

Prashant Shenoy

Department of Computer Science
140 Governor's Drive
University of Massachusetts
Amherst, MA 01003-4610

URL: <http://www.cs.umass.edu/~shenoy>
E-mail : shenoy@cs.umass.edu
Phone: (413) 577-0850
Fax: (413) 545-1249

Research Interests

Operating and Distributed systems, Sensor networks, Mobile and Multimedia systems, Sustainability

Education

- August 1998 Doctor of Philosophy (Ph.D.), Department of Computer Sciences,
The University of Texas of Austin.
Dissertation title: *Symphony: An Integrated Multimedia File System*
Advisor: *Prof. Harrick M. Vin.*
- December 1994 Master of Science (M.S) in Computer Sciences
The University of Texas of Austin.
- July 1993 Bachelor of Technology (B.Tech), Department of Computer Science and Engineering
The Indian Institute of Technology, Bombay, India.

Work Experience

- Fall 2011: Visiting Researcher, NICTA, Sydney, Australia
- 9/2009-present: Professor, Department of Computer Science, University of Massachusetts Amherst.
- 9/2004-8/2009: Associate Professor, Department of Computer Science, University of Massachusetts Amherst.
- 9/1998-8/2004: Assistant Professor, Department of Computer Science, University of Massachusetts Amherst.
- 8/1995-8/1998: Graduate Research Assistant, Department of Computer Sciences, University of Texas at Austin.
- 5/1995-8/1995: Summer Intern, AT&T Bell Laboratories, Murray Hill, NJ.
- 8/1994-5/1995: Teaching Assistant, Department of Computer Sciences, University of Texas at Austin.
- 5/1994-8/1994: Summer Intern, Microsoft Research, Redmond, WA.

Honors and Awards

- Elected as the Fellow of the IEEE, 2013
- Distinguished member of the ACM, 2009.
- Keynote Speaker, IEEE E6 Energy Workshop, 2012.
- Keynote speaker, TCS Excellence in Computer Science (TECS) Week, January 2012.

VEEAM 1003
IPR of U.S. Patent No. 7,093,086

- Best papers of *IEEE PerCom 2012* conference (one of three papers chosen for this honor).
- Best paper, *IEEE COMSNETS 2012* conference, India.
- Best paper, *ACM Sigcomm GreenNets 2011* workshop, Toronto, Canada.
- Our Memory Buddies paper adjudged one of the four best papers of ACM VEE 2009.
- Best paper, *Usenix 2007* annual technical conference.
- Best Paper, *ACM Multimedia 2005*, Singapore.
- Paper co-authored with a student won Best Student Paper, *IEEE Autonomic Computing conference (ICAC) 2005*.
- Best Paper, *IEEE Web Information Systems Engineering Conference*, 2002. Forwarded to a fast-track issue of *World Wide Web Journal*.
- Best Paper in Performance/Systems Category and Finalist for overall Best Paper, *World Wide Web Conference*, May 2002. Forwarded to a fast-track issue of *IEEE Transactions on Knowledge and Data Engineering*.
- Paper co-authored with a student was Best Student Paper Finalist, *ACM Multimedia 2005*.
- Lilly Foundation Teaching Fellowship, August 2001.
- IBM Faculty Partnership Award, June 2000, June 2001 and June 2003.
- National Science Foundation (NSF) CAREER Award, April 2000.
- Best Doctoral Dissertation of 1998-99, Department of Computer Sciences, University of Texas at Austin.
- MCD Graduate Fellowship, Department of Computer Sciences, University of Texas at Austin, 1993-95.
- Institute Medal recipient for being the top ranking graduating student, Department of Computer Science and Engineering, Indian Institute of Technology, Bombay, July, 1993.

Book Chapters

- B1. Michael Zink and Prashant Shenoy, "Caching and Distribution Issues for Streaming Content Distribution Networks," X. Tang, J. Xu, and S T. Chanson (eds), Springer, 2005.
- B2. Harrick Vin and Prashant Shenoy, "Storage Architectures for Digital Imagery," *Image Databases: Search and Retrieval of Digital Imagery*, V. Castelli and L. Bergman (eds), John Wiley, 2002.
- B3. Prashant Shenoy and Harrick Vin, "Media Servers," *Readings in Multimedia Computing*, K Jeffay and H. Zhang (eds), Morgan Kaufman Publishers, August 2001.

Journal Publications

- J1. B. Li, E. Mazur, Y. Diao, A. McGregor and P. Shenoy, "SCALLA: A Platform for Scalable One-Pass Analytics using MapReduce," *ACM Transactions on Database Systems (TODS)* 2013 (to appear).

- J2. Peter Desnoyers, Timothy Wood, Prashant Shenoy, Rahul Singh, Sangameshwar Patil, and Harrick Vin, "Modellus: Automated Modeling of Complex Internet Data Center Applications," *ACM Transactions on the Web (TWEB)*, 6(2), 1-19, May 2012.
- J3. T. Wood, K K Ramakrishnan, P. Shenoy, K Van der Merwe, "Enterprise Ready Virtual Cloud Pools: Vision, Opportunities and Challenges," *The Computer Journal, Oxford Univ. Press*, vol 55, number 8, pages 1-10, October 2012.
- J4. Navin Sharma, David Irwin, Prashant Shenoy and Michael Zink, "MultiSense: Proportional-Share for Mechanically Steerable Sensor Networks," *Multimedia Systems Journal (MMSJ)*, vol 18, pages 425-444, October 2012.
- J5. Y. Nie, R. Cocci, Z. Cao, Y. Diao, and P. Shenoy "SPIRE: Efficient Data Interpretation and Compression over RFID Streams," *IEEE Trans. on Knowledge and Data Engineering (TKDE)*, vol 24, number 1, pages 141-155, 2012.
- J6. Zhao Cao, Charles Sutton, Yanlei Diao, and Prashant Shenoy,"Distributed Inference and Query Processing for RFID Tracking and Monitoring" *PVLDB Journal*, vol 4, number 5, pages 326-337, March 2011.
- J7. Xiaotao Liu, Mark D. Corner, Prashant Shenoy, "Ferret: An RFID-enabled pervasive multimedia application," *Ad Hoc Networks*, 9(4), 2011.
- J8. Jeremy Gummesson, Deepak Ganesan, Prashant Shenoy and Mark Corner, "An Adaptive Link Layer for Heterogeneous Multi-radio Mobile Sensor Networks," *IEEE Journal on Selected Areas in Communications (JSAC), Special Issue on Simple Wireless Sensor Networking Solutions*, vol 28, no 7, pages 1094-1104 Sept 2010.
- J9. Gaurav Mathur, Peter Desnoyers, Paul Chukiu, Deepak Ganesan and Prashant Shenoy, "Ultra Low Power Data Storage for Sensor Networks," *ACM Transaction on Sensor Networks (TOSN)*, 2009.
- J10. David Yates, Erich Nahum, James F. Kurose, Prashant Shenoy, "Data Quality and Query Cost in Pervasive Sensing Systems", *Elsevier Pervasive and Mobile Computing Journal*, Special Issue of Selected Papers from IEEE Percom'08, 2009.
- J11. Ming Li, Deepak Ganesan and Prashant Shenoy, "PRESTO: Feedback-driven Data Management in Sensor Networks," *IEEE/ACM Transactions on Networking (TON)*, October 2009.
- J12. Xiaotao Liu, Mark D. Corner, and Prashant Shenoy, "SEVA: Sensor Enhanced Video Annotation," *ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMCCAP)*, August 2009.
- J13. Bhuvan Uргаonkar, Prashant Shenoy, and Timothy Roscoe. "Resource Overbooking and Application Profiling in a Shared Internet Hosting Platform," *ACM Transactions on Internet Technologies (TOIT)*, 2008.
- J14. Xiaotao Liu, Prashant Shenoy, and Mark D. Corner, "Chameleon: Application Level Power Management," *IEEE Transactions on Mobile Computing*, 7(8):995-1010, August 2008.
- J15. Bhuvan Uргаonkar and Prashant Shenoy "Cataclysm: Scalable Overload Policing for Internet Applications," *Elsevier Journal of Network and Computer Applications (JNCA)*, vol 31, pages 891-920, July 2008.

- J16. B. Wang, J. Kurose, P. Shenoy and D. Towsley, "Multimedia Streaming via TCP: An Analytic Performance Study," *ACM Transactions on Multimedia Computing, Communications and Applications (TOMCCAP)*, 4(2), April 2008.
- J17. A. Chandra and P. Shenoy. "Hierarchical Scheduling for Symmetric Multiprocessors," *IEEE Trans. On Parallel and Distributed Systems (TPDS)*, 19(3), pp 418-431, March 2008.
- J18. Bhuvan Urgaonkar, Prashant Shenoy, Abhishek Chandra, Pawan Goyal, and Timothy Wood, "Agile Dynamic Provisioning of Multi-tier Internet Applications", *ACM Transactions on Adaptive and Autonomous Systems (TAAS)*, Vol. 3, No. 1, pages 1-39, March 2008.
- J19. B. Urgaonkar, A. Rosenberg and P. Shenoy, "Application Placement on a Cluster of Servers", *International Journal of Foundations of Computer Science*, Vol. 18, No. 5, pages 1023-1041, October 2007
- J20. Z. Ge, P. Ji and P. Shenoy, "Design and Analysis of a Demand Adaptive and Locality Aware Streaming Media Server Cluster" *ACM/Springer Multimedia Systems Journal*, 13(3), pages 235-249, September 2007
- J21. B. Urgaonkar, G. Pacifici, P. Shenoy, M. Spreitzer and A. Tantawi, "Analytic Modeling of Multi-tier Internet Applications," *ACM Transactions on the Web (TWEB)*, 1(1):1-25, May 2007.
- J22. H. Li, K. Ramamritham, P. Shenoy, R. Grupen, J. Sweeney, "Resource Management for Real-time Tasks in Mobile Robotics," Special Issue on Dynamic Resource Management in Distributed Real-Time Systems, *Journal of Systems and Software*, 80:962-971, May 2007
- J23. X. Liu, J. Lan, P. Shenoy and K. Ramamritham, "Consistency Maintenance in Dynamic Overlay Networks," *Computer Networks*, Special Issue on Overlay Distribution Structures and their Applications, 50(6), pp 859-876, April 2006.
- J24. A. Chandra, P. Pradhan, R. Tewari, S. Sahu and P. Shenoy, "An Observation-based Approach Towards Self-managing Web Servers" *Computer Communications*, 2006.
- J25. Y. Guo, Z. Ge, B. Urgaonkar, P. Shenoy and D. Towsley, "Dynamic Cache Reconfiguration Strategies for Cluster-based Streaming Proxies," *Computer Communications*, 29(8), pp 1174-1188, May 2006.
- J26. J. Arnold, B.N. Levine, R. Manmatha, F. Lee, P. Shenoy, M.-C. Tsai, T.K. Ibrahim, D. O'Brien, D.A. Walsh, "Information Sharing in Out-of-Hospital Disaster Response: The future role of information technology", *Journal of Pre-Hospital and Disaster Medicine*, 19(2):201-207, Sept 2004.
- J27. Sheetal Shah, Krithi Ramamritham and Prashant Shenoy, "Resilient and Coherency Preserving Dissemination of Dynamic Data Using Cooperating Peers," *IEEE Trans. on Knowledge and Data Engineering, Special Issue on Peer-to-Peer Data Management*, 16(7):799-812 July 2004.
- J28. Aameek Singh, Abhishek Trivedi, Krithi Ramamritham and Prashant Shenoy, "PTC : Proxies that Transcode and Cache in Heterogeneous Web Client Environments," *World Wide Web Journal, Special Issue on WISE 2002 papers*, 7(1):2-28 2004.
- J29. Bhuvan Urgaonkar and Prashant Shenoy, "Sharc: Managing CPU and Network Bandwidth in Shared Clusters," *IEEE Trans. on Parallel and Distributed Systems (TPDS)*, 15(1):2-17, January 2004.
- J30. P Shenoy, P Goyal, S Rao and H Vin, "Design Considerations for the Symphony Integrated File System", *ACM/Springer Multimedia Systems Journal*, volume 9, no 4, November 2003

- J31. M. Bradshaw, B. Wang, S. Sen, L. Gao, J. Kurose, P. Shenoy, and D. Towsley, "Periodic Broadcast and Patching Services: Implementation, Measurement and Analysis in an Internet Streaming Media Testbed," *ACM/Springer Multimedia Systems Journal, Special Issue on Multimedia Distribution*, 9(1), pages 78-93, July 2003.
- J32. Prashant Shenoy, Pawan Goyal, Sriram Rao and Harick Vin, "Design Considerations for the Symphony Integrated Multimedia File System," *ACM/Springer Multimedia Systems Journal*, 9(4), pages 337- 352, October 2003.
- J33. Venkata Duvvuri, Prashant Shenoy and Renu Tewari, "Adaptive Leases: A Strong Consistency Mechanism for the World Wide Web," *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 15(5), pages 1266-1276, September 2003.
- J34. Anoop Ninan, Purushottam Kulkarni, Prashant Shenoy, Krithi Ramamritham and Renu Tewari, "Scalable Consistency Maintenance in Content Distribution Networks using Cooperative Leases," *IEEE Transactions of Knowledge and Data Engineering*, 15(4), pages 813-828, July/August 2003.
- J35. Pavan Deolasee, Amol Katkar, Ankur Panchbudhe, Krithi Ramamritham and Prashant Shenoy "Adaptive Push-Pull of Dynamic Web Data," *IEEE Transactions on Computers*, 51(6) pages 652-668, June 2002.
- J36. Mohammad S. Raunak, Prashant Shenoy, Pawan Goyal, Krithi Ramamritham and Puru Kulkarni, "Implications of Proxy Caching for Provisioning Servers and Networks," *IEEE Journal on Selected Areas in Communications (JSAC)*, Special Issue on Internet Proxy Services, 20(7), pages 1276-1289, September 2002.
- J37. Prashant Shenoy, Pawan Goyal and Harrick M. Vin, "Architectural Considerations for Next Generation File Systems", *ACM/Springer Multimedia Systems Journal*, 8(4), pages 270-283, July 2002
- J38. Prashant Shenoy and Harrick M. Vin, "Cello: A Disk Scheduling Framework for Next Generation Operating Systems," *Real Time Systems Journal: Special Issue on Flexible Scheduling of Real-Time Systems*, 22(1) pages 9-47, January 2002.
- J39. Prashant J. Shenoy and Harrick M. Vin, "Failure Recovery Algorithms for Multimedia Servers," *ACM/Springer Multimedia Systems Journal*, 8(1) pages 1-19, January 2000.
- J40. Prashant J. Shenoy and Harrick M. Vin, "Efficient Striping Techniques for Variable Bit-rate Continuous Media File Servers," *Performance Evaluation Journal*, 38:(3), pages 175-200, December 1999.
- J41. Prashant J. Shenoy and Harrick M. Vin, "Efficient Support for Interactive Operations in Multi-resolution Video Servers," *ACM/Springer Multimedia Systems Journal*, 7(3), pages 241-251, July 1999.
- J42. Prashant J. Shenoy, Pawan Goyal, and Harrick M. Vin, "Issues in Multimedia Server Design," *ACM Computing Surveys (Special Issue : Symposium on Multimedia Systems)*, 27(4), pages 636-639, December 1995.

Refereed Conference and Workshop Publications

- C1. Upendra Sharma, Prashant Shenoy and Don Towsley, "Provisioning Multi-tier Cloud Applications Using Statistical Bounds on Sojourn Time," Proceedings of the 9th ACM Conference on Autonomic Computing, San Jose, CA, September 2012.

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