

Arshia Rafieioskouei

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Education

Michigan State University | Ph.D. in Computer Science **Spring 2023 – Present**

- **Focus:** Causality, Formal Methods, Probabilistic Model Checking, Reinforcement Learning, Cyber-Physical Systems
- **GPA:** 4.0

Sharif University of Technology | B.Sc. in Computer Engineering **Fall 2016 – Fall 2021**

- **GPA:** 3.82

Publications

Efficient Discovery of Actual Causality in Stochastic Systems **2025**

[Arshia Rafieioskouei](#)*, [Kenneth Rogale](#)*, [Borzoo Bonakdarpour](#)

Int Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI 2025)
(Under Review)

HypRL: Reinforcement Learning of Control Policies for Hyperproperties **2025**

[Tzu-Han Hsu](#)*, [Arshia Rafieioskouei](#)*, [Borzoo Bonakdarpour](#)

Neural Information Processing Systems (NeurIPS 2025)

Beyond Correlation: Establishing Causality in Protein Corona Formation for Nanomedicine **2025**

[Arshia Rafieioskouei](#), [Kenneth Rogale](#), [Amir Ata Saei](#), [Morteza Mahmoudi](#), [Borzoo Bonakdarpour](#)
Molecular Pharmaceutics

Ai-driven prediction of cardio-oncology biomarkers through protein corona analysis **2025**

[Avirup Guha](#), [Seyed Amirhossein Sadeghi](#) ... [Arshia Rafieioskouei](#), et al.
Chemical Engineering Journal

Efficient Discovery of Actual Causality using Abstraction-Refinement **2024**

[Arshia Rafieioskouei](#), [Borzoo Bonakdarpour](#)

ACM SIGBED International Conference on Embedded Software (EMSOFT 2024)

* Equally contributed

Experience

Michigan State University | **Research Assistance** **2023 – Present**

- Applied advanced causal modeling in Cyber-physical systems.
- Specification-based Reinforcement Learning.

Dalhousie University | **Research Assistance** **2022**

- Applied Machine Learning techniques to enhance IoT security protocols.

Technical Skills

Topics: Causality, Reinforcement Learning, Formal Methods, Markov Decision Process, Cyber-physical Systems, Internet of Things

Programming Languages: Python (Advanced), C++ (Advanced), JAVA (Advanced)

ML Frameworks: PyTorch, TensorFlow, Scikit-Learn, Pandas, NumPy

Awards & Honors

SIGDA Student Travel Grant	2024
Ranked 5th GPA the graduating class of 2020 Sharif University of Technology	2020
Ranked in the top 1% out of 180,000 Iran's Nationwide University Entrance Exam	2016

Activities & Services

ACM Student Member

Program Committee:

- (EMSOFT25) International Conference on Embedded Software LB/WIP Track

Artifact Evaluation Program Committee:

- (TACAS25) International Conference on Tools and Algorithms for the Construction and Analysis of Systems
- (EMSOFT25) International Conference on Embedded Software

Conference Reviewer/Sub-reviewer:

- (SRDS24) International Symposium on Reliable Distributed Systems
 - (EMSOFT24) International Conference on Embedded Software
 - (ICCP24) International Conference on Cyber-Physical Systems
 - (TACAS25) International Conference on Tools and Algorithms for the Construction and Analysis of Systems
 - (CAV25) International Conference on Computer Aided Verification
 - (RV2025) International Conference on Runtime Verification Teaching Experience
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Michigan State University Teaching Assistance Computer Organization and Architecture (CSE230)	Spring 2025
Michigan State University Teaching Assistance <ul style="list-style-type: none">• Object-Oriented Software Development (CSE335)	Spring 2023
Dalhousie University Teaching Assistance <ul style="list-style-type: none">• Introduction to Information Security (CSCI 2201)	Fall 2022