MAHDI HAJIALILUE

Department of Mathematical Sciences

⌂ Homepage · 🎓 Google Scholar · ✉ 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
- Computer Vision

Publications

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

3rd author, in collaboration with Prof. Mohammad Hossein Rohban, Prof. Mahdieh Soleymani Baghshah, and Dr. Mohammad Sabokrou

Scanning Trojaned Models Using Out-of-Distribution Samples Accepted to NeurIPS 2024

10th author, in collaboration with Prof. Mohammad Hossein Rohban and Dr. Mohammad Sabokrou

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

Selected Courses

- 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

Teaching Assistance Experience

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

Awards And Scholarships

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

Skills

Programming Languages: Python, Java, R
Libraries/Frameworks: PyTorch, OpenCV, Cvxpy, Pandas, Numpy, Scikit-learn, Keras, Tensorflow

Languages

English | **IELTS overall band score 7.5**
Persian | Native Proficiency
Azerbaijani | Native Proficiency

Extracurricular Activities

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