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Mahvash Siavashpour

Senior Undergraduate, Computer Engineering, Amirkabir University of Technology

Education

Amirkabir University of Technology, Tehran, Iran
Bachelor of Science, Computer Engineering, *2018–2022(Expected)*
GPA: 18.61/20

Farzanegan2 High School(NODET), Tehran, Iran
High School Diploma, Mathematics and Physics, *2014–2018*
GPA: 19.92/20

Awards & Achievements

Announced as the **Outstanding Student**, Amirkabir University of Technology *2020*

1st place, **ACM ICPC** (Juniors), Amirkabir University of Technlogy *2018*

Ranked in **top 0.5 percent** among 144,000 participants, Nationwide University Entrance Exam for B.Sc *2018*

1st place, Science Engineering Conference, University of Tehran *2017*

1st place, Demo Open Challenge, **IranOpen 2016** *2016*

1st place, Demo Open Challenge, Super Team, **IranOpen 2016** *2016*

Skills

Programming Languages: C, C++, Python, Java, JavaScript, Go, Bash, LaTeX
Tools/Frameworks: Tensorflow, Numpy, Pandas, Keras, Scikit, Git

Languages

Persian(Native)
English(Full Professional Proficiency)

Research Experience

Research Assistant, University of Mannheim *2021 - Now*
- A Non-Parametric Sentence Embedding Model
We are currently working on a non-parametric sentence embedding model that has less computational complexity that the deep neural network models available.

Research Intern, CMP Lab, Shahid Beheshti University *2021 - Now*
- Deep Learning Sequential Sampling Model For Human Lexical Decision Making
In this project we focused on modeling human semantic and linguistic processing using a new method.

Research Intern, Institute for Research in Fundamental Science (IPM) *2020 - 2021*
- Tensor Method for Analyzing Multi-Dimensional Diffusion Models
We worked on "Tensor Method for Analyzing Multi-Dimensional Diffusion Models" and tried to implement this method in order to analyse multi-option decision making problems.

Teaching Experience

Amirkabir University of Technology, Tehran, Iran
Teaching Assistant

- Algorithm Design, Prof. Alireza Bagheri *Fall 2021*
- Information Retrieval, Prof. Ahmad Nickabadi *Fall 2021*
- Linear Algebra, Prof. Mostafa Haghir Chehraghani *Spring 2021*
- Linear Algebra, Prof. Ehsan Nazerfard *Fall 2020*

- Advanced Programming, Prof. Ehsan Edalat *Winter 2020*
- Principles of Programming, Prof. Bahador Bakhshi *Fall 2019*

Notable Projects

BERT - Persian Token Classification *Fall 2021*

This project is for categorizing tokens in a Persian text using BERT (Pars-BERT). In Persian, there is an annotation called Kasr-E-Ezafeh which is not usually written, but using this code we can annotate each word in Persian text with its appropriate label.

Information Retrieval System *Spring 2021*

This project is an information retrieval system that can retrieve documents by using different approaches including tf-idf and classification. I used a documents collection from the ISNA news agency to test and implement the system. [Github Link]

Fuzzy C-Means *Spring 2021*

Fuzzy C-Means is a form of the classic k-means classification algorithm that uses fuzzy membership values to assign the data to each of the clusters and learns to update those clusters to be a good match for the data. [Github Link]

Handwritten Digit Recognition *Spring 2021*

In this project I worked on a fully connected neural network containing 2 hidden layers and I implemented the whole network by the use of mathematics and calculus. [Github Link]

Categorizing Poems by Their Poets Using NLP *Winter 2021*

I used a data set that contained the poems written by 3 different poets. By the use of the training data set I created a set of unigram and bigram models. I used these models to guess the poets of the test data set. And by changing the coefficients of the back-off model I have got the accuracy greater than 85%. [Github Link]

Card Game Player Using Artificial Intelligence *Fall 2020*

In this project I designed a card game player that can predict the next moves and steps to solve a card game at a given state. [Github Link]

Detecting Secret Codes in Audio Files Using Fourier Transform *Fall 2020*

This is a project I have done for my Signals and Systems course. We were given a set of audio files with some ascii codes hidden in their frequency domain. I used fourier transform to convert audio files from their time domain to frequency domain and then detected the codes hidden. [Github Link]

Additional Activities

Honorary member at student' scientific chapter at department of computer engineering of Amirkabir University of Technology *2020-2021*

Member of execution committee of Amirkabir Programming League (APL) *2019*

Technical judge in Science Engineering Conference at University of Tehran *2019*