

ARSHIA SOLTANI MOAKHAR

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Education

Stanford University

Ph.D. in Management Science & Engineering; Advised by Prof. Amin Saberi

2026 – Present

Stanford, CA, USA

University of Maryland

Ph.D. in Computer Science (transferred); Advised by Prof. S. Feizi and Prof. M. Hajiaghayi

2025 – 2026

College Park, MD, USA

Sharif University of Technology

B.S. in Computer Engineering, GPA: 18.41/20.00

September 2019 – September 2024

Tehran, Iran

Publications and Preprints

- **A. Soltani Moakhar**, F. Ghahremani, K. Banihashem, M.T. Hajiaghayi, “Decision Tree Learning on Product Spaces,” *ICML*, 2026, ([ICML 2026](#)).
- **A. Soltani Moakhar**, T. Laoaron, F. Ghahremani, K. Banihashem, M.T. Hajiaghayi, “Active Learning for Decision Trees with Provable Guarantees,” *ICLR*, 2026, ([ICLR 2026](#)).
- A.Y. Parast, P. Hosseini, H. Asadollahzadeh, **A. Soltani Moakhar**, B. Azam, S. Feizi, N. Akhtar, “GHOST: Hallucination-Inducing Image Generation for Multimodal LLMs,” *ICLR*, 2026, ([ICLR 2026](#)).
- Y. Cheng*, **A. Soltani Moakhar***, C. Fan*, P. Hosseini, K. Faghih, Z. Sodagar, W. Wang, S. Feizi, “Your LLM Agents are Temporally Blind: The Misalignment Between Tool Use Decisions and Human Time Perception,” *Findings of ACL*, 2026, ([ACL Findings 2026](#)).
- **A. Soltani Moakhar**, I. Gholami, M. Springer, M. JafariRaviz, M.T. Hajiaghayi, “Beyond the Library: An Agentic Framework for Autoformalizing Research Mathematics,” *arXiv*, 2026, ([arXiv 2026](#)).
- M. JafariRaviz*, K. Rezaei*, **A. Soltani Moakhar***, Z. Sodagar, Y. Cheng, S. Feizi, “Failing to Explore: Language Models on Interactive Tasks,” *arXiv*, 2026, ([arXiv 2026](#)).
- **A. Soltani Moakhar*** ... (44 authors) ... Enzo Ferrante, Sara Hooker, Marzieh Fadaee, “Kaleidoscope: In-language Exams for Massively Multilingual Vision Evaluation,” *ICLR*, 2025, ([ICLR 2025](#)).
- (53 authors) ... **A. Soltani Moakhar**, ... , Sara Hooker, Antoine Bosselut, “INCLUDE: Evaluating Multilingual Language Understanding with Regional Knowledge,” *ICLR Spotlight*, 2025, ([ICLR Spotlight 2025](#)).
- **A. Soltani Moakhar***, E. Iofinova*, Elias Frantar, D. Alistarh, “SPADE: Sparsity-Guided Debugging for Deep Neural Networks,” *ICML*, 2024, ([ICML 2024](#)).
- H. Mirzaei, M. Jafari, H.R. Dehbashi, A. Ansari, S. Ghobadi, M. Hadi, **A. Soltani Moakhar**, Mohammad Azizmalayeri, M. Soleymani Baghshah, M.H. Rohban, “RODEO: Robust Out-of-Distribution Detection Via Exposing Adaptive Outliers,” *ICML*, 2024, ([ICML 2024](#)).
- Maral Jabbarishiviari, **A. Soltani Moakhar**, “Software 1.0 Strengths for Interpretability and Data Efficiency,” *ICLR Tiny Papers*, 2024, ([ICLR Tiny Papers 2024](#)).
- **A. Soltani Moakhar**, M. Azizmalayeri, H. Mirzaei, M.T. Manzuri, M.H. Rohban, “Seeking Next Layer Neurons’ Attention for Error-Backpropagation-Like Training in a Multi-Agent Network Framework,” *arXiv*, 2023, ([arXiv 2023](#)).
- M. Azizmalayeri, **A. Soltani Moakhar**, A. Zarei, R. Zohrabi, M.T. Manzuri, M.H. Rohban, “Your Out-of-Distribution Detection Method is Not Robust!,” *NeurIPS*, 2022, ([NeurIPS 2022](#)).

Research Interests

- Multi-Agent Systems
- LLM Reasoning
- LLM Efficiency
- ML Interpretability

Research Experience

Researcher in Autoformalizing Mathematics and Theoretical Computer Science Sep 2024 - June 2026

University of Maryland, Supervised by: [Prof. MohammadTaghi Hajiaghayi](#) and [Prof. Soheil Feizi](#)

• Autoformalizing Research Mathematics in Lean 4 ([arXiv 2026](#))

In MohammadTaghi’s group, I built an agentic framework that translates research-level mathematics into machine-verified Lean 4 proofs.

- **Mathematical Analysis of Active Learning in Decision Trees (ICLR 2026)**

Also with MohammadTaghi, I studied the theoretical aspects of active learning in decision trees. I derived sample complexity bounds for decision trees over continuous features and established time complexity upper bounds for decision trees with non-uniform binary features.

- **Agentic Systems**

In Soheil's lab, I worked on time blindness in tool-using LLM agents, which fail to account for how much real time passes between user messages.

Independent Research

- **Multilingual Evaluation (With Cohere team) (Spotlight ICLR 2025)**

We introduced a dataset consisting of multilingual multiple-choice questions sourced from official exams across various countries, ensuring cultural authenticity beyond simple translations of English benchmarks. In a subsequent project, where I am a joint first author, we expanded this dataset to include multimodal questions.

Internship in Interpretability and Sparsity in Deep Neural Networks

Feb 2023 - Sep 2023

IST Austria, Supervised by: [Prof. Dan Alistarh](#)

- **Sparsity-Guided Debugging for Deep Neural Networks (ICML 2024)**

I improved the performance of several interpretability techniques by sparsifying the network on a selected subset of samples before applying the interpretability method. As the first author on an ICML paper, I developed the core theoretical ideas and implemented most of the code. After publication, we extended this work to explore similar sparsification techniques for large language models.

Research Assistant in Robust and Interpretable Machine Learning Lab

Aug 2021 - Feb 2024

Sharif University, Supervised by: [Prof. Mohammad Hossein Rohban](#)

- **Robust Out-of-Distribution (OOD) Detection Using GAN Architecture (NeurIPS 2022)**

I first demonstrated critical vulnerabilities in existing robust OOD detection methods against end-to-end adversarial attacks. Subsequently, we proposed an OOD detection algorithm inspired by Generative Adversarial Network (GAN) architecture and adversarial training.

Honors and Awards

2022 International Collegiate Programming Contest (ICPC) World Final participation

2019 **Silver Medal** in International Olympiad of Informatics (IOI)

2018 **First Place** in Iranian National Olympiad of Informatics

2017 **Silver Medal** in Iranian National Olympiad of Informatics

Academic services

Question Designer and Lecturer

Aug 2020 – Feb 2024

Iranian National Olympiad in Informatics

Created and reviewed combinatorial problems for the National Olympiad in Informatics.

Taught and mentored Iranian gold medalists and IOI team members in competitive programming.

Delivered lectures on graph theory at the National Olympiad in Informatics summer camp.

Designed and selected algorithmic problems for the National Olympiad in Informatics, including summer camp exams and International Olympiad in Informatics (IOI) team selection tests.

Volunteer Scientific Committee Member

Feb 2021 - Sep 2021

Rastaiha (Student Association)

Designed online workshops in Game Theory for high school students.

Conference Reviewer

NeurIPS 2024, ICML 2025, NeurIPS 2025, AAAI 2026

Teaching Assistant

Spring 2023

Sharif University of Technology

Teaching Assistant for Machine Learning course lectured by [Prof. Abolfazl Motahari](#).