

Mobina Sedaghat

PROSPECTIVE STUDENT

DoB: 31 OCT, 1999

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Education

B.Sc. in Computer Science

2018 - 2023

KHARAZMI UNIVERSITY

Tehran, Iran

GPA: 3.10/4.00 | Final 2-year GPA: 3.40

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.

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 260,000 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

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ASSISTANT PROFESSOR OF COMPUTER SCIENCE, FACULTY OF MATHEMATICAL SCIENCES AND COMPUTER

Kharazmi University

Dr. Mohammad Soltanian

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