Amirhossein Abaskohi *September 19, 2000*

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Research Interests

- Natural Language Processing
- Energy Based Models
- Software Engineering
- Structured prediction
- Multimodal Models
- Machine Learning Theory

Education

University Of Tehran   SEPTEMBER 2018 - PRESENT
B.Sc in Computer Science   *Ranked top 15% in class*

Department of Electrical and Computer Engineering

- **Cumulative:** 17.79/20.00 (3.8/4) (Faculty Average: 15.10/20.00)

Motahari High School   2015-2018
Diploma in Mathematics and Physics
GPA: 19.81/20

Research Experience

Undergraduate research assistant at University of Tehran   JUL 2022 - PRESENT
Under Supervision of Prof. Yadollah Yaghoobzadeh

I am working on prompt-based learning.

Undergraduate research assistant at University of Tehran   NOV 2021 - JUN 2022
Under Supervision of Prof. Azadeh Shakery and Prof. Yadollah Yaghoobzadeh

I was working on a model to reach better result for unsupervised multilingual translation task. We reached a state-of-the-art model.

Undergraduate research assistant at University of Illinois Chicago(UIC)   SEPT 2021 - JUN 2022
Under Supervision of Prof. Pedram Rooshenas

Using PyTorch, I'm developing an VAE-based generative model to produce a picture and its caption simultaneously to check the effect of text and image fusion in latent space of generative models.

Undergraduate research assistant at University of Tehran   AUG 2021 - FEB 2022
Under Supervision of Prof. Behnam Bahrak

My team and I worked on binary sarcasm classifier using iSarcasm dataset on SemEval 2022 workshop. We used some new data augmentation ideas to reach better results.

Undergraduate research assistant at University of Tehran   NOV 2020 - OCT 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 our collected data and some simple changes in the famous Wav2Vec model, we reached a state-of-the-art model for automatic speech recognition.

Teaching Experience

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

Publications

- 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 (preprint)

Volunteering

- Artificial intelligence and machine learning mentor in summer school 2021   Summer 2021
- Writing on Medium about Machine Learning   Jul 2021-Present
- Working on the backend API system of cognitive tests for preschool children project   Nov 2020-Feb 2021

Work Experience

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, working 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, REST API

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. We were using Agile methodology for our project management. In some points, I also worked on the mobile application as well.
- **Skills used:** ASP.NET, Swagger, SeqLog, Agile, Scrum, Grafana, Dart

Data collector and data anlayzer   Jun 2019 - Jan 2020
Academic Center for Education, Culture and Research of Science and Technology university

- **Description:** I was working on collecting data from Iranian online shops to create a price comparison and price estimation.
- **Skills used:** Scraper, Python(Pandas, Matplotlib, numpy, ...)

Extra Courses

- **Machine Learning Prof. Mohammadreza Abolghasemi**
- **Generative Adversarial Networks**
- **Deep learning specialization**
- **Natural language processing specialization**
- **Machine learning**
- **Distributed Computing With Spark SQL**
- **Neural Networks and Deep Learning**
- **Advanced Computer Vision with TensorFlow**
- **Blockchain and Cryptocurrency Explained**
- **Intro to Computer Vision and Image Processing**
- **Cloud Computing Concepts, Part 1**
- **MongoDB Basics**
- **Introduction to NOSQL Databases**
- **Big data specialization**

Honors and Awards

Admission to University of North Carolina at Charlotte for 1-year research internship   Sept 2021
Accepted for 1-year remote research internship under supervision of Prof.Pedram Rooshenas.

Iran's Elites Foundation Member   Nov 2021
Being a member of Iran's Elites Foundation.

Supporter Foundation of University of Tehran Scholarship   Sept 2020
Awarded to top 500 students among 35000 students in the university.

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.

Languages

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

Persian
- Native

Skills

Languages
- Expert in Python, C\C++, SQL, C#
- Familiar with Java, GNU Octave, MATLAB, Verilog HDL

Technologies
- Git, VS Code, Jupyter, Google Colab, Visual Studio, LaTeX

Tools
- NumPy, SciPy, Pandas, Scikit-learn, Tensorflow, Matplotlib, Pytorch, Jupyter, Modelsim, Quartus, CUDA, Django, Flask, GraphQL, Apache Airflow

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

Notable Projects

IEMDB   Java, React, Docker, Kubernetes, JUnit

This is the project that I have done in my Internet Engineering course at the University of Tehran. My teammate and I created an Movie an online database of information related to films like IMDB.

Pet Clinic Web Application Tests   Java, JUnit

This is was a part of my Software Testing course which contains seven branch for each computer assignment. This is a simple Spring Web Application which I coded some test for that.

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.

Computer Network Projects   C++, C, TCL, GNS3

These projects are implementation of Multicasting, FTP Server and congestion control testing.

Operating Systems Projects   C++, C, Assembly

One of the projects is XV6-modified which is MIT's Unix based operating system which is modified and some features has been added to that. Also there are multi-thread and multi-process projects.

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.

Django Craigslist Scraper   Python, Django, BeautifulSoup

In this project I made a scraper to scraper the famous Craigslist website. Also I have added the visualization to scrape and show the result based on the search using Django.

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.

VWS API   C#, Entity framework, ASP.NET Core

In this project, I created an API system for project management application like Trello.

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.

UT IOT Blog   Python, Django, HTML, CSS, Bootstrpa

For the IOT lab at the University of Tehran, I designed a Blog application. You have the ability to create, modify, and read other people's blogs. There is also a mechanism in place to control who can post.