Science at Kharazmi University

Kharazmi University   *2018*
Ranked among 1 percent of 144,000 attendants in national undergraduate exam

Ministry of Education   *2016 & 2017*
Qualified for the first round of the Iranian Computer Olympiad

Languages

Persian| *Native*

English| *Duolingo English Test -* **Overall: 130** *, Literacy: 130, Comprehension: 135, Conversation: 130, Production: 105*

Selected Presentations

Deep Learning   *2023*

An overview of emergence and underlying mathematics of ANN and Deep Learning models

Pseudo-Random number generator Based on quantum Random Walks   *2022*

Presented article: "Novel Pseudo-Random Number Generator Based on Quantum Random Walks" (Yang & Zhao).
Types of Random Number Generators, Chaotic Behavior of QRW, and steps PRNGs

Quantum Computing   *2021*

Introduction to Quantum Computers, Qubits, their Operation/Function, Shor's Algorithm, and RSA Encryption System

Big Data   *2021*

Introduction, types and tools and technologies for analysis of Big Data

Selected Courses and Workshops

SELECTED UNIVERSITY COURSES:

• **Artificial Intelligence** , Dr. Mohammad Soltanian   *18.1/20*

• **Principles of Matrices and Linear Algebra** , Dr. MohammadReza Salarian   *20/20*

• **Data Mining** , Dr. Keyvan Borna   *17/20*

• **Database** , Dr. Somaye Arabi   *20/20*

• **Coding and Cryptography** , Dr. Arash Ahadi   *17/20*

• **Computer Simulation** , Dr. Mohammad Soltanian   *17/20*

• **Calculus III** , Dr. Reza Orfi   *18.25/20*

• **Basics of Bioinformatics** , Dr. Leila Karami   *19/20*

OTHER COURSES:

• **Reinforcement Learning From Human Feedback** , DeepLearning.ai   *2024*

• **Bioinformatics Specialization** , Coursera   *2024*

• **Data Analysis with python**, Coursera   *2023*

• **Tools for Data Science**, Coursera   *2023*

• **What is Data Science?**, Coursera   *2023*

• **Machine Learning A-Z™**, Udemy   *2023*

• **Biology Library**, Khan Academy   *2022*

• **Deep Learning and Neural Networks**, Shahid Beheshti University   *2019*

• **Python** , Kaggle   *2019*

WORKSHOPS:

• **Sharif Neuroscience Symposium**   *2024*

• **Neuroscience Data Processing with DL methods Python** , National Brain Mapping Lab   *2023*

• **2Day Workshop on Human Connectome Database** , National Brain Mapping Lab   *2023*

• **Deep Learning spring school** , Kharazmi University   *2018*

Extracurricular Activities

Teacher Assistant, Database Course   *2021*

• Assisted in the Database course under the supervision of Dr. Somaye Arabi

ACM of Kharazmi University   *2021 - 2022*

• Participated in ACM association of Kharazmi university
• Machine Learning and Scientific Computing study group

Setar and Taar Player   *2019 - 2023*

MUSIC COMMITTEE OF KHARAZMI UNIVERSITY

• Participated in Iranian traditional music band of Kharazmi university as Taar and Setar player.

References

Dr. Keivan Borna   *borna@khu.ac.ir*

ASSISTANT PROFESSOR OF COMPUTER SCIENCE, FACULTY OF MATHEMATICAL SCIENCES AND COMPUTER   *Kharazmi University*

Dr. Mohammad Soltanian   *m.soltanian@khu.ac.ir*

ASSISTANT PROFESSOR OF COMPUTER SCIENCE, FACULTY OF MATHEMATICAL SCIENCES AND COMPUTER   *Kharazmi University*