

Todd J. Green

CONTACT INFORMATION

Department of CIS
University of Pennsylvania
3330 Walnut St
Philadelphia, PA 19104 USA

Voice: (215) 292-5707
Fax: (215) 898-0587
Email: tjgreen@cis.upenn.edu
Web: <http://www.cis.upenn.edu/~tjgreen>

RESEARCH INTERESTS

Data management systems and principles for collaborative data sharing, data integration, and data exchange. Special interests in data provenance, incomplete and probabilistic information, semistructured data, and streaming data processing. Co-developer of ORCHESTRA system, which focuses on sharing data among heterogeneous data sources related by declarative mappings, with provenance-based trust policies and conflict reconciliation facilities.

EDUCATION

University of Pennsylvania, Philadelphia, Pennsylvania USA

Ph.D. Candidate, Computer and Information Science, expected graduation May 2009
Thesis title: Foundations and Applications of Collaborative Data Sharing
Advisors: Zachary G. Ives and Val Tannen

University of Washington, Seattle, Washington USA

M.S., Computer Science, June 2001

Yale University, New Haven, Connecticut USA

B.S., Computer Science, May 1997

AWARDS

Best Student Paper Award, for “Containment of Conjunctive Queries on Annotated Relations,” International Conference on Database Theory (ICDT), March, 2009

Teaching Practicum Award, University of Pennsylvania Dept. of CIS, 2004–2005

PROFESSIONAL EXPERIENCE

Xyleme SA, Saint-Cloud, France

Software Design Engineer 2001–2003
Designed and implemented components of native XML DBMS in Java and C++, including graphical query shell, performance benchmark, and public SDK. Managed company’s day-to-day software engineering practices.

Microsoft Corporation, Redmond, Washington, USA

Software Design Engineer, Development Lead 1997–2001
Designed and implemented user interface code for multiple releases of Windows and Internet Explorer, and led a team of developers working on Windows XP user interface. Acquired strong skills in C/C++, COM, and Win32 programming, project management, and general software engineering. Awarded two patents for features developed in Windows XP.

RESEARCH
EXPERIENCE

University of Pennsylvania, Philadelphia, Pennsylvania USA

Research Assistant

2003–present

Developed unifying formalisms for data provenance, incomplete databases, and probabilistic databases. Designed and implemented support for data provenance, provenance-based trust policies, and incremental maintenance of recursive views in the ORCHESTRA collaborative data sharing system.

Microsoft Research, Redmond, Washington, USA

Research Intern

Summer 2005

Worked as a member of the database research group on the design and implementation of an algorithm for performing mapping composition.

TEACHING
EXPERIENCE

University of Pennsylvania, Philadelphia, Pennsylvania USA

Teaching Assistant

Spring 2005

CSE 121 – Programming Languages and Techniques II

Teaching Assistant

Fall 2004

CIS 550 – Database and Information Systems

CONFERENCE AND
WORKSHOP
PUBLICATIONS

Todd J. Green, Zachary G. Ives, and Val Tannen. Reconcilable Differences. In *ICDT*, March 2009.

Todd J. Green. Containment of Conjunctive Queries on Annotated Relations. In *ICDT*, March 2009. **Best Student Paper Award**.

J. Nathan Foster, **Todd J. Green**, and Val Tannen. Annotated XML: Queries and Provenance. In *PODS*, June 2008.

Todd J. Green, Grigoris Karvounarakis, Zachary G. Ives, and Val Tannen. Update Exchange with Mappings and Provenance. In *VLDB*, September 2007.

Todd J. Green, Grigoris Karvounarakis, and Val Tannen. Provenance Semirings. In *PODS*, June 2007.

Todd J. Green, Grigoris Karvounarakis, Nicholas E. Taylor, Olivier Biton, Zachary G. Ives, and Val Tannen. ORCHESTRA: Facilitating Collaborative Data Sharing. In *SIGMOD* (demo track), June 2007.

Philip A. Bernstein, **Todd J. Green**, Sergey Melnik, and Alan Nash. Implementing Mapping Composition. In *VLDB*, September 2006.

Todd J. Green and Val Tannen. Models for Incomplete and Probabilistic Information. In *EDBT Workshops*, March 2006.

Todd J. Green, Gerome Miklau, Makoto Onizuka, and Dan Suciu. Processing XML Streams with Deterministic Automata. In *ICDT*, January 2003.

Iliana Avila-Campillo, **Todd J. Green**, Ashish Gupta, Makoto Onizuka, Demian Raven, and Dan Suciu. XMLTK: An XML Toolkit for Scalable XML Stream Processing. In *PLAN-X*, October 2002.

JOURNAL
PUBLICATIONS

Zachary G. Ives, **Todd J. Green**, Grigoris Karvounarakis, Nicholas E. Taylor, Val Tannen, Partha Pratim Talukdar, Marie Jacob, and Fernando Pereira. The ORCHESTRA Collaborative Data Sharing System. In *SIGMOD Record*, Vol. 37 No. 3, September 2008.

Philip A. Bernstein, **Todd J. Green**, Sergey Melnik, and Alan Nash. Implementing Mapping Composition. In *VLDB Journal*, Vol. 17 No. 2, March 2008.

Todd J. Green and Val Tannen. Models for Incomplete and Probabilistic Information. In *IEEE Data Engineering Bulletin*, Vol. 29 No. 1, March 2006.

Todd J. Green, Ashish Gupta, Gerome Miklau, Makoto Onizuka, and Dan Suciu. Processing XML Streams with Deterministic Automata and Stream Indexes. In *ACM TODS*, December 2004.

BOOK CHAPTERS

Todd J. Green. Bag Semantics. In *Encyclopedia of Database Systems*, eds. Ling Liu and M. Tamer Özsu. Springer-Verlag, 2009.

Todd J. Green. Models for Incomplete and Probabilistic Information. In *Managing and Mining Uncertain Data*, ed. Charu Aggarwal. Springer-Verlag, 2009.

INVITED TALKS

Todd J. Green. Provenance and Uncertainty in Databases. In *Uncertainty Management in Information Systems*, Schloss Dagstuhl, Wadern, Germany, October 2008. Invited participant. Slides at <http://www.dagstuhl.de/Materials/Files/08/08421/08421.GreenTodd.Slides.pdf>.

Todd J. Green. Update Exchange with Mappings and Provenance. In *Workshop on Information Integration*, Bertinoro, Italy, October 2007. Invited participant.

PATENTS

Richard W. Stoakley, James B. Kurtz, **Todd J. Green**, Ramkumar Ramasubramanian, Chris J. Guzak, and James F. Springfield. Method and system for reducing notification area clutter. US Patent No. 7249326, issued July 24, 2007.

Richard W. Stoakley, James B. Kurtz, James F. Springfield, **Todd J. Green**, Suzan M. Andrew, and Justin Mann. Method and system for clustering and grouping taskbar buttons. US Patent No. 6756999, issued June 29, 2004.

Philip A. Bernstein, **Todd J. Green**, Sergey Melnik, and Alan Nash. Mapping composition using algebraic operators. US Patent Application No. 20080114785, filed November 15, 2006.

REFERENCES

Val Tannen

Professor
Dept. of Computer and Info. Science
University of Pennsylvania
3330 Walnut St
Philadelphia, PA 19104 USA
(215) 898-2665
val@cis.upenn.edu

Zachary G. Ives

Assistant Professor
Dept. of Computer and Info. Science
University of Pennsylvania
3330 Walnut St
Philadelphia, PA 19104 USA
(215) 746-2789
zives@cis.upenn.edu

Jeffrey F. Naughton

Professor
Dept. of Computer Sciences
University of Wisconsin-Madison
1210 West Dayton St
Madison, WI 53706 USA
(608) 262-8737
naughton@cs.wisc.edu

Christoph Koch

Associate Professor
Dept. of Computer Science
Cornell University
4105A Upson Hall
Ithaca, NY 14853 USA
(607) 255-4117
koch@cs.cornell.edu

Philip A. Bernstein

Principal Researcher
Database Group
Microsoft Research
1 Microsoft Way
Redmond, WA 98052 USA
(425) 706-2838
philbe@microsoft.com