Arshia Rafieioskouei

517.290.9775 | rafieios@msu.edu | GitHub | LinkedIn | Website

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 with Uncertainty   **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)

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

Peer-evaluated Conference Paper Reviews/Sub-reviews:

- (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
- (RV2025)   International Conference on Runtime Verification

Conference Artifact Evaluation Program committee:

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

Teaching Experience

Michigan State University | Teaching Assistance   **Spring 2025**

   Computer Organization and Architecture (CSE230)

Michigan State University | Teaching Assistance   **Spring 2023**

- Object-Oriented Software Development (CSE335)

Dalhousie University | Teaching Assistance   **Fall 2022**

- Introduction to Information Security (CSCI 2201)