

Amirhossein Abaskohi *September 19, 2000*

Senior Undergraduate Student Majoring in Computer Engineering

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Education

University Of Tehran	SEPT 2018 - APR 2023
B.Sc in Computer Engineering	<i>Ranked top 10% in class</i>
Department of Electrical and Computer Engineering	
• Cumulative GPA: 17.94/20.00 (3.8/4) [Last Two Years GPA: 18.42 (4/4)] (Faculty Average: 15.10/20.00)	
Motahari High School	SEPT 2015 - JUL 2018
Diploma in Mathematics and Physics	
GPA: 19.81/20	

Research Interests

• Natural Language Processing	• Cognitive Computing	• Machine Learning for Health
• Computer Vision for Medical Imaging	• Multi-modal Models	• Human Centered AI

Publications

Paraphrasing-Guided Data Augmentation for Contrastive Prompt-Based Few-Shot Fine-Tuning	2023
Amirhossein Abaskohi, Yadollah Yaghoobzadeh, Sascha Rothe Annual Meeting of the Association for Computational Linguistics (ACL)	
PEACH: Pre-Training Sequence-to-Sequence Multilingual Models for Translation with Semi-Supervised Pseudo-Parallel Document Generation	2023
Amirhossein Abaskohi, Alireza Salemi (equal contribution), Sara Tavakoli, Yadollah Yaghoobzadeh, Azadeh Shakeri Workshop on Technologies for Machine Translation of Low-Resource Languages (LoResMT) co-located with EACL 2023	
Persian Emotion Detection using ParsBERT and Imbalanced Data Handling Approaches	2022
Amirhossein Abaskohi, Nazanin Sabri, Behnam Bahrak ACM Transactions on Asian and Low-Resource Language Information Processing	
A Comparative Analysis of Sarcasm Detection Using Generative-based and Mutation-based Data Augmentation	2022
Amirhossein Abaskohi, Arash Rasouli, Tanin Zeraati, Behnam Bahrak International Workshop on Semantic Evaluation co-located with NAACL 2022	
Automatic Speech recognition for Speech Assessment of Persian Preschool Children	2021
Amirhossein Abaskohi, Fatemeh Mortazavi, Hadi Moradi arXiv 2203.12886	

Research Experience

Undergraduate research assistant at the University of Tehran	JUL 2022 - MAR 2023
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 creating pseudo-translation documents for the pre-training stage of a multilingual transformer-based language model. We mapped sentences from one language to another by using bilingual dictionaries with distinct monolingual corpora. The quality of mapped sentences is improved by training a model reordering to enhance the quality of sentences for a language.	
Undergraduate research assistant	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. We had two goals: 1) Checking the effect of text and image fusion in the latent space on the quality of generative models, and 2) Using the model to create artificial image captioning datasets.	
Undergraduate research assistant at the University of Tehran	AUG 2021 - MAR 2023
Under Supervision of Prof. Behnam Bahrak	
I am working in the Data Analytics Lab of the University of Tehran. I have done several projects, including binary sarcasm classification and Persian emotion detection. I recently started a project on detecting people suffering from BPD based on social media data.	

Under Supervision of Prof. Hadi Moradi

We developed a cognitive test for preschoolers to determine whether or not they are ready for school. At first, as our system was an AI-powered test-taking system, I was working on the website's back end. After that, for the ASR system in speech-based test, we suggested a new pre-train objective for the Wav2Vec model, and we reached a state-of-the-art model for automatic speech recognition.

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 | • Generative Adversarial Networks |
| • Reinforcement Learning Specialization | • Deep learning specialization |
| • Machine learning | • Mathematics for Machine Learning |
| • Advanced Computer Vision with TensorFlow | • Cloud Computing Concepts, Part 1 |
| • Intro to Computer Vision and Image Processing | • 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 "Pre-Training Sequence-to-Sequence Multilingual Models for Translation with Semi-Supervised Pseudo-Parallel Document Generation" 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 Membership and Financial Support Nov 2021

After the Automatic Speech Recognition for preschool children project, I have been awarded a 1-year scholarship from this foundation.

Skills

Programming Languages: Python, C/C++, SQL, C#, Java, Dart, JavaScript, GNU Octave, MATLAB, Verilog HDL

Technologies: Git, Docker, Jupyter, Google Colab, L^AT_EX

Tools: Tensorflow, Matplotlib, Pytorch, Jupyter, CUDA, Django, Flask, GraphQL, Apache Airflow, PowerBI

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

Work Experience

Back-end Developer Nov 2022 - Now

Mate Machine Inc

- **Description:** Experienced in optimizing and maintaining the back-end system of a dynamic dating social network application, ensuring robust functionality and superior performance.
- **Skills used:** ASP.NET, MicoService, Docker, CI/CD, EntityFramework, GRPC, RabbitMq, Grafana, DataDog, PowerBI, Swagger, Agile, Scrum

Back-end Developer Dec 2022 - May 2023

Ramand

- **Description:** I was working on the back-end of a bourse trading system for Farabi brokerage.
- **Skills used:** ASP.NET, RabbitMq, Dapper, Agile, Scrum, Grafana

Machine Learning Researcher Dec 2022 - Present

University of Tehran Science and Technology Park

- **Description:** I was involved in developing a prediction model to identify individuals eligible for insurance coverage at Achareh, an Iranian service provider company.
- **Skills used:** Python, Research, Tensorflow, PyTorch, NLP, Data Analysis

Full-stack developer internship

Jun 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.
- **Skills used:** ASP.NET, CI/CD, Angular

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.
- **Skills used:** Python, Tensorflow, Research, Project Leadership, Flask, Django, GraphQL

Back-end Developer

Jun 2020 - Mar 2021

Idea Varzan System

- **Description:** I was working on back-end API system for a project management application called SevenTask.
- **Skills used:** ASP.NET, Swagger, SeqLog, Agile, Scrum, Grafana, Dart

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 Detection

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.