

Mohammad Amin Alipour

Department of Computer Science
University of Houston
Houston, TX, 77204

alipour@cs.uh.edu
<http://alipourm.github.io>

Research Interests

Software engineering in general and software testing and analysis in particular

Education *Ph.D.*, Computer Science, Oregon State University, Corvallis, OR 2017
 M.S., Computer Science, Michigan Technological University, Houghton, MI 2011
 B.S., Computer Engineering, Petroleum University of Technology, Iran 2001

Conference Papers

- FSE 2018 [C16] Vincent Hellendoorn, Premkumar Devanbu, and **Mohammad Amin Alipour**. On the Naturalness of Proofs. *The 26th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE) (NIER Track)*, Lake Buena Vista, Florida, November 4-9, 2018.
- ESEM 2018 [C15] Amirreza Shirani, Bowen Xu, David Lo, and **Mohammad Amin Alipour**. Is Easy Really Over Hard? A Reproducibility Study. *ACM/IEEE International Symposium on Empirical Software Engineering and Measurement*. Oulu, Finland, October 11–12, 2018. [Highly Commended Paper Award](#)
- ASE 2016 [C14] **Mohammad Amin Alipour**, August Shi, Rahul Gopinath, Darko Marinov, and Alex Groce. Evaluating Non-Adequate Test-Case Reduction. *IEEE/ACM International Conference on Automated Software Engineering*, pages 16–26, Singapore, Singapore, September 2016.
- ISSTA 2016 [C13] **Mohammad Amin Alipour**, Alex Groce, Rahul Gopinath, and Arpit Christi. Generating Focused Random Tests Using Directed Swarm Testing. *ACM International Symposium on Software Testing and Analysis*, pages 70–81, Saarbrücken, Germany, July 2016.
- ICSE 2016 [C12] Rahul Gopinath, **Mohammad Amin Alipour**, Iftexhar Ahmed, Carlos Jensen, and Alex Groce. On the Limits of Mutation Reduction Strategies. *ACM/IEEE International Conference on Software Engineering*, pages 511–522, Austin, Texas, May 2016.
- ISSRE 2015 [C11] Rahul Gopinath, **Mohammad Amin Alipour**, Iftexhar Ahmed, Carlos Jensen, and Alex Groce. How Hard Does Mutation Analysis Have to Be, Anyway? *IEEE International Symposium on Software Reliability Engineering*, pages 216–227, Gaithersburg, Maryland, November 2015.
- Onward 2014 [C10] Alex Groce, **Mohammad Amin Alipour**, and Rahul Gopinath. Coverage and Its Discontents. *ACM Symposium on New Ideas in Programming and Reflections on Software, Onward! Essays, part of SPLASH (ACM SIGPLAN Conference on Systems, Programming, Languages and Applications: Software for Humanity)*, pages 255–268, Portland, Oregon, October 2014. [Featured in The Morning Paper weblog, and Theory and Craft podcast](#)
- ISSTA 2014a [C9] Chaoqiang Zhang, Alex Groce, and **Mohammad Amin Alipour**. Using Test Case Reduction and Prioritization to Improve Symbolic Execution. *ACM International Symposium on Software Testing and Analysis*, pages 60–70, San Jose, California, July 2014.
- ISSTA 2014b [C8] Duc Le, **Mohammad Amin Alipour**, Rahul Gopinath, and Alex Groce. MuCheck: an Extensible Tool for Mutation Testing of Haskell Programs. *ACM International Symposium on Software Testing and Analysis*, pages 429–432, San Jose, California, July 2014 (Tools and Demonstration track).
- ICST 2014 [C7] Alex Groce, **Mohammad Amin Alipour**, Chaoqiang Zhang, Yang Chen, and John Regehr. Cause Reduction for Quick Testing. *IEEE International Conference on Software Testing, Verification and Validation*, pages 243–252, Cleveland, Ohio, March-April 2014. [Best Paper Award](#).

- ISSRE 2013 [C6] Alex Groce, Chaoqiang Zhang, **Mohammad Amin Alipour**, Eric Eide, Yang Chen, and John Regehr. Help, Help, I'm Being Suppressed! The Significance of Suppressors in Software Testing. *IEEE International Symposium on Software Reliability Engineering*, pages 390–399, Pasadena, California, November 2013.
- ISSTA 2013 [C5] Milos Gligoric, Alex Groce, Chaoqiang Zhang, Rohan Sharma, **Mohammad Amin Alipour**, and Darko Marinov. Comparing Non-adequate Test Suites using Coverage Criteria. *ACM International Symposium on Software Testing and Analysis*, pages 302–313, Lugano, Switzerland, July 2013. [Invited for journal submission to ACM TOSEM](#).
- ISoLA 2012 [C4] Learning-Based Test Programming for Programmers. Alex Groce, Alan Fern, Martin Erwig, Jervis Pinto, Tim Bauer, and **Amin Alipour**. *5th International Symposium of Leveraging Applications of Formal Methods, Verification and Validation*, pages 572–586, Crete, Greece, October 2012.
- ISSRE 2012 [C3] Alex Groce, Alan Fern, Jervis Pinto, Tim Bauer, **Mohammad Amin Alipour**, Martin Erwig, and Camden Lopez. Lightweight Automated Testing with Adaptation-Based Programming. *IEEE International Symposium on Software Reliability Engineering*, pages 161–170, Dallas, Texas, November 2012.
- FLINS 2006 [C2] **Mohammad Amin Alipour**, and Saeed Jalili. Urban Signal Control using Intelligent Agents. *International FLINS Conference on Applied Artificial Intelligence*, pages 811–816, Genova, Italy, August 2006.
- FLAIRS 2005 [C1] **Mohammad Amin Alipour**. Reactive Agent for Urban Traffic Control. *International Florida Artificial Intelligence Research Society Conference*, pages 808–809, Clearwater Beach, Florida, USA, May 2005.

Journal Articles

- ITR 2017 [J4] Rahul Gopinath, Iftekhar Ahmed, **Mohammad Amin Alipour**, Carlos Jensen, and Alex Groce. Mutation Reduction Strategies Considered Harmful *IEEE Transactions on Reliability*, 2017.
- SQJ 2016 [J3] Rahul Gopinath, Iftekhar Ahmed, **Mohammad Amin Alipour**, Carlos Jensen, and Alex Groce. Does Choice of Mutation Tool Matter? *Software Quality Journal*, 1-50, May 2016.
- STVR 2016 [J2] Alex Groce, **Mohammad Amin Alipour**, Chaoqiang Zhang, Yang Chen, and John Regehr. Cause Reduction: Delta Debugging, Even Without Bugs. *Journal of Software Testing, Verification and Reliability*, 26(1):40-68, January 2016.
- TOSEM 2015 [J1] Milos Gligoric, Alex Groce, Chaoqiang Zhang, Rohan Sharma, **Mohammad Amin Alipour**, and Darko Marinov. Guidelines for Coverage-Based Comparisons of Non-Adequate Test Suites. *ACM Transactions on Software Engineering and Methodology*, 24(4):4-37, August 2015.

Workshop Papers

- IDEAR 2018 Arpit Christi, Matthew Olson, **Mohammad Amin Alipour**, and Alex Groce. Reduce Before You Localize: Delta-Debugging and Spectrum-Based Fault Localization. IEEE International Workshop on Debugging and Repair(IDEAR). Memphis, TN; Oct 15 2018.
- NL4SE 2018 [W7] Amirreza Shirani, A. Pastor Lopez-Monroy, Fabio Gonzalez, Thamar Solorio and **Mohammad Amin Alipour**. Evaluation of Type Inference with Textual Cues. Workshop on NLP for Software Engineering, New Orleans, LA, Feb. 2, 2018.
- TECPS 2017 [W6] **Mohammad Amin Alipour**. Fault Injection in the Internet of Things Applications. *ACM Workshop on Testing Embedded and Cyber-Physical Systems*, Santa Barbara, California, July 2017.
- A-TEST 2016 [W5] Josie Holmes, Alex Groce, and **Mohammad Amin Alipour**. Mitigating (and Exploiting) Test Reduction Slippage. *7th Workshop on Automated Software Testing*, Seattle, Washington, November 2016.

- MUTATION 2016 [W4] Rahul Gopinath, **Mohammad Amin Alipour**, Iftekhhar Ahmed, Carlos Jensen, and Alex Groce. Measuring Effectiveness of Mutant Sets. *International Workshop on Mutation Analysis*, Chicago, Illinois, April 2016.
- CFV 2013 [W3] **Mohammad Amin Alipour**, Alex Groce, Chaoqiang Zhang, Anahita Sanadaji, and Gokul Caushik. Finding Model-Checkable Needles in Large Source Code Haystacks: Modular Bug-Finding via Static Analysis and Dynamic Invariant Discovery. *International Workshop on Constraints in Formal Verification*, San Jose, California, November 2013.
- WODA 2012 [W2] **Mohammad Amin Alipour** and Alex Groce. Extended Program Invariants: Applications in Testing and Fault Localization. *International Workshop on Dynamic Analysis*, pages 7–11, Minneapolis, Minnesota, July 2012.
- CFV 2011 [W1] **Mohammad Amin Alipour** and Alex Groce. Bounded Model Checking and Feature Omission Diversity. *International Workshop on Constraints in Formal Verification*, San Jose, California, November 2011.

Technical Reports and Other Papers

- [TR2] Rahul Gopinath, **Mohammad Amin Alipour**, Iftekhhar Ahmed, Carlos Jensen, Alex Groce. An Empirical Comparison of Mutant Selection Approaches. *Technical Report, School of Engineering and Computer Science*, Oregon State University, April 2014.
- [TR1] Ali Ebneenasir, and **Mohammad Amin Alipour**. Identifying satisfying subsets: A method for algorithmic correction of inter-thread synchronization mechanisms. *Technical Report CS-TR-10-01, Department of Computer Science*, Michigan Technological University, March 2010.
- [OJ2] **Mohammad Amin Alipour**, and Ali Reza Ashrafi. A Numerical Method for Computing the Wiener Index of One-Heptagonal Carbon Nanocone. *Journal of Computational and Theoretical Nanoscience*, Vol. 6. No. 5, May 2009.
- [OJ1] **Mohammad Amin Alipour**, and Ali Reza Ashrafi. Computer Calculation of the Wiener Index of One-Pentagonal Carbon Nanocone. *Digest Journal of Nano-materials and Biostructures*, vol 4, no 1, March 2009.

Awards

- Highly Commended Paper Award*, ACM/IEEE International Symposium on Empirical Software Engineering and Measurement. Oulu, Finland, 2018.
- Best Paper Award*, IEEE International Conference on Software Testing, Verification and Validation, Cleveland, Ohio, 2014.
- Vice Provost’s Award for Excellence in Innovation in Teaching, 2014 (as a member of E-Campus teaching team)
- Fellowship*, Max-Planck Institute for Software Systems, Kaiserslautern, Germany, 2014¹
- NSF, ACM SIGSOFT, and ACM SIGPLAN travel grants to attend: CAV’11, FSE’12, SSFT’12, ICSE’13, ICST’14, SSFT’14, OOPSLA’14, PLDI’15, and PLDI’16

Experience

- | | | |
|-----------------|--|-------------------------|
| 09/2017–Present | Assistant Professor
Department of Computer Science | University of Houston |
| 06/2011–06/2017 | Teaching/Research Assistant | Oregon State University |
- *Research Assistant*, research on software testing and verification under supervision of Dr. Alex Groce.
 - *Instructor*, “Applied Software Engineering” (two terms).

¹Due to some visa issues, I could not travel to Germany at the time.

- *Instructor*, “Theory of Computation” (one term).
- *Teaching assistant*, “Theory of Computation”, “Applied Software Engineering”, “Computer Architecture and Assembly Language”.

01/2009–04/2011 **Teaching Assistant** Michigan Technological University
Teaching Assistant for “C for Java Programmers”, “Programming Languages”, and “Discrete Mathematics”.

01/2004–01/2009 **Instructor of Computer Engineering** University of Kashan
Instructor, “Computer Networks”, “Design and Analysis of Algorithms”, “Introduction to Programming”, “Object-Oriented Programming”, “Software Engineering”, and “Theory of Formal Languages and Computation”.

Students

Amirreza Shirani, PhD student (Co-advised with Thamar Solorio)
 Soodeh Atefi, PhD student (Chair of PhD Committee)
 Farah Prity, PhD student (Chair of PhD Committee)
 Rafiqul Rabin, PhD student (Chair of PhD Committee)
 Kaoji Xu, PhD (Member of PhD Committee)
 Andrew Truelove, undergraduate research student (won Provost’s Undergraduate Research Scholarship)

Professional Service

Reviewer, IEEE Transactions on Services Computing, 2018.

Reviewer, ACM/IEEE International Conference on Automated Software Engineering, 2017.

Program Committee Member,

- ACM SIGPLAN conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH), Poster track, 2015.
- ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), AE track, 2017.
- ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), AE track, 2018.

Reviewer, International SPIN Symposium on Model Checking of Software, 2012.

Reviewer, ACM International Symposium on Software Testing and Analysis, 2014.

Reviewer, Software Quality Journal, 2016.

Student Volunteer, ICSE’13, OOPSLA’14, and PLDI’15.

Community Service

Workshop Leader, ChickTech’s Soft Circuit Workshop, November 2015.

Mentor for Graduate Teaching Assistants, Center for Teaching and Learning, Oregon State University, September 2015.

Member of Senate, Associated Students of Oregon State University (ASOSU), 2012.

Member of Advisory Board, Office of International Programs and Services, Michigan Technological University, 2010.

Translator, Coursera Global Translator Community, 2014-2015.

Invited Talks

- JPF 2017 Anatomy of Test Cases. *Java PathFinder Workshop*, Urbana, Illinois, Nov 3, 2017.
- UC Davis Testing Large Software Systems. *Software System Research Group*, Department of Computer Science, UC Davis, Jan 16, 2018.