

Alex Gyori

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EDUCATION

PhD, Computer Science
University of Illinois at Urbana Champaign, Urbana, IL, USA 2013 - 2017

BSc, Computer Science
Polytechnic University of Timisoara, Timisoara, Romania 2009 - 2013

RESEARCH INTERESTS

Software Engineering, Formal Methods, Programming Languages: Software Testing, Software Verification, Software Evolution, and Program Transformations

EXPERIENCE

Facebook Inc. August 2017 to present
Seattle, WA, USA *Research Scientist*
Topic: Disaster Recovery, Reliability, Testing large scale systems

University of Illinois at Urbana Champaign August 2013 to August 2017
Urbana, IL, USA *Research Assistant*
Advisor: Darko Marinov
Topic: Software Testing, Regression Testing, Test Reliability

Microsoft Research May 2015 to August 2015
Redmond, WA, USA *Research Intern*
Advisor: Shuvendu Lahiri
Topic: Semantic-based Change-Impact Analysis using Differential Program Verification

Google Inc. May 2014 to August 2014
Mountain View, CA, USA *Software Engineering Intern*
Advisor: Chang-Seo Park
Topic: Implementing static analysis infrastructure for interprocedural CFA-style analysis to detect API misusages.

University of Illinois at Urbana Champaign June 2012 to August 2012
Urbana, IL, USA *Undergraduate Research Intern*
Advisor: Danny Dig
Topic: Designing automated refactoring to upgrade to functional APIs

Institute E-Austria October 2011 - May 2012 and November 2012 - July 2013
Timisoara, Romania *Undergraduate Research Assistant*
Advisor: Marius Minea
Topic: Applying formal techniques (model checking/smt) to web security

Continental AG June 2010 - September 2010 and June 2011 - September 2011
Timisoara, Romania *Software Engineering Intern*
Advisor: Dan Onica
Topic: Developing build and test automation in Eclipse and Rational Rhapsody

PUBLICATIONS

1. K. Veeraraghavan, J. Meza, S. Michelson, S. Panneerselvam, **A. Gyori**, D. Chou, S. Margulis, D. Obenshain, S. Padmanabha, A. Shah, Y. J. Song, and T. Xu. Maelstrom: Mitigating datacenter-level disasters by draining interdependent traffic safely and efficiently. In *13th USENIX Symposium on Operating Systems Design and Implementation*, **OSDI** 2018, pages 373—389. Acceptance Rate: 47/257 – 18%, 2018
2. **A. Gyori**, O. Legunsen, F. Hariri, and D. Marinov. Evaluating regression test selection opportunities in a very large open-source ecosystem. In *Proceedings of the 29th IEEE International Symposium on Software Reliability Engineering*, **ISSRE** 2018, pages 112—122. Acceptance Rate: 23/96 – 24%, 2018
3. A. Shi, **A. Gyori**, S. Mahmood, P. Zhao, and D. Marinov. Evaluating test-suite reduction in real software evolution. In *Proceedings of the 2018 International Symposium on Software Testing and Analysis*, **ISSTA** 2018, pages 84—94. Acceptance Rate: 31/130 – 23%, 2018
4. **A. Gyori**, S. K. Lahiri, and N. Partush. Refining interprocedural change-impact analysis using equivalence relations. In *Proceedings of the 2017 International Symposium on Software Testing and Analysis*, **ISSTA** 2017, pages 318—328. Acceptance Rate: 31/118 – 26%, 2017
5. **A. Gyori**, P. Garg, E. Pek, and P. Madhusudan. Efficient incrementalized runtime checking of linear measures on lists. In *Proceedings of the IEEE International Conference on Software Testing, Verification and Validation*, **ICST** 2017, pages 310—320. Acceptance Rate: 36/135 – 26%, 2017. This paper was **nominated for the best paper award**
6. **A. Gyori**, B. Lambeth, S. Khurshid, and D. Marinov. Exploring underdetermined specifications using Java PathFinder. In *Proceedings of the Java Pathfinder Workshop 2016*, **JPF Workshop** 2016, pages 1—5, 2016
7. **A. Gyori**, B. Lambeth, A. Shi, O. Legunsen, and D. Marinov. NonDex: A tool for detecting and debugging wrong assumptions on Java API specifications. In *Proceedings of the 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering, Demo Papers*, **FSE Demo** 2016, pages 993—997. Acceptance Rate: 13/32 – 41%, 2016
8. A. Shi, **A. Gyori**, O. Legunsen, and D. Marinov. Detecting assumptions on deterministic implementations of non-deterministic specifications. In *Proceedings of the IEEE International Conference on Software Testing, Verification and Validation*, **ICST** 2016, pages 80—90. Acceptance Rate: 74/291 – 25%, 2016
9. A. Shi, T. Yung, **A. Gyori**, and D. Marinov. Comparing and combining test-suite reduction and regression test selection. In *Proceedings of the 2015 10th Joint Meeting on Foundations of Software Engineering*, **ESEC/FSE** 2015, pages 237—247. Acceptance Rate: 74/291 – 25%, 2015
10. **A. Gyori**, A. Shi, F. Hariri, and D. Marinov. Reliable testing: Detecting state-polluting tests to prevent test dependency. In *Proceedings of the 2015 International Symposium on Software Testing and Analysis*, **ISSTA** 2015, pages 223—233. Acceptance Rate: 33/119 – 27%, 2015
11. A. Shi, **A. Gyori**, M. Gligoric, A. Zaytsev, and D. Marinov. Balancing trade-offs in test-suite reduction. In *Proceedings of the 22nd ACM SIGSOFT International Symposium on Foundations of Software Engineering*, **FSE** 2014, pages 246—256. Acceptance Rate: 61/273 – 22%, 2014
12. **A. Gyori**, L. Franklin, D. Dig, and J. Lahoda. Crossing the gap from imperative to functional programming through refactoring. In *Proceedings of the 2013 9th Joint Meeting on Foundations of Software Engineering*, **ESEC/FSE** 2013, pages 543—553. Acceptance Rate: 51/251 – 20%, 2013
13. L. Franklin, **A. Gyori**, J. Lahoda, and D. Dig. Lambdaficator: from imperative to functional programming through automated refactoring. In *Proceedings of the 2013 International Conference on Software Engineering*, **ICSE Tool Demo** 2013, pages 1287—1290. Acceptance Rate: 16/53 – 30%, 2013

TEACHING EXPERIENCE

Teaching Assistant, <i>University of Illinois at Urbana Champaign</i> - CS527 Advanced Topics in Software Engineering	Fall 2016
Grad Seminar Organizer, <i>University of Illinois at Urbana Champaign</i> - CS591 Software Engineering Seminar	Fall 2014 and Spring 2016
Teaching Assistant, <i>Polytechnic University of Timisoara</i> - Senior level Cloud Computing Course	Fall 2012 and Spring 2013
Guest Lecturer, <i>National College C. D. Loga</i> - Elective course in algorithm for high school students. Full responsibility for curriculum and lectures.	Fall 2011 and Spring 2012

AWARDS AND HONORS

• NSF Helped prepare Grant on IoT Safety and Security – \$800K	– June 2016
• NSF Helped prepare REU Supplement Grant – \$12K	– June 2016
• Saburo Muroga Endowed Fellowship – \$6K	– 2014-2015
• General Electric Foundation Scholar Leader Award – \$4K	– 2010-2012
• NSF Conference Travel Funding ISSTA’15 – \$1K	– July 2015
• Travel Grant to Training And Research On Testing (TAROT) 2014 Summer School – \$1K	– July 2014
• ACM SIGSOFT CAPS Undergraduate Conference Travel Funding ICSE’13 – \$1K	– May 2013
• 2013 SAT/SMT Summer School travel grant – \$1K	– July 2013
• NSF Conference Travel Funding JPF’16 – \$500	– November 2016
• Academic Scholarship awarded by Polytechnic University of Timisoara	– 2009 to 2013
• First prize at ACI Software Testing Challenge organized by ACI	– March 2013
• First prize at Océ Software Development Contest organized by Océ, a Canon company	– February 2013
• 2012 ARiSE/VCLA Winter School on Verification travel grant	– February 2012
• National Finalist at Imagine Cup a worldwide competition sponsored and organized by Microsoft	– 2012
• Merit Diploma at regional programming competition	– 2010, 2011, 2013
• National Finalist at ACM-ICPC	– 2010, 2011, 2013
• 3rd place at iTec software development competition a 48 hours hackathon	– 2011
• National Debate Champion and numerous 1st to 3rd prizes at National level	– 2007 to 2010

SERVICE - VOLUNTEERING - LEADERSHIP

TECPS 2017 Session Chair at Workshop on Testing for Cyber Physical Systems	July 2017
ICST 2017 Student Volunteer	March 2017
UIUC CS Admissions Committee: Reviewer for Graduate Student Applications	2016–2017 cycle
Security and Privacy Forum 2016 Student Volunteer	October 2016
POPL 2016 Student Volunteer	January 2016
UIUC CS Graduate Ambassador	2015–2017
UIUC PL-FM-SE Area Retreat Organizer	2015
UIUC Research Mentor for Undergraduates in Science and Engineering	2015
ESEC/FSE 2015 Student Volunteer	September 2015
MS Microsoft Student Partner	2010–2013
ARDOR Training Director in the Romanian Regional Debate Organization	2009–2011

SERVICE – REVIEWING

ECOOP DS’18 <i>European Conference on Object-Oriented Programming Doctoral Symposium</i>	2018
TSE 2017 <i>Transactions on Software Engineering</i>	2017
ASE’17 <i>The 32nd IEEE/ACM International Conference on Automated Software Engineering Programming’17 International Conference on the Art, Science, and Engineering of Programming</i>	2017
TACAS’17 <i>International Conference on Tools and Algorithms for the Construction and</i>	2016

<i>Analysis of Systems</i>	2016
ASE'16 <i>The 31st IEEE/ACM International Conference on Automated Software Engineering</i>	2016
ICST'16 <i>The IEEE International Conference on Software Testing and Verification</i>	2016
ASE'15 <i>The 30th IEEE/ACM International Conference on Automated Software Engineering</i>	2015
CAV'15 <i>The International Conference on Computer Aided Verification</i>	2015
CLSS <i>Elsevier Computer Languages, Systems & Structures</i>	2015
HVC'14 <i>Tenth Haifa Verification Conference</i>	2014
JSS <i>Elsevier Journal of Systems and Software</i>	2014
PLOS ONE <i>Plos One Computer and Information Sciences Journal</i>	2014
ASE'14 <i>The 29th IEEE/ACM International Conference on Automated Software Engineering</i>	2014
ICST'14 <i>The IEEE International Conference on Software Testing, Verification and Validation</i>	2014
ASE'13 <i>The 28th IEEE/ACM International Conference on Automated Software Engineering</i>	2013

TALKS

University of Washington Research@FB: Reliability at the datacenter level Seattle, WA, October 2018	~~
TECPS'17 Support for Security and Safety of Programmable IoT Systems Santa Barbara, CA, July 2017	~~
ISSTA'17 Refining Interprocedural Change-Impact Analysis using Equivalence Relations Santa Barbara, CA, July 2017	~~
ICST '17 Efficient incrementalized runtime checking of linear measures on lists Tokyo, Japan, March 2017	~~
FSE '16 NonDex: A tool for detecting and debugging wrong assumptions on Java API specifications Seattle, WA, November 2016	~~
JPF '16 Exploring Underdetermined Specifications using Java PathFinder ~~Seattle, WA, November 2016	~~
George Mason Assessing Forward Compatibility in Practice ~~Washington, DC, October 2016	~~
Salesforce Reliable Testing: A principled approach to detecting flaky tests San Francisco, CA, March 2016	~~
Google Reliable Testing: A principled approach to detecting flaky tests Mountain View, CA, March 2016	~~
Qualcomm Towards a Safer IoE: Detecting and Correcting Abnormal Interactions between Things in Smart Homes ~~San Diego, CA, March 2016	~~
Microsoft Reliable Testing: Detecting State-Polluting Tests to Prevent Test Dependency Redmond, WA, August 2015	~~
ISSTA'15 Reliable Testing: Detecting State-Polluting Tests to Prevent Test Dependency Baltimore, MD, July 2015	~~
Columbia University Reliable Testing: Detecting State-Polluting Tests to Prevent Test Dependency New York, NY, July 2015	~~
Microsoft Research Reliable Testing: Detecting State-Polluting Tests to Prevent Test Dependency Redmond, WA, July 2015	~~
Polytechnic University of Timisoara Applying for PhD Studies in the US Timisoara, Romania, April 2015	~~
University of Oxford Abstraction-guided Runtime Checking of Assertions on Lists Oxford, UK, March 2015	~~
Imperial College London Abstraction-guided Runtime Checking of Assertions on Lists London, UK, March 2015	~~
University College London Evaluating Test-Suite Reduction for Evolution ~~London, UK, March 2015	~~
University of Illinois at Urbana Champaign Test Suite Reduction – <i>Guest Lecture in CS527</i> Urbana, IL, November 2015	~~
Training And Research On Testing (TAROT) 2014 Summer School Balancing Trade-Offs in Test-Suite Reduction ~~Porto, Portugal, July 2014	~~
University of Illinois at Urbana Champaign – ISSTA-PC Meeting Workshop Test Suite Reduction	~~

– *ISSTA PC Workshop*

~~ Urbana, IL, March 2014

Illinois Symposium on Parallelism – I2PC’13 LambdaFicator: Crossing the Gap from Imperative to Functional Programming through Refactoring

~~ Urbana, IL, September 2013

ESEC/FSE’13 Crossing the gap from imperative to functional programming through refactoring
Saint Petersburg, Russia, August 2013

ICSE’13 LAMBDAFICATOR: from imperative to functional programming through automated refactoring
~~ San Francisco, CA, May 2013

HOBBIES

I enjoy biking, rock-climbing, and running (I ran a half marathon and now train to run the full). I always have fun roller skating or ice skating in the winter. When I am not working late, I enjoy ballroom dancing (and as of more recently tango) in the evenings. I enjoy playing a friendly soccer or basketball match outdoors. I spend my holidays in the wild - camping, hiking, and swimming or relaxing by a bonfire in the evening. I enjoy traveling, reading, and learning new things.