
JAMES R. LARUS

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Education

Ph.D. (Computer Science), University of California at Berkeley, May 1989. Thesis: *Restructuring Symbolic Programs for Concurrent Execution on Multiprocessors*. Advisor: Paul Hilfinger.

M.S. (Computer Science), University of California at Berkeley, December 1982. Thesis: *Glean: An Interactive Program Analysis System for Franz Lisp*. Advisor: Richard Fateman.

A.B. *magna cum laude* (Applied Mathematics), Harvard University, June 1980.

Honors and Awards

Paper (“Righting Software”) selected as one of IEEE Software’s 25th-Anniversary Top Picks.

Paper (“Exploiting Hardware Performance Counters with Flow and Context Sensitive Profiling”) selected as the Most Influential 1997 PLDI Paper, 2007.

ACM Fellow, 2006.

Best paper (“Language Support for Fast and Reliable Message-based Communication in the Singularity OS”), EuroSys 2006.

Paper (“Improving Data-Flow Analysis with Path Profiling”) selected for *20 Years of PLDI*, 2003.

Paper (“Whole Program Paths”) selected as the Most Innovative Paper Award, PLDI ‘99, 1999.

Paper (“Typhoon: A User-Level Shared-Memory System”) selected for *25 Years of the International Symposia on Computer Architecture (Selected Papers)*, 1998.

IBM Partnership Award, 1996.

National Science Foundation Young Investigator (NYI), 1993.

Best Paper (“Cooperative Shared Memory: Software and Hardware for Scalable Multiprocessors”), ASPLOS V, 1992.

California Microelectronics Fellowship, 1985–87.

Harvard College Scholar, 1976–80.

Professional Experience

Director, XCG Research and Strategy, eXtreme Computing Group, Microsoft Research. (May 2010 –)

Director of Software Architecture, Cloud Computing Futures, Microsoft Research. (May 2008 – May 2010)

Research Area Manager, Microsoft Research, Redmond Washington. (December 2005 – May 2008)

Assistant Director, Microsoft Research, Redmond Washington. (December 2003 – September 2004)

Affiliated Associated Professor, Computer Science Department, University of Washington. (January 2000 –)

Senior Researcher, Microsoft Research, Redmond Washington. (May 1998 – December 2005)

Visiting Researcher, Microsoft Research, Redmond Washington. (August 1997 – July 1998)

Associate Professor, Computer Sciences Department, University of Wisconsin-Madison. (June 1995 – July 1999)

Assistant Professor, Computer Sciences Department, University of Wisconsin-Madison. (September 1989 – June 1995)

Research Assistant, Computer Science Division, University of California at Berkeley. (September 1984 – April 1989)

Computer Scientist, Bolt Beranek and Newman, Cambridge, Massachusetts. (September 1983 – August 1984)

Research Assistant, Computer Science Division, University of California at Berkeley. (January 1982 – August 1983)

Software Engineer, General Systems Group, Cambridge, Massachusetts. (June 1980 – June 1981)

Other Professional Experience

Consultant: Franz, Inc., IBM, Mercury Interactive, Inc., and TranSwitch, Inc.

Expert Witness: Fliesler, Dubb, Meyer & Lovejoy (Pure Software Inc. v. AIB Software, Inc.), Shneidman, Myers, Dowling, and Blumefield (Ackerman v. State of Wisconsin, DOA).

Professional Society Membership

Association for Computing Machinery (Fellow), IEEE Computer Society

Editorial Boards

Editorial board, *Communications of the ACM (CACM)*, November 2007 – .

Associate Editor, *Computer Architecture Letters*, IEEE Computer Society, September 2007 – .

Editorial board, *Software – Practice & Experience*, Wiley & Sons, August 2007 – .

Editorial board, *Open Software Engineering Journal*, Bentham Science Publishers, February 2007 – .

Program Committees

1. Program committee, *USENIX HotPar 2012*, June 2012.
2. Program committee, *2011 ACM SIGPLAN Workshop on Memory Systems Performance and Correctness (MSPC 2011)*, co-located with PLDI, June 2011.
3. Program committee, *2nd ACM SIGOPS Asia-Pacific Workshop on Systems (APSys 2011)*, July 2011.
4. Program committee, *2nd Workshop on Determinism and Correctness in Parallel Programming*, co-located with ASPLOS, March 2011.
5. Program committee, *USENIX HotPar 2011*, May 2011.
6. Program committee, *Programming Languages Design and Implementation (PLDI '11)*, June 2011.
7. Program committee, *Architectural Support for Programming Languages and Operating Systems (ASPLOS '11)*, March 2011.
8. Program committee, *Workshop on Concurrency for the Application Programmer*, co-located with SPLASH 2010, November 2010.
9. Program committee, *ACM Symposium on Cloud Computing*, co-located with SIGMOD, June 2010.
10. Program committee, *GreenMetrics 2010 Workshop*, co-located with SIGMETRICS 2010, June 2010.
11. Program committee, *6th Workshop on the Interaction between Operating System and Computer Architecture (WIOSCA 2010)*, co-located with ISCA 2010, June 2010.
12. External review committee, *ISCA 2010*, June 2010.
13. Program committee, *USENIX HotPar 2010*, June 2010.
14. Program committee, *EuroSys 2010*, April 2010.
15. Program committee, *International Symposium on Code Generation and Optimization (CGO)*, March 2010.
16. Program committee, *GreenMetrics 2009 Workshop*, in conjunction with SIGMETRICS/Performance 2009, June 2009.
17. Program committee, *Fun Ideas and Thoughts (FIT)*, in conjunction with SIGPLAN PLDI, June 2009
18. Program committee, *First Workshop on Asynchrony in the PGAS Programming Model (APGAS09)*, in conjunction with ICS 2009, June 2009.

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19. ► Program Co-Chair and Co-Organizer, *First USENIX Workshop on Hot Topics in Parallelism (HotPar '09)*, March 2009.
 20. Program committee, *ACM Symposium on Parallel Algorithms and Architectures (SPAA 08)*, June 2008.
 21. ► Program Committee Chair, *Architectural Support for Programming Languages and Operating Systems (ASPLOS '08)*, 2008.
 22. Program committee, *Programming Language Design and Implementation (PLDI '07)*, June 2007.
 23. Program committee, *Workshop on Architectural and System for Improving Software Dependability*, in conjunction with ASPLOS '06, Oct. 2006.
 24. Program committee, *Workshop on Programming Models for Ubiquitous Parallelism*, in conjunction with PACT '06, Sept. 2006.
 25. Program committee, *Workshop on Transactional-Memory Workloads*, in conjunction with PLDI'06, June 2006.
 26. Program committee, *ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP)*, 2006.
 27. Program committee, *Seventh International Conference on Formal Engineering Methods (ICFEM 2005)*, November 2005.
 28. Program committee, *International Conference for Formal Engineering Methods (ICFEM 2004)*, November 2004.
 29. Program committee, *Parallel Architecture and Compilation Techniques (PACT 04)*, September 2004.
 30. Program committee, *Fourth Workshop on Runtime Verification (RV' 04)*, in conjunction with ETAPS '04, April 2004.
 31. Program committee, *Fifth International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI 04)*, in conjunction with POPL '04, January 2004.
 32. Program committee, *ACM SIGPLAN Symposium on Principles and Practices of Parallel Programming (PPoPP 03)*, May 2003.
 33. Program committee, *International Symposium on Code Generation and Optimization, CGO-1*, March 2003.
 34. Program committee, *Tenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS-X)*, October 2002.
 35. Program committee, *Second Workshop on Runtime Verification*, in conjunction with CAV'02, July 2002.
 36. Program committee, *International Conference on Software Engineering (ICSE 2003)*, May 2003.
 37. Program committee, *Workshop on Dynamic Program Monitoring and Analysis*, in conjunction with SAS '01, July 2001.
 38. Program committee, *International Conference on Parallel Architecture and Compilation Techniques (PACT 2001)*, September 2001.
 39. Program committee, *First ACM SIGPLAN Workshop on Optimizations of Middleware and Distributed Systems*, in conjunction with PLDI 2001, June 2001.
 40. Program committee, *Compiler Optimization meets Compiler Verification (COCV 2002)*, in conjunction with ETAPS 2002, April 2002.
 41. Program committee, *ACM SIGPLAN Symposium on Principles and Practices of Parallel Programming (PPoPP 2000)*, June 2000.
 42. Program committee, *2001 Static Analysis Symposium (SAS '01)*, July 2001.
 43. Program committee, *The Best of PLDI Collection, 1970–1996*.
 44. Program committee, *3rd Workshop on Feedback-Directed Optimization*, in conjunction with the 33rd Annual International Symposium on Microarchitecture (MICRO 33), December 2000.
 45. Program committee, *2nd Workshop on Feedback-Directed Optimization*, in conjunction with the 32nd Annual International Symposium on Microarchitecture (MICRO 32), November 1999.
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46. Program committee, *Workshop on Binary Translation*, in conjunction with the 32nd Annual International Symposium on Microarchitecture (MICRO 32), November 1999.
47. ► General Chair, *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2000)*, June 2000.
48. Program committee, *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2000)*, June 2000.
49. Program committee, *ACM SIGPLAN Principles and Practices of Parallel Programming (PPoPP)*, May 1999.
50. Program committee, *Fourth International Workshop on High-Level Parallel Programming Models and Supportive Environments (HIPS'99)*, April 1999.
51. Program committee, *Second USENIX Conference on Domain-Specific Languages*, October 1999.
52. Program committee, *ACM SIGPLAN '93 Conference on Programming Languages Design and Implementation (PLDI)*, June 1993.
53. Program committee, *Twentieth Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL)*, January 1993.
54. Program committee, *ACM Third Symposium on Principles and Practices of Parallel Programming (PPoPP)*, April 1991.
55. Program committee, *ACM SIGPLAN '91 Conference on Programming Languages Design and Implementation (PLDI)*, June 1991.

Government Committees

1. Committee member, *Advancing Software-Intensive Systems Producibility Committee*, Computer Science and Telecommunications Board of the National Academies, 2006 (Final Report: [Critical Code: Software Producibility for Defense](#), National Research Council, 2010).
2. Panel participant, *Workshop on Certifiably Dependable Software Systems*, Computer Science and Telecommunications Board of the National Academies, April 2004.
3. Committee member, *Evaluation Committee of the INRIA Program 2A: Software Engineering and Symbolic Computing*, October 2002.
4. Committee member, *Panel on Engineering for Complex System*, National Research Council of the National Academies, 2002.
5. Committee member, *Fundamentals of Computer Science Study Committee*, Computer Science and Telecommunications Board of the National Academies, 2001. (Final Report: [Computer Science: Reflections on the Field](#), National Research Council, 2004.)

Organizing and Steering Committees

1. Steering committee, *Workshop on Advancing Computer Architecture Research: Popular Parallel Programming*, San Diego, CA, February 2010.
2. Steering committee, *Workshop on Programming Language Curricula*, Cambridge, MA, May 2008.
3. Organizing committee, *Workshop on Future Directions of Compiler Research*, Irvine, CA, February 2006.
4. Steering committee, *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS XII)*, October 2006.
5. Co-Organizer, *Workshop on the Evaluation of Software Defect Detection Tools (Bugs 05)*, in conjunction with PLDI '05, June 2005.
6. Steering committee, *Feedback-Directed and Dynamic Optimization*.
7. Co-Organizer and Program Committee Chair, *Workshop on Compiler Support for System Software (WCSS'99)*, May 1999.
8. Co-Organizer, *Workshop on Profile and Feedback-Directed Compilation*, October 1998.

Other Professional Activities

Member, CRA CIFellows Selection Committee, 2011.

Member, CRA CIFellows Selection Committee, 2010.

Member, PLDI 2000 Best Paper Selection Committee, 2010.

Member, ACM Task Force on Membership, 2009.

Member, CRA CIFellows Selection Committee, 2009.

ACM National Lecturer.

NSF review panel, Programming Languages, February 1998.

NSF review panel, Career Awards, December 1996.

NSF review panel, Postdoctoral Research Associates, January 1995.

NSF review panel, Research Initiation Awards, April 1991.

Refereed papers for: SIGPLAN Conference on Programming Language Design and Implementation (PLDI), ACM Symposium on Principles of Programming Languages (POPL), Conference on Architectural Support of Programming Languages and Operating Systems (ASPLOS), SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP), ACM SIGMETRICS Conference on Measurement & Modeling of Computer Systems, International Symposium on Computer Architecture (ISCA), International Conference on Parallel Processing (ICPP), International Conference on Supercomputing (ICS), Supercomputing (SC), Hawaii International Conference on System Sciences (HICSS), *ACM Transactions on Programming Languages and Systems (TOPLAS)*, *ACM Letters on Programming Languages and Systems (LOPLAS)*, *ACM Transactions on Internet Technology (TOIT)*, *ACM Transactions on Computer Systems (TOCS)*, *IEEE Transactions on Computers*, *IEEE Transactions on Parallel and Distributed Systems*, *Software-Practice & Experience*, *Communications of the ACM*, *International Journal of Parallel Programming*, *Journal of Programming Languages*, *International Journal of Computer Simulation*, *Scientific Programming*, Benjamin Cummings, Morgan-Kaufmann, MIT Press.

Member of ACM, IEEE.

Grants and Awards

1. 1998 Sun Microsystems: \$100,000 cash grant to Wisconsin Wind Tunnel project.
2. 1997 Intel: \$20,860 Equipment grant.
3. 1997 Sun Microsystems: \$100,000 cash grant to Wisconsin Wind Tunnel project.
4. 1997 Sun Microsystems: \$2,450,940 equipment grant to MIDSHIP project.
5. 1997 Hewlett-Packard: \$175,337 equipment grant to departmental PC laboratory.
6. 1996 Sun Microsystems: \$100,000 cash grant to Wisconsin Wind Tunnel project.
7. 1996 IBM: \$79,605 cash and equipment as IBM Partnership Award.
8. 1996 Hewlett-Packard: \$56,268 cash and equipment grant.
9. 1996 Microsoft: \$100,000 cash grant to CS department.
10. 1996 National Science Foundation: \$1,208,251 co-PI, *Tornado: Fine-Grain Distributed Shared Memory for SMP Clusters*.
11. 1996 National Science Foundation: \$1,600,000 co-PD, CISE Research Infrastructure grant, *MIDSHIP: Managing Image Data for Scalable High Performance*.
12. 1995 IBM: \$1,255,000 equipment grant to Wisconsin Wind Tunnel Project.
13. 1995 Portland Group: \$90,000 software grant.
14. 1995 Hewlett-Packard: \$62,338 cash and equipment grant.
15. 1994 Sun Microsystems: \$74,780 Equipment grant to Wisconsin Wind Tunnel project.

16. 1994–1996 National Science Foundation: \$224,896 co-PI, *Cooperative Shared Memory and the Wisconsin Wind Tunnel (Supplement)*.
17. 1994–1997 DARPA: \$2,371,525 co-PI, *Blizzard and Paradyn: Infrastructure and Scalable Tools for Multi-Paradigm Parallel Computers*.
18. 1993 Digital Equipment Corp.: \$73,381 *Editing Program Executables*, NYI matching grant.
19. 1993–1996 DOE: \$900,000 co-PI, *The Parallel Programmer's Workbench: Programming Tools in Support of the Computational Sciences*.
20. 1993–1998 National Science Foundation: \$312,500 PI, NSF Young Investigator (NYI) Award. *Programming Massively Parallel Computers*.
21. 1993–1994 National Science Foundation: \$39,861 PI, Software Capitalization Grant, *Editing Program Executables*.
22. 1993–1996 National Science Foundation: \$1,428,308 co-PI, *Cooperative Shared Memory and the Wisconsin Wind Tunnel*.
23. 1992 Sun Microsystems: \$18,095 equipment grant, *Tools for Optimal Profiling and Tracing*.
24. 1992–1993 NASA: \$21,620 National Fellowship in Parallel Processing (to L. Huelsbergen), *Dynamic Program Parallelization*.
25. 1991–1993 National Science Foundation: \$125,500 PI, *Parallel Symbolic Computation*.
26. 1991–1996 National Science Foundation: \$2,000,000 Participating Faculty Member, Departmental Institutional Infrastructure grant, *PRISM-A Laboratory for Research in Future High-Performance Parallel Computing*.

Books

1. Tim Harris, James Larus, Ravi Rajwar, [Transactional Memory: 2nd edition](#), Morgan & Claypool Publishers, 2010.
2. James Larus, Ravi Rajwar, [Transactional Memory](#), Morgan & Claypool Publishers, 2007.

Journal Publications

1. James Larus, Galen Hunt, "[The Singularity System](#)," *Communications of the ACM (CACM)*, Vol. 53, No. 8, pp. 72–79, August 2010.
2. James Larus, "[Spending Moore's Dividend](#)," *Communications of the ACM (CACM)*, Vol. 52, No. 5, pp. 62–69, May 2009.
3. James Larus, "[PL Research and Its Consequences on PL Curriculum](#)," *SIGPLAN Notices*, Vol. 43, No. 11, pp. 84–86, November 2008.
4. James Larus, Christos Kozyrakis, "[Transactional Memory](#)," *Communications of the ACM (CACM)*, Vol. 51, No. 7, pp. 80–88, July 2008.
5. Galen Hunt, James Larus, "[Singularity: Rethinking the Software Stack](#)," *Operating Systems Review*, Vol. 41, No. 2, pp. 37–49, April 2007.
6. James Larus, Galen Hunt, and David Tarditi, "[Singularity](#)," *MSDN Magazine*, Vol. 21, No. 7, pp. 176, June 2006.
7. Herb Sutter, James Larus, "[Software and the Concurrency Revolution](#)," *ACM Queue*, Vol. 3, No. 7, pp. 54–62, September 2005.
8. James Larus, Thomas Ball, Manuvir Das, Rob DeLine, Manuel Fähndrich, Jon Pincus, Sriram Rajamani, Ramanathan Venkatapathy, "[Righting Software](#)," *IEEE Software*, Vol. 21, No. 3, pp. 92–100, May/June 2004.
► **IEEE Software 25th-Anniversary Top Picks.**
9. Trishul Chilimbi, Mark Hill, and James Larus, "[Making Pointer-Based Data Structures Cache Conscious](#)," *IEEE Computer*, Vol. 33, Num. 12, pp. 67–74, December 2000.
10. Shubhendu Mukherjee, Steven Reinhardt, Babak Falsafi, Mike Litzkow, Mark Hill, David Wood, Steven Huss-Lederman, and James Larus, "[Wisconsin Wind Tunnel II: A Fast, Portable Parallel Architecture Simulator](#)," *IEEE Concurrency*, Vol. 8, No. 4, pp. 12–20, October 2000.

11. Thomas Ball, James Larus, "[Using Paths to Measure, Explain, and Enhance Program Behavior](#)," *IEEE Computer*, Vol. 33, No. 7, pp. 57–65, July 2000.
12. Satish Chandra, James Larus, Bradley Richards, "[Teapot: A Domain-Specific Language for Writing Cache Coherence Protocols](#)," *IEEE Transactions on Software Engineering*, Vol. 25, No. 3, pp. 317–334, May/June 1999.
13. Mark Hill, James Larus, and David Wood, "[Portably Supporting Parallel Programming Languages](#)," *IEEE Computer*, Vol. 28, No. 8, pp. 28–29, August 1995.
14. David Wood, Satish Chandra, Babak Falsafi, Mark Hill, James Larus, Alvin Lebeck, James Lewis, Shubhendu Mukherjee, Subbarao Palacharla, Steven Reinhardt, "[Mechanisms for Cooperative Shared Memory](#)," *CMG Transactions*, Issue 84, pp. 51–62, Spring 1994.
15. Thomas Ball and James Larus, "[Optimally Profiling and Tracing Programs](#)," *ACM Transactions on Programming Languages and Systems (TOPLAS)*, Vol. 16, No. 4, pp. 1319–1360, July 1994.
16. James Larus and Thomas Ball, "[Rewriting Executable Files to Measure Program Behavior](#)," *Software Practice & Experience*, Vol. 24, No. 2, pp. 197–218, February 1994.
17. James Larus, "[Compiling for Shared-Memory and Message-Passing Computers](#)," *ACM Letters on Programming Languages and Systems*, Vol. 2, No. 1–4, pp. 165–180, March–December 1993.
18. Mark Hill, James Larus, Steven Reinhardt, and David Wood, "[Cooperative Shared Memory: Software and Hardware for Scalable Multiprocessors](#)," *ACM Transactions on Computer Systems (TOCS)*, Vol. 11, No. 4, pp. 300–318, November 1993.
19. James Larus, "[Efficient Program Tracing](#)," *IEEE Computer*, Vol. 26, No. 5, pp. 52–61, May 1993.
20. James Larus, "[Loop-Level Parallelism in Numeric and Symbolic Programs](#)," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 4, No. 7, pp. 812–826, July 1993.
21. James Larus, "[Compiling Lisp Programs for Parallel Execution](#)," *Lisp and Symbolic Computation*, Vol. 4, No. 1, pp. 29–99, January 1991.
22. James Larus, "[Abstract Execution: A Technique for Efficiently Tracing Programs](#)," *Software–Practice & Experience*, Vol. 20, No. 12, pp. 1241–1258, December 1990.
23. Mark Hill and James Larus, "[Cache Considerations for Programmers of Multiprocessors](#)," *Communications of the ACM*, Vol. 18, No. 8, pp. 97–102, August 1990.
24. Benjamin Zorn, Kinson Ho, James Larus, Luigi Semenzato, and Paul Hilfinger, "[Multiprocessing Extensions in SPUR Lisp](#)," *IEEE Software*, pp. 41–49, July 1989.
25. Mark Hill, Susan Eggers, James Larus, et al., "[Design Decisions in SPUR](#)," *IEEE Computer*, Vol. 18, No. 11, pp. 8–24, November 1986.

Prefaces and Collection Contributions

1. James Larus, Dennis Gannon, "Multicore Computing and Scientific Discovery," in Tony Hey, Stewart Tansley, and Kristin Tolle, eds., *The Fourth Paradigm: Data-Intensive Scientific Discovery*, Microsoft Research 2009.
2. James Larus, Preface to Andreas Zeller, *Why Programs Fail: A Guide to Systematic Debugging*, Morgan Kaufmann, 2005.
3. James Larus, Preface to Michael Scott, *Programming Language Pragmatics*, Morgan Kaufmann, 2005.
4. James Larus, Brad Richards, Guhan Viswanathan, "Parallel Programming in C**: A Large-Grain Data-Parallel Programming Language," in Gregory V. Wilson and Paul Lu, eds., *Parallel Programming Using C++*, MIT Press, 1996
5. Steven Reinhardt, Mark Hill, James Larus, Alvin Lebeck, James Lewis, David Wood, "The Wisconsin Wind Tunnel: Virtual Prototyping of Parallel Computers," in Laxmi Bhuyan and Xiaodong Zhang, eds., *Multiprocessor Performance Measurement and Evaluation*, IEEE Computer Society Press, 1994.
6. James Larus, Satish Chandra, and David Wood, "CICO: A Practical Shared-Memory Programming Performance Model," in T. Hey and J. Ferrante, eds., *Portability and Performance for Parallel Processing*, John Wiley & Sons, 1994.

7. James Larus, “Assemblers, Linkers, and SPIM,” in David Patterson and John Hennessy, *Computer Organization & Design: The Hardware/Software Interface*, Morgan Kaufman, 1993.
8. Mark Hill, Susan Eggers, James Larus, et al., “Design Decisions in SPUR,” in Benjamin Wah and C. V. Ramamoorthy, eds., *Computers for Artificial Intelligence Processing*, John Wiley & Sons, 1990.

Conference and Workshop Publications

1. Sergey Bykov, Alan Geller, Gabriel Kliot, James Larus, Ravi Pandya, Jorgen Thelin, “Orleans: Cloud Computing for Everyone,” To appear: *ACM Symposium on Cloud Computing (SOCC 2011)*, Portugal, October 2011.
2. Yi Lu, Qiaomin Xie, Gabriel Kliot, Alan Geller, James Larus, Albert Greenberg, “Join-Idle-Queue: A Novel Load Balancing Algorithm for Dynamically Scalable Web Services,” *IFIP Performance 2011*, October 2011. To appear in *Performance Evaluation (PEVA)*.
3. James Larus, “Programming Clouds,” Keynote abstract, *International Conference on Compiler Construction (CC ’10)*, Paphos, Cyprus, LNCS 6011, March 2010.
4. James Larus, “[The Real Value of Testing](#),” Keynote abstract, *International Symposium on Software Testing and Analysis (ISSTA 2008)*, pp. 1-2, July 2008.
5. James Larus, “Singularity: Designing Better Software (Invited Talk),” Invited talk abstract, *International Conference on Computer-Aided Verification (CAV 08)*, LNCS 5123, July 2008.
6. Virendra Marathe, Time Harris, James Larus, “[Featherweight Transactions: Decoupling Threads and Atomic Blocks](#),” *12th ACM SIGPLAN Symposium on Principles and Practices of Parallel Programming (PPoPP 07)*, pp. 134–135, March 2007.
7. Galen Hunt, Mark Aiken, Manuel Fähndrich, Chris Hawblitzel, Orion Hodson, James Larus, Steven Levi, Bjarne Steensgaard, David Tarditi, Ted Wobber, “[Sealing OS Processes to Improve Dependability and Safety](#),” pp. 341–354, *Second ACM SIGOPS/EuroSys Conference on Computer Systems (EuroSys 2007)*, March 2007.
8. James Larus, “[Is Process or Architecture the Solution?](#),” Invited keynote talk abstract, *First Workshop on Architectural and System Support for Improving Software Dependability (ASID)*, at *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS XII)*, October 2006.
9. Mark Aiken, Manuel Fähndrich, Chris Hawblitzel, Galen Hunt, James Larus, “[Deconstructing Process Isolation](#),” *ACM SIGPLAN Workshop on Memory Systems Performance and Correctness (MSPC 2006)*, at *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS XII)*, pp. 1–10, October 2006.
10. Manuel Fähndrich, Michal Carbin, James Larus, “[Reflective Program Generation with Patterns](#),” *Generative Programming and Component Engineering (GPCE ’06)*, October 2006.
11. James Larus “[Abolish Runtime Systems: Operating Systems Should Control the Execution Environment](#),” Invited talk abstract, *Second International Conference on Virtual Execution Environments*, June 2006.
12. Manuel Fähndrich, Mark Aiken, Chris Hawblitzel, Orion Hodson, Galen Hunt, James Larus, and Steven Levi, “[Language Support for Fast and Reliable Message-based Communication in the Singularity OS](#),” *EuroSys 2006 Conference*, pp. 177–190, April 2006.
 ► **Best paper award.**
13. Galen Hunt, James Larus, David Tarditi, and Ted Wobber, “[Broad New OS Research: Challenges and Opportunities](#),” *USENIX Tenth Workshop on Hot Topics in Operating Systems (HOTOS X)*, June 2005.
14. Glenn Ammons, James Larus, “[Improving Data-Flow Analysis with Path Profiling](#),” in *20 Years of the ACM/SIGPLAN Conference on Programming Language Design and Implementation (1979–1999): A Selection*, ACM 2003.
15. Glenn Ammons, David Mandelin, Rastislav Bodik, James Larus, “[Debugging Temporal Specifications with Concept Analysis](#),” *ACM SIGPLAN 2003 Conference on Programming Language and Implementation (PLDI’03)*, June 2003, pp. 182–196.
16. James Larus and Michael Parkes, “[Using Cohort Scheduling to Enhance Server Performance](#),” *2002 USENIX Annual Technical Conference*, June 2002, pp. 103–114.

17. Glenn Ammons, Ras Bodik, and James Larus, "[Mining Specifications](#)," *29th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL 2002)*, January 2002, pp. 4–16.
18. James Larus and Michael Parkes, "[Using Cohort Scheduling to Enhance Server Performance \(Extended Abstract\)](#)," *Workshop on Optimization of Middleware and Distributed Systems*, June 2001, pp. 182–187 (Invited Paper).
19. Eric Schnarr, Mark Hill, James Larus, "[Facile: A Language and Compiler for High-Performance Processor Simulators](#)," *ACM SIGPLAN '01 Conference on Programming Language and Implementation (PLDI'01)*, June 2001, pp. 321–331.
20. James Larus, "[Whole Program Paths](#)," *ACM SIGPLAN '99 Conference on Programming Language and Implementation (PLDI'99)*, May 1999, pp. 259–269.
▶ **Most Innovative Paper award.**
21. Trishul Chilimbi, Mark Hill, James Larus, "[Cache-Conscious Structure Layout](#)," *ACM SIGPLAN '99 Conference on Programming Language and Implementation (PLDI'99)*, May 1999, pp. 1–12.
22. Trishul Chilimbi, Bob Davidson, James Larus, "[Cache-Conscious Structure Definition](#)," *ACM SIGPLAN '99 Conference on Programming Language and Implementation (PLDI'99)*, May 1999, pp. 13–24.
23. Trishul Chilimbi and James Larus, "[Using Generational Garbage Collection to Implement Cache-Conscious Data Placement](#)" *1998 International Symposium on Memory Management*, October 1998.
24. Ioannis Schoinas, Babak Falsafi, Mark Hill, James Larus, and David Wood, "Sirocco: Cost-Effective Fine-Grain Distributed Shared Memory," *International Conference on Parallel Architecture and Compilation Techniques (PACT '98)*, October 1998, pp. 40–51.
25. Thomas Ball, James Larus, Genevieve Rosay, "Analyzing Path Profiles with the Hot Path Browser," *Workshop on Profile and Feedback-Directed Compilation*, in conjunction with the *International Conference on Parallel Architectures and Compilation Techniques (PACT '98)*, Paris, France, October 1998.
26. Eric Schnarr and James Larus, "[Fast Out-of-Order Processor Simulation Using Memoization](#)," *Eighth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS-VIII)*, October 1998, pp. 283–294.
27. Brad Richards and James Larus, "[Protocol-Based Race Detection](#)," *SIGMETRICS Symposium on Parallel and Distributed Tools (SPDT '98)*, August 1998.
28. Steven Reinhardt, James Larus, and David Wood, "[Typhoon: A User-Level Shared-Memory System](#)," *25 Years of the International Symposia on Computer Architecture (Selected Papers)*, pp. 497–508, June 1998.
29. Steven Reinhardt, James Larus, and David Wood, "[Retrospective: Typhoon: A User-Level Shared-Memory System](#)," *25 Years of the International Symposia on Computer Architecture (Selected Papers)*, pp. 98–102, June 1998.
30. Glenn Ammons and James Larus, "[Improving Data-flow Analysis with Path Profiles](#)," *ACM SIGPLAN '98 Conference on Programming Language Design and Implementation (PLDI'98)*, June 1998, pp. 72–84. (Selected for *20 Years of the ACM/SIGPLAN Conference on Programming Language Design and Implementation (1979–1999): A Selection*.)
31. Satish Chandra, Michael Dahlin, Bradley Richards, Randolph Y. Wang, Thomas E. Anderson, and James Larus "[Experience with a Language for Writing Coherence Protocols](#)," *USENIX Conference on Domain-Specific Languages*, October 1997, pp. 51–66.
32. Thomas Reps, Thomas Ball, Manuvir Das, and James Larus, "[The Use of Program Profiling for Software Maintenance with Applications to the Year 2000 Problem](#)," *Fifth ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE)*, Sept. 1997, pp. 432–449.
33. Zhichen Xu, James Larus, and Bart Miller, "[Shared-Memory Performance Profiling](#)," *Sixth ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP '97)*, June 1997, pp. 240–251.
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35. Glenn Ammons, Thomas Ball, James Larus, "[Exploiting Hardware Performance Counters with Flow-Sensitive and Context-Sensitive Program Profiling](#)," *ACM SIGPLAN '97 Conference on Programming Language Design and*

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► **Most influential 1997 PLDI paper award.**

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 37. Eric Schnarr and James Larus, “[Instruction Scheduling and Executable Editing](#),” *29th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO 29)*, December 1996, pp. 288–297.
 38. Thomas Ball and James Larus, “[Efficient Path Profiling](#),” *29th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO 29)*, December 1996, pp. 46–57.
 39. Guhan Viswanathan and James Larus, “Compiler-directed Shared-Memory Communication for Iterative Parallel Applications,” *1996 ACM/IEEE Supercomputing Conference*, November 1996.
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 41. Mark Hill, James Larus, and David Wood, “Parallel Computer Research in the Wisconsin Wind Tunnel Project,” *NSF Conference on Experimental Research in Computer Systems*, June 1996.
 42. Satish Chandra, Brad Richards, and James Larus, “[Teapot: Language Support for Writing Memory Coherence Protocols](#),” *ACM SIGPLAN '96 Programming Language Design and Implementation (PLDI '96)*, May 1996, pp. 237–248.
 43. Trishul Chilimbi, Thomas Ball, Stephen Eick, and James Larus, “StormWatch: A Tool for Visualizing Memory System Protocols,” *1995 ACM/IEEE Supercomputing Conference*, December 1995.
 44. Shubhendu Mukherjee, Shamik Sharma, Mark Hill, James Larus, Anne Rogers, and Joel Saltz, “[Efficient Support for Irregular Applications on Distributed-Memory Machines](#),” *Fifth ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP)*, July 1995, pp. 68–79.
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 53. Lorenz Huelsbergen, James Larus, and Alexander Aiken, “[Using the Run-Time Sizes of Data Structures to Guide Parallel-Thread Creation](#),” *1994 ACM Conference on Lisp and Functional Programming*, pp. 79–90, June 1994.
 54. Steven Reinhardt, James Larus, and David Wood, “[Typhoon: A User-Level Shared-Memory System](#),” *International Symposium on Computer Architecture (ISCA '94)*, pp. 325–337, April 1994.
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55. James Larus, "[C**](#): A Large-Grain, Object-Oriented, Data-Parallel Programming Language," in U. Banerjee, D. Gelernter, A. Nicolau, and D. Padua, eds., *Languages And Compilers for Parallel Computing (5th International Workshop)*, *Lecture Notes in Computer Science 757*, Springer-Verlag, 1994.
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60. Mark Hill, James Larus, Steven Reinhardt, and David Wood, "[Cooperative Shared Memory: Software and Hardware for Scalable Multiprocessors](#)," *Fifth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS-V)*, pp. 262–273, October 1992.
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62. Thomas Ball and James Larus, "[Optimally Profiling and Tracing Programs](#)," *Nineteenth Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages POPL '92*, pp. 59–70, January 1992.
63. James Larus, "Parallelism in Numeric and Symbolic Programs," in A. Nicolau, D. Gelernter, T. Gross, and D. Padua, eds. *Third Workshop on Programming Languages and Compilers for Parallel Computing*, MIT Press, 1991, pp. 331–349.
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68. James Larus and Paul Hilfinger, "[Register Allocation in the SPUR Lisp Compiler](#)," *SIGPLAN '86 Symposium on Compiler Construction*, pp. 255–263, June 1986.
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1. Sergey Bykov, Alan Geller, Gabriel Kliot, James Larus, Ravi Pandya, and Jorgen Thelin, "Orleans: A Framework for Cloud Computing," Microsoft Research Technical Report, [MSR-TR-2010-159](#), November 2010.
2. James Larus, "Spending Moore's Dividend," Microsoft Research Technical Report [MSR-TR-2008-69](#), May 2008.
3. Galen Hunt, Mark Aiken, Paul Barham, Manuel Fähndrich, Orion Hodson, James Larus, Steven Levi, Nick Murphy, Bjarne Steensgaard, David Tarditi, Ted Wobber, Brian Zill, "Sealing OS Processes to Improve Dependability and Security," Microsoft Research Technical Report [MSR-TR-2006-51](#), April 2006.
4. Mark Aiken, Manuel Fähndrich, Chris Hawblitzel, Galen Hunt, James Larus, "Deconstructing Process Isolation," Microsoft Research Technical Report [MSR-TR-2006-43](#), April 2006.

5. Galen Hunt, James Larus, Martin Abadi, Mark Aiken, Paul Barham, Manuel Fahndrich, Chris Hawblitzel, Orion Hodson, Steven Levi, Nick Murphy, Bjarne Steensgaard, David Tarditi, Ted Wobber, Brian Zill, “An Overview of the Singularity Project,” Microsoft Research Technical Report [MSR-TR-2005-135](#), October 2005.
6. Galen Hunt, James Larus, “Singularity Technical Report 1: Singularity Design Motivation,” Microsoft Research Technical Report [MSR-TR-2004-105](#), November 2004.
7. Jeremy Condit, James Larus, Sriram Rajamani, Jakob Rehof, “Region-Based Model Abstraction,” Microsoft Research Technical Report [MSR-TR-2003-47](#), August 2003.
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9. Thomas Ball, James Larus, “Programs Follow Paths,” Microsoft Research Technical Report, [MSR-TR-99-01](#), January 1999.
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11. Trishul Chilimbi, James Larus, and Mark Hill, “Improving Pointer-Based Codes Through Cache-Conscious Data Placement,” Computer Sciences Technical Report #1365, University of Wisconsin-Madison, March 1998.
12. Guhan Viswanathan and James Larus, “User-defined Reductions for Communication in Data-Parallel Languages,” Computer Sciences Technical Report #1293, University of Wisconsin-Madison, January 1996.
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19. Benjamin Zorn, Paul Hilfinger, Kinson Ho, James Larus, and Luigi Semenzato, “Features for Multiprocessing in SPUR Lisp,” Computer Science Division-EECS, University of California at Berkeley, Technical Report No. UCB/CSD 88/406, March 1988.
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24. James Larus and William Bush, “Classy: An Efficient Method for Compiling Smalltalk,” *Proceedings of CS292R: Smalltalk on a RISC, Architectural Investigations*, Computer Science Division-EECS, University of California at Berkeley, Technical Report, April 1983.
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Patents

1. Ozzie; Raymond, Gates, III; William, Flake; Gary, Bergstraesser; Thomas, Blinn; Arnold, Brumme; Christopher, Cheng; Lili, Connolly; Michael, Dani; Nishant, Glasgow; Dane, Glasser; Daniel, Gounares; Alexander, Larus; James, MacLaurin; Matthew, Meijer; Henricus, Mishra; Debi, Mital; Amit, Snyder, Jr.; Ira, Thekkath; A, Treadwell, III; David, Zaner-Godsey; Melora, [*Personal Data Mining*](#), U.S. Patent 7,930,197, April 2011.
2. Hunt; Galen C, Hawblitzel; Chris K., Larus; James R., Fahndrich; Manuel A, Aiken; Mark, [*Process isolation using protection domains*](#), U.S. Patent 7,882,317, February 2011.
3. Meijer; Henricus Johannes Maria, Bergstraesser; Thomas F., Brumme; Christopher W, Cheng; Lili, Gounares; Alexander G., Larus; James R., Mishra; Debi P., Snyder, Jr.; Ira L., [*Resource Standardization in an Off-premise Environment*](#), U.S. Patent 7,797,453, September 2010.
4. Meijer; Henricus Johannes Maria, Gates, III; William H., Ozzie; Raymond E., Flake; Gary W., Cheng; Lili, Dani; Nishant V., Glasser; Daniel S., Gounares; Alexander G., Larus; James R., Mishra; Debi P., Mital; Amit, Snyder, Jr.; Ira L., Thekkath; Chandramohan A., [*State Reflection*](#), U.S. Patent 7,716,280, May 2010.
5. Cheng; Lili, Flake; Gary W., Gounares; Alexander G., Larus; James R., MacLaurin; Matthew B. (Woodinville, WA), Ozzie; Raymond E., Bergstraesser; Thomas F., Blinn; Arnold N. (Hunts Point, WA), Brumme; Christopher W., Connolly; Michael, Glasser; Daniel S., Meijer; Henricus Johannes Maria, Mishra; Debi P., Zaner-Godsey; Melora, [*Machine Learning System for Analyzing and Establishing Tagging Trends Based on Convergence Criteria*](#), U.S. Patent 7,716,150, May 2010.
6. Rehof; Jakob, Larus; James R., Rajamani; Sriram K., [*Programming Model to Detect Deadlocks in Concurrent Programs*](#), U.S. Patent 7,703,077, April 2010.
7. Hunt; Galen C., Larus; James R., DeTreville; John D., Jones; Michael B., Chilimbi; Trishul A., [*Inter-process Interference Elimination*](#), U.S. Patent 7,694,300, April 2010.
8. Larus; James R., Rajamani; Sriram K., Rehof; Jakob, [*Contracts and Futures in an Asynchronous Programming Language*](#), U.S. Patent 7,694,276, April 2010.
9. Ozzie; Raymond E., Gates, III; William H., Flake; Gary W., Bergstraesser; Thomas F., Blinn; Arnold N., Bolosky; William J., Brumme; Christopher W., Cheng; Lili, Connolly; Michael, Glasgow; Dane A., Glasser; Daniel S., Gounares; Alexander G., Larus; James R., MacLaurin; Matthew B., Meijer; Henricus Johannes Maria, Mishra; Debi P., Mital; Amit, Snyder, Jr.; Ira L., Thekkath; Chandramohan A., Zaner-Godsey; Melora, [*Dynamic Environment Evaluation and Service Adjustment Based on Multiple User Profiles Including Data Classification and Information Sharing with Authorized Other Users*](#), U.S. Patent 7,689,524, March 2010.
10. Gates, III; William H., Flake; Gary W., Larus; James R., Mishra; Debi P., Thekkath; Chandramohan A., Ozzie; Raymond E., Cheng; Lili, Dani; Nishant V., Glasser; Daniel S., Gounares; Alexander G., Meijer; Henricus Johannes Maria, Mital; Amit, Snyder, Jr.; Ira L., [*State Replication*](#), U.S. Patent 7,680,908, March 2010.
11. Henricus Johannes Maria Meijer, William H. Gates, III, Raymond E. Ozzie, Gary W. Flake, Thomas F. Bergstraesser, Arnold N. Blinn, Christopher W. Brumme, Lili Cheng, Michael Connolly, Nishant V. Dani, Dane A. Glasgow, Daniel S. Glasser, Alexander G. Gounares, James R. Larus, Matthew B. MacLaurin, Debi P. Mishra, Amit Mital, Ira L. Snyder, Jr., Chandramohan A. Thekkath, David R. Treadwell, III, and Melora Zaner-Godsey, [*Recommendation System that Identifies a Valuable User Action by Mining Data Supplied by a Plurality of Users to Find a Correlation that Suggests One or More Actions for Notification*](#), U.S. Patent 7,657,493, February 2010.
12. Henricus Johannes Maria Meijer, Raymond E. Ozzie, Gary W. Flake, Thomas F. Bergstraesser, Arnold N. Blinn, Christopher W. Brumme, Michael Connolly, Dane A. Glasgow, Alexander G. Gounares, Galen C. Hunt, James R. Larus, Matthew B. MacLaurin, and David R. Treadwell, III, [*Operating system with Corrective Action Service and Isolation*](#), U.S. Patent 7,647,522, January 2010.
13. Galen C. Hunt, James R. Larus, Manuel Fahndrich, Edward P. Wobber, Martin Abadi, and John D. DeTreville, [*Inter-process Communications Employing Bi-directional Message Conduits*](#), U.S. Patent 7,600,232, January 2010.
14. Galen C. Hunt, Thomas Roeder, James R. Larus, Manuel Fahndrich, John D. DeTreville, Steven P. Levi, Benjamin Zorn, Wolfgang Grieskamp, [*Self-Describing Artifacts and Application Abstractions*](#), U.S. Patent 7,451,435, November 2008.

15. James Larus, [*Virtual Machine for Operating N-core Application on M-core Processor*](#), U.S. Patent 7,406,407, July 2008.
 16. Michael Parkes, James Larus, [*Method and System for Performing a Task on a Computer*](#), U.S. Patent 7,137,116, November 2006.
 17. James Larus, Robert Davidson, Trishul Chilimbi, [*Field Reordering to Optimize Cache Utilization*](#), United States Patent 6,360,361, March 2002.
 18. Trishul Chilimbi, James Larus, Robert Davidson, [*Data Structure Partitioning to Optimize Cache Utilization*](#), United States Patent 6,330,556, December 2001.
 19. James Larus, [*Whole Program Path Profiling*](#), United States Patent 6,327,699, December 2001.
 20. Trishul Chilimbi, James Larus, [*Data Structure Partitioning with Garbage Collection to Optimize Cache Utilization*](#), United States Patent 6,321,240, November 2001.
- 24 other patents submitted.

Widely Distributed Software

PP – A path profiling tool.

EEL – An executable editing library.

QP/QPT – A program profiler and tracing system that uses the Ball & Larus's optimal profiling algorithm.

SPIM – An instruction-level simulator for the MIPS R2000.

AE – A compiler-based program tracing system.

mh-e – A mail system front-end for GNU emacs.

Keynotes and Invited Talks

1. “The Cloud Will Change Everything,” Microsoft Research Cloud Futures Workshop, June 2011.
2. —, Keynote, EcoCloud Opening, EPFL, Lausanne, Switzerland, May 2011.
3. —, Invited Talk, AMD, April 2011.
4. —, Keynote, *Sixteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2011)*, March 2011.
5. “Programming the Cloud,” Keynote, *11th International Symposium on High-Performance Computer Architecture (HPCA)* and *16th ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming (PPoPP)*, February 2011.
6. —, Gerard Salton Memorial Lecture, Cornell University, November 2010.
7. “Cloud Programming,” Microsoft Faculty Summit, July 2010.
8. —, Invited Talk, *16th Monterey Workshop on Modeling, Development and Verification of Adaptive Computer Systems*, April 2010.
9. “Programming Clouds,” Keynote, *International Conference on Compiler Construction (CC '10)*, Paphos, Cyprus, March 2010.
10. “Should We Fear Concurrency?,” Invited Talk, *Workshop on Advancing Computer Architecture Research (ACAR)*, February 2010.
11. “Programming Clouds,” Invited Talk, *First Mysore-Park Workshop on Building and Programming the Cloud*, Mysore India, January 2010.
12. “Hardware Can Make Data Center Software Simpler and More Robust,” Invited Talk, *Workshop on Architectural Concerns in Large Datacenters*, ISCA 2009, Austin, TX, June 2009.
13. “Multicore and Cloud Computing – Time to Start Afresh,” Keynote, *High Confidence Software and Systems*, Baltimore, MD, May 2009.

14. “The Real Value of Testing,” Keynote, *International Symposium on Software Testing and Analysis (ISSTA 2008)*, Seattle, WA, July 2008.
15. “Singularity: Designing Better Software,” Invited talk at *International Conference on Computer-Aided Verification (CAV 08)*, Princeton NJ, July 2008.
16. “Spending Moore’s Dividend,” Invited talk at *Workshop on Exploiting Concurrency: Efficiency and Correctness (EC²)*, at CAV 2008, Princeton NJ, July 2008.
17. “It is the Software, Stupid,” Presentation to the Computer Science Technical Board panel on Sustaining Growth in Computing Performance, San Jose, CA, December 2007.
18. “Is Architecture the Solution?,” Keynote talk at *First Workshop on Architectural and System Support for Improving Software Dependability (ASID)*, at *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS XII)*, San Jose, CA, October 2006.
19. “Abolish Run-time Systems: The Operating System Should Control the Execution Environment,” Keynote talk at *Second International Conference on Virtual Execution Environments*, Ottawa, Canada, June 2006.
20. “Can Architecture Enhance Verifiability? The Singularity Project at Microsoft Research,” Invited talk at the *Seventh International Conference on Verification, Model Checking and Abstract Interpretation*, Charleston, SC, January 2006.
21. “Building Dependable Software,” Keynote at I & C Research Day, EPFL – Ecole Polytechnique Fédérale de Lausanne, June 2005.
22. —, *Microsoft Academic Days in Silicon Valley*, San Jose, CA, October 2004.
23. —, Keynote at *Eleventh International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS-XI)*, Boston MA, October 2004.
24. “Software Matters,” Presentation to the Computer Science Technical Board panel on Certifiably Dependable Software, Washington DC, October 2004.
25. “Righting Software: Tools to Improve Software Development,” *German-American Frontiers of Engineering Symposium*, National Academy of Engineering, April 2004.
26. —, Keynote to *Third Annual Southeastern Software Engineering Conference*, Huntsville AL, March 2004.
29. “Programs Follow Paths,” *IEEE International Conference on Computer Languages (ICCL '98)*, May 1998.
30. “Introduction to Java,” *WILS World '97 Conference*, Madison WI, May 1997.
31. “Why Write Real Software (in a University)?,” Keynote to *3rd Annual Workshop on Computer Architecture Education (WCAE3)*, San Antonio, Texas, February 1997.
32. “A Case for Custom Coherence Protocols,” *IBM Research 50th Anniversary Symposium on Parallel Computing*, IBM Tokyo Research Laboratory, Tokyo Japan, March 1996.
33. Plenary talk: “Tempest: A Substrate for Portable Parallel Programs,” *Seventeenth International Conference on Boundary Elements (BEM 17)*, Madison WI, July 1995.
34. “Compilers: Catching Up With Computer Architecture,” *IBM Rochester*, June 1993.

Presentations at Symposia, Workshops, and Tutorials

1. Panelist, “Discussion on industry vs. government funding for data center research,” *Workshop on Exascale Evaluation and Research Techniques (EXERT)*, at ASPLOS 2011, Santa Anna, CA March 2011.
2. Debater, “There is a free lunch: you can have strong parallel safety guarantees with little programmer effort,” *Workshop on Deterministic Multiprocessing and Parallel Programming*, University of Washington, November 2009.
3. Panelist, “Teach Parallel Panel,” *Supercomputing '09*, Portland, OR, November 2009.
4. Panelist, “Cloud Computing Challenges and Realities,” *5th Workshop on the Interaction between Operating System and Computer Architecture (WIOSCA 09)*, at ISCA 2009, Austin, TX, June 2009.
5. Panelist, “Memory Systems Panel,” *Workshop on Memory Systems Performance and Correctness*, ASPLOS '08, Seattle, WA, March 2008.

6. “Reconsidering Transactional Memory,” Dagstuhl Seminar, September 2007.
7. Panelist, “Corezilla: Build and Tame the Multicore Beast,” *44th Design Automation Conference (DAC)*, June 2007.
8. “Challenges in Compiler Technology for Software Reliability and Productivity,” *Workshop on Future Directions for Compiler Research and Education*, February 2007.
9. “What do Bell Bottoms, Peace Signs, and Computer Architecture Have in Common?,” Wild and Crazy Idea Session, at *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS XII)*, San Jose, CA, October 2006.
10. “Software Challenges in Nanoscale Technologies,” *CRA Workshop on Grand Challenges in Architecture*, December 2005.
11. “It’s the Software, Stupid,” *Workshop on Transactional Memory*, April 2005.
12. “The End of Compiler Research,” Dagstuhl Vision Seminar, August 2003.
13. “Cache-Conscious Compilation: Can Compilers Hack It?,” Dagstuhl Conference, September 2000.
14. “LCM: Memory System Support for Parallel Language Implementation,” *Parallel Object Oriented Methods & Applications (POOMA)*, Santa Fe, New Mexico, December 1994.
15. “Compiling for Shared-Memory and Message-Passing Computers,” *DIMACS Workshop on Models, Architectures, and Technologies for Parallel Computation*, Rutgers University, September 1993.
16. “CICO: A Practical Shared-Memory Programming Performance Model,” *Workshop on Portability and Performance for Parallel Processing, Southampton, England*, July 1993.
17. Tutorial: “Parallel Programming Languages,” *ACM SIGPLAN '93 Conference on Programming Language Design and Implementation (PLDI)*, June 1993.
18. “C**: A Large-Grain, Object-Oriented, Data-Parallel Programming Language,” *Fifth Workshop on Languages and Compilers for Parallel Computers*, New Haven CT, August 1992.
19. Panelist: “SPUR Retrospective,” *ONR/NSF/DARPA Workshop on Research in Experimental Computer Science*, October 1991.
20. Tutorial: “Parallel Lisp,” *ACM SIGPLAN '91 Conference on Programming Language Design and Implementation (PLDI)*, June 1991.
21. Panelist: “Problems and Issues in Parallel C Programming,” *ACM SIGPLAN Principles and Practice of Parallel Programming (PPoPP)*, April 1991.
22. “Parallelism in Numeric and Symbolic Programs,” *Workshop on Compilers for Parallel Machines*, Paris, France, December 1990.
23. —, *Third Workshop on Languages and Compilers for Parallel Computers*, Irvine, CA, August 1990.
24. *Workshop on Parallelization in the Presence of Pointers*, Leesburg, VA, March 1990.
25. “Parallel Lisp for SPUR,” *Asilomar Microcomputer Workshop*, Asilomar, CA, 1985.

Lectures at Universities and Research Institutes

1. “Orleans: A Platform for Cloud Computing,” Harvard University, November 2009.
2. “Spending Moore’s Dividend,” Distinguished Lecture, University of California at Davis, May 2009.
3. —, University of Texas, Austin, February 2009.
4. —, Distinguished Lecture, Texas A&M University, February 2009.
5. —, Carnegie-Mellon, April 2008.
6. “The Real Value of Testing,” Distinguished Lecture, Information Trust Institute, University of Illinois at Urbana Champagne, January 2009.
7. “Singularity: Rethinking the Software Stack,” University of Chicago, January 2008.
8. —, University of Texas at Austin, November 2007.

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9. —, Rice University, March 2007.
 10. —, "Distinguished Lecture, University of Pennsylvania, November 2006.
 11. "Singularity Overview," Distinguished Lecture, University of Illinois at Urbana Champagne, January 2006.
 12. —, "University of Wisconsin Computer Architecture Colloquia, November 2005.
 13. —, Distinguished Colloquium, University of California at Berkeley, November 2005.
 14. "Building Dependable Software," Distinguished Lecture, Rice University, October 2004.
 15. "Righting Software: Tools to Improve Software Development," Distinguished Colloquium, University of Maryland, November 2003.
 16. —, Microsoft Faculty Summit & Microsoft European Faculty Summit, July 2003.
 17. —, Ecole Nationale Supérieure d'Electronique et de Radioélectrique de Bordeaux, July 2003.
 18. "A New Generation of Systematic Programming Tools," Universitat Politècnica de Catalunya, Barcelona Spain, October 2002.
 19. —, Distinguished Lecturer, University of Pittsburgh, October 2002.
 20. —, University of Wisconsin—Madison, May 2002.
 21. —, Distinguished Lecture, University of California, Berkeley, March 2002.
 22. "Using Cohort Scheduling to Enhance Server Performance," Compaq Systems Research Center, June 2001.
 23. —, University of Washington, April 2001.
 24. "Enhanced Server Performance with Staged Server," University of California, Berkeley, October 2000.
 25. —, University of Wisconsin, Madison, October 2000.
 26. "Whole Program Paths," University of Maryland, October 1999.
 27. —, CMU, March 1999.
 28. "Fast Out-of-Order Processor Simulation," University of Washington, April 1998.
 29. "Cache-Conscious Data Structures," University of Washington, January 1998.
 30. "Efficient Path Profiling," Silicon Graphics, May 1997.
 31. —, University of California, Berkeley, May 1997.
 32. —, Sun Microsystems, April 1997.
 33. —, University of California, San Diego, April 1997.
 34. —, University of Toronto and IBM Toronto, March 1997.
 35. —, Microsoft Research Laboratory, February 1997.
 36. —, Hewlett Packard Research Laboratory, August 1996.
 37. "EEL: Machine-Independent Executable Editing," Intel Corporation, September 1996.
 38. —, Princeton University, April 1996.
 39. —, Sun Microsystems, December 1995.
 40. —, Microsoft Research, June 1995.
 41. "Tempest: A Substrate for Portable Parallel Programs," University of Wisconsin-Milwaukee, November 1995.
 42. —, University of Washington, June 1995.
 43. —, University of Massachusetts, April 1995.
 44. —, Harvard University, April 1995.
 45. "Tempest: User-Level Shared Memory," Rice University, March 1994.
 46. —, University of Texas, March 1994.
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47. —, University of Maryland, March 1994.
48. “EEL: A Library for Editing Program Executables,” AT&T Bell Laboratories, Naperville, December 1993.
49. “Cooperative Shared Memory and the Wisconsin Wind Tunnel,” IBM Hawthorne Research Laboratory, July 1993.
50. —, Los Alamos National Laboratory, June 1993.
51. —, University of California, Santa Barbara, February 1993.
52. —, Duke University, January 1993.
53. —, Washington University, December 1992.
54. —, Princeton University, December 1992.
55. —, Carnegie-Mellon University, November 1992.
56. —, University of Colorado, September 1992.
57. —, University of Washington, September 1992.
58. “Optimally Profiling and Tracing Programs,” Rutgers University, August 1992.
59. —, University of Texas at Austin, January 1992.
60. —, Yale University, October 1991.
61. —, Stanford University, August 1991.
62. “Parallelism in Numeric and Symbolic Programs,” University of California at Berkeley, August 1991.
63. —, AT&T Bell Laboratories, Murray Hill, August 1991.
64. —, Hewlett-Packard Laboratories, April 1991.
65. —, Center for Supercomputing Research and Development, University of Illinois, November 1990.
66. —, MIT, June 1990.
67. —, IBM Hawthorne Research Laboratory, June 1990.
68. “Restructuring Symbolic Programs for Concurrent Execution on Multiprocessors,” University of California at Berkeley, February 1989.
69. —, IBM Hawthorne Research Laboratory, July 1988.
70. “Restructuring Symbolic Programs for Concurrent Execution on Multiprocessors,” (Interview talk) Stanford University, February 1989.
71. —, University of Washington, March 1989.
72. —, Princeton University, March 1989.
73. —, University of Maryland, March 1989.
74. —, MIT, March 1989.
75. —, Yale University, March 1989.
76. —, CMU, March 1989.
77. —, University of Wisconsin-Madison, April 1989.

Videos

1. [Orleans: A Framework for Scalable Client+Cloud Computing](#), Channel 9 video, December 2010.
2. [Singularity III: Revenge of the SIP](#), Channel 9 video, August 2006.
3. [Singularity Revisited](#), Channel 9 video, December 2005.
4. [Singularity: A Research OS Written in C#](#), Channel 9 video, May 2005.

Teaching Experience

2000, Visiting Associate Professor: University of Washington.
1995–1998, Associate Professor: University of Wisconsin-Madison.
1989–1995, Assistant Professor: University of Wisconsin-Madison.
1985–1986, Instructor: Franz Inc., Berkeley, California.
1981, Teaching Assistant: University of California at Berkeley.
1980–1981, Head Teaching Assistant: Harvard University.
1979–1980, Teaching Assistant: Harvard University.

PhD Students

Glenn Ammons, PhD April 2003 (supervised by Ras Bodik).
Eric Schnarr, PhD “[Applying Programming Language Implementation Techniques To Processor Simulation](#),” December 2000 (supervised by Prof. Mark Hill).
Trishul Chilimbi, PhD “Cache-Conscious Data Structures,” June 1999.
Satish Chandra, PhD “Software Techniques for Customizable Distributed Shared Memory,” October 1997 (winner: 1998 UW Computer Sciences Graduate Student Research Award)
Guhan Viswanathan, PhD “New Techniques for Compiling Data Parallel Languages,” September 1996.
Brad Richards, PhD “Memory Systems for Parallel Programming,” August 1996.
Lorenz Huelsbergen, PhD “Dynamic Language Parallelization,” August 1993.

Civic Service

Visiting Committee, Harvard School of Engineering and Applied Sciences, April 2009.
Lakeside School Parent Technology Advisory Committee, 2003 – .
Search committee, Islander Middle School Principal, Mercer Island School District, April 2001.
