

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:** 4.0/4.0

Sharif University of Technology | B.Sc. in Computer Engineering

Fall 2016 – Fall 2021

- **GPA:** 3.82/4.0

Publications

Efficient Discovery of Actual Causality with Uncertainty

2025

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

(Under Review)

HypRL: Reinforcement Learning of Control Policies for Hyperproperties

2025

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

(Under Review)

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)

Experience

Michigan State University | Research Assistance

2023 – Present

- Applied advanced causal modeling in Cyber-physical systems.
- Applied probabilistic actual causality methods to advance research in nanoscience.

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

Cisco Network Associate Routing and Switching (CCNA) certificate | Tehran Institute of Technology (MFT)

Peer-evaluated Conference Paper Reviews/Sub-reviews:

- (SRDS24) International Symposium on Reliable Distributed Systems
- (EMSOFT24) International Conference on Embedded Software
- (ICCPSS24) 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

Conference Artifact Evaluation:

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

Teaching Experience

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