Sam Tobin-Hochstadt

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Research Interests

My research focuses on the design and analysis of programs and programming languages. I am particularly interested in how programs grow from prototype scripts to robust software, and how programming language design can support this process. My research concerns type systems, software contracts, module systems, and extensible languages.

Appointments

2011-   Research Assistant Professor, CCIS, Northeastern University

2009-2011 Mozilla Postdoctoral Research Fellow, CCIS, Northeastern University
2006-2009 Research Assistant, CCIS, Northeastern University
2003-2006 Teaching Assistant, CCIS, Northeastern University
2004-2006 Intern, Programming Languages Research Group, Sun Microsystems Labs

Education

2010 PH.D in Computer Science, Northeastern University
         Thesis title: *Typed Scheme: From Scripts to Programs*
2006 MA in Computer Science, Northeastern University
2003 BS in Computer Science with Honors, University of Chicago

Publications

Journal Articles

2012 The Design and Implementation of Typed Scheme, with Matthias Felleisen, *Higher Order and Symbolic Computation (HOSC)*, to appear.

Conferences

2012 Run Your Research: On the Effectiveness of Lightweight Mechanization, with Casey Klein, John Clements, Christos Dimoulas, Carl Eastlund, Matthias Felleisen, Matthew Flatt, Jay A. McCarthy, Jon Rafkind, and Robert Bruce Findler, *Proc. 39th ACM Symposium on Principles of Programming Languages (POPL)*.

2012 Typing the Numeric Tower, with Vincent St-Amour, Matthias Felleisen, and Matthew Flatt, *2012 Symposium on Practical Aspects of Declarative Languages (PADL)*.

2011   Languages as Libraries, with Vincent St-Amour, Ryan Culpepper, Matthew Flatt, and Matthias Felleisen, *Proc. 32nd ACM Conference on Programming Language Design and Implementation (PLDI).*

2010   Logical Types for Untyped Languages, with Matthias Felleisen, *Proc. 15th ACM International Conference on Functional Programming (ICFP).*

2009   Practical Variable-Arity Polymorphism, with Matthias Felleisen and T. Stephen Strickland, *Proc. Eighteenth European Symposium on Programming (ESOP).*

2008   The Design and Implementation of Typed Scheme, with Matthias Felleisen, *Proc. 35th ACM Symposium on Principles of Programming Languages (POPL).*

2006   Interlanguage Migration: From Scripts to Programs, with Matthias Felleisen, *Dynamic Languages Symposium at OOPSLA (DLS).*

Workshops

2011   Semantic Solutions to Program Analysis Problems (Abstract), *2011 Fun Ideas and Thoughts Session at the 32nd ACM Conference on Programming Language Design and Implementation (FIT).*

2010   Extensible Pattern Matching for Extensible Languages (Abstract), *2010 Symposium on Implementation and Application of Functional Languages (IFL).*

2010   Where are you going with those types? (Abstract), with Vincent St-Amour, Matthias Felleisen, and Matthew Flatt, *2010 Symposium on Implementation and Application of Functional Languages (IFL).*

2010   Purely Functional Data Structures for Typed Racket, with Hari Prashanth K R, *2010 Workshop on Scheme and Functional Programming.*

2009   Cycles without pollution: a gradual typing poem, with Robert Bruce Findler, *First Workshop on Script to Program Evolution (STOP).*

2007   Advanced Macrology and the Implementation of Typed Scheme, with Ryan Culpepper and Matthew Flatt, *2007 Workshop on Scheme and Functional Programming.*

2005   A Core Calculus of Metaclasses, with Eric Allen, *Twelfth Workshop on Foundations of Object-Oriented Languages (FOOL).*

Miscellaneous Publications

2004-2008   Fortress Language Specification, with Eric Allen, David Chase, Joe Hallet, Victor Luchangco, Jan-Willem Maessen, Sukyoung Ryu, and Guy L. Steele Jr., versions 0.618-1.0, Sun Microsystems Technical Report.

Patents

2006   Method and apparatus for expressing and checking relationships between types, with Sukyoung Ryu, Eric Allen, Victor Luchangco, and Joe Hallet, Pending. 2007/0256060.

Grants & Awards

2011-2012   Gift from the Mozilla Corporation, $74,900

2009-2011   2-year Mozilla Research Fellowship, Mozilla Corporation, $200,000

2010   CCIS Outstanding Research Award

Teaching

2012	Instructor, Fundamentals of Computer Science 2 (Honors)
2011	Instructor, Fundamentals of Computer Science 2 (Honors)
2009	Instructor, Fundamentals of Computer Science 1
2005	Instructor, Fundamentals of Computer Science 2
2003-2008	Teaching Assistant, Fundamentals of CS 1 (2003, 2004), Fundamentals of CS 2 (2004), Software Development (2005), Programming Languages (2006, 2008)

Advisees

2010-	Vincent St-Amour, Ph.D student, Northeastern University
2009-2010	Hari Prashanth K R, MS Thesis, Northeastern University
2007	Ivan Gazeau, Ph.D student from École normale supérieure (Paris)

Selected Talks

2011	Domain-Specific Languages for GnoSys. At the DARPA CRASH PI Meeting
2011	Evolving Software from Scripts to Programs. At the Oregon State University Department of Computer Science
2010	From Scripts to Programs. At the Indiana University Department of Computer Science
2010	Logical Types for Scheme. At the New England Programming Languages and Systems Symposium
2010	Typed Scheme: From Scripts to Programs. At the Harvard University Programming Languages Seminar
2009	Types for Scheme, in Scheme. At the Boston Lisp Meeting
2009	Typed Scheme: From Scripts to Programs. At Sun Microsystems Laboratories
2009	The Design and Implementation of Typed Scheme. At the Symposium in Honor of Mitchell Wand
2008	To Type or Not to Type. At the Northeastern University ACM Lecture Series

Professional Activities

2012	International Conference on Functional Programming, Program Committee
2012	Workshop on Script to Program Evolution, Chair
2010-2012	TC39 - ECMAScript (Standards Committee for JavaScript), Member
2011	Workshop on Scheme and Functional Programming, Program Committee
2011	New England Programming Languages and Systems Symposium, Chair
2011	Workshop on Script to Program Evolution, Program Committee
2011	Workshop on Types in Language Design and Implementation, Program Committee
2010	Workshop on Foundations of Object-Oriented Languages, Program Committee
2010	Symposium on Trends in Functional Programming, Program Committee

Reviewer for J. of Functional Programming, VMCAI 2012, OOPSLA 2009, ICFP 2008

Professional Associations

Association for Computing Machinery, SIGPLAN

References

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