

## CURRICULUM VITAE

May 15, 2008

### Zachary G. Ives

Born Nov. 26, 1974, San Francisco, CA USA  
US Citizen

### Education

- 2002, PhD in Computer Science, University of Washington, Seattle, WA.  
Thesis advisors: Alon Halevy, Daniel Weld  
Thesis title: *Efficient Query Processing for Data Integration*.
- 1999, M.S. in Computer Science, University of Washington, Seattle, WA.
- 1997, B.S., *Summa Cum Laude*, in Computer Science (Mathematics Minor), Sonoma State University, Rohnert Park, CA.
- 1995, A.S. in Computer Science, A.S. in Electronics and Electric Technology, Mendocino College, Ukiah, CA.

### Positions Held

- 2003-present, Assistant Professor, University of Pennsylvania.
- 2004-present, Associated Faculty, Penn Center for Bioinformatics, University of Pennsylvania.
- 2002, Postdoctoral Research Associate, University of Washington.
- 2000-2001, Consultant, Core Technology Group, Nimble Technology.
- 1999, Research Intern, Database Group, IBM Almaden Research Center.
- 1998, Predoctoral Lecturer, University of Washington.
- 1997-2002, Research Assistant, University of Washington.
- 1995-1997, Programmer Analyst, County of Sonoma, CA.

### Honors/ Distinctions

- DARPA Computer Science Study Group, 2006 (renewed 2007-).
- NSF CAREER award, 2005.
- IBM Graduate Research Fellowship, 1999, 2000.
- Sonoma State University Scholarship, 1995, 1997.
- Phi Theta Kappa International Honor Society, 1994.

### Membership/ Leadership Positions in Scientific and Professional Societies

- Member of Association for Computing Machinery (ACM).
- Member of ACM Special Interest Group on Management of Data.
- Member of IEEE Computer Society.

### Grant Awards

#### Pending:

- Co-PI, NSF RI-Large Collaborative Research, "The Science of Human-Robot First Response."  
Amount requested: \$1,226,999. Duration: July 2008–June 2012.

#### Current:

- PI and sole investigator**, NSF CAREER, IIS-0447972: "Orchestra – Managing the Collaborative Sharing of Evolving Data". Duration: Apr. 2005–Apr. 2010. Total award: \$400,000.
- PI and sole investigator**, DARPA Computer Science Study Panel, Year 2. Duration: June 2007–May. 2008 (extended to 2009). Total award: \$436,000.
- PI and sole investigator**, DARPA Seedling, "Best Effort Data Integration Seedling."  
Administered through Lockheed Martin. Duration: Oct. 2007–June 2008. \$291,000.
- PI**, NSF NeTS/NOSS, CNS-071541, with Insup Lee, Sudipto Guha, Clarence Hanson: "ASPEN: Abstraction-based Sensor Programming Environment." Duration: Sep. 2007–Aug. 2010. Total award: \$450,000.

- PI**, NSF II, IIS-0713267, with Sudipto Guha: “Distributed Stream Integration.” Duration: Sep. 2007–Sep. 2010. Total award: \$402,000.
- Co-PI**, NSF SEIII, IIS-0513778, with Susan Davidson, Val Tannen, Chris Stoeckert, Pete White: “Data Cooperatives: Rapid and Incremental Data Sharing with Applications to Bioinformatics.” Duration: July 2005–July 2008 (extended to 2009). Total award: \$1,295,000.
- Co-PI**, NSF NeTS/FIND, CNS-0721845, with Boon Thau Loo and Jonathan Smith: “WiKI: Wireless Knowledge Infrastructure.” Duration: Aug. 2007–July 2008 (extended to 2009). Total award: \$235,000.
- Senior Personnel**, State of PA, Pennsylvania Injury Reporting & Intervention System (PIRIS), with Doug Wiebe, Penn Medical School. Duration: 2008–9 academic year. Annual year salary support: \$13,830.

Previously funded (inactive) grants

- PI**, Seed grant, University of Pennsylvania Institute for Strategic Threat Analysis and Response (ISTAR), “View-Based Data Management Techniques for Sensor Networks.” Total award: \$40,000 in 2004; renewed for \$40,000 in 2005.
- PI**, Subcontractor on Air Force Research Laboratories (via Lockheed-Martin), “SIGRIG: Semantically Interoperable Global Information Grid.” Total award: \$30,000.
- PI**, Contract award, Lockheed Martin, “GIG Data Strategy Whitepaper.” Duration: Sep. 2005–Dec. 2005. Total award: \$10,000.
- PI**, DARPA Computer Science Study Panel, HR0011-06-1-0016, PI. Duration: May 2006–Apr. 2007. Total award: \$88,000.

**Research Interests**

Integration, exchange, and synchronization of heterogeneous, distributed, frequently updated data; management of conflicting information; query processing and optimization; languages and models for sensor and data stream processing; management of complex and biological data; XML and semi-structured data; databases; distributed systems.

Students advised:

Nicholas Taylor.  
Marie Jacob.  
Todd Green (co-advised with Val Tannen).  
Grigoris Karvounarakis (co-advised with Val Tannen).  
Svilen Mihaylov (co-advised with Sudipto Guha).  
Mengmeng Liu (co-advised with Boon Thau Loo).

Other student collaborators:

Yun Mao (advised by Jonathan Smith and Boon Thau Loo).  
Partha Talukdar (advised by Fernando Pereira and Mark Liberman).

Major projects (please see <http://www.cis.upenn.edu/~zives/projects/> for more details):

- Orchestra: “synchronizes” autonomous databases by propagating updates from one to another. The database owners may have entirely different data representations and formats; conflicting data; and a need to locally “override” or curate data imported from elsewhere.
- Pangea (in collaboration with Sudipto Guha, Insup Lee, Boon Thau Loo): distributed processing and integration of sensor data, across heterogeneous and wireless networks and devices.
- Q (in collaboration with Fernando Pereira, Sudipto Guha): using keyword search and machine learning to determine which database queries best meet a user’s information need.
- Smart Copy & Paste (in collaboration with Steve Minton, Fetch Technologies, and Craig Knoblock, USC/ISI): monitoring user copy & paste actions and collecting feedback on generalizations, in order to learn how to integrate data.

## Teaching Experience

CIS 455/555, Internet and Web Systems: Spring 2008 (ongoing).  
CSE 455/CIS 555, Internet and Web Systems: Spring 2006 (instr. rating: 3.7/4), Spring 2007 (instr. rating: 3.9/4).  
CIS 550, Database Mgmt. Systems: Fall 2003 (instr. rating: 3.2/4), Fall 2004 (instr. rating: 3.5/4), Fall 2005 (instr. rating: 3.5/4), Fall 2007 (instr. rating 3.3/4).  
CIS 650, Implementing Data Management Systems: Spring 2005 (instr. rating: 3.9/4).  
CIS 700-5 seminar, Sensor Network Programming: Spring 2005 (instr. rating: 3.3/4).  
CIS 700-4 seminar, Machine Virtualization: Fall 2004 (instr. rating: 3.7/4).  
CSE 455, Internet and Web Systems: Spring 2004 (instr. rating: 3.9/4).  
CIS 700-6 seminar, Ad hoc Distributed Computing: Spring 2004 (instr. rating: 4.0/4).  
CIS 650, Advanced Topics in Databases: Spring 2003 (instr. rating: 3.2/4).  
Univ. Washington CSE 142, Intro to Programming (in C): Summer 1998.

## Dissertations/Theses Supervised/Thesis Committees

### Chair of thesis committee:

Byron Choi (advisor: Peter Buneman), 2005 (Nanyang Technological University, Singapore).  
Michael Levin (advisor: Benjamin Pierce), 2005 (Microsoft Research).

### Member of thesis committee:

Yun Mao (advisors: Jonathan Smith, Boon Thau Loo), 2008.  
Michael May (advisors: Insup Lee, Carl Gunter), 2007.  
Vlad Petric (advisor: Amir Roth), 2007.  
Yifeng Zheng (advisor: Susan Davidson), 2006.  
Vladimir Gapayev (advisor: Benjamin Pierce), 2006.  
Yi Chen (advisor: Susan Davidson), 2005 (Arizona State University).

## Undergraduate Projects Supervised

### Senior Project (BSE)

Avidan Ackerson, 2007-8.  
John Geewax and Michael Gottlieb, 2007-8.  
Scott Bender, 2006-7.  
James Shkolnik, 2006-7.  
Doug Petkanics and Ben Dodson (co-advised with Sanjeev Khanna), 2005-6.  
Feng Zhao, 2005-6.  
Brandon and Wesley Rosenblum, 2005-6.  
Zhisuang Zhang (co-advised with Val Tannen), 2005-6.  
Lee Guoquan, 2004-5.  
Rick Jones and Elwin Chai, 2004-5.  
Olga Ivanova and Bilal Aslam, 2004-5.  
Mike Daglian, 2003-4 (First runner-up, best CSE project award).  
Nate Hashem, 2003-4.  
Steve MacCrory and Howie Vegter, 2003-4 (Winner, best CSE project award).  
Eric McGlinchey, 2003-4.  
Nina Quek, 2003.

### Capstone project (BAS)

Danny Panzer, Sp 2007.  
Raghav Bajaj and Amit Vazirani, Sp 2004.  
D. Scott Brown, Sp 2004.  
Filbert Cua, Sp 2004.  
Mohammed Shaf Hassan, Sp 2004.  
Ilya Knizhnik, Sp 2004.  
Chris Lee, Sp 2004.

### Independent Study

Kelly Huang, Sp 2005.  
Ari Gilder, Sp 2005.  
Steve MacCrory, F 2004.  
Joseph Schorr, F 2004.

### **Administrative Responsibilities and Service**

Networked information curriculum committee, 2008.  
Chair search committee, 2007.  
Space committee, 2003, 2004, 2005, 2006.  
Graduate admissions committee, 2002, 2003, 2004, 2005.  
Funding committee, 2005.  
Systems faculty hiring committee, 2004, 2005, 2006.  
Systems lab renovation committee, 2004, 2005, 2006.  
ABET standardization committee, 2005.  
MS/undergraduate internship/fellowship committee, 2004.  
Publicity committee, 2003, 2004, 2005.  
School of Engineering panel: "Writing a CAREER Proposal," 2005.

### **Professional Service Activities**

#### Highlighted Program Committees

Program Committee, SIGMOD International Conference on Management of Data, 2004, 07-09.  
Program Committee, International Conference on Very Large Databases (VLDB), 2005, 08.  
Program Committee, International Conference on Data Engineering (ICDE), 2004-06, 08.  
Program Co-Chair, XML Symposium (XSym), 2005.  
Program Co-Chair, Workshop on New Trends in Information Integration, 2008.

#### Other Program Committees

Demonstrations Program Committee, VLDB, 2007.  
Program Committee, Conference on Information and Knowledge Management (CIKM), 2002, 2006, 2008.  
Program Committee, Workshop on Data Management for the Web (WebDB), 2005, 2006.  
Program Committee, VLDB PhD Workshop, 2005, 2007.  
Program Committee, AAAI Student Abstract Program, 2005.  
Program Committee, International World Wide Web Conference, 2005.  
Program Committee, Database Systems for Advanced Applications (DASFAA), 2005.  
Program Committee, Workshop on Data Management for Sensor Networks (DMSN), 2004, 2006, 2008.  
Program Committee, International Semantic Web Conference (ISWC), 2003, 2004.  
Program Committee, Semantic Web Database Workshop (SWDB), 2004.  
Program Committee, 11th International Conference on Artificial Intelligence: Methodology, Systems, Applications (AIMSA), 2004.  
Program Committee, ACM Symposium on Applied Computing, Track on Internet Data Management (SAC-IDM), 2004.  
Program Committee, Third International Workshop on Data Integration over the Web (DIWeb), 2004.  
Program Committee, XML Implementation, Experience, and Perspectives (XIME-P), 2004.  
Program Committee, International Workshop on Databases, Information Systems, and Peer to Peer Computing, 2003.  
Program Committee, Workshop on Databases and Programming Languages (DPBL), 2003.  
Poster Committee, 12th International World-Wide Web Conference (WWW), 2003.  
Program Committee, International Conference on Distributed Computer Systems (ICDCS), 2002.  
Program Committee, Next-Generation Information Technologies and Systems (NGITS), 2002.  
Program Committee, First ECOOP Workshop on XML Object Technology (XOT), 2000.

### Journal and Other Reviews

Reviewer, IEEE Computing, 2008.  
Reviewer, Transactions on Parallel and Distributed Systems (TPDS), 2008.  
Reviewer, Information Systems, 2008.  
Reviewer, IEEE Transactions on Knowledge and Data Engineering, 2002, 2004, 2005.  
Reviewer, VLDB Journal, 2003, 2004, 2005.  
Reviewer, ACM Transactions on Database Systems (TODS), 2005.  
Reviewer, ACM Transactions on Internet Technology (TOIT), 2003.  
Reviewer, IEEE Transactions on Knowledge and Data Engineering (TKDE).  
Reviewer, Information and Computation, 2002.  
Reviewer, Information Science and Technology, 2002.  
Reviewer, Software Practice and Experience, 2001.  
Reviewer, Artificial Intelligence Journal, 2000.  
External reviewer, SIGMOD 2003, SIGMOD 2001, VLDB 2001, USITS 2001, WISE 2001, DBPL 2001, WebDB 2000.

### Community Activities

Associate Information Director, ACM SIGMOD, 2006.  
Demonstration Program Committee, SIGMOD 2006.  
Associate Editor, ACM SIGMOD Digital Symposium Collection (DiSC), 2004, 2005.  
Proceedings Chair, SIGMOD International Conference on Management of Data, 2003.  
Web site architect, ACM SIGMOD Digital Review, 2000.  
Student volunteer, ACM SIGMOD, 1998.

### Community Educational Activities

Presentation: "Preparing for the Interview Circuit." SIGMOD New Faculty Symposium, 2005.  
Article: *Interviewing During a Tight Job Market*, SIGMOD Record, Vol. 31 No. 3, September 2002, pp. 90-96.

### **Consulting Activities**

Consultant for IBM Corp. regarding code quality of several potential corporate acquisitions in data integration-related areas.

### **Invited Seminars/Lectures/Presentations**

"Orchestra: Exchanging Dynamic Data among Collaborators." New England Database Symposium, Boston, MA, April 18, 2008.  
"Orchestra: Collaborative Sharing of Dynamic Data." Cornell University, Ithaca, NY, March 24, 2008.  
"Adaptive Query Processing," with Amol Deshpande. Tutorial, Conference on Very Large Databases, Vienna, Austria, Sep. 25, 2007.  
"Orchestra: Collaborative Sharing of Dynamic Data." Computer Science Colloquium, University of Massachusetts, Amherst, April 10, 2007.  
"Orchestra: Collaborative Sharing of Dynamic Data." Computer Science Colloquium, EPFL, Lausanne, Switzerland, November 6, 2006.  
"Orchestra: Collaborative Sharing of Dynamic Data." Database Musings Seminar, North Carolina State University, October 6, 2006.  
"Peer-to-Peer Inspired Models of Data Integration and Exchange." NSF Assembling the Tree of Life (AToL) Workshop, March 10, 2006.  
"Peer-to-Peer Inspired Models of Data Integration and Exchange." Department of Homeland Security Data Integration Workshop, November 2, 2005.  
"Orchestra: Collaborative Sharing of Dynamic Data." Computer Science Colloquium, Villanova University, October 24, 2005.  
"Orchestra: Collaborative Sharing of Dynamic Data." AT&T Shannon Laboratories, June 30, 2005.  
"Data Integration: Moving towards Managing Autonomy and Inconsistency." Lockheed Martin Advanced Technology Labs, June 28, 2005.

- “Data Integration for Emergency Crisis Management.” National Academies of Science Workshop on Information for Emergency Crisis Management, June 22, 2005.
- “Orchestra: Collaborative Sharing of Dynamic Data.” University of Edinburgh, March 21, 2005.
- “Pushing the Limits of Adaptive Query Processing.” IBM Almaden Research Center, March 13, 2005.
- “Orchestra: Collaborative Sharing of Dynamic Data.” Stanford University, March 4, 2005.
- “Data Mediation & Integration and the Knowledge Plane.” DARPA workshop on APNets, 2003.
- “Processing Queries Adaptively.” Microsoft Research, October 30, 2002.
- “Efficient Query Processing for Data Integration.” Given at: University of Pennsylvania, Columbia University, University of Texas-Austin, University of Illinois-Urbana-Champaign, University of Wisconsin, University of Michigan, University of California-San Diego, University of Toronto, Georgia Institute of Technology, University of Maryland, Brown University, University of California-Berkeley, IBM Almaden Research Center, 2002.
- “XML Query Processing for Data Integration.” Microsoft Research, 2000.
- “Sagres: Data Management for Ubiquitous Computing.” Portolano Research Group Retreat, University of Washington, 2000.
- “An Adaptive Query Execution System for Data Integration.” INRIA Roquencourt, 1999.
- “An Adaptive Query Execution System for Data Integration.” Dagstuhl Workshop on Foundations of Data Integration, 1999.

#### Invited Panels

- “Sensor Networks: Are We Done?” Data Management for Sensor Networks, 2007.
- “Reforming the Conference Review Process.” International Conference on Very Large Databases, 2005.
- “Information Integration for Medical Devices.” HCMDSS workshop on medical devices, 2005.
- “Is It Worth Doing XQuery Research Today, and Why?.” XML Implementation and Practice (XIME-P) Workshop, 2005.
- “What Is the Future of Information Integration?” WebDB Workshop on Databases and the Web, 2005.
- “Rethinking the Conference Reviewing Process.” ACM SIGMOD Conference on Management of Data, 2004.
- “Database Research for the Current Millenium.” IEEE Conference on Data Engineering, 2004.
- “Databases for Ambient Intelligence.” IEEE Conference on Data Engineering, 2003.

#### **Publications in Refereed Journals/ transactions (asterisk Invited Papers)**

- Amol Deshpande, Zachary Ives, Vijayshankar Raman. *Adaptive Query Processing*. Foundations and Trends in Database Systems, Vol. 1 No. 1, 2007.
- Alon Halevy, Zachary Ives, Dan Suciu, Igor Tatarinov. *Schema Mediation for Large-Scale Data Sharing*. VLDB Journal, Vol. 14 No. 1, March 2005.
- Zachary Ives, Alon Halevy, Peter Mork, Igor Tatarinov. *Piazza: Mediation and Integration Infrastructure for Semantic Web Data*. Journal of Web Semantics, Vol. 1 No. 2, February 2004, pp. 155-175.
- Alon Halevy, Zachary Ives, Jayant Madhavan, Peter Mork, Dan Suciu, Igor Tatarinov. *The Piazza Peer Data Management System*. IEEE Transactions on Knowledge & Data Engineering Vol. 16 No. 7, July 2004, pp. 787-798.
- Zachary G. Ives, Alon Y. Halevy, Daniel S. Weld. *An XML Query Engine for Network-Bound Data*. VLDB Journal Vol. 12 No. 4, December 2002, pp. 380-402.
- Igor Tatarinov, Zachary Ives, Jayant Madhavan, Alon Halevy, Dan Suciu, Nilesh Dalvi, Xin (Luna) Dong, Yana Kadiyska, Peter Mork. *The Piazza Peer Data Management Project*. SIGMOD Record, Vol. 32 No. 3, September 2003, pp. 47-52. \*
- Zachary G. Ives, Alon Y. Halevy, Daniel S. Weld. *Integrating Network-Bound XML Data*. IEEE Data Engineering Bulletin, Vol. 24 No. 2, June 2001, pp. 20-26. \*

Zachary G. Ives, Alon Y. Levy, Daniel S. Weld, Daniela Florescu, Marc Friedman. *Adaptive Query Processing for Internet Applications*. IEEE Data Engineering Bulletin, Vol. 23 No. 2, June 2000, pp. 19-26. \*

**Publications in Refereed Conference Proceedings (Asterisk Invited Papers)**

*(Acceptance rates listed if below 25%; citations listed if over 100)*

- Zachary G. Ives, Nicholas E. Taylor. *Sideways Information Passing for Push-Based Query Processing*. International Conference on Data Engineering (ICDE), 2008, Cancun, Mexico. Full paper. Also available as University of Pennsylvania Technical Report MS-CIS-07-14. **Acceptance rate: 75/615 = 12.2%.**
- Sören Auer, Chris Bizer, Georgi Kobilarov, Jens Lehmann, Richard Cyganiak, and Zachary Ives. *DBpedia: A Nucleus for a Web of Open Data*. International Semantic Web Conference (ISWC), 2007.
- Todd J. Green, Zachary G. Ives, Grigoris Karvounarakis, Val Tannen. *Update Exchange with Mappings and Provenance*. Conference on Very Large Databases (VLDB), 2007, Vienna, Austria. Amended version available as University of Pennsylvania Technical Report MS-CIS-07-26. **Acceptance rate: 91/538 = 16.9%.**
- Todd J. Green, Grigoris Karvounarakis, Nicholas E. Taylor, Olivier Biton, Zachary G. Ives, Val Tannen. Demonstration description: *ORCHESTRA: Facilitating Collaborative Data Sharing*. SIGMOD Conference on Management of Data, Beijing, China, June 2007.
- Nicholas E. Taylor, Zachary G. Ives. *Reconciling while Tolerating Disagreement in Collaborative Data Sharing*. SIGMOD Conference on Management of Data, 2006, Chicago, IL. **Acceptance rate: 58/446 = 13.0%.**
- Zachary G. Ives, Nitin Khandelwal, Aneesh Kapur, Murat Cakir. *Orchestra: Rapid, Collaborative Sharing of Dynamic Data*. Conference on Innovative Database Systems Research, Monterey, CA, 2005.
- Zachary G. Ives, Alon Y. Halevy, Daniel S. Weld. *Adapting to Source Properties in Processing Data Integration Queries*. SIGMOD Conference on Management of Data, Paris, France, June 2004, pp. 395-406. **Acceptance rate: 69/431 = 16.0%.**
- Alon Y. Halevy, Zachary G. Ives, Peter Mork, Igor Tatarinov. *Piazza: Data Management Infrastructure for Semantic Web Applications*. Twelfth International World-Wide Web Conference, Budapest, Hungary, 2003, pp. 556-567. **Acceptance rate: 77/602 = 12.8%. 225 citations (Google Scholar, April 2008).**
- Alon Y. Halevy, Zachary G. Ives, Dan Suciu, Igor Tatarinov. *Schema Mediation in Peer Data Management Systems*. International Conference on Data Engineering (ICDE), 2003, Bangalore, India, pp. 505-516. **Acceptance rate: 51/378 = 13.5%. 263 citations (Google Scholar, April 2008).**
- Alon Halevy, Oren Etzioni, AnHai Doan, Zachary Ives, Jayant Madhavan, Igor Tatarinov. *Crossing the Structure Chasm*. Conference on Innovative Database Systems Research (CIDR), Monterey, CA, 2003, pp. 117-128.
- Igor Tatarinov, Zachary G. Ives, Alon Y. Halevy, Daniel S. Weld. *Updating XML*. SIGMOD Conference on Management of Data, Santa Barbara, CA, June 2001, pp. 413-424. **Acceptance rate: 44/293 = 15.0%. 292 citations (Google Scholar, April 2008).**
- Zachary G. Ives, Ying Lu. *XML Query Languages in Practice: An Evaluation*. Web Age Information Management, Shanghai, China, 2000, pp. 29-40.
- Zachary Ives, Alon Levy, Jayant Madhavan, Rachel Pottinger, Stefan Saroiu, Igor Tatarinov. Demonstration description: *Self-Organizing Data Sharing Communities with SAGRES*. SIGMOD Conference on Management of Data, Dallas, TX, May 2000, p. 582.
- Zachary G. Ives, Daniela Florescu, Marc Friedman, Alon Levy, Daniel S. Weld. *An Adaptive Query Execution System for Data Integration*. SIGMOD Conference on Management of Data, Philadelphia, PA, June 1999, pp. 299-310. **Acceptance rate: 42/205 = 20.5%. 313 citations (Google Scholar, April 2008).**

### **Books/Chapters in Books**

- Zachary G. Ives, Alon Halevy, Peter Mork, Igor Tatarinov. "Mediation of Semantic Web Data in Piazza", book chapter, 23 pages, to appear in *Semantic Web and Peer-to-Peer: Opportunities and Challenges*, edited by Steffen Staab, Heiner Stuckenschmidt, Frank van Harmelen. To be published by Springer-Verlag.
- Zachary G. Ives. "Updates and Transactions in Peer-to-Peer Systems." Entry to appear in *Encyclopedia of Database Systems*, edited by M. Tamer Ozsu and Ling Liu, to be published by Springer-Verlag.
- Zachary G. Ives. "XML Publishing." Entry to appear in *Encyclopedia of Database Systems*, edited by M. Tamer Ozsu and Ling Liu, to be published by Springer-Verlag.
- Zachary G. Ives. "Adaptive Stream Processing." Entry to appear in *Encyclopedia of Database Systems*, edited by M. Tamer Ozsu and Ling Liu, to be published by Springer-Verlag.

### **Other (media publicity, alternative media, congressional testimony, etc.)**

#### Workshop publications

- Grigoris Karvounarakis, Zachary Ives. *Bidirectional Mappings for Data and Update Exchange*. Accepted for publication, Conference on the Web and Databases (WebDB), 2008, Vancouver, Canada.
- Yun Mao, Boon Thau Loo, Zachary Ives, Jonathan M. Smith. *The Case for a Unified Extensible Data-centric Mobility Infrastructure*. MobiArch 2007.
- Madhukar Anand, Eric Cronin, Micah Sherr, Matt Blaze, Zachary Ives. *Security in Sensor Networks: More Interesting than You Think*. Usenix Workshop on Hot Topics in Security, 2006.
- Madhukar Anand, Zachary G. Ives, Insup Lee. *Quantifying Eavesdropping Vulnerability in Sensor Networks*. VLDB Workshop on Data Management for Sensor Networks, August 2005.
- Steven Gribble, Alon Halevy, Zachary Ives, Maya Rodrig, Dan Suciu. *What Can Databases Do for Peer-to-Peer?* WebDB Workshop on Databases and the Web, June 2001, pp. 31-36.
- Michael Carey, Daniela Florescu, Zachary Ives, Ying Lu, Jayavel Shanmugasundaram, Eugene Shekita, Subbu Subramanian. *XPERANTO: Publishing Object-Relational Data as XML*. Third International Workshop on the Web and Databases, 2000, pp. 105-110.

#### Technical reports

- Todd J. Green, Zachary G. Ives, Grigoris Karvounarakis, Val Tannen. Update Exchange with Mappings and Provenance. University of Pennsylvania Technical Report MS-CIS-07-26.
- Yun Mao, Boon Thau Loo, Zachary Ives, Jonathan M. Smith. MOSAIC: Multiple Overlay Selection and Intelligent Composition. University of Pennsylvania Technical Report MS-CIS-07-22.
- Zachary G. Ives, Nicholas E. Taylor. Sideways Information Passing for Push-Style Query Processing. University of Pennsylvania Technical Report MS-CIS-07-14.

#### Papers under submission

- Mengmeng Liu, Wenchao Zhou, Nicholas Taylor, Zachary Ives, Boon Thau Loo. Monitoring Regions and Connectivity in Networks. Submitted for publication.
- Svilen Mihaylov, Marie Jacob, Zachary Ives, Sudipto Guha. Distributing Stream Joins in Multi-Hop Wireless Networks. Submitted for publication.
- Partha Talukdar, Marie Jacob, M. Salman Mehmood, Koby Crammer, Zachary Ives, Fernando Pereira, Sudipto Guha. Learning to Create Data-Integrating Queries. Submitted for publication.