

# Amirhossein Abaskohi *September 19, 2000*

Senior Undergraduate Student Majoring in Computer Engineering

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## Education

University Of Tehran

**B.Sc in Computer Science**

Department of Electrical and Computer Engineering

• **Cumulative:** 17.85/20.00 (3.8/4) [Last Two Years: 18.24 (4/4)] (Faculty Average: 15.10/20.00)

• **Important Courses:**

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|---|--|
| - Machine Learning (18.6/20)                | - Data Structures (19.8/20)                      |
| - Artificial Intelligence (20/20)           | - Database Design (18.3/20)                      |
| - Design and Analysis of Algorithms (20/20) | - Engineering Probability & Statistics (17.7/20) |

SEPTEMBER 2018 - PRESENT

*Ranked top 15% in class*

Motahari High School

**Diploma in Mathematics and Physics**

GPA: 19.81/20

2015-2018

## Research Interests

- |                               |                       |                              |
|-------------------------------|-----------------------|------------------------------|
| • Natural Language Processing | • Energy-Based Models | • Social Media Data Analysis |
| • Structured prediction       | • Multi-modal Models  | • Bioinformatics             |

## Research Experience

Undergraduate research assistant at the University of Tehran

JUL 2022 - PRESENT

**Under Supervision of Prof. Yadollah Yaghoobzadeh and Dr. Sascha Rothe**

I am working on the influence of data augmentation methods for contrastive-based prompt learning in the RoBERTa language model.

Undergraduate research assistant at the University of Tehran

NOV 2021 - JUN 2022

**Under Supervision of Prof. Azadeh Shakery and Prof. Yadollah Yaghoobzadeh**

I was working on a project to use a new pre-train objective for transformer-based language models to reach better results in translation tasks in different scenarios, including zero- and few-shot.

Undergraduate research assistant at the University of Illinois Chicago (UIC)

SEPT 2021 - JUN 2022

**Under Supervision of Prof. Pedram Rooshenas**

I developed a VAE-based generative model to simultaneously produce a picture and its caption to check the effect of text and image fusion in the latent space of generative models.

Undergraduate research assistant at the University of Tehran  
**Under Supervision of Prof. Behnam Bahrak**

AUG 2021 - PRESENT

I am working in the Data Analytics Lab of the University of Tehran. During this period, I have worked on different projects. For instance, I worked on a binary sarcasm classifier using the sarcasm dataset in SemEval 2022 workshop. We used some new data augmentation ideas to reach better results. In addition, I have two projects undergoing which are going to be completed soon. One of them is Insurance Data Analysis and using LSTMs to decide how should be insured. I also worked on Emotion Detection on the EmoPars dataset from Twitter, and I reached state-of-the-art results on this dataset using ParsBERT.

Undergraduate research assistant at the University of Tehran

NOV 2020 - SEPT 2021

**Under Supervision of Prof. Hadi Moradi**

We developed a cognitive test for preschoolers to determine whether or not they are ready for school. The test includes a voice recognition model that I have worked on that. Using new pre-train objective provided to famous Wav2Vec model, we reached a state-of-the-art model for automatic speech recognition.

## Teaching Experience

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|--|--|
| • <b>Artificial Intelligence</b> Prof. Hakimeh Fadaie and Yadollah Yaghoobzadeh      | FALL 2021, SPRING 2022                         |
| • <b>Design and Analysis of Algorithms</b> Prof. Javad Dousti and Prof. Hamid Mahini | SPRING 2021, SPRING 2022                       |
| • <b>Engineering Probability and Statistics</b> Prof. Behnam Bahrak                  | FALL 2020                                      |
| • <b>Operating systems</b> Prof. Mehdi Kargahi                                       | SPRING 2022, FALL 2022                         |
| • <b>Programming languages and Compilers (Chief TA)</b> Prof. Fatemeh Ghasemi        | SPRING 2021, FALL 2021, SPRING 2022, FALL 2022 |
| • <b>Data Structures</b> Prof. Hesham Faili  | FALL 2020, FALL 2021                           |
| • <b>Discrete mathematics</b> Prof. Siamak Mohammadi                                 | SPRING 2020, FALL 2020                         |
| • <b>Computer Architecture</b> Prof. Saeed Safari                                    | FALL 2021, SPRING 2022                         |

## Publications

- A.Abaskohi, S.Shahsavari, Sh.Javidi, B.Bahrak. Using LSTM and Sentence Embeddings to Predict Who Should Be Insured(Under Preparation)
- A.Abaskohi, N.Sabri, B.Bahrak. Emotion Detection in Persian Using ParsBERT to Provide State-of-the-art result on EmoPars Dataset(Under Preparation)
- A.Abaskohi, T.Zeraati, A.Rasouli, B.Bahrak (2022). UTNLP at SemEval-2022 Task 6: A Comparative Analysis of Sarcasm Detection Using Generative-based and Mutation-based Data Augmentation(International Workshop on Semantic Evaluation)
- A.Abaskohi, F.Mortazavi, H.Moradi (2022). Automatic Speech recognition for Speech Assessment of Persian Preschool Children (Submitted to IEEE/ACM Transactions on Audio, Speech, and Language Processing)

## Volunteering

- Artificial Intelligence and Machine Learning Mentor in Summer School 2021 SUMMER 2021
- Freelance Content Creation on Medium JUL 2021-PRESENT
- Working on The Backend API System of Cognitive Tests For Preschool Children Project NOV 2020-FEB 2021

## Extra Courses

- Natural language processing specialization
- Neural Networks and Deep Learning
- Machine learning
- Advanced Computer Vision with TensorFlow
- Intro to Computer Vision and Image Processing
- Generative Adversarial Networks
- Deep learning specialization
- Distributed Computing With Spark SQL
- Cloud Computing Concepts, Part 1
- Big data specialization

## Honors and Awards

- Supporter Foundation of University of Tehran Scholarship** Sept 2020  
Awarded to top 500 students among 35000 students in the university.
- Best Undergraduate Project Award** Sept 2022  
My project on "Unsupervised Machine Translation" has been awarded as the best undergraduate project in the 16th Project Day competition of ECE school of the University of Tehran.
- Admission to University of Tehran** Sept 2018  
Ranked 46th (regional rank), and 1125th (national rank) among 144,437 participants in the Iranian Nationwide University Entrance Exam for Mathematics and Physics discipline.
- Iran's Elites Foundation Member** Nov 2021  
Being a member of Iran's Elites Foundation.

## Languages

### English

- IELTS Band Score: 7 - Listening: 8, Reading: 6.5, Speaking: 7, Writing: 6

### Persian

- Native

## Skills

**Programming Languages:** Python, C\C++, SQL, C#, Java, GNU Octave, MATLAB, Verilog HDL

**Technologies:** Git, VS Code, Jupyter, Google Colab, Visual Studio, L<sup>A</sup>T<sub>E</sub>X

**Tools:** Tensorflow, Matplotlib, Pytorch, Jupyter, Modelsim, Quartus, CUDA, Django, Flask, GraphQL, Apache Airflow

**Operating Systems:** Linux (Ubuntu, Parrot, Kali), Windows, Cloudera

## Work Experience

- Full-stack developer internship Jul 2022 - Sept 2022  
**System Group**
  - **Description:** I was working on Abramad which provides businesses with a variety of services and helps them expand by taking advantage of cloud computing with greater speed and security.

Financial data science remote internship

Aug 2021 - Oct 2021

**World Data Science Institute**

- **Description:** In this internship I have worked with a group from all around the world remotely on a online payment application with API system and some machine learning algorithms for payment fraud detection.

Back-end developer internship

Jun 2020 - Sept 2020

**Idea Varzan System**

- **Description:** I was working on back-end API system for a project management application called SevenTask.
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## Notable Projects

### Python code generator

Python, Huggingface Transformers

Based on the dataset I obtained, I constructed a GPT2 transformer model for this project. I downloaded several python repositories from github and used them to train my model.

### Advanced Programming Course Projects

C++

These projects are: famous GUI game: Super Mario, A simple movie network like Netflix, and a simple interpreter.

### Artificial Intelligence Projects

Python, Sklearn, Numpy, Pandas, Matplotlib

These project contains: An multi layer neural network implementation from scratch on fashion MNIST dataset, search algorithms, A\* algorithm visualization, Naive Bayes sentiment analysis and house price prediction which I participated in the related Kaggle's competition as well.

### Sophia Compiler

Java, ANTLR

In this project, I have implemented a complete compiler for a object-oriented language called Sophia. This compiler, checks the code first and then generates the code using Jasmin.

### Iranian Music Genre Detection

Python, Tensorflow, Sklearn, Librosa, Flask

In this project, I created used different classifying and clustering models like KNN, SVM, MLP, and KMeans to detect genre of an Iranian music.

### Stop sign classifier

Python, PyTorch, Pillow

This project was my final project for Intro to Computer Vision and Image Processing course which I use CNN to classify stop sign images.

### Premier league Infringing IPs detector

Python, Apache Airflow, Tensorflow

In this project I created a apache airflow pipeline with different machine learning models to detect the infringing IPs for the premier league matches.

### Cafe Bazar Gender Detection

Python, Sklearn

Based on the applications installed, I utilized simple machine learning models to predict the gender of Cafe Bazar (Iranian Android app store) users in this project.