David Walker

35 Olden Street
Princeton University
Princeton, NJ 08544

Phone: (609) 258–7654
Email: dpw@cs.princeton.edu

Professional Preparation

Queens University, Kingston, Ontario, Canada
Computer Science, B.Sc. Honors, 1995.

Cornell University, Ithaca, NY, US
Computer Science, M.S. 1999.
Computer Science, Ph.D. 2001.

Carnegie Mellon University, Dept. of Computer Science, Pittsburgh, PA, US
Postdoctoral Fellow, Oct. 2000–Oct. 2001

Appointments

Full Professor with Tenure, Princeton, Computer Science, July 2013–Present.

Associate visiting faculty, U. Pennsylvania, Aug 2015–Aug 2016.

Associate Professor with Tenure, Princeton, Computer Science, July 2008–June 2013.

Visiting researcher, Microsoft Research Cambridge, UK, Jun 2010–Jul 2010.

Visiting researcher, Microsoft Research Redmond, Sep. 2009–Dec. 2009.

Assistant Professor, Princeton, Computer Science, Feb. 2002–July 2008.

Selected Publications

Selected papers of greatest relevance (in chronological order)

1. LearnPADS++: Incremental Inference of Ad Hoc Data Formats. Kenny Q. Zhu, Kathleen Fisher and David Walker. ACM SIGPLAN PADL. January 2012.
2. From Dirt to Shovels: Fully Automatic Tool Generation From Ad Hoc Data. Kathleen Fisher, David Walker, Kenny Q. Zhu and Peter White. ACM SIGPLAN-SIGACT POPL, January 2008.
3. Substructural Type Systems. David Walker. Chapter 1 of Benjamin Pierce, ed., Advanced Topics in Type Systems for Programming Languages. MIT Press, January 2005.
4. A Concurrent Logical Framework: The Propositional Fragment. Kevin Watkins, Iliano Cervesato, Frank Pfenning and David Walker. In S. Berari, M. Coppo, and F. Damiani, Ed, Types for Proofs and Programs, LNCS 3085, 2004.
5. An Effective Theory of Type Refinements. Yitzhak Mandelbaum, David Walker and Robert Harper. In ACM SIGPLAN ICFP, August 2003.

Selected other publications (in chronological order):

1. NetKAT: Semantic Foundations for Networks. Carolyn Jane Anderson, Nate Foster,

Arjun Guha, Jean-Baptiste Jeannin, Dexter Kozen, Cole Schlesinger, and David Walker. ACM SIGPLAN-SIGACT POPL. January 2014.

2. Composing Software-Defined Networks. Chris Monsanto, Josh Reich, Nate Foster, Jen Rexford, and David Walker. USENIX NSDI, April 2013. Winner of the NSDI Community Award.

3. The Next 700 Data Description Languages. Kathleen Fisher, Yitzhak Mandelbaum and David Walker. Journal of the ACM. Volume 57, Issue 2. January 2010.

4. Fault-tolerant Typed Assembly Language. Frances Perry, Lester Mackey, George A. Reis, Jay Ligatti, David I. August, and David Walker. ACM SIGPLAN PLDI, June 2007. Winner of the PLDI 2007 Best Paper Award.

5. From System F to Typed Assembly Language. Greg Morrisett, David Walker, Karl Crary, and Neal Glew. ACM SIGPLAN-SIGACT POPL, January 1998. Winner of the Most Influential 1998 POPL Paper Award (awarded after 10 years reflection at POPL 2008).

Synergistic Activities

- ACM POPL Steering Committee; ACM ICFP 2016 PC
- Founder of "Off the Beaten Track" (OBT) Workshop at POPL, 2012.
- Online courseware in functional programming and programming language semantics (see http://www.cs.princeton.edu/~dpw)

Collaborators and Other Affiliations

- Current Collaborators and Co-Editors (Outside Princeton) (Total=19): Pat Bosshart (Barefoot Networks), Matthew Caesar (UIUC), Dan Daly (Intel), Kathleen Fisher (Tufts), Nate Foster (Cornell), Arjun Guha (UMass, Amherst) Martin Izzard (Barefoot Networks), Eric Keller (University of Colorado), Dexter Kozen (Cornell), Boon Thau Loo (U of Pennsylvania), Ratul Mahajan (Microsoft Research), Todd Millstein (UCLA), Sriram Rajamani (Microsoft), Josh Reich (AT&T), Gun Sirer (Cornell), Dan Talayco (Barefoot Networks), Amin Vahdat (Google), George Varghese (Microsoft), Steve Zdancewic (U of Pennsylvania),

- Graduate Advisors and Postdoctoral Sponsors (Total=3): Robert Harper (CMU), Greg Morrisett (Harvard), Frank Pfenning (CMU)

- Thesis Advisor and Postgraduate-Scholar Sponsors (Last 48 months, Total=7): Christian Bell (MIT), Nate Foster (Cornell), Michael Greenberg (Pomona College), Rob Harrison (West Point), Cole Schlesinger (Samsung), Qian Xi (Oracle), Kenny Q. Zhu (Shanghai Jiao Tong University)

- Current number of graduate students and postdoctoral scholars: 2