Robert J. Simmons

Computer Science Department
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Education

Ph.D., Computer Science Department, Carnegie Mellon University, October 2012.
Advisor: Frank Pfenning

Master of Science, Computer Science Department, Carnegie Mellon University, 2010

Bachelor of Science and Engineering (cum laude), Computer Science, Princeton University, 2005

Work

Assistant Teaching Professor, Computer Science Department, Carnegie Mellon University,
Fall 2012-Present.

Post Doctoral Associate, teaching 15-122 Principles of Imperative Computation.
Computer Science Department, Carnegie Mellon University, Fall 2012-Spring 2013.

Intern, Microsoft Research, Bangalore, India, Summer 2007, Summer 2011

Teaching

15-122 Principles of Imperative Computation (instructor), F'12, S'13, F'13, M'14, F'14, S'15,
M'15

15-411 Compiler Design (instructor), F'15

15-312 Foundations of Programming Languages (instructor), S'14

15-814 Type Systems for Programming Languages (teaching assistant), F'08

15-312 Foundations of Programming Languages (teaching assistant), S'08

Research Interests

Programming languages, declarative and logic programming, specification languages and logical
frameworks.

Awards and Fellowships

Herbert A. Simon Award for Teaching Excellence in Computer Science, 2015

Siebel Scholar, Class of 2012, awarded annually for academic excellence and demonstrated lead-
ership to 85 top students from the world's leading graduate schools

Alan J. Perlis Graduate Student Teaching Award, 2008

National Science Foundation Graduate Research Fellowship, 2007-2010

Princeton Computer Science Department Senior Thesis Award, 2005

Journal Papers Published

Structural Focalization. Robert J. Simmons. ACM Transactions on Computational Logic, 15(3). 2014.

Logical approximation for program analysis. Robert J. Simmons and Frank Pfenning. Higher Order and Symbolic Computation, 24(1-2):41-80. 2011.

> *Originally published as:* Linear logical approximations. Robert J. Simmons and Frank Pfenning. ACM SIGPLAN Workshop on Partial Evaluation and Program Manipulation. January 2009.

Products of Weighted Logic Programs. Shay B. Cohen, Robert J. Simmons, and Noah A. Smith. Theory and Practice of Logic Programming, 11(2-3):263-296. 2011.

> *Originally published as:* Dynamic Programming Algorithms as Products of Weighted Logic Programs. Shay B. Cohen, Robert J. Simmons, and Noah A. Smith. International Conference on Logic Programming. In Logic Programming, LNCS 5366. December 2008. (Given the Best Student Paper Award.)

Proofs from Tests. Nels E. Beckman, Aditya V. Nori, Sriram K. Rajamani, Robert J. Simmons, Sai Deep Tetali, and Aditya V. Thakur. IEEE Transactions on Software Engineering, 36(4):495-508. July/August 2010.

> *Originally published as:* Proofs from Tests. Nels Beckman, Aditya Nori, Sriram Rajamani, and Rob Simmons. ACM SIGSOFT International Symposium on Software Testing and Analysis. July 2008.

Refereed Conference/Workshop Papers

A logical correspondence between natural semantics and abstract machines. Robert J. Simmons, Ian Zerny. 15th Symposium on Principles and Practice of Declarative Programming. September 2013.

Relating Reasoning Methodologies in Linear Logic and Process Algebra. Yuxin Deng, Iliano Cervesato, and Robert J. Simmons. 2nd International Workshop on Linearity. April 2012.

Distributed deductive databases, declaratively: The L10 logic programming language. Robert J. Simmons, Frank Pfenning, and Bernardo Toninho. X10 Workshop. June 2011.

Substructural Operational Semantics as Ordered Logic Programming. Frank Pfenning and Robert J. Simmons. IEEE Symposium on Logic in Computer Science. August 2009.

SASyLF: An Educational Proof Assistant for Language Theory Jonathan Aldrich, Robert J. Simmons, and Key Shin. ACM SIGPLAN Workshop on Functional and Declarative Programming Education. September 2008.

Linear Logical Algorithms. Robert J. Simmons and Frank Pfenning. International Colloquium on Automata, Languages and Programming (Track B). In Automata, Languages and Programming, LNCS 5126. July 2008.

Mechanized Metatheory for User-Defined Type Extensions. Daniel Marino, Brian Chin, Todd Millstein, Gang Tan, Robert J. Simmons and David Walker. ACM SIGPLAN Workshop on Mechanizing Metatheory. September 2006.

Unrefereed Conference/Informal Workshop Papers

Constructive Provability Logic. Robert J. Simmons and Bernardo Toninho. Intuitionistic Modal Logic and Applications Workshop. July 2011.

Invited Talks and Lectures

A Walk in the Substructural Park. 7th International Workshop on Logical Frameworks and Meta-languages: Theory and Practice. September 9, 2012.

Logical Algorithms in Propositional, Linear, and Timed Logic. West Virginia University, Lane Department of Computer Science and Electrical Engineering. October 15, 2009.

Departmental & Professional Activities

Caregie Mellon CSD TA Committee, 2013-Present

Carnegie Mellon CSD Masters Admissions Committee, 2015
(helped out, not a full committee member)

Program committee member, of Third International Workshop on Linearity (LINEARITY 2014)

Carnegie Mellon CSD Graduate Admissions Committee, 2011 and 2012

Contributing editor, ACM XRDS Magazine, 2009-2012

SIGBOVIK Organizing Committee, 2007-2008

Open House Student Co-Organizer, 2007-2008

Head of Dec/5 Social Organization 2005-2006