

# Harshawardhan Gadgil

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## EDUCATION

- **Ph.D., Computer Science**, May 2007  
Indiana University, Bloomington, IN  
**Thesis:** Scalable, Fault-tolerant Management of Grid Services: Application to Messaging Middleware  
**Minor:** Software Engineering  
**Advisor:** Prof. Geoffrey Fox
- **Master of Science (M.S.), Computer Science**  
Indiana University, Bloomington, IN, May 2002  
**G.P.A.:** 3.93 / 4.0
- **Bachelor of Engineering (B.E.), Computer Engineering**  
Mumbai University, India, August 2000

## PROFESSIONAL EXPERIENCE

- VMware, Bellevue, WA (Apr 2012 – Present) – Sr. Member of Technical Staff
  - Cloud foundry Services Team.
- Microsoft Corporation, [Windows Azure Storage](#), Redmond, WA (Jan 2009 – Mar 2012) – Software Development Engineer
  - End-to-end ownership of key features and components such as Storage Analytics, Upgrade Infrastructure for Windows Azure Storage and periodic assessment of system health
  - Contributed to implementation of several core features for the Windows Azure Storage platform such as Blob apis and Geo replication
- Amazon.com, [Distributed Systems Engineering](#), Seattle, WA (Aug 2006 – Jan 2009) - Software Development Engineer
  - Extended functionality of several core components of messaging software for supporting Amazon.com's service-oriented infrastructure and Amazon Simple Queue Service.
- Community Grids Lab (CGL), Indiana University, Bloomington (Jan 2003 - Aug 2006) - Research Assistant
  - Designed and Implemented a Scalable, Fault-tolerant Management framework for managing a large number of services in heterogeneous environments (based on architecture proposed in thesis)
  - Management of workflow and data streams in Geographical Information Systems (GIS) applications architectures
  - Implemented several core features in the Distributed Messaging Infrastructure, NaradaBrokering (<http://www.naradabrokering.org>) resulting in multiple publications in highly selective conferences:
    - Support for discovery of brokers
    - Topic creation and discovery scheme to aid topic authorization and provenance
    - Message level security scheme for secure messaging in publish-subscribe systems

- Microsoft Corporation (May 2001 - July 2001) - Summer Intern, Software Design Engineer in Test, Microsoft Exchange Server
  - Redesigned and developed an automatic mailbox statistics gathering tool for Microsoft Exchange Server
  - Automated setup process for automated test suites
- Indiana University, Bloomington (Aug 2000 - Dec 2002) - Associate Instructor, CSCI (A110) - "Introduction to Computer Science"
  - Involved leading discussions in the lab, holding office/help hours and grading assignments

## JOURNAL PAPERS

- J1. *Algorithms and the Grid* Geoffrey C. Fox, Mehmet S. Aktas, Galip Aydin, Harshawardhan Gadgil, Shrideep Pallickara, Marlon E. Pierce, and Ahmet Sayar, Invited talk at ALGORITMY 2005 Conference, Vysoke Tatry, Podbanske, March 13-18, 2005, In Journal of Computing and Visualization in Science, Feb 2, 2008, DOI: 10.1007/s00791-007-0083-8
- J2. *On the Secure Creation, Organization and Discovery of Topics in Distributed Publish/Subscribe Systems*, Shrideep Pallickara, Geoffrey Fox, Harshawardhan Gadgil, (Extended version, Invited for publication) in the International Journal of High Performance Computing and Networking (IJHPCN), Vol. 5, No. 3, pp. 156-167, 2008, DOI: 10.1504/IJHPCN.2008.020860
- J3. *Building and applying geographical information system grids* Galip Aydin, Ahmet Sayar, Harshawardhan Gadgil, Mehmet S. Aktas, Geoffrey C. Fox, Sunghoon Ko, Hasan Bulut and Marlon E. Pierce, In Special Issue on Geographical Information Systems and Grids, Concurrency and Computation: Practice and Experience, Vol. 20, Issue 14, pp. 1653 – 1695, Aug 6, 2008, DOI: 10.1002/cpe.1312
- J4. *Management of real-time streaming Data Grid Services* Geoffrey C. Fox, Galip Aydin, Harshawardhan Gadgil, Shrideep Pallickara, Marlon E. Pierce, and Wenjun Wu, In Journal "Concurrency and Computation: Practice and Experience", Vol. 19, Issue 7, pp. 983 – 998, 2007, DOI: 10.1002/cpe.v19:7
- J5. *Building Messaging Substrates for Web and Grid Applications*, Geoffrey Fox, Shrideep Pallickara, Marlon Pierce, Harshawardhan Gadgil, In special issue on *Scientific Applications of Grid Computing* in Philosophical Transaction of the Royal Society, London, Volume 363, Number 1833, pp 1757-1773, August 2005, DOI:10.1098/rsta.2005.1605

## CONFERENCE PUBLICATIONS

- C1. *The QuakeSim Project: Web Services for Managing Geophysical Data and Applications* Marlon E. Pierce, Geoffrey C. Fox, Mehmet S. Aktas, Galip Aydin, Harshawardhan Gadgil, Zhigang Qi, and Ahmet Sayar, PAGEOPH Special Issue for 5th ACES International Workshop Maui Prince Hotel, Island of Maui, Hawaii, 2006, Pure and Applied Geophysics Volume 165, Numbers 3-4 / April, 2008, pp. 635 – 651, DOI: 10.1007/s00024-008-0319-7
- C2. *Scalable, Fault-tolerant Management of Grid Services* Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, Marlon Pierce, In proceeding of IEEE Cluster 2007, pp. 349 – 356, Austin, TX, Sep 19, 2007, DOI: 10.1109/CLUSTER.2007.4629249
- C3. *Scalable, Fault-tolerant Management in a Service Oriented Architecture* Harshawardhan Gadgil, Geoffrey C. Fox, Shrideep Pallickara, Marlon Pierce, As poster In Proceedings of the 16th IEEE International Symposium on High-Performance Distributed Computing HPDC 2007 Conference, Monterey Bay, CA, June 27 - 29, 2007, DOI: 10.1145/1272366.1272407

- C4. *A Framework for Secure End-to-End Delivery of Messages in Publish/Subscribe Systems* Shrideep Pallickara, Marlon Pierce, Harshawardhan Gadgil, Geoffrey Fox, Yan Yan, Yi Huang In Proceedings of "The 7th IEEE/ACM International Conference on Grid Computing" (Grid 2006), pp. 215-222, Barcelona, September 28th-29th, 2006, DOI: 10.1109/ICGRID.2006.311018
- C5. *Managing Grid Messaging Middleware* Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, Marlon Pierce, In proceeding of "Challenges of Large Applications in Distributed Environments" (CLADE), pp. 83 - 91, Paris, France, June 19, 2006, DOI: 10.1109/CLADE.2006.1652059
- C6. *Management of Real-Time Streaming Data Grid Services* Geoffrey C. Fox, Galip Aydin, Harshawardhan Gadgil, Shrideep Pallickara, Marlon E. Pierce, and Wenjun Wu, Invited talk at Fourth International Conference on Grid and Cooperative Computing (GCC2005), Beijing, China, Nov 30 - Dec 3, 2005, In *Lecture Notes in Computer Science*, Volume 3795, Nov 2005, Page 3 - 12, DOI: 10.1007/11590354
- C7. *Grids for Real-time Data Applications* Geoffrey C. Fox, Mehmet S. Aktas, Galip Aydin, Hasan Bulut, Harshawardhan Gadgil, Sangyoon Oh, Shrideep Pallickara, Marlon E. Pierce, Ahmet Sayar and Gang Zhai , Invited talk at the Sixth International Conference on Parallel Processing and Applied Mathematics (PPAM 2005), Poznan, Poland, September 11 - 14, 2005 *Lecture Notes in Computer Science*, Volume 3911, Pages 320 - 332, DOI: 10.1007/11752578
- C8. *On the Creation and Discovery of Topics in Distributed Publish/Subscribe Systems* Shrideep Pallickara, Geoffrey Fox, Harshawardhan Gadgil In Proceedings of the 6th IEEE/ACM International Workshop on Grid Computing, pp. 25 - 32, Seattle, WA, Nov 13 - 14, 2005 (*Selected as one of the six Best Papers*), DOI: 10.1109/GRID.2005.1542720
- C9. *SERVOGrid Complexity Computational Environments(CCE) Integrated Performance Analysis* Galip Aydin, Mehmet S. Aktas, Geoffrey C. Fox, Harshawardhan Gadgil, Marlon Pierce, Ahmet Sayar, As poster and In Proceedings of the 6th IEEE/ACM International Workshop on Grid Computing, Grid2005 Conference, pp. 256 - 261, Seattle, WA, Nov 13 - 14, 2005, DOI: 10.1109/GRID.2005.1542750
- C10. *On the Discovery of Brokers in Distributed Messaging Infrastructure* Shrideep Pallickara, Harshawardhan Gadgil, Geoffrey Fox In Proceedings of the IEEE Cluster 2005 Conference, Boston, MA, Sep 26 - 30, 2005, DOI: 10.1109/CLUSTER.2005.347076
- C11. *A Scripting based Architecture for Management of Streams and Services in Real-time Grid Applications* Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, Marlon Pierce, Robert Granat In Proceedings of the IEEE/ACM Cluster Computing and Grid 2005 Conference, Vol. 2, pp. 710 - 717, CCGrid 2005, Cardiff, UK, May 9 - 12, 2005, DOI: 10.1109/CCGRID.2005.1558633
- C12. *Building Sensor Filter Grids: Information Architecture for the Data Deluge* Geoffrey C. Fox, Mehmet S. Aktas, Galip Aydin, Andrea Donnellan, Harshawardhan Gadgil, Robert Granat, Shrideep Pallickara, Jay Parker, Marlon E. Pierce, Sangyoon Oh, John Rundle, Ahmet Sayar, Michael Scharber, First International Conference on Semantics, Knowledge and Grid (SKG'05), pp. 2, 2005, DOI: 10.1109/SKG.2005.48

## BOOK CHAPTERS

- B1. *A Retrospective on the Development of Web Service Specifications* Shrideep Pallickara, Geoffrey Fox, Mehmet Aktas, Harshawardhan Gadgil, Beytullah Yildiz, Sangyoon Oh, Sima Patel, Marlon Pierce and Damodar Yemme Chapter in Book: *Securing Web Services: Practical Usage of Standards and Specifications*, Editor Periorellis Panos, University of Newcastle Upon Tyne. Published by Information Science Reference (IGI Global), Nov. 1 2007. ISBN-10: 1599049864; ISBN-13: 9781599046396

## TECHNICAL REPORTS

- T1. *Streaming Data Services to support Archival and Real-time Geographical Information System Grids* Galip Aydin, Geoffrey C. Fox, Harshawardhan Gadgil and Marlon E. Pierce, Sixth Annual NASA Earth Science Technology Conference, June 27th - 29th 2006, College Park, MD
- T2. *HPSearch: Service Management & Administration Tool* Harshawardhan Gadgil, Geoffrey Fox, Marlon Pierce, Shrideep Pallickara, Poster presentation, 1st VLAB Workshop, UMN, Minneapolis, July 21 - 23, 2005
- T3. *Information Services for Grid/Web Service Oriented Architecture (SOA) Based Geospatial Applications* Mehmet S. Aktas, Galip Aydin, Geoffrey C. Fox, Harshawardhan Gadgil, Marlon Pierce, Ahmet Sayar, CGL Technical Report, June 2005
- T4. *HPSearch for managing Distributed Services* Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, In work-in-progress session of the IEEE/ACM Cluster Computing and Grid 2005 Conference, CCGrid 2005, Cardiff, UK, May 9 - 12, 2005
- T5. *Complexity Computational Environments (CCE) Architecture* Geoffrey Fox, Harshawardhan Gadgil, Shrideep Pallickara, Marlon Pierce, John Rundle, Andrea Donnellan, Jay Parker, Robert Granat, Greg Lyzenga, Dennis McLeod and Anne Chen, NASA Technical Report, September 2004
- T6. *High Performance Data Streaming in Service Architecture* Geoffrey Fox, Harshawardhan Gadgil, Shrideep Pallickara, Marlon Pierce, Robert L. Grossman, Yunhong Gu, David Hanley, Xinwei Hong, CGL Technical Report, July 2004
- T7. *Management of Data Streams for a Real Time Flood Simulation* Harshawardhan Gadgil, Jin-Yong Choi, Bernie Engel, Geoffrey Fox, Sunghoon Ko, Shrideep Pallickara, Marlon Pierce, CGL Technical Report, June 2004

## PROFESSIONAL SERVICE

- **Journal:**  
 Referee, KSII Transactions on Internet and Information Systems, 2010  
 Referee, Concurrency and Computation: Practice and Experience, 2008

## HONORS AND AWARDS

- 1. *On the Discovery of Topics in Distributed Publish/Subscribe Systems*, Shrideep Pallickara, Geoffrey Fox, Harshawardhan Gadgil, Selected as one of six best papers, in the prestigious Grid Workshop, Grid 2005, Seattle, WA
- 2. Recipient of the Dhirubhai Ambani Foundation (DAF) scholarship for undergraduates (1996 - 2000)