

Amirhossein Abaskohi *September 19, 2000*

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in amirhossein-abaskohi | 🎓 Amirhossein Abaskohi Scholar | 📺 live:.cid.11d29e5a6ca6fb23

Research Interests

- Natural Language Processing
- Energy Based Models
- Software Engineering
- Structured prediction
- Multimodal
- 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 NOV 2021 - PRESENT
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 UNC Charlotte SEPT 2021 - PRESENT
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. Hesham 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 Preschool Children (preprint)
- A.Salemi, A.Abaskohi, S.Tavakoli, Y.Yaghoobzadeh, A.Shakery (2022). PEACH: Pre-Trining Sequence-to-Sequence Multilingual Models for Translation with Semi-Supervised Pseudo-Parallel Document Generation(under preparation)

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 |
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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 analyzer 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, ...)
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Extra Courses

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

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

Pet Clinic Web Application Tests

Java, JUnit

This was a part of my Software Testing course which contains seven branches for each computer assignment. This is a simple Spring Web Application which I coded some tests 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 have been added to that. Also there are multi-thread and multi-process projects.

Artificial Intelligence Projects

Python, Sklearn, Numpy, Pandas, Matplotlib

These projects contain: A 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 scrape 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 an 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 and used different classifying and clustering models like KNN, SVM, MLP, and KMeans to detect the 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 used CNN to classify stop sign images.

Premier league infringing IPs detector

Python, Apache Airflow, Tensorflow

In this project I created an 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, Bootstrap

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.