

Sara Tavakoli

COMPUTER ENGINEERING STUDENT

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Education

University of Tehran

Tehran, Iran

BSc. IN COMPUTER ENGINEERING (SOFTWARE ENGINEERING MAJOR)

Sep. 2017 - Present

- **GPA of last two years: 4/4 (18.69/20)**
- **CGPA: 3.8/4 (17.73/20)**
- Related Courses: Artificial Intelligence (**19.5/20**), Internet Engineering (**19.3/20**), Cyber-Physical Systems (**18/20**), Computer Networks (**20/20**), Parallel Programming (**19.4/20**), Programming Languages and Compiler (**19.5/20**), Database Design (**18.4/20**), Advanced software design (**19.67/20**)

Salam Vanak High School

Tehran, Iran

DIPLOMA OF MATH AND PHYSICS

2013 - 2017

- **CGPA: 4/4 (19.8/20)**

Research Interests

- Machine Learning
- Natural Language Processing
- Artificial Intelligence
- Software Engineering
- Data Science
- Social Networks

Honors & Awards

Ranked in the Top 0.1% : In Iranian University Entrance Exam among 148,000 participants

Bachelor Scholarship : Awarded a 4-year full scholarship from **University of Tehran**

Iranian Mathematics Olympiad : Accepted in first round of Iranian Mathematics Olympiad

Research Experiences

Data Analytics Research Assistant

University of Tehran

UNDER SUPERVISION OF **DR. B. BAHRAK** AND **DR. Y. YAGHOOBZADEH**

June. 2021 - Present

- Comprehending the concepts and methods of Natural Language Processing (NLP)
- Employing various Topic modeling methods on Persian Tweets to find the most productive and efficient technique
- Currently I am working on the preparation of our manuscript in which we assess people's inclination towards specific social issues by measuring the potency of words connotation in given tweets

Data Scientist Intern

University of Tehran

UNDER SUPERVISION OF **DR. B. BAHRAK**

June. 2021 - Aug. 2021

- During this internship, I completed "Hands-on Machine Learning with Scikit-Learn, Keras, and TensorFlow" book's projects and exercises while getting familiar with machine learning concepts in Python

Teaching Experiences

Artificial Intelligence Teaching Assistant

University of Tehran

DR. Y. YAGHOOBZADEH AND **DR. H. MORADI** AND **DR. H. FADAEI**

Dec. 2020 - Present

- Designing projects, assignments and quizzes according to course curriculum
- Recapitulating and reviewing course content for eager students before class projects
- Utilizing online resources to keep my knowledge up to date regarding course contents

Operating Systems Teaching Assistant

University of Tehran

DR. M. KARGAHI

Dec. 2020 - Present

- Designing projects and quizzes according to course curriculum
- Running question and answer sessions before mid-term exams
- Compiling inclusive and in-depth reports from students progress and results

Discrete Mathematics Teaching Assistant

University of Tehran

PROF. S. MOHAMMADI

Feb. 2020 - Feb. 2021

- Designing assignments and quizzes according to course curriculum
- Counseling and guiding students throughout their assignments
- Designing challenging questions and archiving them to be used in voluntary contests

Work Experiences

Junior Software Engineer

Tehran, Iran

DIGIKALA

July. 2019 - Dec. 2019

- Hands-on experience working with technologies like PHP, MySQL, Redis, Docker, Git, ci-cd (Jenkins).
- Collaborating cross-functionally with business users, project managers and other engineers to implement practical solutions
- Providing ongoing maintenance and development in the main web page of **Digikala** and **Digistyle**

Software Engineer Summer camp

Tehran, Iran

DIVAR

Aug. 2021

- Attending several workshops including Django, Docker, Kubernetes, Data structures and algorithm, Git, Microservice programming, etc
- Developing a whole project from scratch using Python and Django in group of 5 people
- Adopting top-notch technologies that we were taught during the summer camp

Course Projects

Artificial Intelligence

Spring 2020

- **Price Estimation using Regression**
Estimating the price of mobile phones using different regression models like LinearRegression, TreeRegression, and lightgbm
- **Image Classification with Neural Network**
Applying a multi-layer neural network using Pytorch in conjunction with analyzing and tuning various hyper-parameters
- **Working with SciKit-Learn Library**
Using different classifiers like decision trees, KNN, and ensemble methods on a dataset of customers to predict whether they will come back to the market
- **Text Processing using Bayesian Networks**
Processing news with bag of words to classify their categories using Bayesian networks implemented from scratch
- **Decrypting Substitution Ciphers with Genetic Algorithm**
Implementing a genetic algorithm from scratch to find the key for a particular substitution cipher
- **Search Algorithms**
Implementing uninformed and informed search methods from scratch to solve a problem and comparing these methods' functionality

Compiler design and programming languages

Fall 2020

- Implementing compiler for Sophia language in four phases: lexical and syntax analyzer, name analyzer, type analyzer, and code generator using Java

Internet Engineering

Spring 2021

- Developing web application for Students Portal and Course Registration System
- **Back end** : Java (Spring framework) - **Front end** : JavaScript (Reactjs) - **DB**: MySQL - **Deployment**: Docker, Kubernetes

Operating System

Fall 2019

- Customizing xv6 kernel with some added features for CPU scheduling, memory management, and synchronization
- This course's projects consist of subjects like socket programming, multi-threading, and synchronization

Skills

Programming	Python, C++, Java, C, PHP, JavaScript, SQL
Web Development	Django, Spring, React, HTML, CSS
Machine Learning Python Libraries	Pandas, Scikit-learn, Numpy, NLTK, Pytorch
Database	MySQL, MongoDB, PostgreSQL
Technologies	Git, Docker, Jupyter Notebook, Maven, Kubernetes
Software Engineering	Proficient in object-oriented design patterns, software development methodologies, and software testing
Hardware Design Languages	Verilog, VHDL
Simulation	Modelsim, Vivado, Quartus
Interpersonal skills	Teamworking, Teaching, Self-Learning, Problem-Solving
Operating Systems	Linux (Ubuntu), MacOS, Windows

Volunteer Experience

High School Discrete Mathematics and Physics Teacher

Oct. 2017 - July. 2018

- Teaching Discrete Mathematics and Physics, solving extra problems in sophisticated subjects.

Languages

Persian : Native

English : Fluent (TOEFL : To be taken on November 13th)