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

High School — *Tehran, Iran*

Diploma in Mathematics and Physics — *2015 - 2018*

- GPA: 19.06/20 (4/4)

Research Interests

- Artificial Intelligence
- Machine Learning
- Deep Learning
- Reinforcement Learning
- Natural Language Processing
- Data Science
- Data Analytics
- Human-Computer Interaction

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 — *Sprring 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, I learned about NLP as one of the most widely applied areas of machine learning. Some of the topics that I learned about include Naive Bayes Classification and Sentiment, Neural Nets and Neural Language Models, RNN, Attention, Transformers (BERT). Moreover, by the end of the course, I will learn about Machine Translation, Constituency Parsing, Question Answering, Chatbots, 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. And by the end of the course, I will get acquainted with Dynamic Programming, Monte Carlo Methods, Policy Gradient Methods, n-step learning, Approximate Solution Methods. I am also reading Reinforcement Learning: An Introduction by Richard S. Sutton and Andrew G. Barto, which is the primary textbook for this course.

Work Experience

TAPSI *Tehran, Iran*

Back End Developer Intern *Jul. 2021 - Jan. 2022*

- TAPSI is an Iranian mobility as a service provider.
- Collaborated with 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 website similar to IMDB was implemented entirely from scratch. This project was developed using Java and Spring for the back-end and React for the front-end. Tools like CI/CD pipelines, JDBC, JUnit, Github Oauth apps, and more have been used.

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

C and Verilog

This project consists of two phases: hardware implementation of a basic Neuron in Artificial Neural Networks (ANNs) and 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, a custom language designed for the course, 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 alongside drafting domain model and operational contract, designing class diagram, and 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 app, issues such as the inaccuracy of sensors and OS restrictions for using sensors and communication with the hardware have been considered.

Workshops

Teaching Assistance Training 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	**High Intermediate:** Python, C/C++ **Intermediate:** Java, JavaScript, Node.js, Go, HTML, CSS, Verilog, VHDL, SQL **Beginner:** Swift, MATLAB, LaTeX
Technologies	MakeFile, Git, Docker, Kubernetes, Jupyter Notebook, Google Colab, Anaconda, Figma, MySQL, MongoDB, Neo4j
Python Libraries	NumPy, Pandas, Matplotlib, Seaborn, SciPy, Scikit-Learn, TensorFlow, Karas
Software Engineering	Familiar with various object-oriented design patterns, methodologies such as Agile, and software testing technologies.
Operating Systems	Linux(Ubuntu), macOS, Windows

Languages

Persian Native

English Professional working proficiency | **TOEFL iBT®** Test Scores: 112/120 (R: 29 — L: 30 — S: 26 — W: 27) • Test Date: Oct 15, 2022