

# Sina Negarandeh

COMPUTER ENGINEERING · STUDENT

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## Education

### College of Electric and Computer Engineering, University of Tehran

Tehran, Iran

B.SC. IN COMPUTER ENGINEERING (SOFTWARE ENGINEERING MAJOR)

2018 - Now

- **GPA of Last Two Years: 19.28/20 (4/4) | Cum. GPA: 18.29/20 (3.81/4)** | Faculty Average: 15.10/20
- Related Courses: Artificial Intelligence — 19.5/20 • Advanced Programming — 18.85/20 • Data Structure and Algorithm — 18.5/20 • Database Design — 18.34/20 • Operating System — 18.9/20 • Software Engineering — 19.2/20 • Human-Computer Interaction — 19.6/20
- **Audited** Courses: Machine Learning • Reinforcement Learning • Natural Language Processing

### High School

Tehran, Iran

DIPLOMA IN MATHEMATICS AND PHYSICS

2015 - 2018

- GPA: 19.06/20 (4/4)

## Research Interests

- Artificial Intelligence
- Deep Learning
- Natural Language Processing
- Data Analytics
- Machine Learning
- Reinforcement Learning
- Data Science
- Data Mining

I'm especially interested in applications of AI in **healthcare**.

## Research Experience

### Undergraduate Research Assistant

University of Tehran

UNDER SUPERVISION OF PROF. A. SHAKERY

Most of the presented methods for automatic detection of hate speech and insulting sentences have investigated the problem in one language and its linguistic features. One of the fundamental challenges is that most methods are proposed for high-resource languages. We are currently working on how to use these high-resource languages to enhance hate speech detection in low-resource languages.

### Undergraduate Research Assistant

University of Tehran

UNDER SUPERVISION OF PROF. B. BAHRAK

I started to learn about Reinforcement Learning based Recommender Systems and how RL can be used to enhance and solve some of the problems of RCs. We are currently working on how this can be used for certain cases like real-world online retail environments.

## Teaching Experience

**Supervising Teaching Assistant** ARTIFICIAL INTELLIGENCE — Y. YAGHOOBZADEH, H. FADAEI

Fall 2022

**Teaching Assistant** ARTIFICIAL INTELLIGENCE — Y. YAGHOOBZADEH, H. FADAEI

Spring 2021, Fall 2021, Spring 2022

**Teaching Assistant** OPERATING SYSTEM — M. KARGAHI

Spring 2022, Fall 2022

**Teaching Assistant** INTRODUCTION TO SOFTWARE TESTING — E. KHAMESPANAH

Fall 2022

**Teaching Assistant** DISCRETE MATHEMATICS — S. MOHAMMADI

Spring 2022

**Teaching Assistant** INTRODUCTION TO COMPUTING SYSTEMS AND PROGRAMMING — M. HASHEMI, M. MORADISABZEVAR

Spring 2020

**Teaching Assistant** DATABASE LABORATORY — M. BANAIE

Fall 2022

Related files can be found [here](#).

## Professional Development

### Natural Language Processing, H. Faili, and Y. Yaghoobzadeh

University of Tehran

Audited Course

During this graduate course from the University of Tehran, some of the subjects that I learned about include: Naive Bayes Classification and Sentiment, Neural Nets and Neural Language Models, RNN, Attention, Transformers (BERT), Machine Translation, Constituency Parsing, Question Answering, Chatbot, and Information Extraction.

### Reinforcement Learning, M. Nili

University of Tehran

Audited Course

During this graduate course from the University of Tehran, I learned how RL fits in as an area of machine learning, and how it complements other areas such as deep learning, supervised and unsupervised learning. I also got familiar with concepts like Multi-armed bandits, Markov Decision Processes, Dynamic Programming, Monte Carlo Methods, Policy Gradient Methods, n-step learning, Approximate Solution Methods etc. I also read Reinforcement Learning: An Introduction by Richard S. Sutton and Andrew G. Barto, which was the primary textbook for this course.

## Work Experience

### TAPSI

BACK END DEVELOPER INTERN

Tehran, Iran

Jul. 2021 - Jan. 2022

- TAPSI is an Iranian mobility as a service provider.
- Collaborated in a team of 7 that used agile scrum methodology.
- Helped in redesigning, and optimizing multiple scenarios.
- Investigated and resolved several issues.
- Managed migrating events from PostgreSQL database to MongoDB without down time.
- Implemented several API microservices in Node.js, and python.
- Participated in process of migrating microservices to gRPC.

Student Internship Evaluation: Industrial Training — 20/20 (4/4) • My internship report can be found [here](#).

## Notable Academic Projects

### Artificial Intelligence Course Projects

PYTHON

A series of five projects. Gained knowledge on fundamental subjects of AI, such as search and genetic algorithms. Also, more contemporary areas such as ML, NLP, and Neural Networks were part of the course. We used regression methods to predict housing prices, performed text classification on Persian comments, implemented a complete neural network, and finally, used Tensorflow and Keras for image classification.

### IEMDB

JAVA, JAVASCRIPT, HTML, AND CSS

A complete implementation of a website from scratch. This project was developed using Java and Spring for the back-end, and React for its front-end. Tools like CI/CD pipelines, JDBC, JUnit, Github OAuth apps, etc., were used.

### Hardware Implementation of a Basic Neuron and a Multi-layer Perceptron

C AND VERILOG

A project with two-phase. The first phase is hardware implementation of a basic Neuron in Artificial Neural Networks (ANNs). Furthermore, the second phase is hardware implementation of a Multi-Layer Perceptron (MLP) Neural Network.

### SINIX

C

SINIX is an operating system cloned from xv6 with some added features (System Calls, Synchronization And Concurrency, CPU Scheduling, and Memory Management).

### Sophia Compiler

JAVA AND ANTLR

A compiler was implemented from scratch for Sophia language using Antlr4 and Java.

### Systems Analysis and Design

C++

This project consists of multiple phases including activity diagram and business process modeling, identifying complete use cases along side drafting domain model and operational contract, designing class diagram and finally, implementing the system using C++.

### Surface Scanner

JAVA

An android app that scans the surface using accelerometer and gyroscope sensors and displays it in a graph. In implementing this application, points such as the sensors' inaccuracy and analyzing each sensor's outputs have been considered.

## Workshops

### Teaching Assistant Webinar

A three-hour workshop held by the School of ECE, University of Tehran

### Deep Learning for AI by Yoshua Bengio

A two-hour speech held by the School of ECE, University of Tehran

## Skills

### Programming

Python, C/C++, Java, JavaScript, GoLang, SQL, Verilog, HTML, LaTeX, CSS, Swift

### Technologies

MakeFile, Git, Docker, Kubernetes, Jupyter Notebook, Google Colab, Anaconda, Figma

### Python Libraries

NumPy, Pandas, Matplotlib, Seaborn, SciPy, Scikit-Learn, TensorFlow, Karas

### Software Engineering

Familiar with multiple object-oriented design patterns. Efficient with function-based designs. Fully familiar with Agile development and its concepts.

### Operating Systems

Linux, MacOS, Windows

## Languages

**Persian** Native

**English** Professional working proficiency | **TOEFL iBT® test:** Test Date: Oct 15, 2022