

# Amir Saberhabibi

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Github in LinkedIn

Website

### **EDUCATION**

# University of Guilan

Rasht, Iran

B.Sc in Computer Science

Sep. 2020 - Jun. 2024

- B.Sc. Computer Science Project (Mono2Micro): Applying DBSCAN to decompose monolithic applications into microservices, leveraging NLP for semantic feature linking to create a well-structured architecture.
- o **GPA:** 16.29/20 (3.3/4) (3.7/4 for the last two academic years)
- o English Level: 8.0 band score on the IELTS test (L: 9.0, R: 8.0, W: 6.5, S: 7.5)

### RESEARCH INTERESTS

#### Areas:

Machine Learning, Deep Learning, Natural Language Processing, Software Engineering, Data Science, and Information Retrieval.

#### Interests:

Generative AI in Text and Code, Big Data, Mining Software Repositories, Large Language Models in Software Analysis, AI Ethics and Intent Detection, Software Ecosystems Analysis, Knowledge Graphs, Retrieval-Augmented Generation (RAG), Recommender Systems, Al-driven Decision-making, and Explainable AI (XAI).

#### **EXPERIENCE**

# Undergraduate Research Assistant

(remote) Utrecht, NE

Al-Driven Decision Models in SE: A Focus on Software Package Selection

Sep. 2023 - Present

- This master's project aims to unravel insights into the architecture and dynamics of software ecosystems by identifying frequent combinations of software packages, technologies, and code idioms.
- The outcome of this project is a context-aware software package recommender system that functions, using a combination of retrieval-augmented generation (RAG) and a knowledge graph design.

Topics: Mining Software Repositories, NLP, LLMs, Knowledge Graphs

## Teaching Assistant

Database Design (SQL) Course

Oct. 2023 - Jan. 2024

o Provided guidance for students to design ERD and SQL Querying (Fundamentals and practical level).

## Teaching Assistant

Rasht, Iran

Rasht, Iran

Advanced (Python) Programming Course

Oct. 2021 - Jul. 2023

- As a member of the teaching assistants team for the course 'Advanced Programming' over four semesters (AP14001, AP14002, AP14011, AP14012), to around 60 students under the guidance of Dr. Sadegh Eskandari, I facilitated students' comprehension of Python programming components.
- Responsibilities included conducting tutorial sessions (in offline and online format), aiding with problem-solving, and ensuring clarity on course materials.

Following sections items are clickable

### **CERTIFICATIONS**

Coursera	MOOC
Python for Data Science, AI and Development	Issued Jul. 2023
Introduction to Machine Learning	Issued Jul. 2023
SQL for Data Science	Issued Jul. 2023
Supervised Machine Learning: Regression and Classification	Issued Aug. 2023
Advanced Learning Algorithms	Issued Sep. 2023
Unsupervised Learning, Recommenders, Reinforcement Learning	Issued Feb. 2024
Machine Learning Specialization	Issued Feb. 2024
Introduction to Generative AI	Issued Jun. 2024
Transformer Models and BERT Model	Issued Aug. 2024
Machine Learning Operations (MLOps) for Generative AI	Issued Aug. 2024
Introduction to Large Language Models	Issued Aug. 2024
Encoder-Decoder Architecture	Issued Aug. 2024
Attention Mechanism	Issued Aug. 2024

## SELECTED PROJECTS

## MetaML ☑

Metaheuristic-Based Neural Network Optimization Tool

- This project is designed to train neural networks using different optimization algorithms (Backpropagation, Genetic Algorithm, and Particle Swarm Optimization) and compare their results.
  The app provides an interface space to experiment with these algorithms and visualize their performance.
- o The results could be analyzed to retrieve insights using the Llama3-70b Large Language Model.

Topics: Deep Learning, Machine Learning, Optimization, ANNs, LLMs

# NTFA: Network Traffic Flow Analysis ☑

A Graph-based Integration of Network Traffic Flow Analysis (Case Study)

 This project aims to provide tools for better network analysis and visualization using graph-based algorithms (currently Dijkstra).

**Topics:** Optimization, Graph Algorithms, Shortest Path Algorithms

#### OTHER PROGRAMMING TOOLS

- Deep Learning Frameworks: PyTorch, Keras, Tensorflow.
- Python: Sci-kit, Pandas, Numpy, NetworkX, Ploty, Matplotlib, etc.
- NLP Libraries: SpaCy, NLTK, Hugging Face Transformer.
- LLM APIs: OpenAI, Vertex Anthropic Claude, Cohere, Google Gemini API, Mistral, Groq, etc.
- Web Development: Django, HTML, CSS, React.js.
- Deployment Tools: FastAPI, Streamlit, Flask.

### HONORS AND AWARDS

## • University of Guilan Programming Competition (UGPC):

Placed 2nd out of 36 competitor teams in the UGPC, which is a university-level contest for computer science students.

## Class Ranking at University:

Finished in the top 10 percent of graduating students.

## University Entrance Exam:

Finished in the top 3 percent of all candidates from a 300,000-participant examination.

## · Provincial Music Solo Competitions

Placed 2nd in the provincial competition for Santour (a Persian musical instrument).

#### HOBBIES AND ACTIVITIES

## · Graphic design (Logos, Illustrations, Brochures, Motiongraphy):

Familiar with Adobe Illustrator, Adobe Photoshop, Adobe After Effect, Blender, etc

# · Music and Instruments

I sometimes play the "Santour", which is a Persian musical instrument. I also enjoy creating music on Sibelius or FL Studio.

#### Teaching Music

Taught music theory to a range of 20 students from 2016 to 2020, but I still like it.

## • Dr. Maziar Salahi (Professor)

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## Dr. Ali Jamalian (Assistant Professor)

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## • Dr. Sadegh Eskandari (Assistant Professor)

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## • Dr. Hashem Saberi Najafi (Associate Professor)

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## • Dr. Siamak Farshidi (Research Fellow)

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