Masoud Hadi

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Research Interests

◇ Generative Models ◇ Optimization ◇ Reinforcement Learning

◇ Trustworthy AI ◇ Deep Learning Theory ◇ Efficient Deep Learning

Education

- **Isfahan University of Technology** — Isfahan, Iran
  B.Sc. in Computer Engineering – Intelligent Systems — *2019-2024*
  GPA: 17.96/20 (3.8/4.0), Last Two-Year GPA: 18.22/20 (3.92/4.0), Ranked in the top 10%
  Thesis: *Community Detection with Graph Neural Networks; Grade: 20/20*

Research Experiences

- **Swiss Federal Technology Institute of Lausanne (EPFL)** — *Remote*
  Under the supervision of Prof. Mackenzie W. Mathis. — *November 2025 – May 2025*
  - Explored the use of diffusion models for trigger inversion in backdoored neural networks.
  - Investigated the role of internal attention maps and intrinsic dimensionality in detecting backdoored models.
- **Nanyang Technological University** — *Remote*
  Under the supervision of Prof. Ziwei Liu and Dr. Yukang Cao. — *Jan 2024 – Aug 2024*
  - Investigating 3D avatar-object interactions using 3D Gaussian Splatting (3DGS).
  - Developed novel cross-view consistency approach in 3DGS using personalized diffusion models and attention mechanisms.
  - Pioneered first 3DGS virtual try-on system, achieving state-of-the-art performance.
- **Isfahan University of Technology** — *Isfahan, Iran*
  Under the supervision of Prof. Abdolreza Mirzaei. — *Jan 2023 – Dec 2023*
  - Developed novel community detection method integrating SDE-based diffusion models with graph neural networks.
  - Improved accuracy in identifying community structures, enhancing detection performance in graph-based models.
- **Sharif University of Technology** — *Remote*
  Under the supervision of Prof. Mohammad Hossein Rohban and Prof. Mahdieh Soleymani. — *May 2022 – Jan 2024*
  - Led development of RODEO, a novel outlier detection framework achieving 50% improvement over SOTA.
  - Designed innovative data-centric approach combining adversarial training with text-to-image diffusion models.
  - Conducted experiments exploring using various generative models to improve OOD detection performance.

Publications

DISTIL: Data-Free Inversion of Suspicious Trojan Inputs via Latent Diffusion — ICCV 2025
Hossein Mirzaei, Zeinab Sadat Taghavi, Sepehr Rezaee, **Masoud Hadi**, Moein Madadi, Mackenzie W Mathis.

GS-VTON: Controllable 3D Virtual Try-on with Gaussian Splatting — Under Review
Masoud Hadi*, Yukang Cao*, Liang Pan, Ziwei Liu

RODEO: Robust Outlier Detection via Exposing Adaptive Out-of-Distribution Samples — ICML 2024
Hossein Mirzaei, Mohammad Jafari, Hamid Reza Dehbashi, Ali Ansari, Sepehr Ghobadi, **Masoud Hadi**, Arshia Soltani Moakhar, Mohammad Azizmalayeri, Mahdieh Soleymani Baghshah, Mohammad Hossein Rohban

Honors and Awards

- Ranked among the top 0.5% in the national university entrance exam
- Awarded major change to Computer Engineering based on outstanding GPA
- Granted direct admission to Sharif University of Technology's master's program based on exceptional GPA
- Achieved 37th rank nationwide in Iran's Master's program entrance exam

Teaching Experience

Discrete Mathematical Structures — *Fall 2022*
Teaching Assistant under Prof. Mirzaei — *Isfahan University of Technology*
Operating System Principles — *Spring 2023*
Teaching Assistant under Prof. Zeynab Zali — *Isfahan University of Technology*

Highlight Courses

- **Selected IUT Courses**: Applied Linear Algebra (20/20), Elementary Differential Equations (20/20), Discrete Mathematical Structures (19/20), Probability and Statistics (19/20), Game Theory (18/20), Basics of Machine Learning (18.2/20), Principles of Computational Intelligence (17.7/20), Artificial Intelligence (17.65/20), Data Structures (17.5/20)

Work Experiences

- **National Iranian Gas Company** Summer 2020
  Software Engineer Intern
  - Worked as a software engineer to enhance the functionality of some inefficient programs

Skills

- **Programming Languages**: Python, C, C++, C#, R, Matlab, PHP
- **Deep Learning Frameworks**: PyTorch, Triton, TensorFlow
- **Programming Libraries**: OpenCV, Numpy, Pandas, Scikit-Learn, Matplotlib, Selenium, Scrapy

Languages

- Languages: Persian (Native), English (Proficient) - TOEFL: 104 (L: 26, R: 28, S: 23, W: 27)