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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

- 9/2016 - present: Associate Dean, College of Information and Computer Sciences, University of Massachusetts Amherst.
- 9/2009-present: Professor, College of Information and Computer Sciences, University of Massachusetts Amherst.
- Fall 2011: Visiting Researcher, NICTA, Sydney, Australia
- 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.

Expert Witness Experience

- *Veeam v. Symantec, Inter Partes Review* Case IPR2013-00141 for US Patent 6,931,558, "Computer Restoration Systems and Methods" Deposition October 2013 and March 2014.

- Veeam v. Symantec, *Inter Partes Review* Case IPR2013-00142 for US Patent 6,931,558, “Computer Restoration Systems and Methods,” Deposition October 2013 and March 2014.
- Veeam v. Symantec, *Inter Partes Review* Case IPR2013-00143 for US Patent 7,191,299, “Method and System of Providing Periodic Replication,” Deposition November 2013 and March 2014.
- Veeam v. Symantec, *Inter Partes Review* Case IPR2013-00144 for US Patent 7,254,682, “Selective File and Folder Snapshot Image Creation,” Written testimony February 2013.
- Veeam v. Symantec, *Inter Partes Review* Case IPR2013-00145 for US Patent 7,254,682, “Selective File and Folder Snapshot Image Creation,” Written testimony February 2013.
- Veeam v. Symantec, *Inter Partes Review* Case IPR2013-00150 for US Patent 7,093,086, “Disaster Recover and Backup Using Virtual Machines,” Deposited November 2013 and March 2014.
- Veeam v. Symantec, *Inter Partes Review* Case IPR2014-00088 for US Patent 7,480,822, “Recover and Operation of Captured Running States from Multiple Computing Systems On a Single Computing System,” Deposition June 2014.
- Veeam v. Symantec, *Inter Partes Review* Case IPR2014-00089 for US Patent 7,831,861, “Techniques for Efficient Restoration of Granular Application Data” Deposition June 2014.
- Veeam v. Symantec, *Inter Partes Review* Case IPR2014-00091 for US Patent 8,117,168, “Methods and Systems for Creating and Managing Backups Using Virtual Disks,” Deposition July 2014.
- Riverbed and SAP v. Parallel Networks, *Inter Partes Review* Case IPR2014-01398 for US Patent 8,352,570, “Method and System for Uniform Resource Locator Transformation,” August 2014.
- Riverbed and SAP v. Parallel Networks, *Inter Partes Review* Case IPR2014-01399 for US Patent 7,571,217, “Method and System for Uniform Resource Locator Transformation,” August 2014.
- Delphix v. Actifio, *Inter Partes Review* Case IPR2015-00100 for US Patent 8,566,361, “Datacenter Workflow Automation Scenarios Using Virtual Databases,” August 2015. Deposited.
- Delphix v. Actifio, *Inter Partes Review* Case IPR2015-00108 for US Patent 8,566,361, “Datacenter Workflow Automation Scenarios Using Virtual Databases,” August 2015. Deposited.
- Delphix v. Actifio, *Inter Partes Review* Case IPR2015-01678 for US Patent 8,299,944, “System and Method for Creating Deduplicated Copies of Data Storing Non-lossy Encodings of Data Directly in a Content Addressable Store,” August 2015. Deposited.
- Delphix v. Actifio, *Inter Partes Review* Case IPR2015-01689 for US Patent 8,788,769, “System and method for performing backup or restore operations utilizing difference information and timeline state information,” August 2015. Deposited.

Honors and Awards

- Elected as the Fellow of the IEEE, 2013
- Distinguished member of the ACM, 2009.
- ACM Sigmetrics 2016 Test of Time Award.

- Keynote Speaker, ACM ICPE 2013 conference
- Keynote Speaker, ACM GreenMetrics 2013
- Keynote Speaker, IEEE E6 Energy Workshop, 2012.
- Keynote speaker, TCS Excellence in Computer Science (TECS) Week, January 2012.
- Best paper Finalist, ACM Buildsys 2014.
- Best paper, *ACM/IEEE IWQOS* symposium, Montreal, 2013
- Best paper runner-up, *ACM eEnergy* conference, Berkeley, CA, 2013
- 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. P. Sharma, S. Lee, T. Guo, D. Irwin and P. Shenoy, "Managing Risk in a Derivative IaaS Cloud," *IEEE Trans on Parallel and Distributed Systems (TPDS)*, 2017.
- J2. David Irwin, Srinivasan Iyengar, Stephen Lee, Aditya Mishra, Prashant Shenoy, Ye Xu, "Enabling Distributed Energy Storage by Incentivizing Small Load Shifts," *ACM Transactions on Cyber-Physical Systems (ACM TCPS)*, 2017.
- J3. Srinivasan Iyengar, Navin Sharma, David Irwin, Prashant Shenoy, Krithi Ramamritham, "A Cloud-based Black Box Solar Predictor for Smart Homes," *ACM Transactions on Cyber-Physical Systems - Special Issue on Smart Homes, Buildings, and Infrastructures*, 2017.
- J4. Zhichuan Huang, Ting Zhu, Yu Gu, David Irwin, Aditya Mishra, Daniel Menasche, Prashant Shenoy, "Minimizing Transmission Loss in Smart Microgrids by Sharing Renewable Energy," *ACM Trans on Cyber-Physical Systems*, 2017.
- J5. Prateek Sharma, Patrick Pegus, David Irwin, and Prashant Shenoy, "Design and Operational Analysis of a Green Data Center," *IEEE Internet Computing*, Special Issue on Energy-efficient Data Centers, 2017.
- J6. Prateek Sharma, David Irwin, and Prashant Shenoy, "Keep it Simple: Bidding for Servers in Today's Cloud Platforms," *IEEE Internet Computing*, 2017.
- J7. Navin Sharma, Dilip Krishnappa, Sean Barker, David Irwin, and Prashant Shenoy, "Managing server clusters on intermittent power," *PeerJ Computer Science Journal*, December 2015.
- J8. Boduo Li, Yanlei Diao, Prashant Shenoy, "Supporting Scalable Analytics with Latency Constraints," *PVLDB Journal*, 8(11), 2015. Also presented at the VLDB conference, Hawaii, Aug 2015.
- J9. Dong Chen, Sandeep Kalra, David Irwin, Prashant Shenoy, and Jeannie Albrecht, "Preventing Occupancy Detection from Smart Meter Data," *IEEE Transactions on Smart Grid*, 2015.
- J10. T. Wood, K K. Ramakrishnan, P. Shenoy, J. van der Merwe, J. Hwang, G. Liu and L. Chaufournier, "CloudNet: Dynamic Pooling of Cloud Resources by Live WAN Migration of Virtual Machines," *IEEE/ACM Transactions on Networking (TON)*, 2014.
- J11. Navin Sharma, Jeremy Gummeson, David Irwin, Ting Zhu and Prashant Shenoy "Leveraging weather forecasts in renewable energy systems," *Sustainable Computing: Informatics and Systems*, Volume 4, Issue 3, pages 160-171, September 2014.
- J12. Vimal Mathew, Ramesh K. Sitaraman and Prashant Shenoy "Energy-efficient content delivery networks using cluster shutdown," *Sustainable Computing: Informatics and Systems (SUSCOM)*, Special Issue of Invited Papers from IGCC 2013, 2014.
- J13. Navin Sharma, David Irwin, and Prashant Shenoy, "BlinkFS: A Distributed File System for Intermittent Power," *Sustainable Computing (SUSCOM)*, 2014.

- J14. Rahul Singh, Prateek Sharma, David Irwin, Prashant Shenoy, and K.K. Ramakrishnan, "Here Today, Gone Tomorrow: Exploiting Transient Servers in Data Centers," *IEEE Internet Computing*, 18(4):22-29 2014.
- J15. Sean Barker, Sandeep Kalra, David Irwin, and Prashant Shenoy, "Empirical Characterization, Modeling, and Analysis of Smart Meter Data," *IEEE Journal on Selected Areas in Communications (JSAC)*, Special Series on Smart Grid Communications, 32(7):1312-1327, July 2014.
- J16. Tian Guo, Upendra Sharma, Prashant Shenoy, Timothy Wood, Sambit Sahu, "Cost-aware Cloud Bursting for Enterprise Applications," *ACM Transactions on Internet Technology (TOIT)*, vol 13, no 3, May 2014.
- J17. Prashant Shenoy, "Multimedia Systems Research: The First Twenty Years and Lessons for the Next Twenty," *ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOM-CCAP)*, Special Issue on 20 Years of ACM Multimedia, vol 9, no 1s, October 2013.
- J18. R. Singh, P. Shenoy, M. Natu, V. Sadaphal and H. Vin, "Analytical Modeling for What-if Analysis in Complex Cloud Computing Applications," *ACM Sigmetrics Performance Evaluation Review, Special Issue on Cloud Computing*, Vol 40, no 4, pages 53-62, March 2013
- J19. A. Mishra, D. Irwin, P. Shenoy, J. Kurose, T. Zhu, "GreenCharge: Managing Renewable Energy in Smart Buildings," *IEEE Journal on Selected Areas in Communications (JSAC)*, Special Series on Smart Grid Communications, 31(7): 1281-1293, July 2013.
- J20. 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)*, 37:4, December 2012. Special Issue of Best Papers of Sigmod 2011.
- J21. 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.
- J22. 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.
- J23. 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.
- J24. 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.
- J25. 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.
- J26. Xiaotao Liu, Mark D. Corner, Prashant Shenoy, "Ferret: An RFID-enabled pervasive multimedia application," *Ad Hoc Networks*, 9(4), 2011.

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