

Mahdi Ghazavi

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 [LinkedIn](#) |  [GitHub](#) |  [Scholar](#)

Education

Iran University of Science and Technology

B.Sc. in Computer Engineering

Tehran, Iran

Sep. 2020 - Apr. 2025

- Among the Top 4 Universities in Iran based on QS Ranking
- CGPA of the Last Two Years: **3.87/4.0 (18.53/20.0** on Iranian Scale)
- Overall CGPA: **3.51/4.0 (16.81/20.0** on Iranian Scale)
- Final Project's Thesis: ReAct-Enhanced RAG Framework for Financial Document Question Answering, Under the Supervision of [Dr. Reza Entezari-Maleki](#)
- Selected Courses: Natural Language Processing: **20.0**, Deep Learning: **19.25**, Computer Vision: **18.1**, Signals and Systems: **19.0**, Trading Algorithms: **18.38**, Compiler Principles: **20.0**

Harati High School

Diploma in Mathematics and Physics

Esfahan, Iran

Sep. 2017 - May 2020

- CGPA: **4.0/4.0 (19.75/20.0** on Iranian Scale)

Research Interests

- Natural Language Processing
- Machine Learning / Deep Learning
- NLP-based Financial Forecasting
- Data Mining
- Information Retrieval / RAG
- Large Language Models and Transformers

Publications

ReAct-Enhanced RAG Framework for Financial Document Question Answering

In Preparation

Authors: **M. Ghazavi**, H. Moradi-Kamali, R. Entezari-Maleki.

Market-Derived Financial Sentiment Analysis

Under Submission

[Archive](#)

Apr. 2025

Authors: H. Moradi-Kamali, MH. Rajabi-Ghozlou, **M. Ghazavi**, A. Soltani, R. Entezari-Maleki

Skills

- Programming Languages: Python (Advanced), C/C++ (Advanced), JS (Proficient), SQL (Proficient)
- Frameworks: React.js (Advanced), Next.js (Proficient)
- Libraries: Pytorch, Keras, TensorFlow, Scikit-Learn, Numpy, Pandas, NLTK, Scipy, Transformers, Datasets
- Tools and Platforms: LaTeX, Git, Docker, Linux (Ubuntu & Kali)
- Interpersonal Skills: Teamwork, Teaching, Self-Learning, Problem Solving

Research Experience

ReAct-Enhanced RAG Framework for Financial Document Question Answering

IUST

Bachelor's Thesis, [School of Computer Engineering](#)

Sep. 2024 – Apr. 2025

- Supervisor: [Dr. Reza Entezari-Maleki](#).
- Developed a RAG system for analyzing SEC filings using LLMs.
- Implemented RAPTOR hierarchical indexing with recursive chunking for scalable retrieval/summarization.
- Integrated a LangGraph-based ReAct agent for iterative reasoning and multi-source answer synthesis.

- Improved query relevance via expansion and cross-encoder re-ranking.

NLP-based Financial Forecasting: Market-Aware Textual Representation of Tweets IUST
Undergraduate Internship, School of Computer Engineering Feb. 2024 - July. 2024

- Supervisor: [Dr. Reza Entezari-Maleki](#).
- Developed a topic modeling method for dividing market-related tweets into meaningful topical groups using NLP and Transformers.
- Analyzed tweet representations for short-term market impact (P/L bounds) and applied temporal enrichment techniques to maintain model relevance.
- Implemented hyper-parameter optimized Triple Barriers for tweet labeling and optimized LSTM for next-day market prediction using engineered features.

Teaching Experience

Teaching Assistant	IUST
School of Computer Engineering	Sep 2023 - Present
- Natural Language Processing - Instructor: Dr. Marzieh Davoodabadi Farahani	Spring 2025
- Algorithmic Trading (Head TA) - Instructor: Dr. Reza Entezari Maleki	Spring 2025 & Fall 2024 & 2025
- Computer Architecture - Instructor: Dr. Amir Mahdi Hosseini Monazzah	Spring 2024 & 2025
- Computational Intelligence - Instructor: Dr. Nasser Mozayani	Fall 2024
- Deep Learning - Instructor: Dr. Marzieh Davoodabadi Farahani	Fall 2024 & 2025
- Fundamentals of Computer Programming - Instructor: Dr. Marzieh Malekimajd	Fall 2024
- System Design and Analysis - Instructor: Dr. Mehrdad Ashtiani	Spring & Fall 2024
- Algorithmic Trading - Instructor: Dr. Reza Entezari Maleki	Spring 2024
- Compiler Design Principles - Instructor: Dr. Saeed Parsa	Spring 2024
- Operating Systems - Instructor: Dr. Reza Entezari Maleki	Fall 2023 & Spring 2024
- Software Engineering - Instructor: Dr. Behrouz Minaei Bidgoli & Dr. Mehrdad Ashtiani	Fall 2023

Selected Academic Projects

RAG - Evaluation of Different Generators Fundamentals of Natural Language Processing Course Project - GitHub	IUST Spring 2024
- Description: Explored Retrieval-Augmented Generation (RAG) with different LLMs to address outdated or incorrect information. Judged LLM responses with another language model for accuracy.	
Text Generation Using RAG on Organizational Reports Fundamentals of Natural Language Processing Course Project - GitHub	IUST Spring 2024
- Description: Applied RAG to generate accurate answers from organizational reports, ensuring real-time, relevant responses based on report content.	
Anti-Spoofing System for Facial Recognition Fundamentals of Computer Vision Course Project - GitHub	IUST Spring 2024
- Description: Developed a facial spoofing detection system using two approaches: feature extraction for reduced dimensionality and high classification accuracy, and CNNs for deep learning-based spoof detection. Compared both methods, highlighting trade-offs between traditional machine learning and deep learning. Evaluated the model's effectiveness in detecting liveness from video data.	
- Technologies: Python, OpenCV, TensorFlow, Keras, MobileNet	

Sentiment Analysis on Persian Text Using Natural Language Processing (NLP) Deep Learning Course Project - GitHub	IUST Fall 2023
- Description: Built a sentiment analysis model for Persian text using the XLM-RoBERTa transformer to detect six emotions (Anger, Fear, Happiness, Sadness, Wonder, Hatred). Preprocessed data using NLP techniques and fine-tuned on the ArmanEmo dataset, achieving 75.23% accuracy. Conducted experiments to validate model robustness and benchmarked performance against other architectures.	

Irangard - A Website for Finding Tours, Places and Events Throughout Iran

IUST

Software Engineering Course Project - [GitHub](#)

Feb. 2023 - Jul. 2023

- Description: Developed a comprehensive system to assist its users to build a profile, find or register places, tours and events throughout Iran.
- Implemented the Front-End application using the React.js framework and Sass and included automated CI/CD and Integrated social media features, including chat, posts, and user follow options.

AI-Powered Solution for Lunar Lander Problem

IUST

Artificial Intelligence Course Project - [GitHub](#)

Fall 2022

- Description: Developed and implemented a reinforcement learning-based agent to solve the Gymnasium Lunar Lander Problem, optimizing for speed and convergence. Hyperparameter tuning led to significant improvements in learning efficiency and solution optimality. Project ranked in top 3 in the class.

Honors & Certificates

Digital Image Processing and Computer Vision ([LinkedIn](#))

Feb. 2024

- Covered Topics about NNs, MLP, CNNs, Transfer Learning, Data Augmentation, Image Segmentation, Object Detection

Neural Networks and Deep Learning ([Coursera](#))

Feb. 2024

Supervised Machine Learning: Regression and Classification ([Coursera](#))

Oct. 2023

Algorithmic Toolbox ([Coursera](#))

Jun. 2022

Programming for Everybody (Getting Started with Python) ([Coursera](#))

Mar. 2022

Python Data Structures ([Coursera](#))

Apr. 2022

Ranked within the top 0.5% (581st) in the Iranian University Entrance Exam

Jul. 2020

Mathematics and Physics Major

- Ranked 581st among more than 155,000 participants

Languages

• **Persian:** Native

• **English:** Full Professional Proficiency

- TOEFL iBT: Overall: 105, Reading: 27, Listening: 26, Speaking: 23, Writing: 29

References

Dr. Reza Entezari-Maleki

[Iran University of Science & Technology](#)

Assistant Professor in the School of Computer Engineering

- Email: entezari@iust.ac.ir

Dr. Nasser Mozayani

[Iran University of Science & Technology](#)

Associate Professor in the School of Computer Engineering

- Email: mozayani@iust.ac.ir

Dr. Mehrdad Ashtiani

[Iran University of Science & Technology](#)

Assistant Professor in the School of Computer Engineering

- Email: m_ashtiani@iust.ac.ir