CURRICULUM VITAE – MICHAEL D. DAHLIN

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Research Interests

Sclalable and reliable distributed systems, cloud services, storage systems, and operating systems.

Education

Ph.D. in Computer Science, University of California at Berkeley, 1995.

Advisors: Professor David Patterson and Professor Thomas Anderson

Dissertation: "Serverless Network File Systems."

M.S. in Computer Science, University of California at Berkeley, 1993.

B.S. in Electrical Engineering, *summa cum laude*, Rice University, 1991.

Honors

Research Awards

1. Inducted as Fellow of the ACM *for contributions to the science and engineering of large-scale distributed computer systems,* 2010.
2. Inducted as Fellow of the IEEE *for contributions to scalable networked systems,* 2010.
3. Faculty Fellowship #3, Department of Computer Sciences, UT Austin, 2004–2007.
4. IBM Faculty Partnership award, 2000, 2001, 2002, 2004, 2005.
5. Alfred P. Sloan Research Fellowship, 2000–2002.
6. Faculty Fellow in Computer Science, Department of Computer Sciences, UT Austin, 1999–2002.
7. National Science Foundation CAREER award, *Support for Data Intensive, Distributed Programs in Large Systems*, 1998–2001.
8. National Science Foundation Graduate Fellowship, 1991–1993.

Paper Awards

9. Three papers selected as award papers at the *ACM Symposium on Operating Systems Principles (SOSP)*

   "Zyzzyva: Speculative Byzantine Fault Tolerance," R. Kotla, L. Alvisi, M. Dahlin, A. Clement, E. Wong. *Symposium on Operating Systems Principles* (SOSP), October 2007.

   "BAR Fault Tolerance for Cooperative Services," A. Aiyer, L. Alvisi, A. Clement, M. Dahlin, J.P. Martin, and C. Porth, *The 20th ACM Symposium on Operating Systems Principles* (SOSP), October 2005.

"Serverless Network File Systems," T. Anderson, M. Dahlin, J. Neefe, D. Patterson, D. Roselli, and R. Wang, *The 15th ACM Symposium on Operating Systems Principles* (SOSP), December 1995.

10. Papers selected for *Communications of the ACM* research highlights

    "Zyzzyva: Speculative Byzantine Fault Tolerance," R. Kotla, A. Clement, E. Wong, L. Alvisi, M. Dahlin, *Communications of the ACM*, v. 51 n. 11. November 2008.

11. Papers selected for multi-year conference highlights

    "WebOS: Operating System Services for Wide Area Applications," A. Vahdat, T. Anderson, M. Dahlin, E. Belani, D. Culler, P. Eastham, C. Yoshikawa, originally published July 1998 selected for *Top 20 Papers in the 20 years of the Symposium on High Performance Distributed Computing Systems (HPDC)*, 2012.

12. Additional best paper awards

    "Lazy Means Smart: Reducing Repair Bandwidth Costs in Erasure-coded Distributed Storage," M. Silberstein, Y. Wang, L. Ganesh, L. Alvisi, and M. Dahlin, *Proceedings of the 7th ACM International Systems and Storage Conference* (SYSTOR), June 2014.

    "SafeStore: A Durable and Practical Storage System," R. Kotla, L. Alvisi, M. Dahlin. *USENIX Annual Technical Conference* (USENIX), June 2007.

    "Shruti: A Self-Tuning Hierarchical Aggregation System," P. Yalagandula, M. Dahlin, *First IEEE International Conference on Self-Adaptive and Self-Organizing Systems* (SASO), July 2007.

    "Application Specific Data Replication for Edge Services," L. Gao, M. Dahlin, A. Nayate, J. Zheng, A. Iyengar, *Proceedings of the 2003 International World Wide Web Conference* (WWW), May 2003. (Best student paper)

    "Engineering Server-Driven Consistency for Large Scale Dynamic Web Services," J. Yin, L. Alvisi, M. Dahlin, A. Iyengar, *Proceedings of the 2001 International World Wide Web Conference* (WWW), May 2001. (Best paper)

    "Potential costs and benefits of long-term prefetching for content-distribution" A. Venkataramani, P. Yalagandula, R. Kokku, S. Sharif, M. Dahlin. *2001 Web Caching and Content Distribution Workshop* (WCW), June 2001.

Teaching Awards

13. College of Natural Sciences, Teaching Excellence Award, 2011.

Employment

1. Principal Engineer, Cloud Platform Technical Lead, Google, Inc. (8/12-present)
2. Professor, Computer Science Department, The University of Texas at Austin. (9/07 – present)
3. Co-founder and Chief Technology Advisor, Catalis Health, Inc. (1999 – 2008)
4. Associate Professor, Computer Science Department, The University of Texas at Austin.(9/02 – 8/07)
5. Assistant Professor, Computer Science Department, The University of Texas at Austin. (9/96 – 8/02)
6. Postdoctoral Researcher, Computer Science Division, The University of California at Berkeley. (1/96 – 8/96)

7. Research Assistant, Computer Science Division, The University of California at Berkeley. (8/91 – 12/95)

Publications

Books

1. *Operating Systems: Principles and Practice*, T. Anderson and M. Dahlin, Recursive Books, July 2012 (Beta Edition), July 2014 (Second Edition).

Theses

2. *Serverless Network File Systems*, M. Dahlin. Ph.D. Thesis, University of California at Berkeley. December 1995.

3. *CRAM: A TURBOChannel Board for Fast, Lossless Compression*, M. Dahlin. Masters Thesis, University of California at Berkley. 1993.

Current work in review

4. "A CleanRoom Approach to BYOA: Bring Your Own Apps," S. Lee, E. Wong, D. Goel, and M. Dahlin, *In review*, 2013.

5. "Consistency, Availability, Convergence," P. Mahajan, L. Alvisi, and M. Dahlin, *In review*, 2013.

Refereed Conference Papers

6. "Lazy Means Smart: Reducing Repair Bandwidth Costs in Erasure-coded Distributed Storage," M. Silberstein, Y. Wang, L. Ganesh, L. Alvisi, and M. Dahlin, *Proceedings of the 7th ACM International Systems and Storage Conference* (SYSTOR), *Best Paper Award*, June 2014.

7. "Exalt: Empowering Researchers to Evaluate Large-Scale Storage Systems," Y. Wang, M. Kapritsos, L. Schmidt, L. Alvisi, and M. Dahlin , *Proceedings of the 11th USENIX Symposium on Networked Systems Design and Implementation (NSDI)* April 2014.

8. "Robustness in the Salus Scalable Block Store," Y. Wang, M. Kapritsos, Z. Ren, P. Mahajan, L. Alvisi, M. and Dahlin, *Proceedings of the USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, May 2013.

9. "PiBox: A Platform for Privacy Preserving Apps," S. Lee, E. Wong, D. Goel, M. Dahlin, and V. Shmatikov, *Proceedings of the USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, May 2013.

10. "Eve: Execute-Verify Replication for Multi-Core Servers," M. Kaptritsos, Y. Wang, V. Quema, A. Clement, L. Alvisi, M. Dahlin, *USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, October 2012.

11. "Gnothi: Separating Data and Metadata for Efficient and Available Storage Replication," Y. Wang and L. Alvisi and M. Dahlin, In the *Proceedings of the USENIX Annual Technical Conference (ATC)*, June 2012.

12. "Regret-freedom isn't free," E. Wong, I. Levy, L. Alvisi, A. Clement, M. Dahlin, *15th International Conference on Principles of Distributed Systems (OPODIS 2011)*, December 2011.

13. "Toward the Verification of a Simple Hypervisor," M. Dahlin, R. Johnson, R. Krug, M. McCoyd, S. Ray, and B. Young, *10th International Workshop on the ACL2 Theorem Prover and its Applications 2011*, November 2011.

14. "Volunteer Cloud Computing: MapReduce over the Internet," F. Costa, L. Silva, M. Dahlin, *Fifth Workshop on Desktop Grids and Volunteer Computing Systems (PCGRID 2011)*, May 2011.

15. "Depot: Cloud Storage with Minimal Trust," P. Mahajan, S. Setty, S. Lee, A. Seehra, A. Clement, L. Alvisi, M. Dahlin, M. Walfish, *USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, October 2010.

16. "UpRight Cluster Services," A. Clement, M. Kapritsos, S. Lee, Y. Wang, L. Alvisi, M. Dahlin, T. Riche, *Proceedings of the 22nd ACM Symposium on Operating Systems Principles (SOSP)*, October 2009.

17. "Making Byzantine Fault Tolerant Systems Tolerate Byzantine Faults," A. Clement, M. Marchetti, E. Wong, L. Alvisi, M. Dahlin, *Proceedings of the 6th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, April 2009.

18. "PADS: A Policy Architecture for Building Distributed Storage Systems," N. Belaramani, J. Zheng, A. Nayte, M. Dahlin, R. Grimm, *Proceedings of the 6th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, April 2009.

19. "Self-Tuning, Bandwidth-Aware Monitoring for Dynamic Data Streams", N. Jain, P. Yalagandula, M. Dahlin, Y. Zhang. *25th IEEE International Conference on Data Engineering (ICDE)*. April 2009.

20. "FlightPath: Obedience vs Choice in Cooperative Services," H. Li, A. Clement, M. Marchetti, M. Kapritsos, L. Robinson, L. Alvisi, M. Dahlin. *Proceedings of the USENIX Operating Systems Design and Implementation Conference (OSDI)*. December 2008.

21. "Network Imprecision: A New Consistency Metric for Scalable Monitoring," N. Jain, D. Kit, P. Mahajan, P. Yalagandula, M. Dahlin, and Y. Zhang. *Proceedings of the USENIX Operating Systems Design and Implementation Conference (OSDI)*. December 2008.

22. "BAR Primer," A. Clement, H. Li, J. Napper, J-P Martin, L. Alvisi, and M. Dahlin, *38th Annual IEEE/IFIP International Conference on Dependable Systms and Networks* (DSN), June 2008.

23. "Zyzzyva: Speculative Byzantine Fault Tolerance," R. Kotla, L. Alvisi, M. Dahlin, A. Clement, E. Wong. *Symposium on Operating Systems Principles* (SOSP). Award paper. October 2007.

24. "STAR: Self-Tuning Aggregation for Scalable Monitoring," N. Jain, D. Kit, P. Mahajan, P. Yalagandula, M. Dahlin, Y. Zhang. *33rd International Conference on Very Large Data Bases (VLDB)*. September 2007.

25. "Theory of BAR Games," A. Clement, J. Napper, L. Alvisi, M. Dahlin. *Brief Announcements: Proceedings of the 26th Annual Symposium on the Principles of Distributed Computing*. August 2007.

26. "Shruti: A Self-Tuning Hierarchical Aggregation System," P. Yalagandula, M. Dahlin, *First IEEE International Conference on Self-Adaptive and Self-Organizing Systems*. Best paper award. July 2007.

27. "SafeStore: A Durable and Practical Storage System," R. Kotla, L. Alvisi, M. Dahlin. *USENIX Annual Technical Conference.* **Best paper award.** June 2007.

28. "Machine Learning for On-Line Hardware Reconfiguration," J. Wildstrom, P. Stone, E. Witchel, M. Dahlin, *20th International Joint Conference on Artificial Intelligence" (IJCAI07)*, January 2007.

29. "BAR Gossip," H. Li, A. Clement, E. Wong, J. Napper, I. Roy, L. Alvisi, M. Dahlin, *2006 USENIX Operating Systems Design and Implementation (OSDI) Conference*, November 2006.

30. “PRACTI Replication,” N. Belaramani, M. Dahlin, L. Gao, A. Nayate, A. Venkataramani, P. Yalagandula and J. Zheng. *Symposium on Networked Systems Design and Implementation* (NSDI). May 2006.

31. “TAPER: Tiered Approach for Eliminating Redundancy in Replicas,” N. Jain, M. Dahlin, and R. Tewari. *USENIX Conference onf File and Storage Technologies* (FAST). December 2005.

32. “Dual-Quorum Replication for Edge Services,” L. Gao, M. Dahlin, J. Zheng, L. Alvisi, A. Iyengar. *ACM/IFIP/USENIX 6th International Middleware Conference*, November/December 2005.

33. “BAR Tolerance for Cooperative Services,” J. Martin, A. Aiyer, L. Alvisi, A. Clement, M. Dahlin, C. Porth. *Symposium on Operating Systems Principles* (SOSP). October 2005.

34. “Using Bloom filters to refine web search results,” N. Jain, M. Dahlin, R. Tewari. *Eighth International Workshop on the Web and Databases* (WebDB). June 2005.

35. “Towards Self-Configuring Hardware for Distributed Computer Systems,” J. Wildstrom, P. Stone, E. Witchel, R. Mooney, and M. Dahlin. *IEEE International Conference on Autonomic Computing*. June 2005.

36. “Transparent Information Dissemination,” A. Nayate, M. Dahlin, A. Iyengar. *ACM/IFIP/ USENIX Middleware*. October 2004.

37. “A Scalable Distributed Information Management System,” P. Yalagandula and M. Dahlin. *SIGCOMM 2004*. August/September 2004.

38. “High-throughput Byzantine Fault Tolerant Services,” R. Kotla and M. Dahlin. *IEEE Conference on Dependable Systems and Networks* (DSN). June/July 2004.

39. “Separating Agreement from Execution for Byzantine Fault Tolerant Services,” J. Yin, J. Martin, A. Venkataramani, L. Alvisi, M. Dahlin, *19th ACM Symposium on Operating Systems Principles* (SOSP). October 2003.

40. “Application Specific Data Replication for Edge Services,” L. Gao, M. Dahlin, A. Nayate, J. Zheng, A. Iyengar, *The 12th International World Wide Web Conference* (WWW). May 2003.

41. “A Non-interfering Deployable Web Prefetching System,” R. Kokku, P. Yalagandula, A. Venkatramani, and M. Dahlin. *USENIX Symposium on Internet Technologies and Systems* (USITS). 2003.

42. “TCP Nice: A Mechanism for Background Transfers,” A. Venkataramani, R. Kokku, M. Dahlin. *Fifth Symposium on Operating System Design and Implementation* (OSDI). December 2002.

43. “Minimal Byzantine Quorums,” J.P. Martin, L. Alvisi, M. Dahlin. *16th International Symposium on DIStributed Computing* (DISC). October 2002.

44. “Small Byzantine Quorum Systems,” J.P. Martin, L. Alvisi, M. Dahlin. *Dependable Systems and Networks* (DSN). June 2002.

45. “Bandwidth constrained placement in a WAN,” A. Venkataramani, P. Weidmann, M. Dahlin. *Proceedings of the Twentieth ACM Symposium on Principles of Distributed Computing* (PODC). August 2001.

46. “Potential costs and benefits of long-term prefetching for content-distribution” A. Venkataramani, P. Yalagandula, R. Kokku, S. Sharif, M. Dahlin. *Proceedings of the 2001 Web Cache Workshop.* June 2001.

47. “Engineering server-driven consistency for large scale dynamic web services,” J. Yin, L. Alvisi, M. Dahlin, A. Iyengar. *The 10th International World Wide Web Conference* (WWW). May 2001, pp. 45-57.

48. “Resource management for scalable disconnected access to web services,” B. Chandra, M. Dahlin, L. Gao, A. Khoja, A. Nayate, A. Razzaq, A. Sewani. *The 10th International World Wide Web Conference* (WWW). May 2001, pp. 245-256.

49. “End-to-end WAN Service Availability,” B. Chandra, M. Dahlin, L. Gao, A. Nayate. *The Proceedings of the 2001 USENIX Symposium on Internet Technologies and Systems* (USITS), March 2001, pp. 97-108.

50. “Hierarchical Cache Consistency in a WAN,” J. Yin, L. Alvisi, M. Dahlin, C. Lin. *The Proceedings of the 1999 USENIX Symposium on Internet Technologies and Systems* (USITS), October 1999.

51. “Active Naming: Programmable Location and Transport of Wide-Area Resources,” A. Vahdat, T. Anderson, M. Dahlin. *The Proceedings of the 1999 USENIX Symposium on Internet Technologies and Systems* (USITS). October 1999.

52. “Coordinated Placement and Replacement for Large-Scale Distributed Caches,” M. Korupolu and M. Dahlin. *Proceedings of the 1999 Workshop on Internet Applications* (WIAPP). July 1999.

53. “Design Considerations for Distributed Caching on the Internet,” R. Tewari, M. Dahlin, H. Vin, J. Kay. *Proceedings of the 19th IEEE International Conference on Distributed Computing Systems* (ICDCS). May 1999, pp. 273-284.

54. “Interpreting Stale Load Information”, M. Dahlin. *Proceedings of the 19th IEEE International Conference on Distributed Computing Systems* (ICDCS). May 1999, pp. 285-296.

55. “Experimental Evaluation of QSM, a Simple Shared-Memory Model” B. Grayson, M. Dahlin, and V. Ramachandran. *Proceedings of the 13th International Symposium on Parallel Processing*, April 1999.

56. “WebOS: Operating System Services for Wide Area Applications,” A. Vahdat, T. Anderson, M. Dahlin, E. Belani, D. Culler, P. Eastham, and C. Yoshikawa. Invited Paper: *Seventh Symposium on High Performance Distributed Computing Systems*, July 1998.

57. “Using Leases to Support Server-Driven Consistency in Large-Scale Systems”, J. Yin, L. Alvisi, M. Dahlin, and C. Lin. *Proceedings of the 18th International Conference on Distributed Computing System* (ICDCS), May 1998, pp. 285-294.

58. “The CRISIS Wide Area Security Architecture,” E. Belani, A. Vahdat, T. Anderson, M. Dahlin, *Proceedings of the 7th USENIX Security Symposium*, Jan 1998, pp. 15-30.

59. “Experience with a Language for Writing Coherence Protocols,” S. Chandra, J. Larus, B. Richards, T. Anderson, R. Wang, and M. Dahlin, *Proceedings of the USENIX Conference on Domain-Specific Languages*, October 1997, pp. 51-66.

60. “Serverless Network File Systems,” T. Anderson, M. Dahlin, J. Neefe, D. Patterson, D. Roselli, and R. Wang, in *Proceedings of the 15th ACM Symposium on Operating Systems Principles* (SOSP), December 1995, pp. 109-126.

61. “Cooperative Caching: Using Remote Client Memory to Improve File System Performance,” M. Dahlin, R. Wang, T. Anderson, and D. Patterson, *1st USENIX Conference on Operating Systems Design and Implementation* (OSDI), November 1994, pp. 267-280.

62. “A Quantitative Analysis of Cache Policies for Scalable Network File Systems,” M. Dahlin, C. Mather, R. Wang, T. Anderson and, D. Patterson *ACM Sigmetrics Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS). May 1994, pp. 150–160.

Journal Articles

63. "Depot: Cloud Storage with Minimal Trust," P. Mahajan, S. Setty, S. Lee, A. Seehra, A. Clement, L. Alvisi, M. Dahlin, M. Walfish, *ACM Transactions on Computer Systems*, v. 29 n. 4, December 2011.

64. "Zyzzyva: Speculative Byzantine Fault Tolerance," R. Kotla, L. Alvisi, M. Dahlin, A. Clement, E. Wong, *ACM Transactions On Computer Systems*, v. 27 n. 4, December 2009.

65. "Zyzzyva: Speculative Byzantine Fault Tolerance," R. Kotla, A. Clement, E. Wong, L. Alvisi, M. Dahlin, *Communications of the ACM*, v. 51 n. 11. November 2008.

66. "Dual-Quorum: A Highly Available and Consistent Replication System for Edge Services," L. Gao, J. Zheng, M. Dahlin, A. Iyengar. *IEEE Transactions on Dependable and Secure Computing*. v. 99 n. 2, 2008.

67. "Improving Availability and Performance with Application-Specific Data Replication," L. Gao, M. Dahlin, A. Nayate, J. Zheng, A. Iyengar, *IEEE Transactions on Knowledge and Data Engineering*. v. 17 n. 1, January 2005.

68. "Scaling to the End of Silicon with EDGE Architectures," D. Burger and S. Keckler and M. Dahlin and L. John and C. Lin and K. McKinley and C. Moore and J. Burrill and R. McDonald and W. Yoder, *IEEE Computer*. v. 37 n. 7, July 2004.

69. "Emulations Between QSM, BSP and LogP: A Framework for General-Purpose Parallel Algorithm Design," B. Grayson, M. Dahlin, and V. Ramachandran. *Journal of Parallel and Distributed Computing*. v. 36 n. 12, p. 1175–1192, December 2003.

70. "End-to-end WAN Service Availability," M. Dahlin, B. Chandra, L. Gao, A. Nayate. *IEEE/ACM Transactions on Networking* v11 n2 April 2003.

71. "Coordinated Placement and Replacement for Large-Scale Distributed Caches," M. Korupolu and M. Dahlin. IEEE Transactions on Knowledge and Data Engineering. v14 n6 Nov/Dec 2002.

72. "Engineering server-driven consistency for large scale dynamic web services," J. Yin, L. Alvisi, M. Dahlin, A. Iyengar. *ACM Transactions on Internet Technologies*. v2 n3 August 2002.

73. "Potential costs and benefits of long-term prefetching for content-distribution" A. Venkataramani, P. Yalagandula, R. Kokku, S. Sharif, M. Dahlin. Elsevier *Computer Communications*. v. 25, n. 4, March 2002. pp. 367-375.

74. "Interpreting Stale Load Information," M. Dahlin. *IEEE Transactions on Parallel and Distributed Systems.* v. 11, n. 10, October 2000, pp. 1033–1047.

75. "Volume Leases for Consistency in Large-Scale Systems," J. Yin, L. Alvisi, M. Dahlin, C. Lin, *IEEE Transactions on Knowledge and Data Engineering Special issue on Web Technologies*, July/August 1999. pp. 563–576.

76. "Serverless Network File Systems," T. Anderson, M. Dahlin, J. Neefe, D. Patterson, D. Roselli, and R. Wang, *ACM Transactions on Computer Systems*, volume 14, number 1, February 1996, pp. 41–79.

Book Chapters

77. "Byzantine Fault Tolerant Confidentiality," in *Future Directions in Distributed Computing*, Springer-Verlag Lecture Notes in Computer Science volume 2584. 2003.

78. "Serverless Network File Systems" in *High Performance Mass Storage and Parallel I/O: Technologies and Applications*, Hai Jin, Toni Cortes, and Rajkumar Buyya (editors), IEEE & Wiley Press, ISBN: 0-471-20809-4, New York, USA, 2002.

79. "WebOS: Operating System Services for Wide-Area Applications" in *High Performance Cluster Computing, Volume 2: Programming and Applications*, editor Rajkumar Buyya. ISBN 0-13-013785-5, Prentice Hall PTR, NJ, USA, 1999. pp. 225-248.

Advising

Graduated Ph.D. Students

1. Prince Mahajan (with Alvisi), *Highly Available Storage with Minimal Trust*. Spring 2012. (Google)
2. Allen Clement (with Alvisi), *UpRight Fault Tolerance*. Spring 2011. (MPI)
3. Nalini Belaramani, *Policy Architecture for Distributed Storage Systems*. Fall 2009. (Google)
4. Harry Li (with Alvisi) *Constructing robust cooperative services*. Spring 2009. (Facebook)
5. Jiandan Zheng. *URA: A Universal Dat Replication Architecture*. Fall 2008. (Amazon)
6. Navendu Jain. *Precision-Integrated Scalable Monitoring.* Spring 2008. (Microsoft Research)
7. Ramakrishna Kotla (with Alvisi). *SafeStore: A Durable and Practical Storage System*. Fall 2007. (Microsoft Research)
8. Amol Nayate Fall 2006. *Transparent Replication*. (IBM T. J. Watson Research Center)
9. Lei Gao. *SAR: Semantic-Aware Replication.* Fall 2005. (Oracle)
10. Praveen Yalagandula. *A Scalable Information Management Middleware for Large Distributed Systems.* Summer 2005. (HP Labs)
11. Arunkumar Venkataramani. *Mechanisms and Algorithms for Large-Scale Replication Systems*. Fall 2004. (UMass, Amherst)
12. Jian Yin. *Volume lease a scalable cache consistency framework*. Fall 2003. (IBM T. J. Watson Research Center)

Ph.D. Students Currently Under Supervision

13. Sangmin Lee
14. Yang Wang (with Alvisi)

Masters Theses Supervised

15. Deepak Goel. *A CleanRoom Approach To Bring Your Own Apps*. Spring 2013. (PhD program at Berkeley.)
16. Brandon Hall. *Slot scheduling general-purpose multiprocessor scheduling for heterogeneous workloads.* Summer 2005. (Google)
17. Jiandan Zheng. *Design and implementation of a multi-server file system: Creek.* Spring 2005, PhD student, UT-Austin Computer Sciences.

18. Ramakrishna Kotla (with Alvisi). *High throughput Byzantine fault tolerant architecture.* Fall 2003, PhD student, UT-Austin Computer Sciences.
19. Stefano Masini. *Experimental setup and analysis of stage and cohort scheduling on cache-limited processors.* Fall 2002. (Pragma 2000 Automated Publishing Solutions)
20. Muralidhar Narasimhan. *Cost analysis of conflicts in replicated databases.* Fall 2002. (USC Solutions, Inc.)
21. Lei Gao. *End-to-end WAN service availability.* Fall 2001. (Oracle)
22. Amol Nayate. *Distribution of dynamic data for WAS services.* Fall 2001, PhD student, UT-Austin Computer Sciences.
23. Bharat Chandra. *Web workloads influencing disconnected service access.* Spring 2001. (Oracle)

Undergraduate Projects and Honors Theses Supervised

24. Michael McCoyd *Towards a verified hypervisor*. Summer 2009-Summer 2012.
25. Drake Dawset *Performance tuning parallel loop-AES*. Summer 2008-Summer 2009.
26. Chris Kite *Secure Deletion of Data at Rest.* Summer 2006-Summer 2008
27. Viraj Mody. *Classic scheduler activations on K42.* Fall 2003.
28. Aslan Brooke (with Porter). *An evaluation of the design space for peer-to-peer data replication*. Spring 2001.
29. Arif Siddiqui. *Scalability and tuning of the Active Names system*. Spring 2001.
30. Khawaja Shuja. *Network resource management*. Spring 2001.
31. Kamal Janardhan. *A systematic evaluation of web prefetching strategies.* Spring 2001.
32. Mirza Beg. *Memory management in the Active Names system*. Spring 2001.
33. Nabeel Ahmed. *Design and implementation of a denial-of-service resistent write buffer*. Spring 2001.
34. Anil Sewani. *Network bandwidth management in the Active Names system.* Spring 2000.
35. Asim Razzaq. *Disk bandwidth management in the Active Names system.* Spring 2000.
36. Ali-Amjad Khoja. *Disk space management in the Active Names system*. Spring 2000.
37. Christopher Stanton. *Combining load and locality information to select servers in a WAN*. Spring 2000.
38. Arjun Chopra. *Scalable distributed resource management*. Spring 1998.
39. Tabrez Syed. *Auction-based resource management for WAN services*. Spring 1997.

Classroom teaching

Undergraduate Courses:

1. CS439 – Systems Principles – Spring 2012
2. CS439H – Systems Principles (Honors) – Fall 2011
3. CS372H – Introduction to Operating Systems (Honors) – Spring 2004, Spring 2005, Spring 2006, Spring 2008, Spring 2009
4. CS372 – Introduction to Operating Systems – Fall 1997, Fall 1998, Fall 1999, Fall 2000, Fall 2001, Fall 2002, Spring 2006, Spring 2007, Spring 2010, Fall 2010, Spring 2011.

Graduate Courses:

5. CS380L – Advanced Operating Systems – Spring 2002, Fall 2002, Fall 2003, Fall 2004, Fall 2007, Fall 2008
6. CS382M – Advanced Computer Architectures – Spring 1997, Spring 1998, Spring 1999
7. CS395t – Web Operating Systems – Fall 1996, Spring 1998, Spring 1999, Spring 2001
8. CS395t – Consistent 0-Administrator Personal Environment – Spring 2000

Professional service

Editorial boards and program chairing

1. Program chair *2013 ACM Symposium on Operating Systems Principles* (SOSP13).
2. Program co-chair *2010 USENIX Workshop on the Economics of Networks, Systems, and Computation* (NetEcon '10).
3. Editorial board *ACM Transactions on the Web* (2005-2010).
4. Work in progress chair 2009 Symposium on Operating Systems Principles (SOSP).
5. Program co-chair 2008 ACM/USENIX Conference on Networked Systems Design and Implementation (NSDI).
6. Program co-chair 2006 International World Wide Web conference (WWW).
7. Program vice chair (Performance and Reliability Track), 2004 International World Wide Web conference (WWW).
8. Program deputy chair (Performance Track), 2002, 2003 World Wide Web conference (WWW2003).
9. Program chair, 2001 IEEE Workshop on Internet Applications (WIAPP).
10. Poster session co-chair, 2005 for ACM/USENIX 2005 Conference on Networked Systems Design and Implementation (NSDI 2005).

Program committee service

11. Member of program committee for 2012 USENIX Operating Systems Design and Implementation Conference (OSDI 2012).
12. Member of program committee for 2011 ACM Symposium on Operating Systems Principles (SOSP 2011).
13. Member of program committee for 2011 USENIX Workshop on Hot Topics in Operating Systems (HotOS 2011).
14. Member of external review committee for 2010 Architectural Support for Programming Languages and Operating Systems (ASPLOS 2010).
15. Member of program committee for 2009 ACM Symposium on Operating Systems Principles (SOSP 2009).

16. Member of program committee for 2008 Workshop of Recent Advances on Intrusion-Tolerant Systems (WRAITS 2008)
17. Member of program committee for 2007 ACM Symposium on Operating Systems Principles (SOSP 2007).
18. Member of program committee for 16th International World Wide Web Conference (WWW2007).
19. Member of program committee for ACM/USENIX 2007 Conference on Networked Systems Design and Implementation (NSDI 2007).
20. Member of program committee for USENIX 2007 Conference on File and Storage Technologies (FAST).
21. Member of program committee for USENIX 2006 Workshop on Real, Large Distributed Systems (WORLDS).
22. Member of program committee for Supercomputing 2005.
23. Member of program committee for ACM/USENIX 2005 Conference on Networked Systems Design and Implementation (NSDI).
24. Member of program committee for 2004 IEEE Symposium on High Performance Distributed Computing (HPDC).
25. Member of program committee for 2004 IEEE International Conference on Distributed Computing Systems (ICDCS).
26. Member of program committee for 2003 USENIX Symposium on Internet Technologies and Systems (USITS).
27. Member of program committee for 2004, 2003, 2002, 2001 Workshop on Web Caching and Content Delivery (WCW).
28. Member of poster review committee for the 2003 ACM Symposium on Operating Systems Principles.
29. Member of program committee for 2002 ACM Principles of Distributed Computing (PODC).
30. Member of program committee for 2000 IEEE Symposium on Applications and the Internet (SAINT).
31. Member of program committee for the 2000, 2001, 2002, and 2005 World Wide Web conference (WWW).
32. Judge, Regional Finals of Siemens-Westinghouse Science and Technology Competition, 1999.
33. Member of program committee for the 1998 and 1999 IEEE International Conference on Network Protocols (ICNP).

Professional society and national service

34. Member, NetSE Council/GENI Science Council, 2007-2008.
35. Co-chair, Distributed Systems Working Group, CRA/NSF GENI Town Hall Meeting, National Science Foundation Global Environment for Network Investigations, San Francisco, CA, July 2006.
36. Steering committee, National Science Foundation, Distributed Systems “Grand Challenges” Workshop, 2005.

37. Treasurer, Association for Computing Machinery Special Interest Group on Operating Systems (ACM SIGOPS) (2002-2003)

38. Information director, Association for Computing Machinery Special Interest Group on Operating Systems (ACM SIGOPS) (2001-2002).

39. Member, IEEE (IEEE Fellow), ACM (ACM Fellow), Tau Beta Pi, USENIX Association.

Funding agency review and advising activities

40. Proposal evaluation panelist, National Science Foundation, 2003, 2005, 2009.

41. Proposal evaluation panelist, GENI Project Office, 2009.

42. Proposal reviewer, National Research Council (NRC) Canada, 2006.

43. Site visit panelist, National Science Foundation, Large ITR: Project Iris, 2004.

44. Proposal reviewer, National Science Foundation, CCF Computing Processes & Artifacts, 2004.

45. Proposal reviewer, California MICRO Program, 2004.

46. Proposal evaluation reviewer, Israel Science Foundation, 2003.

47. Proposal evaluation reviewer, United States-Israel Binational Science Foundation, 2003.

Department and University Service

48. 2007-2012: Chair, Gates Complex/Dell Hall building committee.

49. 1998-1999, 2001-2002, 2002-2003, 2004-2005, 2011-2012: Computer Sciences Department Faculty Recruiting committee.

50. 2007-2008, 2008-2009: Chair, Department of Computer Sciences Faculty Evaluation committee

51. 2006-2007: Department of Computer Sciences Faculty Evaluation committee

52. 2006-2007: Department of Computer Sciences ad-hoc CISE committee.

53. 2005-2010: Associate Director, Center for Information Assurance and Security (CIAS), Department of Computer Sciences, University of Texas at Austin.

54. 2003-2004, 2005-2006: Chair, Computer Sciences Department PhD Admissions and Recruiting committee.

55. 2003-2006: University of Texas “Distributed and Grid computing chair” search committee.

56. 2005: Computer Sciences Department committee of Associate Professors

57. 2003-2005: Department of Computer Sciences “Women and Minorities in Computer Sciences” ad-hoc committee.

58. 2002-2003: Organizer, Department of Computer Sciences Distinguished Lecture Series on Internet and Grid Computing.

59. 2001-2003: University of Texas Information Technology Security committee.

60. 2000: University search committee for Vice President for Information Technology.

61. 2000-2001: Computer Sciences Department PhD Admissions and Recruiting committee.
62. 1999-2002: Technical Liason of Tivoli/Department of Computer Sciences Strategic Partnership relationship.
63. 1999-2000: Computer Sciences Department External Relations committee.
64. 1996-1999: Helped found, fund, and organize the Laboratory for Experimental Software Systems Seminar Series (LESSSS) (with Alvisi, Blumofe, and Lin).
65. 1997-1998: Computer Sciences Department Masters Admissions committee.

Selected external talks

66. March 2014: Google Cloud Platform Live, "10 Things that Make Cloud Platform a Next Gen Cloud"
67. June 2013: Keynote, USENIX HotCloud, "How I learned to stop worrying and trust the cloud"
68. April 2012: Keynote, Sungard IGNITE meeting, "Cloud Storage: Opportunities and Challenges"
69. October 2010: Distinguished Lecture, University of New Mexico, "BAR Systems for MAD Services"
70. October 2010: Distinguished Lecture, Sandia National Labs, "BAR Systems for MAD Services"
71. April 2007: Hewlett Parckard Labs, Palo Alto, "PRISM: Precision Integrated Scalable Monitoring"
72. April 2006: Stanford Systems Seminar, "Towards a Unified Theory and Practice of Large Scale Data Replication"
73. December 2005: University of California at Berkeley, Computer Science Division, "Towards a Unified Theory and Practice of Large Scale Data Replication"
74. November 2005: Microsoft Research Silicon Valley, "Towards a Unified Theory and Practice of Large Scale Data Replication"
75. September 2005: Carnegie Mellon University Systems Design and Implementation/Laboratory for Computer Systems seminar series, "Towards a Unified Theory and Practice of Large Scale Data Replication"
76. August 2005: Hewlett Packard Labs, Palo Alto, "Towards a Unified Theory and Practice of Large Scale Data Replication"
77. July 2005: Harvard University, "Towards a Unified Theory and Practice of Large Scale Data Replication"
78. April 2005: Texas Advanced Computing Center, "WAN Data Replication"
79. January 2005: University of Washington, "Towards a Unified Data Replication Architecture"
80. January 2004: IBM TJ Watson Research Center, "Threshold Prefetching Considered Harmful"
81. November 2003: Stanford Networking Seminar, "Threshold Prefetching Considered Harmful"
82. November 2003: Cisco, "TCP-Nice: Network support for background transfers"
83. September 2003: DARPA Polymorphic Computing Architectures program meeting, "User-level Threaded Virtual Machine Interface."

84. May 2003: Panelist, 2003 International World Wide Web Conference “What is the future of the Web infrastructure industry and research?”

85. February 2003: IBM Austin Center for Advanced Studies Conference, “Background Transfers with Minimal Interference.”

86. February 2003: University of California at San Diego “Massive Replication for WAN Services.”

87. November 2001: DARPA Polymorphic Computing Architectures program meeting, “Morphware Virtual Machine Interface.”

88. June 2001: University of Washington Department of Computer Science, “End-to-end WAN Service Availability.”

89. April 2001: Stanford University Internet and Distributed Systems Seminar, “End-to-end WAN Service Availability”

90. Sept 2000: Invited talk: Workshop on Extensible Proxies, San Jose, CA “Active Names: Programmable Location and Transport for Wide Area Network Services.”

91. February 2000: IBM T.J. Watson Research Center, “Active Names: Programmable Location and Transport for Wide Area Network Services.”

92. September 1999: USENIX Symposium on Internet Technologies and Systems “Active Names: Programmable Location and Transport for Wide Area Network Resources.”

93. June 1999: University of Washington Detour Retreat “Interpreting Stale Load Information.”

94. Panelist, 1999 IEEE Workshop on Internet Applications

95. June 1999: International Conference on Distributed Computing Systems “Interpreting Stale Load Information.”

96. June 1999: International Conference on Distributed Computing Systems “Design Considerations for Distributed Caching on the Internet.”

97. Spring 1999: International Parallel Processing Symposium: “Experimental Evaluation of QSM, A Simple Shared Memory Model.”

98. Spring 1999: IBM Innovation Series Lecture: “Data Delivery Architectures for Wide Area Networks.”

99. Fall 1998: Novell CTO Lecture Series “Beyond Browsers.”

100. Fall 1998: Unversity of Washington Detour Research Project Retreat: “Active Naming: Kernel and Applications.”

101. Spring 1998: Unversity of Washington Detour Research Project Retreat: “Design Considerations for Distributed Caching on the Internet.”

102. Spring 1998: Unversity of California NOW Research Project Retreat: “Lessons from xFS.”

103. Fall 1997: Rice University “uFS: Extensible, Scalable, Reliable File Systems.”

Grants and Contracts

1. Sungard, Inc., *Sungard Exascale Storage*, $476,122, 2011-2012.
2. Google, Inc., *A Privacy Preserving App Platform*, $75,000, 2011-2012.
3. Intel, Inc., *A Security Curriculum for Systems II*, $50,000.
4. National Science Foundation, *CiC: FRCC: Cloud Storage with Minimal Trust*, (co-PI with Walfish and Alvisi), $370,000, 2011-2015.
5. National Science Foundation, *CSR Medium: MAD Systems*, (co-PI with Alvisi), $950,000, 2009-2012.
6. National Science Foundation, *V2M2: Towards a Verified Virtual Machine Monitor*, (co-PI with Young), $499,920. 2008-2011.
7. National Science Foundation, *BFT: The Time is Now*, (co-PI with Alvisi) $788,435, 2007-2010.
8. Hewlett-Packard Laboratories, unrestricted research gift. (PI) $35,000. 2006-2007.
9. Naval Undersea Warfare Center, *Information Assurance*. (co-PI with Young). $380,000. 2005-2007.
10. National Science Foundation, *CSR-PDOS: Byzantine Faults in a Rational World*. (co-PI; with Alvisi). $569,555. 2005-2008.
11. National Science Foundation, *NMI DEVELOPMENT: Scalable Distributed Information Management System*. (PI; with Vin.) $600,000. 2005-2008.
12. National Science Foundation, Division of Computer and Network Systems, Distributed Systems Program, *Unified Data Replication Architecture*. (PI) $420,000. 2004-2007.
13. National Science Foundation, Division of Computer and Network Systems, Cybertrust Program, *Byzantine Replication for Trustworthy Systems*. (co-PI; with Alvisi.) $300,000. 2005-2008.
14. Defense Advanced Research Projects Agency (subcontract through Lockheed Martin Advanced Technology Laboratories), "Architectures for Cognitive Information Processing (ACIP): Polymorphous Cognitive Agent Architecture (PCAA)" (co-PI with Keckler, Stone, Witchel, Mooney, Burger, Miikkulainen). $700,000. 2004-2006.
15. University of Texas Research Internship Recruiting Award, *Unified Data Replication Architecture* (PI) $16,000. 2004-2005.
16. Texas Advanced Technology Program, *Dynamic Replication for Robust Cyberinfrastructure Services*. (PI) $160,000. 2004-2005.
17. National Science Foundation, *ITR: Designing a Programming Environment for Network Systems* (Co-PI; with Vin, McKinley, Plaxton, Batory). $2,000,000. 2003-2007.
18. Defense Advanced Research Projects Agency, "TRIPS: The Tera-op Reliable Intelligently adaptive Processing System Implementation for Polymorphous Computing Architectures (PCA)," (Co-PI; with S. Keckler, D. Burger, L. Alvisi, L. John, C. Lin, C.R. Moore, K. McKinley, and H. Vin.) $7,617,912. 2003-2005.
19. IBM Faculty Partnership Award, *A Unified Replication Toolkit*, (PI) $30,000. 2005.
20. IBM Faculty Partnership Award, *Practical and Scalable Application-Specific Data Replication for Commercial Edge Services and Commercial Grid Computing*, (PI) $40,000. 2004.

21. Award in support of education by Tivoli Center of Excellence to support Laboratory for Advanced Systems Research Seminar Series. (PI) $7,500. 2002-2003.

22. IBM Faculty Partnership Award, *Data Replication for Edge Services*, (PI) $40,000. 2002-2003.

23. IBM Faculty Partnership Award for Tivoli Center of Excellence, *Self-tuning networks and servers*. (PI) $40,000. 2002-2003.

24. IBM Faculty Partnership Award for Tivoli Center of Excellence, *Background Transfers with Minimal Interference*. (PI) $30,000. 2001-2002.

25. Texas Advanced Technology Program, *Resource Management for Safe Deployment of Edge Services* (PI; with Dan Wallach, Rice University). $250,000. 2002-2004.

26. Defense Advanced Research Projects Agency, "TRIPS: The Tera-op Reliable Intelligently Adaptive Processor System." (Co-PI; with Alvisi, Burger, Keckler, John, Lin, and McKinley). $3,020,000. 2001-2003.

27. Alfred P. Sloan Research Fellowship, (PI) $40,000, 2000-2002.

28. National Science Foundation CAREER award, *Support for Data Intensive, Distributed Programs in Large Systems*, (PI) $200,000, 1998-2001.

29. Cisco University Research Program Award, *A Failure Model for Wide-Area Services"*, (PI; with Alvisi, Vin) $35,400, 2001-2002.

30. IBM Faculty Partnership Award, *Data Replication for Distributed WAN Services*, (PI) $40,000, 2001-2002.

31. IBM Faculty Research Award, IBM Center For Advanced Studies (IBM CAS) *Consistent 0-Administrator Personal Environment*, (PI) $25,000, 2001-2002.

32. IBM Faculty Partnership Award, *Scalable cache consistency*, (PI) $40,000, 2000-2001.

33. Texas Advanced Technology Program, *A Flexible and Robust Global Data Infrastructure* (PI; with Vin), $142,604, 2000-2002.

34. Texas Advanced Research Program, *C0PE: Consistent 0-Administrator Personal Environment* (Co-PI; with Alvisi), $138,094, 2000-2002.

35. Tivoli, Inc., *Failure Models for WAN services*, (PI) $30,000, 2000-2001.

36. Novell, Inc., *Beyond Browsers: Framework and Services for Data-Driven Distributed Applications* (PI; with Vin), $183,800, 1999-2000.

37. Tivoli, Inc., *C0PE: Consistent 0-Administrator Personal Environment* (PI; with Alvisi, Vin), $30,000, 2000.

38. Tivoli, Inc., *System Support for Wide-Area Applications* (PI; with Alvisi, Vin), $30,000, 2000.

39. Tivoli, Inc., *Laboratory for Experimental Software Systems Seminar Series*, (PI) $5,000, 2000.

40. Dell, Inc., *Development and Evaluation of Electronic Textbook Technology Based on an Active Names Framework* (PI; with Vin), $25,000, 1999-2000.

41. Novell, Inc., unrestricted research gift, (PI) $25,000, 1998-1999.

42. University of Texas Research Internship Award, "Operating Systems Issues for Supporting Data-Intensive Distributed Applications in Large Systems" (PI) $15,000

43. Novell, Inc., unrestricted research gift (Co-PI; with Alvisi, Blumofe, Lin), $50,000, 1997-1998.

44. University of Texas Summer Research Award, *Server-driven Cache Coherence to Support General Web Programming*, (PI) $12,000, 1997.