

Marianna Rapoport

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I like creating tools that can prove code correct before it is run. I am particularly interested in type systems, program verification with proof assistants, and functional programming.

github.com/amaurremi

gitlab.mpi-sws.org/amaurremi

Education

- 2014–date **PhD in Computer Science**, *University of Waterloo*, supervisor Ondřej Lhoták, thesis topic: Extending Dependent Object Types.
- 2012–2014 **MMath in Computer Science**, *University of Waterloo*, co-supervisors Ondřej Lhoták and Frank Tip, thesis title: Precise data flow analysis in the presence of correlated method calls.
- 2008–2012 **BSc in Computer science**, *Moscow Institute of Radioelectronics, Engineering and Automation*, thesis title: *ideah*, a Haskell language plugin for IntelliJ IDEA, supervisor Oleg Sobolev.

Internships

- May–Aug'18 **Max Planck Institute for Software Systems**, Saarbrücken, Germany. I worked in Derek Dreyer's foundations of programming group on the Iris framework (currently work in progress).
- May–Aug'15 **IBM T.J. Watson Research Centre**, Yorktown Heights, NY. I implemented a static-analysis tool that retrieved dynamically constructed URLs from Android applications.
- Sep–Dec'13 **Twitter, Inc.**, San Francisco, CA. I implemented new features in the back-end of the direct-messaging and tweet services.

Papers

- 2017 Marianna Rapoport, Ifaz Kabir, Paul He, Ondřej Lhoták, *A Simple Soundness Proof for Dependent Object Types*, OOPSLA'17. **(distinguished artifact award)**
- 2017 Marianna Rapoport, Ondřej Lhoták, *Mutable WadlerFest DOT*, FTFJP'17
- 2017 Marianna Rapoport, Philippe Suter, Erik Wittern, Ondřej Lhoták, Julian Dolby. *Who You Gonna Call? Analyzing Web Requests in Android Applications*, MSR'17
- 2015 Karim Ali, Marianna Rapoport, Ondřej Lhoták, Julian Dolby, Frank Tip, *Type-Based Call Graph Construction Algorithms for Scala*, TOSEM'15
- 2015 Marianna Rapoport, Ondřej Lhoták, Frank Tip, *Precise Data Flow Analysis in the Presence of Correlated Method Calls*, SAS'15. **(best paper award)**
- 2014 Karim Ali, Marianna Rapoport, Ondřej Lhoták, Julian Dolby, Frank Tip, *Constructing Call Graphs of Scala Programs*, ECOOP'14. **(distinguished artifact award)**

Technical Reports

- 2017 Marianna Rapoport, Ifaz Kabir, Paul He, Ondřej Lhoták, *A Simple Soundness Proof for Dependent Object Types*. Technical report, arXiv:1706.03814, 2017
- 2016 Marianna Rapoport, Ondřej Lhoták, *Mutable WadlerFest DOT*. Technical report, arXiv:1611.07610, 2016

Thesis

- 2014 Rapoport M. *Data Flow Analysis in the Presence of Correlated Calls*, master's thesis, University of Waterloo, August 2014.

Awards

- 2017
 - Distinguished Artifact Award (ECOOP)
 - Ontario Graduate Scholarship

- 2016 David R. Cheriton scholarship, University of Waterloo
- 2015 Radhia Cousot best young researcher paper award, Symposium on Static Analysis
- 2014
 - David R. Cheriton scholarship, University of Waterloo
 - Provost doctoral entrance award, University of Waterloo
 - International Doctoral Student Award, University of Waterloo

- 2012–2014
 - International masters award, University of Waterloo
 - Mathematics graduate experience award, University of Waterloo
 - Graduate research studentship, University of Waterloo

- 2007–2012
 - Russian government scholarship for academic excellence
 - Moscow government nominal scholarship

Talks

- 2017 A Simple Soundness Proof for Dependent Object Types ([link](#)). OOPSLA, Vancouver, Canada.
- 2016 Tracking side effects using the type system in Scala. Oregon Programming Languages Summer School, Eugene, OR.
- 2015
 - Precise data-flow analysis in the presence of correlated method calls. Static Analysis Symposium, Saint-Malo, France.
 - Static analysis of web-API usage in Android applications. IBM T.J. Watson Research Centre, Yorktown Heights, NY.
 - Inter-procedural analysis with infinite domains in WALA. Workshop on WALA (WoW) at PLDI and FCRC, Portland, Oregon.

- 2014 Data flow analysis in the presence of correlated calls. Poster for the David R. Cheriton Symposium, University of Waterloo, Canada.
- 2012 Software transactional memory in Haskell. Seminar for the Functional languages workshop, Faculty of Computational mathematics and cybernetics, Moscow State University, Russia.

Service

- 2018 ICFP student volunteer (upcoming)
- ECOOP artifact evaluation co-chair
- Proof artifact guidelines for Artifact Evaluation Committees (used for the first time at ECOOP'18)
- 2017 OOPSLA artifact evaluation committee (AEC) member
- OOPSLA student volunteer
- 2016 OOPSLA AEC member
- SPLASH student volunteer
- PL group at Waterloo: organizing type-and-effect systems reading group, created group website
- 2015 SPLASH student volunteer
- 2014 ECOOP student volunteer

Open Source

- IDE An implementation of the Interprocedural Distributive Environment algorithm using the WALA algorithm
- ideah A Haskell language support plugin for IntelliJ IDEA

Summer Schools

- July'17 **DeepSpec Summer School**, *University of Pennsylvania, PA.*
- June'16 **Oregon Programming Languages Summer School**, *University of Oregon, OR.*
- Apr'11 **Midlands Graduate School in the Foundations of Computing Science**, *University of Nottingham, England.*
- Aug'10 **Utrecht Summer School in Applied Functional Programming**, *Utrecht University, Netherlands.*

Teaching

- 2017 TA for CS 245E: Logic and computation (enriched)
TA for CS 444/644: Compiler construction
- 2015–2016 TA for CS 241e: Foundations of sequential programs (Enriched)
- 2014 TA for CS 442/642: Principles of Programming Languages
- 2013 Teaching tutorials for CS 136: Elementary algorithm design and data abstraction

Other

I greatly enjoy movies and keep track of the ones I have seen on my website.

In the past I used to do rhythmic gymnastics. I participated in the German Championship 2001 in Bremen and got 5th place at the German Cup 2002 in St Wendel.