

Mahdi Rezaie

Computer Engineering Student

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Research Interests

- Software Engineering and Design Principles
- Artificial Intelligence and Machine Learning
- Cybersecurity and Secure Coding Practices
- Software Architecture and System Design
- Applied Machine Learning in Security

Education

Amirkabir University of Technology (Tehran Polytechnic)

Tehran, Iran

Bachelor of Science in Computer Engineering

2019 - 2024

- Ranked as the top 2 technical university in Iran with a QS Ranking of 403.
- **Total GPA:** 3.95 out of 4 (18.5 out of 20)
- **Main Majors:** Artificial Intelligence and Computer Networks
- **Related Courses:** Principles of Computational Intelligence (20/20), Data Structures and Algorithms (20/20), General Math and Statistics Courses (20/20), Cloud Computing (20/20), Operating Systems (20/20), Database Design (19.3/20), IoT (20/20).
- **Thesis Project:** Design and Implementation of a Static Code Analysis Tool for Security Purposes
- **Supervisor:** Dr. Hamid Reza Shariari

Publications

Learning a Sparse Neural Network Using IHT

Saeed Damadi, Soroush Zolfaghari, Mahdi Rezaie, Jinglai Shen

2024 International Joint Conference on Neural Networks (IJCNN), 2024, Yokohama, Japan

Teaching Experience

Karyar Institute

Tehran, Iran

Teacher

April 2021 - May 2023

- **Data Analysis with Python:** Teaching for over 10 students.
- **Advanced Python Programming:** Teaching for over 20 students.
- **Collaborators:** Dr. Arezou Keshavarz, Bahar Zarin, and Eng. Azade Sanjari.

Karyar Institute

Tehran, Iran

Teaching Assistant

April 2021 - May 2023

- **Advanced Data Analysis with Python**
- **Advanced Python Programming**
- **Instructors:** Dr. Arezou Keshavarz, Eng. Hesam Mohammad Hosseini, Eng. Shamim Taheri, and Eng. Azade Sanjari.

Amirkabir University of Technology

Tehran, Iran

Teaching Assistant

Fall and Winter 2022

- **Operating Systems:** Instructor: Dr. Seyyed Ahmad Javadi
- **Data Structures:** Instructor: Dr. Sajad Shirali-Shahreza
- **Algorithm Design:** Instructor: Dr. Alireza Bagheri
- **Microprocessor and Assembly Language:** Instructor: Dr. Hamed Farbeh

Achievements

- | | | |
|------|---|--------|
| 2022 | 3rd Ranking , Fifth National Brain Mapping Lab (NBML) Competitions in fMRI Data Analysis | Tehran |
| 2020 | Talented Student , Awarded as university's exceptionally talented student | Tehran |
| 2018 | Top 2.1% , Ranked in the top 2.1% of the nationwide university entrance exam | Iran |

Languages

- | | |
|----------------|--------------------|
| English | Upper Intermediate |
| Persian | Native proficiency |

Work Experience

A Fin-tech Startup (Remote Job)

Mid-Level Software Engineer and Data Scientist

Maryland, USA

April 2022 - September 2024

- Developed a scalable trading platform for stocks and cryptocurrency using microservices, Redis, and event-driven architecture. Conducted time-series data analysis with Python and AI frameworks (PyTorch, NN models), and worked with big data tools (Spark, Hadoop, HBase).

Institute for Research in Fundamental Sciences (IPM)

AI Research Intern

Tehran, Iran

2021 Summer

- Worked on pneumonia detection using medical image classification with Python, TensorFlow, and related libraries (Pandas, Numpy, Scipy).

Skills

Programming Languages	Advanced Python, C, C++, Java, JavaScript, Go, SQL, etc.
Data and Machine Learning	Engineering Statistics, Pandas, NumPy, Scikit-learn, PyTorch, Spark
Cloud Platforms	Google Cloud Platform, Amazon AWS
Data Visualization	Plotly, Plotly-Dash, Matplotlib, Databricks, Seaborn, Google Looker Studio
Web Development	RESTful, FastAPI, Django, React.js, Bootstrap
Documentation	Markdown, Sphinx, \LaTeX , Read the Docs, MS Office
Databases	MySQL, Redis, Google BigQuery, Apache HBase, SQL Server, Amazon S3
Software Development Tools	Git, ORM with SQLAlchemy, RabbitMQ, Diagramming, JetBrains, VSCode, Linux, Bash Scripting
Virtualization	Docker and Kubernetes, VirtualBox, VMware
Network Tools	Wireshark, Postman, Swagger, Boson Netsim
Soft Skills	Teamwork, Attention to Detail, Problem-solving, Willing to learn, Engaging Presentation, Brainstorming

Notable Academic Projects

Software Engineering Projects

Amirkabir University of Technology

Tehran, Iran

2020-2023

- Poster:** A back-end services for an online vehicle ad platform using Django. [\[code\]](#)
- CryptoServerWrapper:** A wrapper for the Coinbase API using Flask. [\[code\]](#)
- XV6-Threading:** Implementation of Thread concept in XV6 Linux OS. [\[code\]](#)
- GuessGender:** A website which helps to find out gender of a name. [\[website\]](#) [\[code\]](#)
- IMDB:** A go-lang back-end for a web service like IMDB [\[code\]](#)

AI Projects

Amirkabir University of Technology

Tehran, Iran

2020-2023

- Fruit360Classifier:** An implementation of a classifier neural network from scratch. [\[code\]](#)
- SnailJumperAgent:** A neuroevolutionary model for Snail Jumper game. [\[code\]](#)
- ALSRecommenderSystem:** A recommender system uses collaborative filtering implemented in Spark. [\[code\]](#)
- FuzzyPendulum:** A solution to inverted pendulum using fuzzy methods and AI. [\[code\]](#)
- NLPCommentRemover:** Implementation of an NLP agent for sentimental analysis. [\[code\]](#)
- GimmeButter:** A servant robot trying to serve as fast as possible using A* algorithm. [\[code\]](#)

Security and Network Projects

Amirkabir University of Technology

Tehran, Iran

2021-2023

- SSHChatroom:** A server-client chatroom application uses SSH to communicate securely. [\[code\]](#)
- AESTools:** A tool for encryption and decryption of files using AES algorithm. [\[code\]](#)
- mDHCP:** Implementation of a DHCP server from scratch. [\[code\]](#)
- ReverseMalware:** A malware to get a reverse shell from victim. [\[code\]](#)

Certificates

2022	Introduction to Big Data with Spark and Hadoop, https://coursera.org/share/ccb39f4888082fc7540037dfb76a5c01	Coursera
2021	Advanced Python Programming, https://quera.org/media/public/quera_certificate/5144713a7e67473a807c4c9b0a2e68f1.jpg	Quera College