Mohammad Javad Hezareh

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EDUCATION

Sharif University of Technology — Tehran, Iran
B.Sc. in Computer Engineering; **Major GPA: 19.19/20** — Sep 2019 − Expected Jun 2024
Minor Degree in Mathematics; **Total GPA: 19.07/20** — Oct 2022 − Expected Jun 2024

Shahid Beheshti High School — Kashmar, Iran
Affiliated with the National Organization for the Development of Exceptional Talents (SAMPAD)
High School Diploma in Mathematics and Physics; **GPA: 19.76/20** — Sep 2016 − Jun 2018

PRINCIPAL INTERESTS

- Deep Learning Robustness
- Computer Vision
- Adversarial Machine Learning
- Generative Models
- Federated Learning
- Generalizability

RESEARCH EXPERIENCE

Ruhr University Bochum — Bochum, Germany
Research Intern, under supervision of Prof. Ghassan Karame — *Aug 2023 − present*

- Working in the Information Security group on a project about the effects of decentralized learning and ensemble learning on the adversarial robustness of deep learning models. We are exploring the robustness of ensemble models against novel black-box attacks.

Machine Learning Lab, Sharif University of Technology — Tehran, Iran
Undergraduate Research Assistant — *Jul 2023 − present*

- Working on the medical image segmentation project under the supervision of Prof. Mahdieh Soleymani. I am working with a graduate student to improve the performance of Few-Shot Segmentation (FSS) in the field of medical imaging.

AI Med Startup, Sharif University of Technology — Tehran, Iran
Undergraduate Intern — *Jul 2022 − Oct 2022*

- This was my bachelor's internship. The problem we were trying to solve was about the inaccurate masks of tumors provided by doctors. My task was to train a GAN model to generate tumor masks. Then we could use these masks to improve the accuracy of tumor segmentation problem.

HONORS & AWARDS

- **University Entrance Exam (Konkur):** Ranked 76th among 164 000+ participants — Jun 2019
- **Silver Medal** in 31th Iran National Physics Olympiad — Sep 2018
- **National Elite Foundation Fellowship** — 2019 − present

TEACHING EXPERIENCE

- Artificial Intelligence, Instructor: Prof. Rohban and Prof. Soleymani — Fall 2023
- Artificial Intelligence, Instructor: Prof. Rohban — Spring 2023
- Machine Learning, Instructor: Prof. Sharifi-Zarchi and Dr. Azarkhalili — Fall 2022
- Artificial Intelligence, Instructor: Prof. Rohban — Fall 2022
- Probability and Statistics, Instructor: Prof. Sharifi-Zarchi — Fall 2022
- Machine Learning, Instructor: Dr. Peyvandi — Spring 2022
- Linear Algebra, Instructor: Prof. Rabiee — Fall 2021

- Advanced Programming, Instructor: Prof. Fazli — Spring 2022
- Advanced Programming, Instructor: Prof. Fazli — Spring 2021
- Fundamentals of Programming, Instructor: Prof. Fazli — Fall 2020

Relevant Coursework

Course	Grade	Course	Grade
Artificial Intelligence (⚙)	20/20	Probability and Statistics	18.9/20
Machine Learning (Graduate, ⚙)	19.7/20	Design of Algorithms	20/20
Linear Algebra	20/20	Discrete Structures	19.6/20
Modern Information Retrieval	19.6/20	Advanced Programming	20/20
Security and Privacy in ML (Graduate, ⚙)	17.5/20	Signals and Systems	20/20

Projects and Presentations

SPML course presentation | 📄
- In this presentation we summarized the "Increasing Confidence in Adversarial Robustness Evaluation" paper.

Poem Retrieval System | Python | ⚙
- This was the project of the Modern Information Retrieval course. We build a retrieval system using classic and deep-learning-based methods such as Boolean, TF-IDF, and Transformers. Our system also had clustering and link analysis features.

Click-Through-Rate Prediction | Python | ⚙
- This was the project of the Machine Learning course. We trained a deep learning model besides classic machine learning algorithms to predict the user's response to the product's advertisements.

Atari-Game Agent | Python | ⚙
- This was one of the assignments of the Artificial Intelligence course. I implemented and trained a Deep-Q-Network (DQN) to play the Breakout game.

Other Experience

Sharif AI Challenge — Tehran, Iran
Technical Staff — *Spring 2021*
- I was a member of the Server/Client team. We developed the game framework in Java. I was also the lecturer of one of the workshops about the fundamentals of the game and how to use game API.

CodeStar Academy — Tehran, Iran
Softwear Engineer Intern — *Summer 2020*
- Working on developing a simple graph-based data analysis platform. This platform had special tools for loading and analyzing data, finding out the net flow from one node to another, and detecting fraud. To develop this platform, we used ASP.NET, Angular, and Elasticsearch engine

Skills

Programming: Python, Java, C/C++, C#, MySQL, Git

Libraries: PyTorch, Keras, TensorFlow, Scikit-Learn, NumPy, Pandas, Matplotlib, Seaborn

Typesetting: LaTeX

Languages

English (Professional)   **Persian** (Native)
- TOEFL iBT (R:23 | L:29 | S:23 | W:25)