Curriculum Vitae
Umut A. Acar

Personal and Contact Information

- **E-mail:** umutacar@gmail.com
- **Web site:** `http://umut.mpi-sws.org/`
- **Phone:** +1.347.286.8822 (USA), +49.170.910.1198 (Germany)
- **Work Address:** Gottlieb-Daimler Strasse 49 67663 Kaiserslautern Germany

- **Citizenship:** Turkey and U.S.A.
- **Languages:** English (fluent), German (advanced), Turkish (fluent)

Professional Experience

- Researcher. Group Leader, Programming Languages and Systems Group.
  Max Planck Institute for Software Systems, 2/2010 – present.
- Chair, Academic Program Committee
  Toyota Technological Institute, 6/2005 – 1/2008.
- Assistant Professor
  Toyota Technological Institute, 11/2004 – 02/2010.
- Assistant Professor (Part Time)
  University of Chicago, 11/2005 – 06/2010.
- Visiting Scientist
  Carnegie Mellon University, 09/2004 – 11/2004.
- Research Intern
  Microsoft Research-Cambridge, 03/2003 – 6/2003.
  Mentor: Simon Peyton Jones

Education

- Ph.D., Computer Science, Carnegie Mellon University, May 2005.
  Thesis: Self-Adjusting Computation.
  Advisers: Guy Blelloch and Robert Harper.
  Other Committee Members: Simon Peyton Jones, Danny Sleator, Robert E. Tarjan.
- M.A., Computer Science, University of Texas at Austin, August 1999.
  Thesis: Thread Scheduling for Locality.
  Adviser: Robert D. Blumofe.
- B.S., Computer Science, Bilkent University, Turkey, June 1997 (highest honors).

Honors and Awards

- Microsoft Research Award, 2009.
- Intel Award, 2007-2009.
- Jane Street Award, 2009.
- Nominated for ACM SIGPLAN Dissertation Award, 2005.
- University Fellowship. Carnegie Mellon University, 08/1999 – 09/2004.
- Teaching-Assistant Excellence Award. University of Texas at Austin, 1997.
- NATO Science Fellowship. Ankara, Turkey. 1997.
- University Fellowship. Bilkent University, Turkey, 10/1992 – 06/1997.

Publications

Journal Publications

1. Ozgur Sumer, Umut A. Acar, Alexander Ihler, and Ramgopal Mettu. Adaptive Exact Inference in Graphical Models. *Journal of Machine Learning* **(JMLR)**. 2011.

2. James Cheney, Amal Ahmed, Umut A. Acar. Provenance as Dependency Analysis. *Mathematical Structures in Computer Science* **(MSCS)** *Special Issue on Programming Language Interference and Dependence*. 2011.

3. Umut A. Acar, Guy Blelloch, Matthias Blume, Robert Harper, Kanat Tangwongsan. An Experimental Analysis of Self-Adjusting Computation. *ACM Transactions on Programming Languages and Systems* **(TOPLAS)**. 2009.

4. Umut A. Acar, Guy E. Blelloch, Robert Harper. Adaptive Functional Programming. *ACM Transactions on Programming Languages and Systems* **(TOPLAS)**. 2006.

5. Umut A. Acar, Guy E. Blelloch, Robert D. Blumofe. The Data Locality of Work Stealing. *Theory of Computing Systems* **(TOCS)**. 2002 (invited paper).

Conference Publications

6. Yan Chen, Joshua Dunfield, Umut A. Acar. Type Directed Automatic Incrementalization. *Programming Language Design and Implementation* **(PLDI)**. Beijing, China. 2012.

7. Ruy Ley-Wild, Umut A. Acar, Guy E. Blelloch. Non-Monotonic Self-Adjusting Computation. *European Symposium on Programming* **(ESOP)**. Tallinn, Estonia. 2012.

8. Umut A. Acar, Amal Ahmed, James Cheney, Roly Perrera. A Core Calculus of Provenance. *First Conference on Principles of Security and Trust* **(POST)**. Tallinn, Estonia. 2012.

9. Pramod Bhatotia, Alexander Wieder, Rodrigo Rodrigues, Umut A. Acar, Rafael Pasquini. Incoop: MapReduce for Incremental Computations. *ACM Symposium on Cloud Computing* **(SOCC)**. Cascais, Portugal. 2011.

10. Umut A. Acar, Arthur Charguéraud, Mike Rainey. Oracle Scheduling: Controlling Granularity in Implicitly Parallel Languages. *ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications* **(OOPSLA)**. Portland, OR. 2011.

11. Matthew Hammer, Georg Neis, Yan Chen, Umut A. Acar. Self-Adjusting Stack Machines. *ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications* **(OOPSLA)**. Portland, OR. 2011.

12. Ozgur Sumer, Umut A. Acar, Alexander Ihler, Ramgopal Mettu. Fast parallel and adaptive updates for dual-decomposition solvers. *Conference on Artificial Intelligence* **(AAAI)**. San Francisco, CA. 2011.

13. Umut A. Acar, Andrew Cotter, Benoit Hudson, Duru Türkoğlu. Parallelism in Dynamic Well-Spaced Point Sets. *ACM Symposium on Parallelism in Algorithms and Architectures* **(SPAA)**. San Jose, California. 2011.

14. Umut A. Acar, Benoit Hudson, Duru Türkoğlu. Kinetic Mesh Refinement in 2D. *ACM Symposium on Computational Geometry* **(SCG)**. Paris, France. 2011.

15. Umut A. Acar, Guy Blelloch, Ruy Ley-Wild, Kanat Tangwongsan, Duru Türkoğlu. Traceable Data Types for Self-Adjusting Computation. *ACM-SIGPLAN Symposium on Programming Language Design and Implementation* **(PLDI)**. Toronto, Canada. 2010.

16. Umut A. Acar, Andrew Cotter, Benoit Hudson, Duru Türkoğlu. Dynamic Well-Spaced Point Sets. *ACM Symposium on Computational Geometry* **(SCG)**. Salt-Lake City, Utah. 2010.

17. Matthew Hammer, Umut A. Acar, Yan Chen. CEAL: A C-Based Language for Self-Adjusting Computation. *ACM-SIGPLAN Symposium on Programming Language Design and Implementation* **(PLDI)**. Dublin, Ireland. 2009.

18. Ruy Ley-Wild, Umut A. Acar, Matthew Fluet. A Cost Semantics for Self-Adjusting Computation. *ACM Symposium on Principles of Programming Languages* **(POPL)**. Savannah, GA. 2009.

19. Umut A. Acar, Ruy Ley-Wild. Self-Adjusting Computation in SaSML. *Advanced Functional Programming Summer School* **(AFP)**. Nijmegen, Netherlands. Lecture Notes in Computer Science. 2009.

20. Umut A. Acar, Amal Ahmed, Matthias Blume. Imperative Self-Adjusting Computation. *ACM Symposium on Principles of Programming Languages* **(POPL)**. San Francisco, CA. 2008.

21. Ruy Ley-Wild, Matthew Fluet, Umut A. Acar. Compiling Self-Adjusting Programs with Continuations. *International Symposium on Functional Programming* **(ICFP)**. Victoria, British Columbia, Canada. 2008.

22. Matthew Hammer, Umut Acar. Memory Management for Self-Adjusting Comptutation. *International Symposium on Memory Management* **(ISMM)**. Tucson, AZ. 2008.

23. Matthias Blume, Umut A. Acar, Wonseok Chae. Exception Handlers as Extensible Cases. *Proceedings of the Sixth Asian Symposium on Programming Languages and Systems* **(APLAS)**. Bangolore, India. 2008.

24. Umut A. Acar, Guy Blelloch, Kanat Tangwongsan, Duru Türkoğlu. Robust Kinetic Convex Hulls in 3D. *European Symposium on Algorithms* **(ESA)**. Karlsruhe, Germany. 2008.

25. Umut A. Acar, Alexander T. Ihler, Ramgopal R. Mettu, Özgür Sümer. Adaptive Inference on General Graphs. *Uncertainity in Artificial Intelligence* **(UAI)**. Helsinki, Finland. 2008.

26. Umut A. Acar, Matthias Blume, Jacob Donham. A Consistent Semantics of Self-Adjusting Computation. *European Symposium on Programming* **(ESOP)**. Braga, Portugal. 2007.

27. Umut A. Acar, Alexander Ihler, Ramgopal Mettu, Özgür Sümer. Adaptive Bayesian Inference. *Neural Information Processing Systems* **(NIPS)**. Vancouver, BC. 2007.

28. Umut A. Acar, Guy E. Blelloch, Kanat Tangwongsan. Kinetic 3D Convex Hulls via Self-Adjusting Computation (An Illustration). *ACM Symposium on Computational Geometry* **(SCG)**. Gyeongju, South-Korea. 2007.

29. Umut A. Acar, Benoit Hudson, Gary L. Miller, Todd Phillips. SVR: Practical Enginnering of a Fast 3D Meshing Algorithm. *International Meshing Roundtable* **(IMR)**. Seattle, WA. 2007.

30. Marco D. Santambrogio, Vincenzo Rana, Seda Ogrenci Memik, Umut A. Acar, Donatella Sciuto A Novel SoC Design Methodology Combining Adaptive Software and Reconfigurable Hardware. *IEEE/ACM International Conference on Computer Aided Design* **(ICCAD)**. San Jose, CA. 2007.

31. Umut A. Acar, Guy E. Blelloch, Matthias Blume, Kanat Tangwongsan. An Experimental Analysis of Self-Adjusting Computation. *ACM-SIGPLAN Symposium on Programming Language Design and Implementation* **(PLDI)**. Ottawa, Canada. 2006.

32. Matthias Blume, Umut A. Acar, Wonseok Chae. Extensible Programming with First-Class Cases. *International Symposium on Functional Programming* **(ICFP)**. Portland, Oregon. 2006.

33. Umut A. Acar, Guy E. Blelloch, Kanat Tangwongsan. Kinetic Algorithms via Self-Adjusting Computation. *European Symposium on Algorithms* **(ESA)**. Zurich, Switzerland. 2006.

34. Umut A. Acar, Guy E. Blelloch, Robert Harper, Jorge L. Vittes, Maverick Woo. Dynamizing Static Algorithms with Applications to Dynamic Trees and History Independence. *ACM-SIAM Symposium on Discrete Algorithms* **(SODA)**. New Orleans, Louisiana. 2004.

35. Umut A. Acar, Guy E. Blelloch, Robert Harper. Selective Memoization. *ACM Symposium on Principles of Programming Languages* **(POPL)**. New Orleans, Louisiana. 2003.

36. Umut A. Acar, Guy E. Blelloch, Robert Harper. Adaptive Functional Programming. *ACM Symposium on Principles of Programming Languages* **(POPL)**. Portland, Oregon. 2002.

37. Umut A. Acar, Guy E. Blelloch, Robert D. Blumofe. The Data Locality of Work Stealing. *ACM Symposium on Parallel Algorithms and Architectures* **(SPAA)**. Bar Harbor, Maine. 2001.

Peer-Reviewed Workshop Publications

38. Umut A. Acar, Arthur Charguéraud, Mike Rainey. Efficient Primitives for Creating and Scheduling Parallel Computations. *Workshop on Declarative Aspects of Multicore Programming* **(DAMP)**. Philadelophia, PA. 2012.

39. Yan Chen, Joshua Dunfield, Matthew A. Hammer, Umut A. Acar. Implementing implicit self-adjusting computation. *ACM SIGPLAN Workshop on ML* **(ML)**. Tokyo, Japan. 2011.

40. Pramod Bhatotia, Alexander Wieder, Istemi Ekin Akkus, Rodrigo Rodrigues, Umut A. Acar. Large-scale Incremental Data Processing with Change Propagation. *USENIX Workshop on Hot Topics in Cloud Computing* **(HotCloud)**. Portland, Oregon. 2011

41. Umut Acar, Peter Buneman, James Cheney, Jan Van den Buscsche, Natalia Kwasnikowska, Stijn Vansummeren. A Graph Model of Data and Workflow Provenance. *USENIX/ACM Workshop on the Theory and Practice of Provenance* **(TaPP)**. San Jose, CA. 2010.

42. Lukasz Ziarek, Suresh Jagannathan, Matthew Fluet, Umut A. Acar. Speculative N-Way Barriers. *Workshop on Declarative Aspects of Multicore Programming* **(DAMP)**. Savannah, GA. 2009.

43. Umut A. Acar, Alexander T. Ihler, Ramgopal Mettu, Ozgur Sumer. Maintaining MAP Configurations with Applications to Protein Sidechain Packing. *IEEE/SP 15th Workshop on Statistical Signal Processing* **(SSP)**. Cardiff, Wales, UK. 2009.

44. Matthew Hammer, Umut A. Acar, Mohan Rajagopalan, Anwar Ghuloum. A Proposal for Parallel Self-Adjusting Computation. *Workshop on Declarative Aspects of Multicore Programming* **(DAMP)**. Nice, France. 2007.

45. James Cheney, Amal Ahmed, Umut A. Acar. Provenance as Dependency Analysis. *International Symposium on Database Programming Languages* **(DBPL)**. Vienna, Austria. 2007.

46. Umut A. Acar, Guy E. Blelloch, Matthias Blume, Robert Harper, Kanat Tangwongsan. A Library for Self-Adjusting Computation. *The First Workshop on ML* **(ML)**. Tallinn, Estonia. 2005.

47. Umut A. Acar, Guy E. Blelloch, Jorge L. Vittes. An Experimental Analysis of Change Propagation in Dynamic Trees. *The Seventh Workshop on Algorithm Engineering and Experiments* **(ALENEX)**. Vancouver, British Columbia, Canada. 2005.

Non-Reviewed Workshop Publications

48. Umut A. Acar, Benoit Hudson, Duru Türkoğlu. Kinetic Mesh Refinement in 2D. *Fall Workshop on Computational Geometry*. New York City, NY. 2010.

49. Umut A. Acar, Benoit Hudson, Duru Türkoğlu. A Dynamic Algorithm for Well-Spaced Point Sets. *Fall Workshop on Computational Geometry*. Medford, MA. 2009.

50. Umut A. Acar. Self-Adjusting Computation (An Overview). *ACM SIGPLAN Workshop on Partial Evaluation and Program Manipulation* **(PEPM)**. Accompanying paper for an invited (plenary) talk. Savannah, GA. 2009.

51. Umut A. Acar, Benoit Hudson. Optimal-Time Dynamic Mesh Refinement: Preliminary Results. *Fall Workshop on Computational Geometry*. Northampton, MA. 2006.

Theses and Technical Reports

Theses

1. Umut A. Acar. Self-Adjusting Computation. Ph.D. Thesis. Carnegie Mellon University. Computer Science Department. 2005.
2. Umut A. Acar. Thread Scheduling for Locality. Masters Thesis. University of Texas at Austin. Computer Science Department. 1999.

Technical Reports

1. Pramod Bhatotia, Alexander Wieder, Rodrigo Rodrigues, Umut A. Acar, Rafael Pasquini. Incoop: MapReduce for Incremental Computations. Max-Planck Institute for Software Systems Technical Report TR-2011-2. 2011.
2. Umut A. Acar, Andrew Cotter, Benoit Hudson, and Duru Türkoğlu. Dynamic Well-Spaced Point Sets. Toyota Technological Institute Technical Report TR-2010-1. 2010.
3. Matthew Hammer, Umut A. Acar, and Yan Chen. CEAL: A C-Based Language for Self-Adjusting Computation. Toyota Technological Institute Technical Report TR-2009-2. 2009.
4. Ruy Ley-Wild, Umut A. Acar, and Matthew Fluet. A Cost Semantics for Self-Adjusting Computation. Computer Science Department Technical Report CMU-CS-08-151. Carnegie Mellon University. 2008.
5. Matthias Blume, Umut A. Acar, and Wonseok Chae. Exception Handlers as Extensible Cases. Computer Science Department Technical Report TR-2008-03. University of Chicago. 2008.
6. Umut A. Acar, Amal Ahmed, and Matthias Blume. Imperative Self-Adjusting Computation. Computer Science Department Technical Report 2007-18. University of Chicago. 2007.
7. Umut A. Acar and Benoit Hudson. Dynamic Mesh Refinement with Quad Trees and Off-Centers. Computer Science Department Technical Report CMU-CS-07-121. Carnegie Mellon University. 2007.
8. Umut A. Acar, Guy E. Blelloch, and Kanat Tangwongsan. Non-oblivious Retroactive Data Structures. Computer Science Department Technical Report CMU-CS-07-169. Carnegie Mellon University. 2007.
9. Umut A. Acar, Guy E. Blelloch, Kanat Tangwongsan, and Jorge Vittes. Kinetic Algorithms via Self-Adjusting Computation. Computer Science Department Technical Report CMU-CS-06-115. Carnegie Mellon University. 2006.
10. Umut A. Acar, Matthias Blume, and Jacob Donham. A Consistent Semantics of Self-Adjusting Computation Computer Science Department Technical Report CMU-CS-06-168. Carnegie Mellon University. 2006.

11. Umut A. Acar. Self-Adjusting Computation. PhD Thesis. Computer Science Department Technical Report CMU-CS-05-129. Carnegie Mellon University. 2005.

12. Umut A. Acar, Guy E. Blelloch, Robert Harper. Selective Memoization. Computer Science Department Technical Report CMU-CS-04-155. Carnegie Mellon University. 2004.

13. Umut A. Acar, Guy E. Blelloch, Robert Harper. Adaptive Memoization. Computer Science Department Technical Report CMU-CS-03-208. Carnegie Mellon University. 2003.

14. Umut A. Acar, Guy E. Blelloch, and Robert Harper. Adaptive Functional Programming. Computer Science Department Technical Report CMU-CS-01-161. Carnegie Mellon University. 2001.

Professional Service

Editor

- Journal of Functional Programming, Special Issue on the International Conference on Functional Programming 2010.

General Chair

- ACM Workshop on Declarative Aspects and Applications of Multicore Programming (DAMP), 2012.

Program Chair

- USENIX Workshop on the Theory and Practice of Provenance, 2012.

Program Committees

- PC Member. Programming Language Design and Implementation (PLDI), 2013.
- PC Member. International Conference on Foundations of Software Science and Computation Structures (FoSSaCS), 2013.
- PC Member. ACM Workshop on Declarative Aspects and Applications of Multicore Programming (DAMP), 2012.
- ERC Member. ACM SIGPLAN Principles of Programming Languages (POPL), 2012.
- PC Member. Workshop on the Theory and Practice of Provenance (TAPP), 2011.
- PC Member. European Symposium on Algorithms (ESA), 2011.
- PC Member. ACM International Conference on Functional Programming (ICFP), 2010.
- PC Member. ACM SIGPLAN Workshop on ML. 2009.
- PC Member. Implementation and Application of Functional Languages (IFL), 2008.

Journal-Referee Service

- ACM Transactions on Programming Languages and Systems (TOPLAS).
- ACM Transactions on Computer Systems (TOCS).
- The International Journal on Very Large Databases (VLDB).
- Journal of the ACM (JACM).
- Journal of Artificial Intelligence (JAIR).
- Journal of Functional Programming (JFP).
- Journal of Information Processing Letters (JIPS).

Conference-Referee Service

- ACM-BCS Visions of Computer Science.
- ACM Symposium for Parallel Algorithms and Applications (SPAA).
- ACM Symposium on Principles of Programming Languages (POPL).
- ACM Symposium on Programming Language Design and Implementation (PLDI).
- ACM Workshop on Partial Evaluation and Program Manipulation (PEPM).
- European Symposium on Programming (ESOP).
- International Conference on Functional Programming (ICFP).
- International Conference on Software Engineering (ICSE).
- International Symposium on Algorithms and Computation (ISAAC).

Teaching Experience

- The Theory and Practice of Parallel Computing, Fall 2011.
  Professor (co-taught with Viktor Vafeiadis).
  Max Planck Institute for Software Systems.
- Functional Programming, Fall 2011.
  Professor (co-taught with Viktor Vafeiadis).
  Max Planck Institute for Software Systems.
- Type Systems for Programming Languages (Graduate), Winter 2008.
  Professor (co-taught with Amal Ahmed).
  University of Chicago (CMSC 336).
- Programming Languages (Undergraduate), Fall 2006.
  Professor.
  University of Chicago (CMSC 221).

- Programming Languages (Graduate), Fall 2005, Fall 2006.
  Professor.
  University of Chicago (CMSC 321).
- Algorithms (Undergraduate), Fall 2002.
  Teaching Assistant.
  Carnegie Mellon University (15-451).
  Professors: Gary Miller and Klaus Sutner.
  Teaching evaluations for weekly recitations: 3.91/4.0.
- Computer Systems (Undergraduate), Spring 2001.
  Teaching Assistant.
  Carnegie Mellon University (15-213).
  Professors: Guy Blelloch and Bruce Maggs.
  Teaching evaluations for weekly recitations: 3.43/4.0.
- Data Structures (Undergraduate), Spring 1998.
  Teaching Assistant.
  University of Texas at Austin (315).
  Professor: Robert Blumofe.
- Introduction to Operating Systems (Undergraduate), Fall 1997.
  Teaching Assistant.
  University of Texas at Austin (372).
  Professor: Lorenzo Alvisi.
  Won teaching award for my work in this class.

Advising Experience

Current Post-Docs

- Arthur Charguéraud, 1/2011 – present.
- Joshua Dunfield, 08/2010 – present.
- Mike Rainey, 11/2010 – present.

Current Ph.D. Students

- Pramod Bhatotia, Max-Planck Institute for Software Systems, 01/2011 – present.
- Yan Chen, Toyota Technological Institute, 09/2008 – present.
- Ezgi Cicek, Max-Planck Institute for Software Systems, 08/2011 – present.
- Matthew Hammer, University of Chicago, 09/2005 – present.
- Reinhard Munz, Max-Planck Institute for Software Systems, 07/2011 – present.
- Mustafa Zengin, Max-Planck Institute for Software Systems, 09/2011 – present.

Current Undergraduate Students

- Raphael Reitzig, Max-Planck Institute for Software Systems, 09/2011 – present.

Graduated Ph.D. Students

- Özgür Sümer, University of Chicago, 10/2006 – 03/2012.
  Works at a startup.
- Duru Türkoglu, University of Chicago, 05/2007 – 03/2012.
  Works at a startup.
- Ruy Ley-Wild, Carnegie Mellon University, Graduated in 2010.
  Accepted a post-doc position at IMDEA-Software, Spain.

Graduated Undergraduate Students

- Jamie Morgenstern, University of Chicago.
  Graduated in 2009, entered the Ph.D. program at Carnegie Mellon University.
- Kanat Tangwongsan, Carnegie Mellon University.
  Graduated in 2005, entered the Ph.D. student at Carnegie Mellon University.
  Won CRA undergraduate research award and best undergraduate thesis award.
- Jorge Vittes, Carnegie Mellon University.
  Graduated in 2004, entered the Ph.D. program at Stanford University.

Interns

- Roly Perera.
  Max-Planck Institute for Software Systems. Summer 2010, 06/2011–present.
- Vinay and Vivek Surana
  Max-Planck Institute for Software Systems. Summer 2010.
- Ruy Ley-Wild.
  Toyota Technological Institute. Summer 2007, 2008, 2009.
- Virginia Vassilevska.
  Toyota Technological Institute. Summer 2008.
- Kanat Tangwongsan.
  Toyota Technological Institute. Summer 2007.
- Jacob Donham.
  Toyota Technological Institute. Summer 2006.
- Benoit Hudson.
  Toyota Technological Institute. Summer 2006.

External Doctoral-Thesis-Committee Member

- Sean Young. "Accelerating Haskell Array Codes with Algorithmic Skeletons on GPUs."
  University of New South Wales (UNSW), Syndey, Australia. 2011.
- Wonseok Chae. 'Type Safe Extensible Programming."
  Toyota Technological Institute, Chicago, IL. 2009.
- Benoit Hudson. "Dynamic Mesh Refinement."
  Carnegie Mellon University, Pittsburgh, PA. 2007.

Keynotes and Distinguished Lectures

1. "Automatic Granularity Control for Efficient Parallelism."
   NSF-CPATH Lecture on Parallelism.
   (CPATH: CISE Pathways to revitalized undergraduate computing education.)
   University of Puerto Rico.
   San Juan, Puerto Rico. February 2012.
2. "Greedy Sharing: Load Balancing on Weakly Consistent Memory."
   NSF-CPATH Lecture on Parallelism.
   (CPATH: CISE Pathways to revitalized undergraduate computing education.)
   University of Puerto Rico.
   San Juan, Puerto Rico. February 2012.
3. "Self-Adjusting Computation."
   Plenary Talk.
   ACM SIGPLAN Workshop on Partial Evaluation and Program Manipulation.
   Savannah, Georgia. January 2009.
4. "Self-Adjusting Computation with Delta ML."
   Lectures (6 hours).
   Summer School on Advanced Functional Programming (AFP).
   Nijmegen, Netherlands. May 2008.
5. "Self-Adjusting Computation."
   Distinguished Speaker Seminar Series.
   Electrical and Computer Engineering, Illinois Institute of Technology.
   Chicago, IL. April 2005.

Invited Workshop Presentations

6. "Computation Slices as Universal Provenance".
   Dagstuhl Seminar on Principles of Provenance.
   Dagstuhl, Germany. February 2012.
7. "Algorithmic Abstractions for Dynamic Data."
   Bentinoro Workshop on Algorithms and Data Structures.
   Bentinoro, Italy. May 2011.

8. "Slicing, Provenance, and Self-Adjusting Computation."
   Workshop on the Theory and Practice of Provenance.
   Crete, Greece. June 2011.

9. "Towards Compiling Imperative Self-Adjusting Programs."
   Dagstuhl Seminar on Types, Logics, and Semantics for State.
   Dagstuhl, Germany. February 2008.

10. "Self-Adjusting Computation."
    IFIP WG2.8 Meeting.
    West Point, New York. October 2004.

11. "Self-Adjusting Computation."
    Workshop on Dynamic Algorithms and Applications.
    New Orleans, Louisiana. January 2004.

Other Invited and Conference Presentations

12. "Practical Abstractions for Dynamic and Parallel Software."
    Carnegie Mellon University.
    Department Seminar.
    Pittsburgh, Pennsylvania. April 2012.
    Invited Talk. Host: Robert Harper.

13. "Greedy Sharing: Scheduling on Weakly Consistent Memory."
    Carnegie Mellon University.
    Principles of Programming (POP) Seminar.
    Pittsburgh, Pennsylvania. April 2012.
    Invited Talk. Host: Robert Harper.

14. "Practical Abstractions for Dynamic and Parallel Software."
    Institute for Science and Technology (IST), Austria.
    Institute Seminar.
    Vienna, Austria March 2012.
    Invited Talk. Host: Thomas Henzinger.

15. "Practical Abstractions for Dynamic and Parallel Software."
    Rutgers University, Computer Science Department.
    Department Seminar.
    New Brunswick, New Jersey . February 2012.
    Invited Talk. Host: Ulrich Kremer.

16. "Practical Abstractions for Dynamic and Parallel Software."
    Microsoft Research, Silicon Valley.
    Lab Seminar.
    Mountain View, California. February 2012.
    Invited Talk. Host: Mihai Budiu.

17. "Practical Abstractions for Dynamic and Parallel Software."
    Oregon State University Electrical Engineering and Computer Science Department.
    Department Seminar.
    Corvallis, Oregon. February 2012.
    Invited Talk. Host: Martin Erwig.

18. "Practical Abstractions for Dynamic and Parallel Software."
    Indiana University. Computer Science Department.
    Department Seminar.
    Bloomington, Indiana. January 2012.
    Invited Talk. Host: Amr Sabry.

19. "Practical Abstractions for Dynamic and Parallel Software."
    Microsoft Research.
    Lab Seminar.
    Cambridge, United Kingdom. January 2012.
    Invited Talk. Host: Simon Peyton Jones.

20. "Efficient Parallelism on Multicore Computers."
    Eidgenössische Technische Hochschule (ETH) Zürich. Computer Science Department.
    Department Seminar.
    Zürich, Switzerland. December 2011.
    Invited Talk. Host: Thomas Gross.

21. "Efficient Parallelism on Multicore Computers."
    Max Planck Institute for Informatics.
    Joint Seminar of Max Planck Institutes for Informatics and Software Systems.
    Saarbruecken, Germany. December 2011.
    Invited Talk. Host: Kurt Mehlhorn

22. "Self-Adjusting Computation."
    Max Planck Institute for Informatics.
    Science Lunch.
    Saarbruecken, Germany. May 2011.
    Invited Talk. Host: Kurt Mehlhorn.

23. "Self-Adjusting Computation."
    University of Bonn. Computer Science Department.
    Department Seminar.
    Bonn, Germany. October 2010.
    Invited Talk. Host: Janis Voigtlaender.

24. "Traceable Data Types for Self-Adjusting Computation."
    ACM SIGPLAN Symposium on Programming Language Design and Implementation (PLDI).
    Conference presentation.
    Toronto, Canada. June 2010.

25. "Traceable Data Types for Self-Adjusting Computation."
    ICFP PC Workshop.

Workshop presentation.
Cambridge, UK. May 2010.

26. "Self-Adjusting Computation."
Max Planck Institute for Software Systems.
Department Seminar.
Saarbruecken, Germany. April 2009.
Invited Talk. Host: Derek Dreyer.

27. "Self-Adjusting Computation."
Cornell University. Department of Computer Science.
Department Seminar.
Ithaca, NY. March 2009.
Invited Talk. Host: Andrew Myers.

28. "Self-Adjusting Computation."
University of California, Davis. Department of Computer Science.
Department Seminar.
Davis, CA. March 2009.
Invited Talk. Host: Zhendong Su.

29. "Self-Adjusting Computation in C."
Carnegie Mellon University. Department Computer Science.
POP (Principles of Programming) Seminar.
Pittsburgh, PA. February 2009.
Invited Talk. Host: Guy Blelloch.

30. "Self-Adjusting Computation."
Harvard University. Department of Electrical Engineering and Computer Science.
Cambridge, MA. July 2008.
Invited Talk. Host: Greg Morrisett.

31. "Self-Adjusting Computation."
University of Maryland. Department of Computer Science.
College Park, MD. July 2008.
Invited Talk. Host: Mike Hicks.

32. "Self-Adjusting Computation."
University of Edinburgh. School of Informatics.
Seminar Series of Laboratory for Foundations of Computer Science.
Edinburgh, UK. May 2008.
Invited Talk. Host: James Cheney.

33. "Self-Adjusting Computation."
University of Washington. Department of Computer Science and Engineering.
Seattle, WA. May 2008.
Invited Talk. Host: Dan Grossman.

34. "Self-Adjusting Computation."
Microsoft Research.
Seattle, WA. May 2008.
Invited Talk. Host: Jim Larus.

35. "Self-Adjusting Computation."
Portland State University. Department of Computer Science.
Department Seminar.
Portland, OR. May 2008.
Invited Talk. Host: Andrew Tolmach.

36. "Self-Adjusting Computation."
University of Oregon. Department of Computer and Information Science.
Eugene, OR. May 2008.
Invited Talk. Host: Yannis Smaragdakis.

37. "Self-Adjusting Computation."
Northwestern University. Department of Electrical Engineering and Computer Science.
Department Seminar.
Evanston, IL. February 2008.
Invited Talk. Host: Seda Öğrenci Memik.

38. "Self-Adjusting Computation."
Intel.
Santa Clara, CA. April 2007.
Invited Talk. Host: Anwar Ghuloum.

39. "An Experimental Analysis of Self-Adjusting Computation."
ACM SIGPLAN Symposium on Programming Language Design and Implementation (PLDI).
Ottawa, Canada. June 2006.

40. "Incremental Computation."
Toyota Technological Institute.
Department Seminar.
Nagoya, Japan. April 2006.
Invited Talk.

41. "A Library for Self-Adjusting Computation."
ACM SIGPLAN Workshop on ML.
Workshop presentation.
Tallinn, Estonia. September 2005.

42. "Self-Adjusting Computation."
Massachusetts Institute of Technology. Electrical Engineering and Computer Science Department.
Department Seminar.
Boston, MA. October 2004.
Invited Talk. Hosts: Butler Lampson and Martin Rinard.

43. "Self-Adjusting Computation."
University of Minnesota at Twin Cities. Computer Science Department.
Department Seminar.
Minneapolis, MN. April 2004.
Invited Talk. Host: Ravi Janardan.

44. "Self-Adjusting Computation."
University of Chicago. Computer Science Department.
Department Seminar.
Chicago, IL. April 2004.
Invited Talk. Host: Dave MacQueen.

45. "Self-Adjusting Computation."
Toyota Technological Institute.
Department Seminar.
Chicago, IL. March 2004.
Invited Talk. Host: David McAllester.

46. "Self-Adjusting Computation."
University of Massachusetts. Computer Science Department.
Department Seminar.
Amherst, MA. March 2004.
Invited Talk. Host: Emery Berger.

47. "Self-Adjusting Computation."
University of California. Computer Science and Engineering Department.
Deparment Seminar.
San Diego, CA. March 2004.
Invited Talk. Host: Brad Calder.

48. "Self-Adjusting Computation."
University of Texas. Computer Science Department.
Department Seminar.
Austin, TX. March 2004.
Invited Talk. Host: Lorenzo Alvisi.

49. "Self-Adjusting Computation."
Northwestern University. Computer Science Department.
Department Seminar.
Evanston, IL. March 2004.
Invited Talk. Host: Peter Dinda.

50. "Dynamizing Static Algorithms."
Carnegie Mellon University.
Theory Seminar.
Pittsburgh PA. November 2003.

51. "Dynamizing Algorithms with Applications to Dynamic Trees and History Independence."
ACM-SIAM Symposium on Discrete Algorithms (SODA).
New Orleans, Louisiana. January 2004.

52. "Making Algorithms Dynamic".
Oxford University. Computer Science Department.
Deparment Seminar.
Oxford, UK. May 2003.
Invited Talk. Host: Oege de Moor.

53. "Algorithms and Languages for Incremental Computation."
Microsoft Research-Cambridge.
Friday Talks.
Cambridge, UK. May 2003.

54. "Dynamizing Static Algorithms."
Microsoft Research-Cambridge.
Serious-Talk Series.
Cambridge, UK. April 2003.

55. "Stability, Adaptivity, and Dynamic Algorithms."
Carnegie Mellon University.
Thesis Proposal.
Pittsburgh, PA. February 2003.

56. "Selective Memoization."
ACM Symposium on Principles of Programming Languages (POPL).
New Orleans, LA. January 2003.

57. "Adaptive Functional Programming."
Carnegie Mellon University.
POP (Principles of Programming) Seminar.
Pittsburgh, PA. November 2002.

58. "The Data Locality of Work Stealing."
Carnegie Mellon University.
Student Seminar Series.
Pittsburgh, PA. November 2001.

59. "Adaptive Functional Programming."
ACM Symposium on Principles of Programming Languages (POPL).
Portland, OR. January 2002.

60. "The Data Locality of Work Stealing."
ACM Symposium on Parallel Algorithms and Architectures (SPAA).
Bar Harbor, Maine. June 2000.

References

- **Guy Blelloch**
  Professor.
  Department of Computer Science
  Carnegie Mellon University. Pittsburgh PA 15213, USA.
  Phone: +1.412.268.6245
  E-mail: blelloch@cs.cmu.edu

- **Robert Harper**
  Professor.
  Department of Computer Science
  Carnegie Mellon University. Pittsburgh PA 15213, USA.
  Phone:+1.412.268.3675
  E-mail: rwh@cs.cmu.edu

- **Giuseppe F. Italiano**
  Professor, Department Chair.
  Dipartimento di Informatica
  Universita di Roma "Tor Vergata", 00133 Rome, Italy.
  Phone: +39.06.7259.7394
  E-mail: italiano@disp.uniroma2.it

- **Greg Morrisett**
  Allen B. Cutting Professor.
  School of Engineering and Applied Sciences
  Harvard University. Cambridge, MA 02138, USA.
  Phone: +1.617.495.9526
  Email: greg@eecs.harvard.edu

- **Simon Peyton Jones**
  Principal Researcher.
  Microsoft Research Ltd.
  Cambridge CB3 0FB, England.
  Phone: +44.1223.479.848
  E-mail: simonpj@microsoft.com

- **Robert E. Tarjan**
  James S. McDonnell Distinguished University Professor.
  Department of Computer Science
  Princeton University
  Princeton, NJ 08544-2087 USA.
  Phone: +1.609.258.4797
  E-mail: ret@cs.princeton.edu