Mohammadreza **Teymoorianfard**

Manning College of Information and Computer Sciences, University of Massachusetts, Amherst, MA, USA
+1 413-313-9653 | mteymoorianf@umass.edu | mrteymoorian.github.io | mrteymoorian | teymoorian

Education

University of Massachusetts Amherst — *Massachusetts, USA*
MSc/PhD in Computer Science — *Sep 2023 - present*
- GPA: 3.918/4

University of Tehran — *Tehran, Iran*
BSc in Electrical Engineering — *Sep 2018 - Jun 2023*
- GPA: 19.06/20 (4/4)
- Ranked **3rd** among 120 Electrical Engineering students

University of Tehran — *Tehran, Iran*
Minor in Computer Engineering — *Sep 2019 - Jun 2023*
- GPA: 17.05/20

Research Interests

- Trustworthy Machine Learning
- Privacy and Security in Generative AI Models
- Watermarking for Multi-modal Systems
- Adversarial Robustness in Neural Networks

Publications

Amini, S., **Teymoorianfard, M.**, Ma, S. and Houmansadr, A., 2024. *MeanSparse: Post-Training Robustness Enhancement Through Mean-Centered Feature Sparsification*. arXiv preprint arXiv:2406.05927.

Research Experience

Umass Amherst - The Secure, Private Internet (SPIN) Research Group — *Amherst, MA*
Advisors: Amir Houmansadr, Shiqing Ma — *Sep. 2023 - Present*
- Focused on developing watermarking and model attribution techniques for multi-modal systems, contributing to advancements in model security and traceability.
- Enhanced neural network robustness by reducing feature variation, setting new AutoAttack accuracy records on CIFAR-10, CIFAR-100, and ImageNet.

University of Tehran - Smart Networks Lab — *Tehran, Iran*
Advisor: Hamed Kebriaei — *Jun. 2022 - Jun. 2023*
- Implemented a Model Predictive Control (MPC) for autonomous taxi navigation with obstacle avoidance, leading to more efficient autonomous navigation strategies.

University of Tehran — *Tehran, Iran*
Advisor: Reshad Hosseini — *Jun. 2021 - Sep. 2021*
- Developed a text detection system for card images, enhancing accuracy in document recognition.

Skills

Programming Languages	Python, C/C++, MATLAB, Verilog
Python Libraries & Frameworks	PyTorch, TensorFlow, Transformers, OpenCV, scikit-learn, NumPy, Pandas, Matplotlib, RL-Glue, PuLP, MIP
Simulation Tools	Simulink, CARLA, SolidWorks, AutoCAD, Copeliasim, Proteus

Honors & Awards

2023 **Recipient of an industry-sponsored award for outstanding bachelor's thesis work**
2020 **Awarded the University of Tehran Sponsors Foundation Honorable Award for Academic Excellence**
2020 **Recipient of the Faculty of Engineering (FOE) Award for achieving 2nd rank in the 2019-2020 academic year**
2018 **Ranked in the top 0.4% of over 150,000 students in the Iranian National University Entrance Exam**
2011 **Admitted to National Organization for Exceptional Talents (NODET) for middle and high school**

Teaching Experience

Fall 2024	**CICS 160: Object-Oriented Programming,** TA	*Umass Amherst*
Summer 2024	**COMPSCI 589: Machine Learning,** TA	*Umass Amherst*
Spring 2024	**COMPSCI 119: Intro to Programming,** TA	*Umass Amherst*
Fall 2022	**Intelligent Systems,** TA	*University of Tehran*
Spring 2022	**Mechatronics,** TA	*University of Tehran*
Spring 2022	**Signal and Systems** TA	*University of Tehran*
Fall 2021	**Engineering Probability and Statistics,** TA	*University of Tehran*
Spring 2021	**Electronics1,** Head TA	*University of Tehran*

Relevant Courses

University of Massachusetts Amherst

- COMPSCI611: Advanced Algorithms
- COMPSCI685: Adv Natural Language Processing
- COMPSCI682: Neural Networks, Modern Intro
- COMPSCI660: Advanced Information Assurance

Coursera

- Motion Planning for Self-Driving Cars
- Introduction to Self-Driving Cars
- A Complete Reinforcement Learning System (Capstone)
- Fundamentals of Reinforcement Learning

University of Tehran

- Deep Learning
- Reinforcement Learning
- Machine Learning
- Artificial Intelligence
- Mechatronics
- Linear Algebra
- Engineering Probability and Statistics
- Operational Research
- Modern Control Systems

Language

◇ English: Advanced Proficiency

◇ Persian: Native