

# Arshia Rafieioskouei

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## Education

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

- **Focus:** Specification Based Reinforcement Learning, Causality, Formal Methods, Cyber-Physical Systems
- **GPA:** 4.0

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

- **GPA:** 3.82

## Publications

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**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)

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

Tzu-Han Hsu\*, Arshia Rafieioskouei\*, Borzoo Bonakdarpour

Neural Information Processing Systems (NeurIPS 2025)

**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, ..., Morteza Mahmoudi

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

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**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

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**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

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

## Activities & Services

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### ACM Student Member

#### Program Committee:

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

#### Artifact Evaluation Committee:

- (TACAS25) International Conference on Tools and Algorithms for the Construction and Analysis of Systems
- (EMSOFT25) International Conference on Embedded Software
- (TACAS26) International Conference on Tools and Algorithms for the Construction and Analysis of Systems

#### Conference Reviewer/Sub-reviewer:

- (SRDS24) International Symposium on Reliable Distributed Systems
- (EMSOFT24) International Conference on Embedded Software
- (ICCPs24) 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
- (RV26) International Conference on Runtime Verification Teaching Experience

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<b>Michigan State University   Teaching Assistance</b>	<b>Spring 2025</b>
• Computer Organization and Architecture (CSE230)	
<b>Michigan State University   Teaching Assistance</b>	<b>Spring 2023</b>



<b>Michigan State University   Teaching Assistance</b>	<b>Spring 2023</b>
• Object-Oriented Software Development (CSE335)	
<b>Dalhousie University   Teaching Assistance</b>	<b>Fall 2022</b>



<b>Dalhousie University   Teaching Assistance</b>	<b>Fall 2022</b>
• Introduction to Information Security (CSCI 2201)	