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A Education

Ph.D. Computer Science, Cornell University, 1996.
M.S. Computer Science, Cornell University, 1994.
Post-graduate degree Physics, University of Bologna, Italy, 1989.
Laurea *Summa cum Laude* Physics, University of Bologna, Italy, 1987.

B Academic Appointments

9/07: **Professor**,
Department of Computer Sciences, The University of Texas at Austin.
Summer 2008: **Visiting Professor**
Department of Computer Science, University of Trento.
9/02 – 8/07: **Associate Professor**,
Department of Computer Sciences, The University of Texas at Austin.
Summer 2005: **Visiting Associate Professor**,
Department of Computer Science, University of Rome “La Sapienza”.
8/02 – 7/03: **Visiting Associate Professor**,
Department of Computer Science, Cornell University.
1/96 – 1/02: **Assistant Professor**,
Department of Computer Sciences, The University of Texas at Austin.
Summer 1997: **Visiting Assistant Professor**,
Department of Computer Science, Cornell University.
Fall 1995: **Lecturer**,
Department of Computer Science, Cornell University.
8/91 – 8/95: **Research and Teaching Assistant**,
Department of Computer Science, Cornell University.

C Awards and Honors

- **Texas Exes Teaching Award** for Outstanding Professor in the College of Natural Sciences, 2008.
- **Faculty Fellow in Computer Sciences**, Department of Computer Sciences, UT Austin, 1999-2002, 2004-present.
- **Alfred P. Sloan Research Fellowship**, 2001-2003.
- **Faculty Research Assignment**, 2002-2003.

- **Fellow, IBM Center for Advanced Studies**, 2001-2002.
- **IBM University Partnership Faculty Award**, 2000-2002.
- **NSF CAREER Award**, 1998.
- **Dean's Fellow**, 1998-99.
- **Best paper award**, “Zyzyva: Sepculative Byzantine Fault Tolerance”, R. Kotla, L. Alvisi, M. Dahlin, A. Clement, E. Wong. The 21st Symposium on Operating Systems Principles, October 2007.
- **Best paper award**, “SafeStore: A Durable and Practical Storage System”, R. Kotla, L. Alvisi, and M. Dahlin. The USENIX Annual Technical Conference, June 2007.
- **Best paper award** “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, October 2005.
- **Award Paper** “Fast Byzantine Consensus”, J.P. Martin and L. Alvisi. The International Conference on Dependable Systems and Networks (DSN 2005), DCC Symposium, Yokohama, Japan, June 2005.
- **Best paper award**, “Engineering Server-Driven Consistency for Large Scale Dynamic Web Services”, J. Yin, L. Alvisi, M. Dahlin, A. Iyengar. The International World Wide Web Conference (WWW10), May 2001.
- **Award paper** “The Cost of Recovery in Message Logging Protocols”, S. Rao, L. Alvisi, and H. Vin. The 17th International Symposium on Reliable Distributed Systems (SRDS 98).
- **Reprint** of “Nonblocking and Orphan-Free Message Logging Protocols”, L. Alvisi, B. Hoppe, and K. Marzullo in the volume “Highlights from 25 Years” published in occasion of the 25th International Symposium on Fault-Tolerant Computing (FTCS25), 1995. (Paper appeared originally in the Proceedings of FTCS23).
- **Outstanding Teaching Assistant Award**, Department of Computer Science, Cornell University, 1992.
- **Fellowship** of the Italian National Research Council, 1992-93.
- **Fellowship** of the North Eastern Inter-University Super Computer Center, Bologna, Italy, 1990-91.
- **Fellowship** in Theoretical Chemistry at the University of Bologna, 1988-89.
- **Fellowship** of the Italian National Institute of Nuclear Physics, 1987-88.

D Publications

D.1 Refereed Articles in Journals

1. J.P. Martin and L. Alvisi. “Fast Byzantine Consensus”. *IEEE Transactions on Dependable and Secure Computing*, Special issue dedicated to select papers from DSN 2005, vol. 3, no. 3, July-September 2005, pp. 202-215.
2. M. Kistler and L. Alvisi. “Improving the Performance of Software Distributed Shared Memory Through Speculation”. *IEEE Transactions on Parallel and Distributed Systems*, vol. 16, no. 9, September 2005, pp. 885-896
3. K. Bhatia, K. Marzullo, and L. Alvisi. “Scalable Causal Message Logging for Wide-Area Environments”. *Concurrency and Computation: Practice and Experience*, vol. 15, no. 3, August 2003, pp. 873-889.
4. J. Yin, L. Alvisi, M. Dahlin, and A. Iyengar. “Engineering server-driven consistency for large scale dynamic web services”. *ACM Transactions on Internet Technology*, vol. 2, no. 3, August 2002, pp. 224-259.
5. E. Elnozahy, L. Alvisi, Y.M. Wang, and D.B. Johnson. “A Survey of Rollback-Recovery Protocols in Message-Passing Systems”. *ACM Computing Surveys*, vol. 34, no. 3, September 2002, pp. 375-408.
6. L. Alvisi, K. Bhatia, and K. Marzullo. “Tracking Causality in Causal Message logging Protocols”. *Distributed Computing*, vol. 15, no. 1, January 2002, pp. 1-15.
7. L. Alvisi, D. Malkhi, L. Pierce, and M. Reiter. “Fault Detection for Byzantine Quorum Systems”. *IEEE Transactions on Parallel and Distributed Systems*, vol. 12, no. 9, September 2001, pp. 996-1007.
8. S. Rao, L. Alvisi, and H. Vin. “The Cost of Recovery in Message Logging Protocols”. *IEEE Transactions on Knowledge and Data Engineering*, vol. 12, no. 2, March/April 2000, pp. 160-173.
9. J. Yin, L. Alvisi, M. Dahlin, and C. Lin. “Volume Leases for Consistency in Large-Scale Systems”. *IEEE Transactions on Knowledge and Data Engineering Special issue on Web Technologies*, vol. 11, no. 2 (1999), pp. 563-576.
10. L. Alvisi, K. Marzullo. “Message Logging: Pessimistic, Optimistic, Causal and Optimal”. *IEEE Transactions on Software Engineering*, vol. 24, no.2 (1998), pp. 149-159.
11. R. Davoli, L. A. Giachini, Ö. Babaoğlu, S. Amoroso, L. Alvisi. “Parallel Computing in Networks of Workstations with Paralex”. *IEEE Transactions on Parallel and Distributed Systems*, vol. 7, no.4, (1996) pp. 371-384.
12. L. Alvisi, G. Casciola. “On the Two Mask Hidden-Line Algorithm”. *Computers & Graphics*, vol. 13, no.2 (1989), pp. 193-206
13. L. Alvisi, G. Casciola. “TAM rivisitato: un metodo rapido ed esatto per la rappresentazione prospettica di superfici”. *PIXEL*, October 1988.

14. L. Alvisi, R. Odorico. “A Rule Based Approach for Pattern Recognition in Planar Geometric Figures”. *Computer Physics Communication*, vol. 51, (1988), pp. 443-450.

D.2 Book Chapters

1. L. Alvisi, B. Hoppe, and K. Marzullo. “Nonblocking and Orphan-Free Message Logging Protocols”. In *Highlights from 25 years, Fault Tolerant Computing Symposium*, Pasadena, CA, June 1995, pp. 229-239. **Reprint** of the paper with the same title that appeared in *Proceedings of FTCS 23*.
2. L. Alvisi, A. Amoroso, A. Baronio, Ö. Babaoglu, R. Davoli and L. A. Giachini. “Parallel Scientific Computing in Distributed Systems: The Paralex Approach”. In *Reliable Distributed Computing with the ISIS Toolkit*. K. Birman and R. Van Renesse Editors, IEEE Press Computer Science Series, PP. 328-342. **Reprint** of the paper with the same title that appeared in *Proceedings of the 6th ACM International Conference on Supercomputing*.

D.3 Refereed Articles in Conferences

1. H. LI, A. Clement, M. Marchetti, E. Kapritsos, L. Robison, L. Alvisi and M. Dahlin. “Flight-Path: Obedience vs Choice in Cooperative Services”. To appear in *Proceedings of the 7th Symposium on Operating Systems Design and Implementation (OSDI 2008)*, San Diego, CA, December 2008.
2. Federico Mari, Igor Melatti, Ivano Salvo, Enrico Tronci, Lorenzo Alvisi, Allen Clement, and Harry Li “Model Checking Nash Equilibria in MAD Distributed Systems”. To appear in Proceedings of the 8th conference on Formal Methods in Computer-Aided Design (FMCAD 08), Portland, OR, November 2008.
3. A. Aiyer, L. Alvisi, R. Bazzi, and A. Clement. “Matrix Signatures: From MACs to Digital Signatures in Distributed Systems”. To appear in *Proceedings of the 22nd International Symposium on Distributed Computing (DISC 2008)*, Arcachon, France, October 2008.
4. A. Clement, H. Li, J. Napper, J. P. Martin, L. Alvisi, and M. Dahlin. “BAR Primer”. In *Proceedings of the International Conference on Dependable Systems and Networks (DSN 2008)*, DCC Symposium, Anchorage, Alaska, June 2008, pp. 287-296.
5. R. Kotla, L. Alvisi, M. Dahlin, A. Clement, and E. L. Wong. “Zyzyva: Speculative Byzantine Fault Tolerant Replication”. In *Proceedings of the 21th ACM Symposium on Operating Systems Principles (SOSP 2007)*, Skamania Lodge, Stevenson, WA, October 2007, pp. 45-58. **Best paper award. Selected by the Program Committee for publication in ACM Transactions on Computer Systems.**
6. H. C. Li, A. Clement, A. S. Aiyer, and L. Alvisi. “The Paxos Register”. In *Proceedings of the 26th IEEE International Symposium on Reliable Distributed Systems (SRDS 2007)*, Beijing, China, October 2007, pp. 114-126.
7. A. S. Aiyer, L. Alvisi, and R. Bazzi. “Bounded Wait-Free Implementation of Optimally resilient Byzantine Storage without (Unproven) Cryptographic Assumptions”. In *Proceedings of*

- the 21st International Symposium on Distributed Computing (DISC 2007)*, Lemesos, Cyprus, September 2007, pp. 7-19.
8. L. Alvisi. “BAR: Where Distributed Computing meets Game Theory”. In *Proceedings of Third Latin America Symposium on Dependable Computing (LADC 2007)*, Morelia, Mexico, September 2007, pp. 235-236.
 9. L. Alvisi, J. Doumen, R. Guerraoui, B. Koldehofe, H. Li, R. van Renesse, and G. Tredan. “How Robust are Gossip-Based Communication Protocols?”. To appear in *ACM SIGOPS Operating Systems Review (OSR) Special Issue on Gossip-Based Networking*, October 2007.
 10. E. L. Wong, P. Balasubramanian, L. Alvisi, M. G. Gouda, and V. Shmatikov. “Truth In Advertising: Lightweight Verification of Route Integrity”. In *Proceedings of the 26th ACM Annual Symposium on the Principles of Distributed Computing (PODC 2007)*, Portland, OR, August 2007, pp. 147-156.
 11. A. Aiyer, L. Alvisi, and R. Bazzi. “Bounded Wait-Free Implementation of Optimally Resilient Byzantine Storage without (Unproven) Cryptographic Assumptions”. *Brief Announcement in Proceedings of the 26th ACM Annual Symposium on the Principles of Distributed Computing (PODC 2007)*, Portland, OR, August 2007, pp. 310-311.
 12. A. Clement, J. Napper, H. Li, J. P. Martin, L. Alvisi, and M. Dahlin “Theory of BAR Games”. *Brief Announcement in Proceedings of the 26th ACM Annual Symposium on the Principles of Distributed Computing (PODC 2007)*, Portland, OR, August 2007, pp. 358-359.
 13. R. Kotla, L. Alvisi, and M. Dahlin. “SafeStore: A Durable and Practical Storage System”. In *Proceedings of the 2007 USENIX Annual Technical Conference*, Santa Clara, CA, June 2007, pp. 129-142. **Best Paper Award**.
 14. H. C. Li, A. Clement, E. Wong, J. Napper, I. Roy, L. Alvisi, and M. Dahlin. “BAR Gossip”. In *Proceedings of the 7th Symposium on Operating Systems Design and Implementation (OSDI 2006)*, Seattle, WA, November 2006, pp. 191-204.
 15. A. S. Aiyer, L. Alvisi and M. G. Gouda. “Key Grids: A protocol Family for Assigning Symmetric Keys” In *Proceedings of the 14th International Conference on Network Protocols (ICNP 2006)*, Santa Barbara, CA, November 2006, pp. 178-186.
 16. A. S. Aiyer, L. Alvisi, and R. Bazzi. “Byzantine and Multi-Writer K Quorums”. In *Proceedings of the 20th International Symposium on Distributed Computing (DISC 2006)*, Stockholm, Sweden, October 2006, pp. 443-458.
 17. J. Napper and L. Alvisi. “Robust Multithreaded Applications”. To appear in *Proceedings of the ACM Workshop on Multithreading in Hardware and Software: Formal Approaches to Design and Verification (TV06)*, Seattle, WA, August 2006.
 18. L. Gao, M. Dahlin, J. Zheng, L. Alvisi, and A. Iyengar. “Dual Quorum Replication for Edge Services”. In *Proceedings of Middleware 2005*, Grenoble, France, December 2005, pp. 184-204.

19. A. S. Ayer, L. Alvisi, A. Clement, M. Dahlin, J.P. Martin, and C. Porth. “BAR Fault Tolerance for Cooperative Services”. In *Proceedings of the 20th ACM Symposium on Operating Systems Principles (SOSP 2005)*, Brighton, United Kingdom, October 2005, pp. 45-48. **Best paper award. Selected by the Program Committee for publication in ACM Transactions on Computer Systems**
20. A. S. Ayer, L. Alvisi, and R. Bazzi. “On the Availability of non-Strict Quorum Systems”. In *Proceedings of the 19th International Symposium on Distributed Computing (DISC 2005)*, Cracow, Poland, September 2005, pp. 48-62.
21. J.P. Martin and L. Alvisi. “Fast Byzantine Consensus”. In *Proceedings of the International Conference on Dependable Systems and Networks (DSN 2005), DCC Symposium*, Yokohama, Japan, June 2005, pp. 402-411. **Award paper. Selected by the Program Committee for publication in IEEE Transactions on Dependable and Secure Computing.**
22. J.P. Martin and L. Alvisi. “Dynamic Byzantine Storage”. In *Proceedings of the International Conference on Dependable Systems and Networks (DSN 2004), DCC Symposium*, Florence, Italy, June 2004, pp. 325-334.
23. J. Yin, J.P. Martin, A. Venkataramani, L. Alvisi, and M. Dahlin. “Separating Agreement from Execution for Byzantine Fault Tolerant Services”. In *Proceedings of the 19th ACM Symposium on Operating Systems Principles (SOSP 2003)*, Lake George, NY, October 2003, pp. 253-268.
24. J. Napper, L. Alvisi, and H. Vin. “A Fault-Tolerant Java Virtual Machine”. In *Proceedings of the International Conference on Dependable Systems and Networks (DSN 2003), DCC Symposium*, San Francisco, CA, June 2003, pp. 425-434.
25. D. Zagorodnov, K. Marzullo, L. Alvisi, and T. Bressoud. “Engineering Fault Tolerant TCP/IP Services Using FT-TCP”. In *Proceedings of the International Conference on Dependable Systems and Networks (DSN 2003), DCC Symposium*, San Francisco, CA, June 2003, pp. 393-402.
26. J. Yin, J.P. Martin, A. Venkataramani, L. Alvisi, and M. Dahlin. “Towards a Practical Approach to Confidential Byzantine Fault Tolerance”. In *Future Directions in Distributed Computing*, Lecture Notes in Computer Science, volume 2584, Springer, 2003, pp. 51-56.
27. R. Kokku, R. Rajamoni, L. Alvisi and H. Vin. “Half-Pipe Anchoring: An Efficient Technique for Multiple Connection Handoff”. In *Proceedings of the 10th International Conference on Network Protocols (ICNP 2002)*, Paris, France, November 2002, pp. 12-21.
28. J.P. Martin, L. Alvisi, and M. Dahlin. “Minimal Byzantine Storage”. In *Proceedings of the 16th International Symposium on Distributed Computing (DISC 2002)*, Toulouse, France, October 2002, pp. 311-326.
29. J.P. Martin, L. Alvisi, and M. Dahlin. “Small Byzantine Quorum Systems”. In *Proceedings of the International Conference on Dependable Systems and Networks (DSN 2002 and FTCS 32), DCC Symposium*, Washington, DC, June 2002, pp. 374-383.

30. P. Shivakumar, M. Kistler, S. Keckler, D. Burger, and L. Alvisi. "Modeling the Effect of Technology Trends on Soft Error Rate of Combinational Logic". In *Proceedings of the International Conference on Dependable Systems and Networks (DSN 2002 and FTCS 32), DCC Symposium*, Washington, DC, June 2002, pp. 389-398.
31. K. Bhatia, K. Marzullo, and L. Alvisi. "Scalable Causal Message Logging for Wide-area Environments". In *Proceedings of the European Conference on Parallel Computing (Europar 2001)*, Manchester, UK, August 2001, pp. 864-873.
32. Y. Zhang, H. Vin, L. Alvisi, W. Lee, and S. K. Dao. "Heterogeneous Networking - A New Survivability Paradigm". In *Proceedings of the ACM New Security Paradigms Workshop 2001*, Cloudcroft, NM, September 2001, pp. 33-39.
33. E. Pierce and L. Alvisi. "A Framework for Semantic Reasoning about Byzantine Quorum Systems". In *Brief Announcements, Proceedings of the 20th ACM Symposium on the Principles of Distributed Computing*, August 2001, pp. 317-319.
34. J. Yin, L. Alvisi, M. Dahlin, A. Iyengar. "Engineering server-driven consistency for large scale dynamic web services". The 10th International World Wide Web Conference (WWW10), May 2001, pp. 45-57. **Best Paper Award**.
35. L. Alvisi, T.C. Bressoud, A. El-Khashab, K. Marzullo, and D. Zagorodnov. "Wrapping Server-side TCP to Mask Connection Failures". In *Proceedings of Infocom 2001*, Anchorage, Alaska, April 2001, pp. 329-338.
36. L. Alvisi, D. Malkhi, L. Pierce, M. Reiter, and R. Wright. "Dynamic Byzantine Quorum Systems". In *Proceedings of the International Conference on Dependable Systems and Networks (FTCS 30 and DCCA 8)*, New York NY, June 2000, pp. 283-292.
37. J. Yin, L. Alvisi, M. Dahlin, and C. Lin. "Hierarchical Cache Consistency in a WAN". In *Proceedings of the 1999 USENIX Symposium on Internet Technologies and Systems (USITS99)*, October 1999, pp. 13-24.
38. L. Alvisi, E. Elnozahy, S. Rao, S. A. Husain, and A. de Mel. "An Analysis of Communication-Induced Checkpointing". In *Proceedings of the 29th Fault Tolerant Computing Symposium (FTCS 29)*, Madison WI, June 1999, pp. 48-55.
39. S. Rao, L. Alvisi, and H. Vin. "Egida: An Extensible Toolkit For Low-overhead Fault-Tolerance". In *Proceedings of the 29th Fault Tolerant Computing Symposium (FTCS 29)*, Madison WI, June 1999, pp. 242-249.
40. L. Alvisi, D. Mahlki, L. Pierce, and M. Reiter. "Probabilistic Techniques for Fault Detection in Byzantine Quorum Systems". In *Proceedings of the Seventh IFIP International Working Conference on Dependable Computing for Critical Applications (DCCA-7)* San Jose, CA, January 1999, pp. 357-372.
41. L. Alvisi and K. Marzullo. "WAFT: Support for Fault-Tolerance in Wide-Area Object Oriented Systems". In *Proceedings of the Information Survivability Workshop (ISW98)* October 1998, Orlando, Florida, pp. 5-10.

42. S. Rao, L. Alvisi and H. Vin. “The Cost of Recovery in Message Logging Protocols”. In *Proceedings of the 17th International Symposium on Reliable Distributed Systems (SRDS 98)*, Purdue University, West Lafayette, Indiana, October 1998, pp. 10-18. **Award paper. Selected by the Program Committee for publication in IEEE Transactions on Knowledge and Data Engineering.**
43. K. Bhatia, K. Marzullo and L. Alvisi. “The Relative Overhead of Piggybacking in Causal Message-Logging Protocols”. Workshop on Advances in Parallel and Distributed Systems (*APADS 98*). In *Proceedings of the 17th IEEE Symposium on Reliable Distributed Systems (SRDS 98)*, Purdue University, West Lafayette, Indiana, October 1998, pp. 348-353.
44. L. Alvisi, S. Rao and H. Vin. “Hybrid Message-Logging Protocols for Fast Recovery”. In *Digest of FastAbstracts. The 28th IEEE Symposium on Fault-Tolerant Computing Systems (FTCS 28)*, Munich, Germany, June 1998, pp. 41-42.
45. L. Alvisi, S. Rao and H. Vin. “Low-Overhead Protocols for Fault-Tolerant File Sharing”. In *Proceedings of the 18th IEEE International Conference on Distributed Computing Systems (ICDCS 98)*, Amsterdam, The Netherlands, May 1998, pp. 452-461.
46. J. Yin, L. Alvisi, M. Dahlin and C. Lin. “Using Leases to Support Server-Driven Consistency in Large-Scale Systems”. In *Proceedings of the 18th IEEE International Conference on Distributed Computing Systems (ICDCS 98)*, Amsterdam, The Netherlands, May 1998, pp. 285-294.
47. L. Alvisi, R. Joshi, C. Lin and J. Misra. “Seuss: what the Doctor ordered”. In *Proceedings of the 2nd IEEE International Workshop on Software Engineering for Parallel and Distributed Systems*, Boston, May 1997, pp. 284-290.
48. L. Alvisi and K. Marzullo. “Trade-Offs in Implementing Causal Message Logging Protocols”. In *Proceedings of the 15th ACM Annual Symposium on the Principles of Distributed Computing*, Philadelphia, May 1996, pp. 58-67.
49. L. Alvisi and K. Marzullo. “Deriving Optimal Checkpoint Protocols for Distributed Shared Memory Architectures”. In *Selected Papers, International Workshop in Theory and Practice in Distributed Systems*, K. Birman, F. Mattern and A. Schiper, editors, Springer-Verlag 1995, pp. 111-120.
50. L. Alvisi and K. Marzullo. “Message Logging: Pessimistic, Optimistic, Causal and Optimal”. In *Proceedings of the 15th IEEE International Conference on Distributed Computing Systems (ICDCS 95)*, Vancouver, Canada, June 1995 pp. 229-236.
51. L. Alvisi, B. Hoppe, and K. Marzullo. “Nonblocking and Orphan-Free Message Logging Protocols”, In *Proceedings of the 23rd Fault Tolerant Computing Symposium (FTCS 23)*, Toulouse, France, June 1993, pp. 145-154. **Reprinted** in *Highlights from 25 years, Fault Tolerant Computing Symposium*, Pasadena, CA, June 1995, pp. 229-239
52. Ö. Babaoğlu, L. Alvisi, S. Amoroso, R. Davoli, L. A. Giachini. “Paralex: An Environment for Parallel Programming in Distributed Systems”. In *Proceedings of the 6th ACM International Conference on Supercomputing*, Washington, D.C., July 1992, 178–187.

53. L. Alvisi, A. Amoroso, A. Baronio, Ö. Babaoğlu, R. Davoli and L. A. Giachini. “Parallel Scientific Computing in Distributed Systems: The Paralex Approach”. In *Proceedings of the Sixth International Symposium on Computer and Information Sciences*, Side, Antalya, Turkey, October 1991, 1093–1103.
54. L. Alvisi, G. Fabiani, L. Moltedo. “VIDA: An Ape Extension for the Steering of Numerical Simulations”. In *Proceedings of the ISMM International Workshop on Parallel Computing*, Trani, Italy, September 1991, pp. 375-377.

D.4 Invited Papers

1. P. Yalagandula, L. Alvisi, M. Dahlin, and H. Vin. “COPE: Consistent, 0-Administration Personal Environment”. In *Proceedings of WORDS01*, Rome, Italy, January 2001.
2. L. Alvisi. “Fault-Tolerance: Java’s Missing Buzzword”. In *Proceedings of the 7th Heterogeneous Computing Workshop*, Orlando, Florida, March 1998, pp. 156-158.
3. Ö. Babaoğlu, L. Alvisi, A. Amoroso and R. Davoli. “Mapping Parallel Computations onto Distributed Systems in Paralex”. In *Proceedings of IEEE CompEuro '91*, Bologna, Italy, May 1991, 123–130.

D.5 Technical Reports not Otherwise Published

1. J. Napper and L. Alvisi. “Lock-free Serializable Transactions”. Department of Computer Sciences, Technical Report TR-05-04, The University of Texas at Austin, Austin, Texas, February 2005.
2. P. Yalagandula, A. Garg, M. Dahlin, L. Alvisi, and H. Vin. “Transparent Mobility with Minimal Infrastructure”. Department of Computer Sciences, Technical Report TR-01-30, The University of Texas at Austin, Austin, Texas, July 2001.
3. L. Alvisi and F.B. Schneider. “A Graphical Interface for CHIP”. Department of Computer Science, Technical Report TR-96-1597, Cornell University, Ithaca, New York, June 1996.
4. L. Alvisi and K. Marzullo. “Optimal Message Logging Protocols”. Department of Computer Science, Technical Report TR-94-1457, Cornell University, Ithaca, New York, September 1994.
5. Ö. Babaoğlu, L. Alvisi, S. Amoroso, R. Davoli and L. A. Giachini. “Run-time Support for Dynamic Load Balancing and Debugging in Paralex”. Department of Computer Science, Technical Report TR-91-1251, Cornell University, Ithaca, New York, December 1991.
6. L. Alvisi, G. Casciola. “Two and Four Array Mask Algorithms in practice”. Technical Report, Department of Mathematics, University of Bologna, Italy. (1989)

D.6 Thesis

- “Understanding the Message Logging Paradigm for Masking Process Crashes”. Department of Computer Science, Cornell University, Ithaca, New York, January 1996. Available as Technical Report TR-96-1577.

- “Applying Expert System to the Analysis of Bidimensional Data”. Tesi di Laurea, University of Bologna, Italy, 1987.

D.7 Patents

- T. Bressoud, L. Alvisi, A. El-Khashab, and P. Weidmann. “Method, apparatus and system for maintaining connections between computers using connection-oriented protocols” US Patent: US 7,213,063 B2. Assigned to Lucent Technologies Inc. Murray Hill, N.J. (US) and University of Texas at Austin, Austin, Texas. First filed January 17, 2001.

D.8 Software Releases

- “Egida” is a prototype of the toolkit described in the FTCS paper “Egida: An Extensible Toolkit For Low-overhead Fault-Tolerance”. It is available for download under the GNU Public License.
- “TOPREC” is a rule-based program, written in OPS5, to recognize subpatterns in planar geometric figures. It is available for download from the Computer Physics Communication Program Library (<http://www.cpc.cs.qub.ac.uk/cpc/>, Catalog Identifier ABDG).

E Other Academic Activities

E.1 Student Advising

Ph.D. Dissertations Supervised

Jeff Napper, Spring 2008

Jean-Philippe Martin, Fall 2006

Jian Yin (with Dahlin), Fall 2003

Evelyn Pierce, Fall 2000

Sriram Rao (with Vin), Fall 1999

Ph.D. Students Currently Under Supervision

Harry Li

Allen Clement

Amitanand Ayer

Edmund Wong

Master Students Supervised

Ravishankar Venkatadasu Chamarajnar, Kalpana Ravinarayanan, Mike Kistler, and Salvatore Orlando.

Undergraduate Honors Theses Supervised

Chi Ho — Dean’s Honor Graduate

Undergraduate Students Supervised

Hassan M. Jafri — Recipient, UROP Fellowship
Ali Safdar Kureishi
Carl Porth
Eamon White — Dean’s Honored Graduate.

Participation in Doctoral Dissertation Committees

- Served as a member of 24 doctoral dissertation committees at UT.
- Served as member of 2 doctoral dissertation committees at the Carnegie Mellon University.
- Served as member of 1 doctoral dissertation committee at the Northwestern University.
- Served as member of 1 doctoral dissertation committee at the Università della Svizzera Italiana, Lugano, Switzerland.
- Served as member of 1 doctoral dissertation committee at the University of Tromso, Norway.
- Served as member of 1 doctoral dissertation committee at the University of California, San Diego.
- Served as a member of 1 doctoral dissertation committee at the Indian Institute of Technology.

Participation in Masters Thesis Committees

Served as a member of 7 Masters thesis committees.

E.2 Teaching

Undergraduate Courses

CS371D - Distributed Computing — Fall 2007, Fall 2008
TASP 07 - *Science, Technology, and the Responsible Citizen*, UT Austin Telluride Association Summer Program — Summer 2007
CS372H - Introduction to Operating Systems (Honors) — Spring 2007.
NSC 110 - Dean’s Scholars Seminar on “Technology and Culture”, Fall 2006.
CS178H - Introduction to Computer Science Research, Fall 2005, Spring 2007.
CS372 - Introduction to Operating Systems — Fall 1996, Fall 1997, Fall 2000, Fall 2003, Fall 2006.
CS378 - Introduction to Distributed Computing — Spring 2000, Spring 2001, Spring 2002, Fall 2004, Fall 2005.
CS414 - Introduction to Operating Systems — Summer 1997 (at Cornell).

Graduate Courses

CS380D - Distributed Computing I — Spring 1996, Spring 1997, Fall 1997, Fall 1998, Fall 1999, Fall 2000, Fall 2001, Fall 2003, Fall 2004, Spring 2006.
CS395T - Design and implementation of Trustworthy Services — Spring 2004.

CS395T - C0PE: Consistent 0-Administration Personal Environment — Spring 2000.
CS395T - Hot Topics in Distributed Systems — Fall 1996, Spring 1998.

E.3 Department and University Service

- 2007-2009: Graduate Advisor
- 2006-2007: Ph.D. Admission Committee, Turing Scholars, University Continuing Fellowship Committee.
- 2005-2006: Faculty Fellowships and Awards (Chair), Turing Scholars, Diversity Courses, University Continuing Fellowship Committee.
- 2004-2005: Undergraduate Studies Committee, Evaluation of Graduate Program Committee, University Continuing Fellowship Committee.
- 2003-2004: Faculty Recruiting Committee, ACM Faculty Advisor.
- 2001–2002: Faculty Recruiting Committee.
- 2000-2001: Faculty Recruiting Committee.
- 1999-2000: Faculty Recruiting Committee.
- 1998-1999: Community Outreach and Festivals.
- 1997-1998: Ph.D. Admissions and Recruiting Committee.
- 1996-1997: External Relations Committee.
- Spring 1996: Chair Recruiting Committee, Graduate Recruiting Committee.
- 1996-present: Helped found, fund, and organize the Laboratory for Experimental Software Systems Seminar Series (LESSSS) (with Blumofe, Dahlin, and Lin).

F Recent Invited Talks, Tutorials, and Seminars

- July 2008, “The Long March of the Byzantine Generals”, Department of Computer Science, Vrije University, Amsterdam, The Netherlands.
- July 2008, “The Long March of the Byzantine Generals”, Department of Computer Science, University of Groningen, The Netherlands.
- July 2008, “The Long March of the Byzantine Generals”, Department of Computer Science, École Polytechnique Fédérale de Lausanne, Switzerland.
- June 2008, “The Long March of the Byzantine Generals”, Department of Computer Science, University of Udine, Italy.
- May 2008, “Zyzyva”, Department of Computer Science, University of Trento, Italy.

- March 2008, “The Long March of BFT”, Winter School on Hot Topics in Distributed Computing, La Plagne, France.
- December 2007, “BFT: The Time is Now”, 4th ITI Workshop on Dependability and Security, University of Illinois, Urbana.
- November 2007, “BAR Gossip”, Departmental Colloquium, Department of Computer Science, Yale University, New Haven, CT.
- October 2007, “Zyzyva”, Departmental Colloquium, Department of Computer Science, Technion, Haifa, Israel.
- October 2007, “BAR Gossip”, IBM Research, Haifa, Israel.
- October 2007, “BAR Gossip”, Departmental Colloquium, Department of Electrical and Computer Engineering, Technion, Haifa, Israel.
- September 2007, “BAR: Where Distributed Computing meets Game Theory”, Tutorial at the Third Latin America Symposium on Dependable Computing, Morelia, Mexico.
- September 2007, “BAR Gossip”, Universidad Nacional Autónoma de México, Mexico City, Mexico.
- June 2007, “A Virtuous Cycle: A Personal Perspective on the Relationship between Academia, Industry, and Society at Large in the U.S.A.” Invited Talk, European Genetics Foundation, Hermitage of Ronzano, Bologna, Italy.
- June 2007, “BAR Gossip”, University of Trento, Italy.
- June 2007, “BAR Gossip”, University of Bologna, Italy.
- June 2007, “BAR Gossip”, University of Modena, Italy.
- June 2007, “BAR Gossip”, University of Rome, “La Sapienza”, Italy.
- December 2006, “BAR Gossip”, Invited Talk, Workshop on Gossip-based Computer Networking, Lorentz Center, Leiden University, The Netherlands.
- December 2006, “Reasoning with MAD Distributed Systems”, 3rd ITI Workshop on Dependability and Security, University of Illinois, Urbana.
- September 2006, “Reasoning with MAD Distributed Systems”, Dagstuhl Seminar 06371 “From Security to Dependability”, Schloss Dagstuhl, Germany.
- December 2005, Panelist at the 2nd ITI Workshop on Dependability and Security, University of Illinois, Urbana.
- November 2005, “Reasoning with MAD Distributed Services”, Computer Information Assurance and Security Invited Talk Series, San Antonio, Texas.
- September 2005, “Reasoning with MAD Distributed Services”, Research Strategy Workshop, Max Planck Institute for Software Systems, Kaiserslautern, Germany.

- August 2005, “BAR Fault Tolerance for Cooperative Services”, Carnegie Mellon University, Pittsburgh, PA.
- July 2005, “BAR Fault Tolerance for Cooperative Services”, University of Naples “Federico II”, Italy.
- July 2005, “Rethinking State Machine Replication”, University of Naples “Federico II”, Italy.
- July 2005, “BAR Fault Tolerance for Cooperative Services”, University of Rome “La Sapienza”, Italy.
- July 2005, “BAR Fault Tolerance for Cooperative Services”, IBM Research, Zurich, Switzerland.
- July 2005, “Un Circolo Virtuoso: Industria e Università negli U.S.A.” Workshop “Innovare per Competere”, Associazione Piccole e Medie Industrie, Bologna, Italy.
- June 2005, “Graduate Course in Distributed Computing”, University of Rome “La Sapienza”, Italy.
- January 2005, “Byzantine Faults in a Rational World”, 47th IFIP WG 10.4 Meeting, Rincón, PR, USA.
- July 2004, “Rethinking State Machine Replication”, Departmental Colloquium, University of Bologna, Italy.
- July 2004, “Rethinking State Machine Replication”, Departmental Colloquium, University of Trento, Italy.
- January 2004, “Rethinking State Machine Replication”, Departmental Colloquium, Northwestern University, Chicago, IL.
- January 2004, “Rethinking State Machine Replication”, Departmental Colloquium, University of Rome, “La Sapienza”, Italy.
- December 2003, “Rethinking State Machine Replication”, Departmental Colloquium, University of Modena, Italy.
- November 2003, “Rethinking State Machine Replication”, Departmental Colloquium, Washington University, St. Louis, MO.
- June 2003, “Do We Have a Quorum?” AT&T Shannon Laboratory, Florham Park, New Jersey.
- April 2003, “Rollback Recovery: So Many Protocols, So Little Time”, Systems Seminar, Cornell University, Ithaca, NY.
- April 2003, “Byzantine Fault-tolerance for Trustworthy Distributed Systems”, Invited Lecture, Universidad Politécnica de Madrid, Madrid, Spain.
- April 2003, “Two Applications of Lightweight Fault-Tolerance”, Invited Lecture, Universidad Autónoma de Madrid, Madrid, Spain.

- April 2003, “Rollback Recovery: So Many Protocols, So Little Time”, Invited Lecture, Universidad Rey Juan Carlos, Madrid, Spain.
- February 2003, “Do We Have a Quorum?” Departmental Colloquium, Department of Computer Science, Johns Hopkins University, Baltimore, MD.
- January 2003, “Do We Have a Quorum?” Departmental Colloquium, Department of Computer Science, SUNY Stony Brook, Stony Brook, NY.
- January 2003, “Do We Have a Quorum?” Departmental Colloquium, Department of Computer Science, University of Massachusetts, Amherst, MA.
- January 2003, “Do We Have a Quorum?” CERCS Colloquium, College of Computing, Georgia Tech, Atlanta GA.
- January 2003, “Byzantine fault tolerance for security: does it work?”, IFIP Working Group 10.4 on Dependable Computing and Fault Tolerance, Cape Verde.
- October 2002, “Practical Byzantine Quorum Systems”, Distinguished Lecture Series, Cornell University, Ithaca, NY.
- September 2002, “Lightweight Fault Tolerance”, DoCoMo Laboratories, San Jose, CA.
- May 2001, “WAFt: Final Report”, Quorum/High Confidence Computing PI Meeting, New Orleans, LA.
- April 2001, Invited Lecture, “Towards Lightweight Fault-Tolerance”, Fault-Tolerance Workshop, Sandia National Laboratory, Livermore, CA.
- August 2000, Invited Lecture, “Towards Lightweight Fault-Tolerance”, Jet Propulsion Laboratory, Pasadena, CA.
- April 2000, Departmental Colloquium, “Towards Lightweight Fault-Tolerance”, University of Kentucky, Lexington KY.
- January 2000, Departmental Colloquium, “Towards Lightweight Fault-Tolerance”, University of Catania, Italy.
- April 1999, Invited Lecture, “Egida: a Toolkit for Low-Overhead Fault-Tolerance”, Los Alamos National Laboratories, NM.
- September 1998, Tutorial, “A one-day course in fault-tolerance”, Qualcomm Headquarters, San Diego, CA.
- July 1998, Seminar, “WAFt: Fault-tolerance for wide-area networks”, Quorum/High Confidence Computing PI Meeting, San Diego, CA.
- April 1997, Invited Talk, “Understanding Message Logging”, Texas A&M University, College Station, TX.

G Professional Activities

- **Member of the Editorial Board**, Distributed Computing, Springer-Verlag, since 2008.
- **Member of the Editorial Board**, ACM Computing Surveys, since 2005.
- **Member of the Editorial Board**, IEEE Transactions on Dependable and Secure Computing, since 2005.
- **Member of the Scientific Advisory Board**, Bertinoro International Center for Informatics, since 2001.
- **Member**, NSF GENI Research Coordination Working Group.
- **Member**, DSN Steering Committee, January 2007-January 2009.
- **Member**, NSF Cybertrust Panel, 2007.
- **Member**, NSF EHS CAREER Award Panel, 2006.
- **Member**, NSF NeTS NOSS Panel on Security, 2005.
- **Member**, NSF Panel for Distributed Systems and Compilers & NGS CAREER awards, 2004.
- **Member**, NSF Medium ITR panel, 2003.
- **Member**, NSF Panel for the CCR Operating Systems and Compilers CAREER awards, 2002.
- **Member**, European Commission Panel for FP7 Joint ICT-Security call on Protection of Critical Infrastructure, 2008.
- **Reviewer**, Israel's Science Foundation, 2002, 2003.
- **Program Chair** 28th ACM Symposium on the Principles of Distributed Computing (PODC 2009).
- **Member of program committee**, 2008 8th USENIX Symposium On Operating Systems Design and Implementation (OSDI 08).
- **Program Co-Chair**, 4th Workshop on Hot Topics in System Dependability (HOTDEP 08).
- **Member of program committee**, 2008 Workshop on the Economics of Networks, Systems, and Computation (NetEcon 08).
- **Member of Program committee**, 2008 Workshop on Recent Advances on Intrusion-Tolerant Systems (WRAITS 08).
- **Member of program committee**, 2008 International Conference on Distributed Computing and Networking (ICDCN).
- **Member of program committee**, 2008 International Conference on Distributed Computing Systems (ICDCS).

- **Member of program committee**, 2008 International Conference on Dependable Systems and Networks (DSN/FTCS), DCC Symposium.
- **Member of Program Committee**, 2008 Workshop on Recent Advances on Intrusion-Tolerant Systems (WRAITS 07).
- **Program Chair**, 2007 3rd Workshop on the Future of Distributed Computing (FuDiCo III: Building MAD Distributed Systems), 2007.
- **Member of program committee**, 3rd Workshop on Hot Topics in System Dependability (HOTDEP 07).
- **Member of program committee**, 2nd Workshop on Hot Topics in Autonomic Computing (HOTAC 07).
- **Member of program committee**, 2007 International Conference on Dependable Systems and Networks (DSN/FTCS), DCC Symposium.
- **Program Chair**, 2006 International Conference on Dependable Systems and Networks (DSN/FTCS), DCC Symposium.
- **Member of program committee**, 1st ACM Workshop on Scalable Trusted Computing (STC'06).
- **Member of program committee**, 25th ACM Symposium on the Principles of Distributed Computing (PODC 2006).
- **Member of program committee**, 2nd Workshop on Hot Topics in System Dependability (HOTDEP 06).
- **Member of program committee**, 2nd Workshop on High Availability of Distributed Systems (HADIS 2006).
- **Member of program committee**, 2nd IEEE Workshop on Advanced Architectures and Algorithms for Internet Delivery and Applications (AAA-IDEA 2006)
- **Member of program committee**, 20th ACM Symposium on Operating Systems Principles (SOSP 2005).
- **Member of program committee**, 2nd Latin American Symposium on Dependable Computing (LADC 2005).
- **Member of program committee**, IEEE Workshop on Advanced Architectures and Algorithms for Internet Delivery and Applications (AAA-IDEA 2005)
- **Member of program committee**, 1st Workshop on Hot Topics in System Dependability (HOTDEP 05).
- **Member of program committee**, 9th International Symposium on High Assurance Systems Engineering (HASE 2005).

- **Member of program committee**, 2005 International Conference on Dependable Systems and Networks (DSN/FTCS), DCC Symposium.
- **Member**, Workshop Selection Committee, of the 2005 International Conference on Dependable Systems and Networks (DSN/FTCS).
- **Program Chair**, 2004 Workshop on Survivability: Obstacles and Solutions (FuDiCo II: S.O.S.), 2004.
- **Member of program committee**, 2004 Workshop on Secure Multiparty Computations (SMP 2004).
- **Member of program committee**, 2004 ACM SIGOPS European Workshop.
- **Member of program committee**, 2004 International Symposium on Distributed Computing (DISC 2004).
- **Publicity Chair**, 2004 International Symposium on Distributed Computing (DISC 2004).
- **Member of program committee**, 2004 International Conference on Dependable Systems and Networks (DSN/FTCS), DCC Symposium.
- **Member of program committee**, 22nd ACM Symposium on the Principles of Distributed Computing (PODC 2003).
- **Member of program committee**, 2003 International Conference on Dependable Systems and Networks (DSN/FTCS), DCC Symposium.
- **Member of program committee**, 2003 IEEE Symposium on Reliable Distributed Systems (SRDS).
- **Vice Chair for the areas of Fault-Tolerance and Security**, 2002 IEEE International Conference on Distributed Computing Systems (ICDCS).
- **Member of program committee**, 2nd Workshop on Caching, Coherence, and Consistency (WC3'02)
- **Member of program committee**, Euro-Par 2002.
- **Member of program committee**, 2002 International Conference on Dependable Systems and Networks (DSN/FTCS), DCC Symposium.
- **Member of program committee**, 2002 International Parallel and Distributed Processing Symposium (IPDPS).
- **Member of program committee**, 2001 International Symposium on Distributed Computing (DISC 2001).
- **Member of program committee**, 2001 IEEE Symposium on Reliable Distributed Systems (SRDS).

- **Member of program committee**, 2001 International Conference on Dependable Systems and Networks (DSN/FTCS).
- **Member of program committee**, 2001 IEEE Workshop on Internet Applications (WIAPP).
- **Member of program committee**, 2000 Middleware symposium in connection with ACM Symposium on the Principles of Distributed Computing.
- **Member of program committee**, 2001 IEEE International Conference on Distributed Computing Systems (ICDCS).
- **Publicity Chair**, 2001 ACM Symposium on Operating Systems Principles (SOSP 2001).
- **Member of program committee**, 2000 IEEE International Conference on Distributed Computing Systems (ICDCS).
- **Member of program committee**, 1999 IEEE Workshop on Internet Applications (WIAPP).
- **Vice Chair for the areas of Fault-Tolerance and Security**, 1999 International Conference on Distributed Computing Systems (ICDCS).
- **Local Arrangement Chair**, 1999 IEEE International Conference on Distributed Computing Systems (ICDCS).
- **Member of program committee**, 1997 IEEE International Conference on Distributed Computing Systems (ICDCS).
- **Session Chair** for (1) 2003 International Conference on Distributed Systems and Networks, (2) 2001 Symposium on Reliable Distributed Systems, (3) 2000 International Conference on Distributed Systems and Networks, (4) 1999 IEEE Workshop on Internet Applications, and (5) 1999 IEEE International Conference on Distributed Computing Systems.
- **Panelist**, 1998 IEEE 7th Heterogeneous Computing Workshop.
- **Reviewer** for the following journals: ACM Transactions on Information and System Security, ACM Transactions on Computer Systems, ACM Computing Surveys, Distributed Computing, IEEE Computer, IEEE Transactions on Computers, IEEE Transactions on Software Engineering, IEEE Transactions on Parallel and Distributed Systems, Journal of Parallel and Distributed Computing, Journal of Parallel and Distributed Technology, Information Processing Letters, Euromicro, International Journal of Computers and their Applications, Computer Journal, Reliability Engineering and System Safety.
- **Reviewer** for several conferences, including European Dependable Computing Conference (2005), Globecom 2003, ACM Symposium on Operating Systems Principles (1999), International Workshop on Distributed Algorithms (1996), International Conference on Distributed Computing Systems (ICDCS 1998), IEEE Symposium on Reliable Distributed Systems (2000, 1998). International Fault-Tolerant Computing Symposium (FTCS 1996, 1997, 1998, 1999, 2000), EuroPar (2001).
- **Senior Member**, IEEE.

H Grants

- National Science Foundation, *BFT: The Time is Now*, \$ 788,000, 9/1/2007-8/31/2010
- National Science Foundation, *Travel and Registration Support for Third Bertinoro Workshop on Future of Distributed Computing*, \$12,500, 8/01/07-7/31/08.
- National Science Foundation, *Byzantine Faults in a Rational World*, \$ 569,555.
- National Science Foundation, *Byzantine Replication for Trustworthy Systems*, \$ 300,000, 9/15/04-9/14/07.
- National Science Foundation, *Travel Support for Second Bertinoro Workshop on Future of Distributed Computing*, \$10,000, 6/15/04-5/31/05.
- Cassa di Risparmio in Bologna, Italy. *Survivability: Obstacles and Solutions*, (with A. Panconesi at the University of Rome, “La Sapienza”), € 8,000, 2004.
- Texas Advanced Technology Program, *Byzantine Replication for Trustworthy Systems*, \$150,000, 2004-2006.
- Texas Advanced Research Program, *Scalable Low-Overhead Fault-Tolerance*, (with Lin), \$147,000, 2002-2004.
- Texas Advanced Technology Program, *Resource Management in Server Cluster*, (with Vin), \$150,000, 2002-2004.
- Sandia National Laboratories, *Lightweight Fault-Tolerance for ASCII applications* \$100,000, 2001–2003.
- Sandia National Laboratories, *Scalable Fault Tolerance through Compiler-Driven Communication Induced Checkpointing*, \$122,642, 2002–2004.
- Alfred P. Sloan Research Fellowship, \$40,000, 2001-2003.
- Defense Advanced Research Projects Agency, *TRIPS: The Tera-op Reliable Intelligently Adaptive Processor System*. (With Dahlin, Vin, Burger, Keckler, John, Lin, and McKinley). \$3,020,000, 2001-2003.
- Defense Advanced Research Projects Agency, *WAF: Support for Fault-Tolerance in Wide-Area Object-Oriented Systems*, (with K. Marzullo at UCSD), \$ 826,910, 9/1/98 - 8/31/01.
- National Science Foundation CAREER award, *Lightweight Fault-Tolerance for Distributed Agents*, \$200,000, 1998-2001.
- National Science Foundation, *Experiments in Building Distributed Applications through Compositional Programming*, (with Lin and Misra) NSF ESS Program. \$ 128,452, 9/1/97 - 8/31/98.
- IBM Faculty Partnership Award *Issues in Improving Web Server Performance* (with Vin) \$25,000, 2000-2001.

- IBM Faculty Partnership Award, *Resource Management in Server Clusters* (with Vin) \$25,000, 2001-2002.
- IBM Equipment Grant, (with Vin) \$25,000, 12/2000.
- Texas Advanced Research Program, *C0PE: Consistent 0-Administrator Personal Environment* (with Dahlin), \$138,094, 2000-2002.
- Cisco University Research Program, *A Failure Model for Wide-Area Services* (with Dahlin, Vin), \$ 35,400, 2001-2002
- Tivoli, Inc., *Practical Byzantine Fault Tolerance for Replicated Data Services*, \$60,000, 2000-2001.
- Tivoli, Inc., *C0PE: Consistent 0-Administrator Personal Environment* (with Dahlin, Vin), \$30,000, 2000.
- Tivoli, Inc., *System Support for Wide-Area Applications* (with Dahlin, Vin), \$30,000, 2000.
- Dell Inc. *Designing Reliable Server Clusters*, (with Vin), LARIAT Program, \$ 25,000, 1999-2000.
- Novell, Inc., unrestricted research gift (with Dahlin, Blumofe, Lin), \$50,000, 1997-1998.
- University of Texas Summer Research Award, *Using Application Semantics in Optimal Message Logging: An Empirical Study*, \$12,000, 1996.