

Education

Iran University of Science & Technology (ranked among the top 4 universities in Iran) Tehran, Iran
B.Sc. in Computer Engineering at Iran University of Science & Technology 2021 - Present

- Thesis: **RNA structure prediction using deep learning**
- GPA of the Last Two Years: **3.66/4.0** (17.37/20.0 in Iranian Scale)
- Degree anticipated Feb 2026

Shahid Bahonar University of Kerman Kerman, Iran
Doctor of Veterinary Medicine (D.V.M.) at Shahid Bahonar University of Kerman 2018 - 2021

- Completed three years of the D.V.M. program before transitioning to Computer Engineering
- Gained foundational knowledge in core **biological sciences**
- **Voluntarily withdrew** from the D.V.M. program to pursue a passion for Computer Engineering

High School Diploma - Biology Rafsanjan, Iran
National Organization for Development of Exceptional Talents (**Sampad**) 2014 - 2018

- **GPA: 4/4**
- **Sampad** recruits students for middle and high schools through a two-step set of exams at each level. The organization aims to provide a unique educational environment for exceptionally talented students.

Research Interests

- Machine Learning & Deep Learning
- Natural Language Processing (NLP)
- Computer Vision
- Bioinformatics
- Computational Biology
- LLMs and Transformer Architectures

Publications

Deep Learning and Graph Neural Networks for RNA 2D Structure Prediction in preparation
Authors: **Ali Alizadeh**, Reza Entezari-Maleki

Research Experience

Research Assistant in Dr. Entezari's Lab IUST University
Bachelor Thesis, School of Computer Engineering Sept 2024 - present

- Supervisor: Dr. Reza Entezari-Maleki
- Collaborated with Dr. Entezari's lab on multiple academic research projects, including RNA structure prediction
- Academic paper: RNA structure prediction using deep learning
- Developed and implemented deep learning models for RNA research, utilizing frameworks such as **PyTorch, PyTorch Geometric, TensorFlow, Keras, Scikit-learn, and Pandas**
- Developed a hybrid architecture combining **Transformer encoders and Graph Neural Networks** to predict RNA secondary structures from raw sequences.
- Explored cloud-based LLM infrastructure to address scalability and cost-performance challenges in large-scale genomics pipelines

Teaching & Industrial Experience

Teaching Assistant

School of Computer Engineering

IUST University
Sept 2022 - Jan 2026

- **Fundamentals of Programming** - Instructor: Dr. Mehrdad Ashtiani - Spring 2025
- **Advanced Programming** - Instructor: Dr. Marzieh Maleki - Spring 2025
- **Computer Architecture** - Instructor: Dr. Mehdi Hosseini Monazzah - Spring 2025
- **Design and Analysis of Algorithms** - Instructor: Dr. Farzaneh Ghayour Baghbani - Spring 2025
- **Operating system lab** - Instructor: Dr. Reza Entezari-Maleki - Spring 2025
- **System Analysis and Design** - Instructor: Dr. Mehrdad Ashtiani - Fall 2024
- **Formal Languages and Automata Theory** - Instructor: Dr. Farzaneh Ghayour Baghbani - Spring 2024
- **Principles of Database Design** - Instructor: Dr. Hossein Rahmani - Spring 2024
- **Fundamentals of Programming** - Instructor: Dr. Tayebe Rafiei - Fall 2022

Software Engineer Intern

Backend Developer Intern

System Group, Tehran
Summer 2024

- **Technologies:** C# and .NET Framework

Projects

FaceClass

Computer Vision Course Project – [GitHub](#)

IUST University
Summer 2025

- Designed and implemented a computer vision system for real-time classroom analysis, enabling automated attendance tracking, emotion recognition, and attention scoring
- Integrated multiple models, including **YOLO**, **RetinaFace**, **ArcFace**, and **MediaPipe**, to perform comprehensive face detection, recognition, and behavioral analysis
- Built a **Flask-based** interactive dashboard that provided real-time video processing, spatial heatmaps, and comprehensive reports

NoCodi.ir

Software Engineering Course Project – [Nocodi.ir](#)

IUST University
Spring 2025

- Engineered a responsive full-stack website using **React.js** and **Django REST Framework**
- Designed and developed a responsive frontend using **React.js**, leveraging **Redux** for state management and **Material-UI** for a consistent user interface – [GitHub](#)
- Built a robust RESTful API backend with **Django REST Framework**, incorporating **JWT** authentication, role-based access control, and **PostgreSQL** for data persistence – [GitHub](#)

Seven Apply

System Analysis and Design Course Project

IUST University
Spring 2024

- Developed a full-stack website with a **React.js** frontend and a **Django** backend
- Developed the frontend with **React.js**, implementing a component-based architecture and integrating REST APIs for dynamic data rendering – [GitHub](#)
- Implemented the backend with **Django**, including database schema design, API endpoints, and user authentication modules – [GitHub](#)

Domain-Specific Language for Clustering Algorithms

Compiler Design Project – [GitHub](#)

IUST University
Spring 2024

- Designed and implemented a domain-specific language (DSL) using **ANTLR** to simplify data clustering workflows
- Enabled support for multiple clustering algorithms, including **K-Means**, **DBSCAN**, **Spectral**, and **Agglomerative**
- Engineered a custom grammar and listener to parse DSL commands and generate an Abstract Syntax Tree (AST)

Volatility Modeling for Crypto Asset Allocation

Algorithmic Trading Course – [GitHub](#)

IUST University

Spring 2024

- Estimated crypto asset volatility using statistical estimators and models such as **GARCH, EGARCH, and FIGARCH**
- Optimized portfolio weights using the **Black-Litterman** model to maximize the Sharpe ratio

Naïve Bayes Text Classification

Artificial Intelligence Course – [GitHub](#)

IUST University

Fall 2023

- Constructed a complete text classification pipeline using the **Naïve Bayes** algorithm
- Executed text preprocessing tasks (tokenization, normalization) and feature extraction
- Trained and evaluated the model on labeled datasets, generating accurate predictions on unseen data

XV6 System Call and OS Kernel Development

Operating Systems Course – [GitHub](#)

IUST University

Fall 2023

- Developed a Unix-like educational OS kernel in **C** and **x86 Assembly**
- Implemented core process management functions, including creation, scheduling, and termination
- Extended the **XV6** operating system by adding threading support in **C**

Honors & Awards

Among top 25% in My Class in GPA(last two years:17.37/20)

Sept 2021 - Present

School of Computer Science, IUST

- Class of 110 students

Ranked Within the Top 0.5% in Iranian University Entrance Exam

Spring 2025

Mathematics and Physics majors

- Ranked **175** among 127000 students

Skills

- **AI & Machine Learning:**
Frameworks & Libraries: PyTorch, PyTorch Geometric, TensorFlow, Keras, Scikit-learn, OpenCV, NumPy, Pandas, Matplotlib, Hugging Face.
Core Concepts: Deep Learning (CNNs, RNNs, Transformers), Large Language Models (LLMs), Natural Language Processing (NLP), Computer Vision, Medical Imaging
- **Web Development & Programming:**
Languages: Python, Go, C, C++, C#, JavaScript, TypeScript, SQL.
Backend: FastAPI, Django, Fiber (Go), GORM.
Frontend: React.js, HTML5, CSS3.
Databases: PostgreSQL, MySQL
- **DevOps & Tools:** Git, Docker, Linux (Ubuntu), Bash, CI/CD, Postman, Terraform

Selected Courses

- Algorithms (A+)
- Computational Intelligence (A)
- Microprocessor and Assembly Languages (A)
- Signals and Systems (A)
- Engineering Probability and Statistics (A)
- System Analysis and Design (A)
- Operating Systems (A–)

Certificates

Finalist – Irancell Labs Artificial Intelligence Hackathon

Certificate available on [Quera.org](https://quera.org)

- Selected as a finalist for demonstrating strong skills in developing and optimizing AI models.

Learn Bioinformatics From Scratch (Theory & Practical)

Online course available at [Udemy.com](https://www.udemy.com)

- A comprehensive course tailored to help learners from academic and professional backgrounds master bioinformatics concepts and effectively analyze biological data.

ZeroToMastery - PyTorch for Deep Learning Bootcamp Zero to Mastery

Online course available at zerotomastery.io

- A step-by-step PyTorch course that teaches deep learning through a 3-part real-world project, building skills and a portfolio to qualify for deep learning engineer roles.

TensorFlow: Basic to Advanced - 100 Projects in 100 Days

Online course available on [Udemy.com](https://www.udemy.com)

- Covers TensorFlow from basics to advanced machine and deep learning, starting with its features and foundational concepts.

Introduction to Deep Learning with PyTorch

Certificate available on [DataCamp](https://www.datacamp.com)

- Includes courses on Deep learning with PyTorch.

Introduction to Machine Learning

Certificate available on [Kaggle](https://www.kaggle.com)

- Includes courses on Machine learning with scikit-learn.

CS50: Introduction to Computer Science

Certificate available on [CS50](https://cs50.org)

- Includes courses on Data Structures, Algorithms, SQL, Python, Web Development, CSS, HTML, and JavaScript.

Scored above 1000 on Codeforces and solved over 100 algorithm problems on LeetCode

Profile available on [Codeforces.com](https://codeforces.com)

Profile available on leetcode.com

- Demonstrated strong problem-solving skills and proficiency in algorithms and data structures.

Standardized Tests

- **TOEFL iBT:** Planning to take on September 27th, 2025

References

Dr. Reza Entezari-Maleki

Assistant Professor at Department of Computer Engineering

- Email: entezari@iust.ac.ir

Iran University of Science & Technology

Dr. Nasser Mozayani

Associate Professor at Department of Computer Engineering

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Iran University of Science & Technology

Dr. Mehrdad Ashtiani

Associate Professor at Department of Computer Engineering

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Iran University of Science & Technology