

# Amirhossein Arefzadeh

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## EDUCATION AND TRAINING

### B.S. in Computer Science and engineering

**University of Tehran** [ 01/09/2022 – Current ]

City: Tehran | Country: Iran | Website: <https://ece.ut.ac.ir/en/ece>

- **GPA:** 18.85 / 20.0 (Faculty Average: 14.96/20)
- **Rank:** Among the top 10%

### Highschool Diploma in Mathematics

**Ario Mosallanezhad** [ 01/09/2019 – 01/06/2022 ]

City: Mashhad | Country: Iran

- **GPA:** 19.6 / 20.0

## INTERESTS

### Research Interests

- Artificial Intelligence and Machine Learning
- Data Analytics and Data Science
- Algorithms and Data Structures
- Algorithmic Game Theory

## PROJECTS

### Image Reconstruction with Genetic Algorithms

- Implemented a Python-based genetic algorithm from scratch to recreate target images using triangles. Designed efficient mutation, crossover, and fitness evaluation strategies to achieve high accuracy and convergence in evolutionary image reconstruction.

Link: <https://github.com/Amir-rfz/Genetic-algorithm-image-reconstruction>

### Connect4 Game Bot

- Developed an intelligent Connect 4 game bot using the Minimax algorithm with alpha-beta pruning to optimize decision-making. Implemented an interactive game interface where the agent competes effectively by predicting and countering opponent strategies. It included customizable depth levels for flexible difficulty levels.

Link: <https://github.com/Amir-rfz/Connect-4-Game-Bot>

### Neural Network From Scratch

- Implementation of a basic neural network from scratch, including layers, activation functions, forward and backward passes, and training on datasets like MNIST and California Housing.

Link: <https://github.com/Amir-rfz/Neural-Network-From-Scratch>

### Search Algorithm Analysis

- This project analyzes BFS, IDS, A\*, and Weighted A\* search algorithms using the "Lights Out" puzzle. It examines their performance based on the number of explored nodes and solution paths, with detailed Python implementations and performance metrics.

Link: <https://github.com/Amir-rfz/search-algorithms>

### NLP\_News articles clustering

- A project that applies clustering algorithms to group news articles based on textual similarity. It involves text preprocessing, feature extraction, dimensionality reduction, and evaluation

Link: [https://github.com/Amir-rfz/NLP\\_NewsClustering](https://github.com/Amir-rfz/NLP_NewsClustering)

### Text Processing with Bayes Theorem

- This project implements a simple text processing model using Bayes Theorem for text classification. It trains on a dataset and classifies input text based on the learned probabilities, showcasing the effectiveness of Bayesian methods in natural language processing.

Link: <https://github.com/Amir-rfz/Text-processing>

## HONOURS AND AWARDS

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Sanjesh Organization

### Ranked 813th in Iran's National University Entrance Exam

- among top 0.5% of participants

[ 01/09/2024 ] University of Tehran ACM Student Chapter

### Certified in Deep Learning course

- Completed UT ACM Summer of Code 2024 Deep Learning Course

## VOLUNTEERING

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[ 01/02/2025 – Current ] University of Tehran

### Artificial Intelligence Teaching Assistance

- Designing programming assignments
- Receiving and reviewing student submissions
- Design questions from lesson topics

[ 01/08/2024 – Current ] University of Tehran

### Advanced Programming Teaching Assistance

- Designing programming assignments
- Writing test cases for assignments
- Receiving and reviewing student submissions
- Collaborating on course journals about programming

[ 01/08/2024 – Current ] University of Tehran

#### **Data Structures and algorithms Teaching Assistance**

- Design questions from lesson topics
- Providing correction and feedback on student responses

[ 01/02/2024 – Current ] University of Tehran

#### **Discrete Mathematics Teaching Assistance**

- Design questions from lesson topics
- Providing correction and feedback on student responses
- Participating in practice classes and assisting with troubleshooting

[ 01/08/2023 – 01/02/2024 ] University of Tehran

#### **Introduction to Computing Systems and Programming Teaching Assistance**

- Conducting troubleshooting classes and solving exercises for student
- Record lesson videos for students

[ 01/08/2024 – Current ] University of Tehran

#### **Introduction to Computing Systems and Programming Lab Supervisor**

- Guiding students in implementing programming concepts and solving technical issues
- Evaluated lab projects submitted by students and provided detailed feedback.

### **LANGUAGE SKILLS**

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**Mother tongue(s):** Persian

**Other language(s):**

**English**

**LISTENING B2 READING C1 WRITING B1**

**SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2**

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*