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
- Adversarial Robustness
- Anomaly Detection
- XAI

Publications

Toward Robust 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

- Toward Robust 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

- 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

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

Skills

Programming Languages: Python, Java, R
Libraries/Frameworks: 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