

# MAHDI HAJIALILUE

Department of Mathematical Sciences

✉ [Gmail](#) [LinkedIn](#) [Github](#)

## Education

### Sharif University of Technology

Bachelor of Science in Computer Science, GPA: 17.34/20 (3.68/4.0)

Tehran, Iran

### Sharif University of Technology

Minor of Economics

Tehran, Iran

## Research Interest

- Trustworthy AI
- ML Robustness
- Representation Learning
- XAI

## Publications

### A Contrastive Teacher-Student Framework for Novelty Detection under Style Shifts Submitted to ICLR 2025

Hossein Mirzaei, Mojtaba Nafez, Moein Madadi\*, Arad Maleki\*, **Mahdi Hajialilue\***, Zeinab Sadat Taghavi, Sepehr Rezaee, Ali Ansari, Bahar Dibaei Nia, Kian Shamsaie, Mohammadreza Salehi, Jafar Habibi, Mahdieh Soleymani Baghshah, Mohammad Sabokrou, Mohammad Hossein Rohban

### Scanning Trojaned Models Using Out-of-Distribution Samples

Accepted to NeurIPS 2024

Hossein Mirzaei, Ali Ansari\*, Bahar Dibaei Nia\*, Mojtaba Nafez, Moein Madadi, Sepehr Rezaee, Zeinab Sadat Taghavi, Arad Maleki, Kian Shamsaie, **Mahdi Hajialilue**, Jafar Habibi, Mohammad Sabokrou, Mohammad Hossein Rohban

## Research Experiences

### Sharif University of Technology

Feb 2024 – present

Research Assistant, supervised by Prof. **M.H. Rohban**

Tehran, Iran

- Research areas: Out-of-Distribution Detection, Backdoor Attacks

### Projects

- A Contrastive Teacher-Student Framework for Novelty Detection under Style Shifts(submitted to **ICLR 2025**)
- TRODO: Scanning Trojaned Models Using Out-of-Distribution Samples (accepted to **NeurIPS 2024**)

## Projects

### Financial Analysis on X (Twitter)

- As a part of my Data Science course Project, I finetuned pretrained language models such as BERT and RoBERTa to perform sentiment analysis on a Twitter tweets dataset, inspecting tweets related to specific stocks while exploring their performance trends over time.

### Neural Network Approach to Pricing and Hedging Financial Options

- As part of my M.Sc. course in mathematical finance, I collaborated with Prof. Assa and Prof. Fotouhi to replicate and implement the deep learning concepts presented in the paper titled Pricing and Hedging American-style Options with Deep Learning.

### Optimizing User Engagement: Analyzing Upworthy's Viral Content Strategy

- As part of the Data Science course assignment, I analyzed headline variations' impact on user engagement at Upworthy.

### University Website Replication

- As a part of Advanced Programming course project, I used Java programming language along with JavaFX to replicate Sharif University of Technology's website.

### Panorama Fusion from Multiple Images Using Homography

- As a part of Computer Vision course assignment, I utilized Homography Matrices in OpenCV to Merge Images into Panoramic Views

## Teaching Assistance Experience

- Stochastic Processes (Head TA)
- Statistical Learning
- Statistics
- Advanced Programming
- Basic Programming

## Selected Courses

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- Machine Learning Theory (M.Sc. Course): 20/20
- Computer Vision: 18.7/20
- Statistical Learning: 18.3/20
- Data Science: 17.1/20
- Mathematical Finance (M.Sc. Course): 16.5/20
- Statistics: 19.8/20
- Data Transfer and Networks: 20.0/20
- Stochastic Processes: 19.0/20
- Deep Learning for Computer Vision (Stanford): Audited
- Reinforcement Learning by David Silver (UCL): Audited

## Awards And Scholarships

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- Top 0.1% in Iran's National University Entrance Exam(over 200,000 Participants)

## Skills

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**Programming Languages:** Python, Java, R

**Libraries/Frameworks:** OpenCV, Cvxpy, Pandas, Numpy, Scikit-learn, Keras, Tensorflow

## Languages

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**English | IELTS overall band score 7.5**

**Persian | Native Proficiency**

**Azerbaijani | Native Proficiency**

## Extracurricular Activities

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- Member of the University Futsal Team
- Creator of a YouTube channel where I summarize English podcasts on self-improvement into Persian