

# Soroush Esfahanian

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## Summary

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Highly passionate Computer Engineering student with a strong foundation in Artificial Intelligence and NLP research work and application, and a recently developed passion for evaluating the cognitive abilities of Large Language Models. Demonstrated the ability to apply innovative problem-solving skills while collaborating on various academic and research projects, and now seeking opportunities that provide forward steps towards my new research interests, followed by more contributions and learning.

## Education

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### School of Electrical and Computer Engineering, University of Tehran

Tehran, Iran

B.Sc. in Computer Engineering

Oct 2022 - Current

- GPA: **19.17/20**
- Former Member of the University of Tehran **ACM** Chapter
- Managing Editor of **Jaryan Quarterly Journal**, belonging to University of Tehran IEEE Chapter
- Member of the University of Tehran Music Ensemble
- **Courses:** Natural Language Processing, Artificial Intelligence, Machine Learning, Data Science, Advanced Programming, Discrete Mathematics, Algorithm Design, Engineering Probability and Statistics, Formal Languages and Automata Theory, Compiler Design, Operating Systems, etc.

## Research Experience

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### Researcher at Large Language Models Lab, Tehran Institute for Advanced Studies

Tehran, Iran

Instructors: **Dr.Mohammad Taher Pilehvar, Dr.Yadollah Yaghoobzadeh**

Jun 2025 - Current

- Actively conducting a research on framing and benchmarking Social Intelligence in LLMs using large-scale social media data, where we are developing well-crafted evaluation frameworks and experimental methods that enable us to establish more rigorous assessments of social reasoning in LLMs.
- **Technical Skills:** Prompt Engineering, LLM Prompting, Working with LLM APIs, Python NumPy, Matplotlib, Pandas, Scikit-learn, C++, Ubuntu Linux, Linux tools, Git.
- **Soft Skills:** Teamwork, Proficient team management, Strong Communication, Presentation skills.

### Researcher at Human and Robot Interaction Lab, University of Tehran

Tehran, Iran

Instructor: **Dr.Mehdi Tale Masouleh**

Jun 2024 - Dec 2024

- Conducted research on sound source localization in a 3D multi-surface environment, proposing two novel, learning-based approaches for enhancing the localization performance of the baseline method.
- Employed various learning-based models, including multi-branch deep neural networks and basic machine learning models.
- Boosted the localization accuracy by 17% and significantly reduced the computational time by 97% using efficient classification techniques.
- The paper has been accepted to **ICRoM 2024**. Project material can be accessed [here](#).
- **Technical Skills:** Signal Processing with Python, Keras, NumPy, Matplotlib, Pandas, Scikit-learn, C++, Ubuntu Linux, Linux tools, Git.
- **Soft Skills:** Teamwork, Proficient team management, Strong Communication, Presentation skills.

## Selected Coursework

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### School of Electrical and Computer Engineering

Tehran, Iran

University of Tehran

Sep 2022 - Present

- **Artificial Intelligence:** 19.50/20.00
- **Advanced Programming:** 20.00/20.00
- **Database:** 19.1/20.00
- **Software Engineering:** 20.00/20.00
- **Algorithm Design:** 20.00/20.00
- **Data Structures and Algorithms:** 20.00/20.00
- **Programming Languages and Compilers:** 19.50/20.00
- **Formal Languages and Automata Theory:** 20.00/20.00
- **Engineering Probability and Statistics:** 20.00/20.00

## Publications

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### CONFERENCE PROCEEDINGS

Sound Source Localization in a 3D Multi-Surface Environment Using Learning-Based Methods

Soroush Esfahanian, Keyhan Rayati, Mehdi Tale Masouleh

2024 12th RSI International Conference on Robotics and Mechatronics (ICRoM), 2024

# Technical Projects

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## YouTube Videos Category Detection

University of Tehran

Tehran, Iran

Sep Jan 2025 - Jul 2025

- Performed sophisticated feature engineering steps on US and Canada's Youtube videos dataset in order to obtain the best features for the category detection task.
- Employed a vast spectrum of models, from simple ML models to different LLM prompting approaches, in order to compare the performance of each.
- Designed a Multi-Branch MLP model alongside the other models for the deepest feature learning.
- Designed a Fully-Automated End-to-End pipeline for the entire procedure of feature engineering, preprocessing and model training and evaluation.
- Obtained an accuracy of 78.91 and Precision of 78.98 on the best-performing model.
- Project material available [here](#).
- **Technical Skills:** Prompt Engineering, Keras, NumPy, Matplotlib, Pandas, Scikit-learn, Linux tools, Git.
- **Soft Skills:** Teamwork, Proficient team management, Strong Communication, Presentation skills.

## Natural Language Processing Projects

University of Tehran

Tehran, Iran

Sep Jan 2025 - Current

- Executed various projects and assignments on Natural Language Processing, as mentioned below.
- Implemented Word2Vec architectures based on CBOW and Skipgram models, in order to be used in downstream text classification tasks.
- Implemented Various N-gram models.
- Practically used Transformer-based architectures for downstream tasks.
- Projects' materials can be found [here](#).
- **Technical Skills:** Gensim, FastText, Prompt Engineering, Torch, NumPy, Matplotlib, Pandas, Scikit-learn, Linux tools, Git.

# Teaching Experience

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## Teaching Assistant, Operating Systems

Instructor:**Dr. Mehdi Kargahi**

University of Tehran

Fall 2025 - Current

## Teaching Assistant, Programming Languages and Compilers

Instructor:**Dr. Fatemeh Ghasemi**

University of Tehran

Fall 2025 - Current

## Teaching Assistant, Formal Languages and Automata Theory

Instructor:**Dr. Hossein Hojat**

University of Tehran

Fall 2024 - Summer 2024

## Teaching Assistant, Engineering Probability and Statistics

Instructor:**Dr. Mostafa Tavassolipour**

University of Tehran

Fall 2024 - Winter 2024

- Assisted in providing course material, including designing the main grammar utilized throughout the course and project grading.

# Honors

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2022	<b>Rank 75</b> , Iran National University Entrance Exam	Iran
2022-25	<b>Rank 3</b> , School of Computer Engineering, University of Tehran	Tehran, Iran
2025	<b>Rank 16</b> , Iran National Student Olympiad in Computer Science	Iran

# Skills

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<b>Programming</b>	Python (Torch, Keras, NumPy, Pandas, SciPy, Scikit-learn, Tensorflow, Matplotlib, etc.), Bash, Java, C/C++, SQL, R(ggplot2), Docker, Kubernetes, CSS, HTML, Verilog, Vivado, Quartus, Gensim
<b>Miscellaneous</b>	Linux, Shell, $\text{\LaTeX}$ (Overleaf/Notebook Markdown), Microsoft Office, Git.
<b>Extracurricular</b>	Professional Instrumentalist of Percussion Instruments.
<b>Soft Skills</b>	Proficient team management Strong communication skills, Advanced English Speaking Ability, Effective Team Collaboration

# Languages

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**English** Advanced Professional proficiency

**Persian** Native proficiency

**French** Elementary proficiency