David R. Cheriton School of Computer Science
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Marianna Rapoport

Education

Sep 2014 – ongoing **PhD in Computer Science**, *University of Waterloo*, Cheriton School of Computer Science, supervisor Ondřej Lhoták.

Sep 2012 – Aug 2014 **MMath in Computer Science**, *University of Waterloo*, Cheriton School of Computer Science, thesis: "Data-Flow Analysis in the Presence of Correlated Calls", supervised by Ondřej Lhoták and Frank Tip.

Sep 2008 –Jun 2012 **Computer science, BSc**, *Moscow Institute of Radioelectronics, Engineering and Automation (MIREA)*, Information Technologies Department, thesis: "ideah, a Haskell Language Plugin for IntelliJ IDEA", advisor Sergei Kovalev.

Summer Schools

June 2016 **Oregon Programming Languages Summer School**, *University of Oregon, OR, USA*.

Apr 2011 **Midlands Graduate School in the Foundations of Computing Science**, *University of Nottingham, England*.

Aug 2010 **Utrecht Summer School in Applied Functional Programming**, *Utrecht University, Netherlands*.

Papers

2017 Marianna Rapoport, Philippe Suter, Erik Wittern, Ondřej Lhoták, Julian Dolby. *Who You Gonna Call? Analyzing Web Requests in Android Applications*, Mining Software Repositories 2017

2015 Karim Ali, Marianna Rapoport, Ondřej Lhoták, Julian Dolby, Frank Tip, *Type-Based Call Graph Construction Algorithms for Scala*, ACM Transactions on Software Engineering and Methodology 25(1): 9 (2015)

2015 Marianna Rapoport, Ondřej Lhoták, Frank Tip, *Precise Data Flow Analysis in the Presence of Correlated Method Calls*, Static Analysis Symposium 2015: 54-71

2014 Karim Ali, Marianna Rapoport, Ondřej Lhoták, Julian Dolby, Frank Tip, *Constructing Call Graphs of Scala Programs*, European Conference on Object-Oriented Programming 2014: 54-79

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.

Industry Experience

May 2015 – Aug 2015 Research intern, IBM T.J. Watson Research Centre, Yorktown Heights, NY. Working on large-scale dataflow analysis of Android applications.

Sep 2013 – Dec 2013 Software engineer intern, Twitter, Inc., San Francisco, CA. Implemented new features in the back end of the direct messages and tweet services, working with Scala and Finagle.

Service

2016 Member of SPLASH artifact evaluation committee

SPLASH student volunteer

Organizing type-and-effect systems reading group in PL group

Created and maintaining website of PL group

2015 SPLASH student volunteer

2014 ECOOP student volunteer

Awards

2016
- David R. Cheriton scholarship (2 years), University of Waterloo

2015
- Radhia Cousot best young researcher paper award, awarded by Sandrine Blazy and Thomas Jensen on behalf of the program committee of the Symposium on Static Analysis (SAS) 2015, for the paper *Precise Data Flow Analysis in the Presence of Correlated Method Calls*

2014
- David R. Cheriton scholarship (2 years), University of Waterloo
- Provost doctoral entrance award, University of Waterloo
- Women in math grad scholarship, University of Waterloo
- International Doctoral Student Award (2 years), University of Waterloo

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

2010
- Utrecht Summer School scholarship, Utrecht University, Netherlands

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

Talks

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.

Open Source

IDE algorithm — An implementation of the Interprocedural Distributive Environment algorithm using the WALA framework for static anaysis on Java bytecode

ideah — A Haskell language support plugin for IntelliJ IDEA

Some of my projects can be found on github.com/amaurremi and code.google.com/p/ideah.

Teaching

2017 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

Coursework

CS 842 Memory management and garbage collection, instructor Gregor Richards, *93*.

CS 842 Virtual machines for dynamic languages, instructor Gregor Richards, *100*.

CS 798 Software foundations (programming in Coq), instructor Prabhakar Ragde, *100*.

CS 662 Formal languages and parsing, instructor Jeffrey Shallit, *93*.

CS 644 Compiler construction, instructor Ondřej Lhoták, *92*.

CS 798 Reduction semantics for functional programming languages, instructor Prabhakar Ragde, *92*.

CS 846 Advanced topics in software engineering: software recommendation systems, instructor Reid Holmes, *90*.

CS 785 Intelligent computer interfaces, instructor Robin Cohen, *91*.

Languages

programming **Scala**, **Haskell**, **Java**, **Coq**, **Scheme**, **C**.

natural **Russian**, native; **German**, bilingual; **English**, fluent; **French**, intermediate; **Spanish**, beginner