

CURRICULUM VITAE

SHRIDEEP PALLICKARA

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1 Research Interests

My research interests are in the area of large-scale distributed systems; specifically streaming and computing. I am interested in issues related to machine learning in the context of autonomous distributed systems.

2 Education

June'01 *Syracuse University*, Syracuse, New York.
Ph.D., Computer Engineering.

Dec 98 *Syracuse University*, Syracuse, New York.
Master Of Science, Computer Engineering

May 94 *Bombay University*, Bombay, India.
Bachelor Of Engineering (Honors), Electronics & Telecommunications.

3 Professional Experience

Aug 09 –	Assistant Professor	Department of Computer Science, Colorado State University
Oct 02 – Aug 09	Research Associate	Community Grids Lab, Indiana University.
Oct 01 – Oct 02	Post Doctoral Fellow	Community Grids Lab, Indiana University.
Jan 99 – Sep 99	Intern	IBM T. J. Watson Research Center, New York.
May 97 – Sep 97	Intern	IBM T. J. Watson Research Center, New York.
May 96 – Jun 01	Research Assistant	Northeast Parallel Architectures Center, Department Of Electrical Engineering and Computer Science, Syracuse University
Jan 96 – May 96	Teaching Assistant	Department Of Electrical Engineering and Computer Science, Syracuse University
Jun 94 – July 95	Software Analyst	Mahindra- British Telecom Plc, Bombay India.

4 Research Grants

My research has been funded through grants from funding agencies in the United States and the United Kingdom.

4.1 Funding from the United States

F7. Boosting Tracing and Assimilation of Disease Profiles in the Distributed Orchestration of Epidemiological Simulations. \$352,713. 8/2011-8/2013. Shrideep Pallickara (**PI**). Supplement to award F6. Co-PIs: Wim Böhm, Neil Harvey, Sanjay Rajopadhye, and Aaron Reeves. LONG RANGE PROGRAM, Science and Technology Directorate. Department of Homeland Security.

F6. *Enabling Scalable and Fault Tolerant Regional Epidemiological Simulations in the Cloud.* \$738,139. 8/2010-8/2012. Shrideep Pallickara (**PI**). Co-PIs: Wim Böhm, Neil Harvey, Sanjay Rajopadhye, and Aaron Reeves. LONG RANGE PROGRAM, Science and Technology Directorate. Department of Homeland Security.

F5. *Evaluating the Computational Soundness and Enabling the Coarse Grained Parallelization of the NAADSM Epidemiological Simulation Model.* Shrideep Pallickara (**PI**). Co-PIs: Wim Böhm and Sanjay Rajopadhye. \$86,952 8/2009-8/2010. From the USDA/ Animal and Plant Health Inspection Service (APHIS) through the Department of Homeland Security.

F4. *Collaborative Research: Development of Middleware/Software to allow Visualization and Analysis of Large and Complex 4-D Geoscience Data Sets.* Shrideep Pallickara (**PI**). National Science Foundation. NSF EAR-0446610, \$199,020 over 6/1/2005-5/31/2009.

F3. *Collaborative Research: High-Performance Techniques, Designs and Implementation of Software Infrastructure for Change Detection and Mining.* Shrideep Pallickara: **Co-PI**, with Geoffrey Fox (PI) and Marlon Pierce (Co-PI). National Science Foundation. NSF IIS-0536947: \$368,841 over 9/15/2004-2009

4.2 Funding from the United Kingdom

F2. *FINS -- Support for Web Services based publish/subscribe notifications within Grid Applications.*

PI: Geoffrey Fox, **Co-PI**: Shrideep Pallickara

Funding: 10/2004 -- 1/2006, total amount \$307, 247

Funding Source: Open Middleware Infrastructure Institute of the United Kingdom

F1. *FIRMS -- Support for Web Services based reliable messaging within Grid Applications.*

PI: Geoffrey Fox, **Co-PI**: Shrideep Pallickara

Funding: 10/2004 -- 10/2005, total amount \$158,570

Funding Source: Open Middleware Infrastructure Institute of the United Kingdom

5 Teaching

I feel that teaching is often the easy part – knowing what the students don't know is the hard part. I rely on surveys at the end of every lecture to identify concepts that students grasped and those that they had problems with. Comprehension problems often stem from gaps in the student's knowledge; I have found that addressing such gaps helps students grasp and retain concepts better. I feel that to truly assimilate knowledge one must be able to build on it; my courses generally involve several programming assignments that are geared towards reinforcing concepts covered in class.

CURRICULUM DEVELOPMENT

I have created 3 new computer science courses (CS455, CS555, and CS655) in the area of distributed systems at Colorado State University. CS455 is designated as a *capstone course* and is targeted at senior undergraduate students. First year graduate students take CS555, while CS655 is an advanced research seminar course typically taken by PhD students. The primary objective of these courses is for students to gain a deeper understanding of the algorithms, frameworks, and strategies that underpin complex, large-scale distributed systems. The x55 series of courses entail extensive programming and substantive systems building assignments in addition to a writing component that is generally split into 3 deliverables to facilitate critical feedback on the content and organization of ideas.

COURSES TAUGHT/SCHEDULE

Spring 2012	<i>CS455: Introduction to Distributed Systems.</i>	Undergraduate CAPSTONE COURSE
Spring 2012	<i>CS 370: System Architecture and Software</i>	Core undergraduate Course
Fall 2011	<i>CS655: Advanced Topics in Distributed Systems</i>	Graduate Course
Spring 2011	<i>CS 370: System Architecture and Software</i>	Core undergraduate Course
Fall 2010	<i>CS555: Distributed Systems</i>	Graduate Course
Spring 2010	<i>CS451: Operating Systems</i>	Senior undergraduate Course
Fall 2009	<i>CS670: Special Topics in Architecture/Systems</i> <i>{Distributed Systems}</i>	Graduate Course

6 Projects

I am the creator and project lead of two major systems in the area of large-scale distributed system – Granules and NaradaBrokering. I have placed all systems-software, produced as part of these projects, in the open-source domain. The code-bases for these systems is large involving hundreds of classes and packages.

6.1 Granules

Granules supports the processing of data streams over a distributed collection of processing elements. Such streams can be generated in settings involving observational and monitoring equipment, simulations, and computational workflows. In Granules these computations can be long running, with multiple rounds of execution, with the ability to retain state across successive rounds. Granules allows a collection of related computations to be expressed as directed graphs that have cycles in them, and orchestrates the completion of such distributed processing. Granules manages the lifecycle and finite state machine associated with computations. The system can orchestrate such stream processing computations within traditional clusters, collection of desktops, or IaaS VM-based settings. The processing encapsulated within these computations can be arbitrary, and encoded in C, C++, C#, Java, R and Python. Granules also incorporates support for variants of the MapReduce paradigm that make it amenable for scientific applications. By abstracting the complexities of doing I/O and the vagaries of execution in distributed settings, Granules allows a domain scientist to focus on the problem on at hand and not on the artifacts related to deployments in large-scale distributed systems. A broad class of compute and data intensive applications can benefit from the capabilities available in Granules. Some of the application domains that Granules is currently deployed in include brain computer interfaces, epidemiological modeling, handwriting recognition, data clustering algorithms, and bio-informatics (mRNA sequencing).

6.2 NaradaBrokering

NaradaBrokering is an infrastructure for managing voluminous data streams being produced concurrently, at high rates, by a very large number of entities. The infrastructure allows entities to precisely specify constraints on portions of the streams that they are interested in consuming. By preferentially deploying links during disseminations, the routing solution ensures that underlying network is optimally utilized. Research in NaradaBrokering has been funded through two grants from the National Science Foundation, two grants from the United Kingdom's Open Middleware Infrastructure Institute and an STTR grant from the Department of Energy. The total amount of funding for the NaradaBrokering project, from funding agencies in the US and UK was around \$1,250,000. NaradaBrokering provisions a rich set of easy-to-use capabilities. Since the provisioned capabilities-stack is mutable, scientists can instrument, permute and combine different capabilities to compose streaming systems. NaradaBrokering has been deployed in a diverse set of domains such as earthquake science, particle physics, ecological/environmental monitoring, geosciences, GIS systems, defense applications, and commercial internet conferencing systems.

7 Publications

These are listed in roughly reverse chronological order. Listings with the symbol § signify publications where I am the primary author of the research article; in some cases, the authors are listed in alphabetical order. PDF versions of all papers are available for download at: <http://www.cs.colostate.edu/~shrideep/publications.html>

7.1 Journal Papers and Magazine Articles

- [J23] § Shrideep Pallickara and Geoffrey Fox. Enabling Hierarchical Dissemination of Streams in Content Distribution Networks. (To appear) *Concurrency and Computation: Practice & Experience*.
- [J22] Kathleen Ericson and Shrideep Pallickara. Adaptive Heterogeneous Language Support within a Cloud Runtime. *Future Generation Computer Systems*. Vol. 28(1), pp. 128-135. 2012. Elsevier.
- [J21] Sangmi Lee Pallickara, Shrideep Pallickara, and Milija Zupanski. Enabling Efficient Data Subsetting over Large-scale Atmospheric Datasets. *Future Generation Computer Systems*. Vol. 28(1), pp. 112-118. 2012. Elsevier.
- [J20] Geoffrey C. Fox, Mehmet S. Aktas, Galip Aydin, Harshawardhan Gadgil, Shrideep Pallickara, Marlon E. Pierce, and Ahmet Sayar. Algorithms and the Grid. Springer *Journal of Computing and Visualization in Science (CVS)*. Volume 12, Number 3 / March, 2009. pp 115-124. Publisher Springer Berlin/Heidelberg.
- [J19] § Shrideep Pallickara, Geoffrey Fox and Harshawardhan Gadgil. On the Secure Creation, Organization and Discovery of Topics in Distributed Publish/Subscribe Systems. *International Journal of High Performance Computing and Networking (IJHPCN)*. Vol. 5, No. 3, pp.156–167. 2008.
- [J18] Geoffrey Fox, Galip Aydin, Harshawardhan Gadgil, Shrideep Pallickara, Marlon Pierce, and Wenjun Wu. Management of Real-Time Streaming Data Grid Services. *Concurrency and Computation: Practice & Experience*. Volume 19(7) pp 983-998, 2007.
- [J17] G. Erlebacher, D. Yuen, Z. Lu, E. Bollig, M. Pierce and Shrideep Pallickara. A Grid Framework for Visualization Services in the Earth Sciences. *Journal of Pure and Applied Geophysics*. Volume 163, Numbers 11-12. 2006. pp 2467-2483. Published by Birkhäuser Verlag.
- [J16] § Geoffrey Fox, Shrideep Pallickara, Marlon Pierce, Harshawardhan Gadgil. Building Messaging Substrates for Web and Grid Applications. *Philosophical Transactions of the Royal Society: Mathematical, Physical and Engineering Sciences*. Volume 363, Number 1833, pp 1757-1773. August 15, 2005.
- [J15] § Geoffrey Fox and Shrideep Pallickara. Deploying the NaradaBrokering Substrate in Aiding Efficient Web & Grid Service Interactions. Special Issue of the *Proceedings of the IEEE on Grid Computing*. Vol 93, No 3. pp 564-577. March 2005.
- [J14] § Shrideep Pallickara, Geoffrey Fox, Ahmet Uyar, Hongbin Liu, Xi Rao, David Walker and Beytullah Yildiz. Performance of a Possible Grid Message Infrastructure. *Concurrency and Computation: Practice & Experience*. Volume 17, Number 2-4. pp 193-214.
- [J13] Geoffrey Fox, Sang Lim, Shrideep Pallickara and Marlon Pierce. Message-Based Cellular Peer-to-Peer Grids: Foundations for Secure Federation and Autonomic Services. *Future Generation Computer Systems*. Volume 21, Issue 3, pp 401-415 (1 March 2005). Published by Elsevier.
- [J12] § Geoffrey Fox, Shrideep Pallickara and Xi Rao. Towards Enabling Peer-to-Peer Grids. *Concurrency and Computation: Practice & Experience*. Volume 17, Issue 7-8, Pages 1109-1131. 2005.
- [J11] Mehmet Aktas, Galip Aydin, Andrea Donnellan, Geoffrey Fox, Robert Granat, Lisa Grant, Greg Lyzenga, Dennis McLeod, Shrideep Pallickara, Jay Parker, Marlon Pierce, John Rundle, Ahmet Sayar, and Terry Tullis. iSERVO: Implementing the International Solid Earth Research Virtual Observatory by Integrating Computational Grid and Geographical Information Web Services. Special Issue of the *Journal of Pure and Applied Geophysics*, published by Birkhäuser Verlag AG.
- [J10] § Shrideep Pallickara and Geoffrey Fox. Efficient Matching Of Events in Distributed Middleware Systems. *Journal Of Digital Information Management*. Volume 2, Issue 2. pp 79-87. June 2004. Special Issue of selected papers from the IEEE ITCC 2004 Conference Track on Modern Grid and Web

Systems.

- [J9] Minjun Wang, Geoffrey Fox and Shrideep Pallickara. Demonstrations of Collaborative Web Services and Peer-to-Peer Grids. *Journal Of Digital Information Management*. Volume 2, Issue 2. pp 93-97. June 2004. Special Issue of selected papers from the IEEE ITCC 2004 Track on Modern Grid and Web Systems.
- [J8] § Geoffrey Fox, Shrideep Pallickara, Marlon Pierce and David Walker. Towards Dependable Grid and Web Services. *ACM Ubiquity*. Volume 4 Issue 25. August 2003.
- [J7] Geoffrey Fox, Wenjun Wu, Ahmet Uyar, Hasan Bulut and Shrideep Pallickara. Global Multimedia Collaboration System. *Concurrency and Computation: Practice & Experience*. Middleware for Grid Computing Workshop Special Issue. Volume 16, Issue 5. pp 441-447. 2004.
- [J6] § Shrideep Pallickara and Geoffrey Fox. Efficient Support for Sophisticated Interactions between Entities in Distributed Brokering Systems. *ACM Ubiquity* Volume 4 Issue 16. June 2003.
- [J5] § Geoffrey Fox and Shrideep Pallickara. Support for Peer-to-Peer Interactions in Web Brokering Systems. *ACM Ubiquity*. Volume 3 Issue 15. May 2002.
- [J4] § Geoffrey Fox and Shrideep Pallickara. An Event Service to Support Grid Computational Environments. *Concurrency and Computation: Practice & Experience*. Special Issue on Grid Computing Environments. Volume 14(13-15) pp 1097-1129. 2002.
- [J3] Geoffrey Fox, Sung Hoon Ko, Marlon E. Pierce, Ozgur Balsoy, Jake Kim, Sangmi Lee, Kang-Seok Kim, Sangyoon Oh, Xi Rao, Mustafa Varank, Hasan Bulut, Gurhan Gunduz, Xiaohong Qiu, Shrideep Pallickara, Ahmet Uyar, Choon-Han Youn. Grid Services for Earthquake Science. *Concurrency and Computation: Practice & Experience*. ACES Computational Environments for Earthquake Science Special Issue 2002. Volume 14(6-7):371-393
- [J2] § Geoffrey Fox and Shrideep Pallickara. An Approach to High Performance Distributed Web Brokering *ACM Ubiquity* Volume 2 Issue 38. November 2001.
- [J1] G. Fox, W. Furmanski, B. Natarajan, H. T. Ozdemir, Z. Odcikin Ozdemir, S. Pallickara and T. Pulikal. Integrating Web, Desktop, Enterprise and Military Simulation Technologies To Enable World-Wide Scalable Televirtual (TVR) Environments *Information & Security-An International Journal*, Volume 3-1999 : Modeling and Simulation. Hard copy: ISSN 1311-1493

7.2 Book Contributions

- [B9] Zhiquan Sui and Shrideep Pallickara. A Survey Of Load Balancing Techniques for Data Intensive Computing. (To appear) *Handbook of Data Intensive Computing*. Springer. 2012.
- [B8] Sangmi Lee Pallickara, Matthew Malensek, and Shrideep Pallickara. On the Processing of Extreme Scale Datasets in the Geosciences. (To appear) *Handbook of Data Intensive Computing*. Springer. 2012.
- [B7] Kathleen Ericson and Shrideep Pallickara. A Survey Of Storage and Fault Tolerance Strategies Used in Cloud Computing. Chapter 6: pp 137-158. *Handbook of Cloud Computing*. Springer. 2010. ISBN: 978-1-4419-6523-3.
- [B6] Sangmi Lee Pallickara, Shrideep Pallickara and Marlon Pierce. Scientific Data Management in the Cloud: A Survey of Technologies, Approaches and Challenges. Chapter 22: 517-534. *Handbook of Cloud Computing*. Springer. 2010. ISBN: 978-1-4419-6523-3.
- [B5] § Shrideep Pallickara, Jaliya Ekanayake, and Geoffrey Fox. Granules: A Lightweight Runtime for Scalable Computing With Support for Map-Reduce. Chapter 9: pp 201-226. *Handbook on Cloud Computing and Software Services: Theory and Techniques*. CRC Press. July 2010. ISBN: 1439803153/978-1439803158
- [B4] § Shrideep Pallickara, Geoffrey Fox, Mehmet Aktas, Harshawardhan Gadgil, Beytullah Yildiz, Sangyoon Oh, Sima Patel, Marlon Pierce and Damodar Yemme A Retrospective on the Development of Web Service Specifications. Chapter II (pp 22-49) in *Securing Web Services: Practical Usage of Standards and Specifications*. Editor Periorellis Panos, University of Newcastle Upon Tyne. Published by IGI Global. ISBN-13: 978-1599046396, ISBN-10: 1599046393. 2007.

- [B3] Geoffrey Fox, Shrideep Pallickara, Galip Aydin and Marlon Pierce. Messaging in Web Service Grid with Applications to Geographical Information Systems. Chapter in *Grid Computing: The New Frontier Of High Performance Computing*. (ed. L. Grandinetti, published by Elsevier, Amsterdam, 2005) pp 305-331. ISBN: 0-444-51999-8
- [B2] § Geoffrey Fox and Shrideep Pallickara. NaradaBrokering: An Event Based Infrastructure for Building Scaleable Durable Peer-to-Peer Grids. Chapter 22 of *Grid Computing: Making the Global Infrastructure a Reality Grid*. Published by John Wiley, West Sussex, England. ISBN 0-470-85319-0. 2003.
- [B1] Geoffrey Fox, Dennis Gannon, Sung-Hoon Ko, Sangmi Lee, Shrideep Pallickara, Marlon Pierce, Xiaohong Qiu, Xi Rao, Ahmet Uyar, Minjun Wang, Wenjun Wu . Peer-to-Peer Grids. Chapter 18 of *Grid Computing: Making the Global Infrastructure a Reality Grid*. Published by John Wiley, West Sussex, England. ISBN 0-470-85319-0. 2003.

7.3 Conference and Workshop proceedings

- [C54] Wes Lloyd, Shrideep Pallickara, Olaf David, Jim Lyon, Mazdak Arabi and Ken Rojas. Migration of Multi-tier Applications to Infrastructure-as-a-Service Clouds: An Investigation Using Kernel-based Virtual Machines. Proceedings of the 12th *IEEE/ACM International Conference on Grid Computing*. pp 137-144. Lyon, France. 2011. [29% acceptance rate]
- [C53] Matthew Malensek, Sangmi Pallickara, and Shrideep Pallickara. Galileo: A Framework for Distributed Storage of High-Throughput Data Streams. Proceedings of the *IEEE/ACM Conference on Utility and Cloud Computing*. pp. 17-24. Melbourne, Australia. 2011. [26.7% acceptance rate]
- [C52] Kathleen Ericson and Shrideep Pallickara. On the Performance of Distributed Clustering Algorithms in File and Streaming Processing Systems. Proceedings of the *IEEE/ACM Conference on Utility and Cloud Computing*. pp. 33-40. Melbourne, Australia. 2011. [26.7% acceptance rate]
- [C51] Sangmi Pallickara, Matthew Malensek and Shrideep Pallickara. Enabling Access to Time-Series, Geospatial Data for On Demand Visualization. Proceedings of the *IEEE Symposium on Large-Scale Data Analysis and Visualization*, Providence, Rhode Island. 2011.
- [C50] Kathleen Ericson, Shrideep Pallickara, and Charles Anderson. Analyzing Electroencephalograms Using Cloud Computing Techniques. Proceedings of the *IEEE International Conference on Cloud Computing Technology and Science*. pp. 185-192. Indianapolis. November 2010. [24.9% acceptance rate]
** Best Student Paper Award
- [C49] Sangmi Lee Pallickara, Shrideep Pallickara, Milija Zupanski, and Stephen Sullivan. Efficient Metadata Generation to Enable Interactive Data Discovery over Large-scale Scientific Data Collections. Proceedings of the *IEEE International Conference on Cloud Computing Technology and Science*. pp. 573-580. Indianapolis. November 2010. [24.9% acceptance rate]
- [C48] Kathleen Ericson, Shrideep Pallickara, and Charles Anderson. Handwriting Recognition Using a Cloud Runtime. Proceedings of the *Colorado Celebration of Women in Computing '10*.
** Selected as one of the 8 *showcased presentations* at the Conference.
- [C47] § Shrideep Pallickara, Jaliya Ekanayake and Geoffrey Fox. Granules: A Lightweight, Streaming Runtime for Cloud Computing With Support for Map-Reduce. Proceedings of the *IEEE International Conference on Cluster Computing (CLUSTER 2009)*. New Orleans, LA. [48% acceptance rate]
- [C46] Tao Huang, Shrideep Pallickara and Geoffrey Fox. A Framework for the Collaborative Annotation of Streams. Proceedings of the *IEEE International Symposium on Collaborative Technologies and Systems*. Baltimore, MD. 2009.
- [C45] Jaliya Ekanayake, Shrideep Pallickara, and Geoffrey Fox. Map-Reduce for Data Intensive Scientific Analyses. Proceedings of the *IEEE International Conference on e-Science*. Indianapolis. 2008. [29.6% acceptance rate]
- [C44] § Shrideep Pallickara, Jaliya Ekanayake, and Geoffrey Fox. An Overview of the Granules Runtime for Cloud Computing. Proceedings of the *IEEE International Conference on e-Science*. Indianapolis. 2008. [29.6% acceptance rate]

- [C43] Jaliya Ekanayake, Shrideep Pallickara, and Geoffrey Fox. A Collaborative Framework for Scientific Data Analysis. Proceedings of *the IEEE International Symposium on Collaborative Technologies and Systems*. Irvine, California. 2008.
- [C42] Beytullah Yildiz, Geoffrey Fox, Shrideep Pallickara. An Orchestration for Distributed Web Service Handlers. Proceedings of the Third *International Conference on Internet and Web Applications and Services* ICIW 2008 June 8-13, 2008 - Athens, Greece. [30% acceptance rate]
- [C41] § Shrideep Pallickara, Hasan Bulut, and Geoffrey Fox. Fault-Tolerant Reliable Delivery of Messages in Distributed Publish/Subscribe Systems. Proceedings of the 4th *IEEE International Conference on Autonomic Computing*. Jacksonville, Florida. 2007. [14% acceptance rate]
- [C40] Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, and Marlon Pierce. Scalable, Fault-tolerant Management of Grid Services. Proceedings of the *IEEE Cluster 2007 Conference*. Austin, Texas. [39.6% acceptance rate]
- [C39] § Shrideep Pallickara, Jaliya Ekanayake, and Geoffrey Fox. A Scalable Approach for the Secure and Authorized Tracking of the Availability of Entities in Distributed Systems. Proceedings of the 21st *IEEE International Parallel & Distributed Processing Symposium (IPDPS)*. Longbeach, California. 2007. [26% acceptance rate]
- [C38] Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, and Marlon Pierce. Scalable, Fault Tolerant Management in a Service-Oriented Architecture. Proceedings of the 2007 *ACM International Symposium on High-Performance Distributed Computing (HPDC)*. Monterey Bay, CA. [20% acceptance rate]
- [C37] § Shrideep Pallickara, Marlon Pierce, Harshawardhan Gadgil, Geoffrey Fox, Yan Yan, Yi Huang. A Framework for Secure End-to-End Delivery of Messages in Publish/Subscribe Systems. Proceedings of the 7th *IEEE/ACM International Conference on Grid Computing (GRID 2006)*. Barcelona, Spain. [20.2% acceptance rate]
- [C36] Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, Marlon Pierce. Managing Grid Messaging Middleware. Proceedings of the *IEEE Workshop on Challenges of Large Applications in Distributed Environments (CLADE)*, June 19, 2006, Paris, France. Held in conjunction with the IEEE HPDC 2006 conference.
- [C35] Beytullah Yildiz, Shrideep Pallickara and Geoffrey Fox. Experiences with deploying services within the Axis container. Proceedings of the 2006 *IEEE International Conference on Internet and Web Applications and Services*. French Caribbean. [40.9% acceptance rate]
- [C34] § Shrideep Pallickara, Geoffrey Fox and Harshawardhan Gadgil. On the Creation & Discovery of Topics in Distributed Publish/Subscribe systems. Proceedings of the *ACM/IEEE GRID 2005*, pp 25-32. Seattle, WA. [18.8% acceptance rate]
** Selected as one of the six *Best Papers*.
- [C33] Geoffrey Fox, Alex Ho, Shrideep Pallickara, Marlon Pierce, Wenjun Wu. Grids for the GiG and Real Time Simulations. Proceedings of the Ninth *IEEE International Symposium on Distributed Simulation and Real Time Applications (DS-RT 2005)*, pp 129-138. Montreal, Canada. [33% acceptance rate]
- [C32] § Shrideep Pallickara, Geoffrey Fox, Beytullah Yildiz, Sangmi Lee Pallickara, Sima Patel and Damodar Yemme. On the Costs for Reliable Messaging in Web/Grid Service Environments. Proceedings of the *IEEE International Conference on e-Science & Grid Computing*. Melbourne, Australia. pp 344-351. [31.6% acceptance rate]
- [C31] Geoffrey Fox et al. Building Sensor Filter Grids: Information Architecture for the Data Deluge. Proceedings of the *IEEE International Conference on Semantics, Knowledge and Grid (SKG2005)*, Beijing, China, November, 27-29, 2005. [15% acceptance rate]
- [C30] § Shrideep Pallickara, Harshawardhan Gadgil and Geoffrey Fox. On the Discovery of Brokers in Distributed Messaging Infrastructures. Proceedings of the *IEEE Cluster 2005 Conference*. Boston, MA. [32.6% acceptance rate]
- [C29] Sang Boem Lim, Geoffrey Fox, Ali Kaplan, Shrideep Pallickara and Marlon Pierce. GridFTP and Parallel TCP Support in NaradaBrokering. Proceedings of the Sixth *International Conference on*

- Algorithms and Architectures for Parallel Processing*. Lecture Notes in Computer Science (LNCS) published by Springer-Verlag. ISBN 3-540-29235-7 pp 93-102. [27.5% acceptance rate]
- [C28] Geoffrey Fox, Galip Aydin, Harshawardhan Gadgil, Shrideep Pallickara, Marlon Pierce, and Wenjun Wu. Management of Real-Time Streaming Data Grid Services. Fourth *International Conference on Grid and Cooperative Computing (GCC2005)*, held in Beijing, China. Lecture Notes in Computer Science (LNCS) published by Springer-Verlag. ISSN: 0302-9743. Volume 3795. pp 3-12. [10% acceptance rate]
- [C27] Pete Burnap, Hasan Bulut, Shrideep Pallickara, Geoffrey Fox, David Walker, Beytullah Yildiz, A Kaplan and M Nacar. Worldwide Messaging Support for High Performance Real-time Collaboration. Proceedings of the UK e-Science Programme All Hands Meeting 2005 (AHM2005). Nottingham, UK.
- [C26] § Shrideep Pallickara, Geoffrey Fox and Sangmi Lee Pallickara. An Analysis of Reliable Delivery Specifications for Web Services. Proceedings of the *IEEE ITCC Conference on Information Technology* 2005, pp 360-365.
- [C25] § Shrideep Pallickara and Geoffrey Fox. An Analysis of Notification Related Specifications for Web/Grid applications. Proceedings of the *IEEE ITCC Conference on Information Technology* 2005. pp 762-763.
- [C24] Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara, Marlon Pierce, Robert Granat . A Scripting based Architecture for Management of Streams and Services in Real-time Grid Applications. Proceedings of the *IEEE/ACM Cluster Computing and Grid 2005 Conference (CCGrid 2005)*. Cardiff, UK. [32.3% acceptance rate]
- [C23] Harshawardhan Gadgil, Geoffrey Fox, Shrideep Pallickara. HPSearch for Managing Distributed Services. Work In Progress paper presented at the *IEEE/ACM Cluster Computing and Grid 2005 Conference (CCGrid 2005)*. Cardiff, UK. [32.3% acceptance rate]
- [C22] § Geoffrey Fox, Shrideep Pallickara and Savas Parastatidis. Towards Flexible Messaging for SOAP Based Services. Proceedings of the *IEEE/ACM Supercomputing Conference* 2004. Pittsburgh, PA. [30.7% acceptance rate]
- [C21] Xiaohong Qiu, Shrideep Pallickara, and Ahmet Uyar. Making SVG a Web Service in a Message-based MVC Architecture. Proceedings of the *Scalable Vector Graphics Conference* Tokyo, Japan. 2004
- [C20] Hasan Bulut, Geoffrey Fox, Wenjun Wu, Ahmet Uyar, Shrideep Pallickara and Harun Altay. A Web Services Based Streaming Gateway for Heterogeneous A/V Collaboration. Proceedings of the 2004 *International Conference on Internet Computing*. Volume II, pp 493-499.
- [C19] § Shrideep Pallickara and Geoffrey Fox. A Scheme for Reliable Delivery of Events in Distributed Middleware Systems. Proceedings of the *IEEE International Conference on Autonomic Computing*. pp 328-329. 2004. [25% acceptance rate]
- [C18] Hasan Bulut, Shrideep Pallickara and Geoffrey Fox. Implementing a NTP-Based Time Service within a Distributed Brokering System. Proceedings of the *ACM International Conference on the Principles and Practice of Programming in Java*. pp 126-134. 2004.
- [C17] § Shrideep Pallickara and Geoffrey Fox. On the Matching Of Events in Distributed Brokering Systems. Proceedings of the *IEEE ITCC Conference on Information Technology*. April 2004. pp 68-76.
- [C16] Amey Dharurkar, Shrideep Pallickara and Geoffrey Fox. A Topology Viewer for Distributed Brokering Systems. Proceedings of the *IEEE ITCC Conference on Information Technology*. 2004. pp 228-234.
- [C15] Minjun Wang, Geoffrey Fox and Shrideep Pallickara. A Demonstration of Collaborative Web Services and Peer-to-Peer Grids. Proceedings of the *IEEE ITCC2004 International Conference on Information Technology*. Volume II pp 62-67.
- [C14] Geoffrey Fox, Wenjun Wu, Ahmet Uyar, Hasan Bulut, Shrideep Pallickara. A Web Services Framework for Collaboration and Videoconferencing. Proceedings of the 3rd Annual *Workshop on Advanced Collaborative Environments co-located with IEEE HPDC-12 & GGF8*.
- [C13] § Shrideep Pallickara and Geoffrey Fox. NaradaBrokering: A Middleware Framework and Architecture for Enabling Durable Peer-to-Peer Grids. Proceedings of *ACM/IFIP/USENIX International Middleware Conference* Middleware-2003. pp 41-61. Lecture Notes in Computer Science (LNCS) published by Springer-Verlag 2003, ISBN 3-540-40317-5. [15.8% acceptance rate]

- [C12] Geoffrey Fox, Wenjun Wu, Ahmet Uyar, Hasan Bulut and Shrideep Pallickara. Global Multimedia Collaboration System. Proceedings of the 1st International *Workshop on Middleware for Grid Computing. Co-located with ACM/IFIP Middleware Conference*. pp 245-250.
- [C11] Gurhan Gunduz, Shrideep Pallickara and Geoffrey Fox. A Portal based Approach to Aggregating Network Performance. Proceedings of the 2003 *International Conference on Internet Computing*. Volume II pp 495-501.
- [C10] § Shrideep Pallickara, Geoffrey Fox, and Marlon Pierce. Incorporating an XML Matching Engine into Distributed Brokering Systems. Proceedings of the *International Conference on Parallel and Distributed Processing Techniques and Applications*. (PDPTA'03). Volume IV pp 1511-1517.
- [C9] Ahmet Uyar, Shrideep Pallickara and Geoffrey Fox. Towards an Architecture for Audio/Video Conferencing in Distributed Brokering Systems. Proceedings of the 2003 *International Conference on Communications in Computing*. pp 17-23.
- [C8] § Shrideep Pallickara, Geoffrey Fox, John Yin, Gurhan Gunduz, Hongbin Liu, A Uyar, M Varank. A Transport Framework for Distributed Brokering Systems. Proceedings of the *International Conference on Parallel and Distributed Processing Techniques and Applications*. Volume II pp 772-778. 2003.
- [C7] Geoffrey Fox, Hasan Bulut, Kangseok Kim, Sung-Hoon Ko, Sangmi Lee, Sangyoon Oh, Shrideep Pallickara, Xiaohong Qiu, Ahmet Uyar, Minjun Wang, Wenjun Wu. Collaborative Web Services and Peer-to-Peer Grids. Proceedings of the 2003 *IEEE Collaborative Technologies Symposium*.
- [C6] § Geoffrey Fox, Shrideep Pallickara, Xi Rao. A Scaleable Event Infrastructure for Peer to Peer Grids. Proceedings of the *ACM Java Grande ISCOPE Conference 2002*. pp 66-75. Seattle, WA. [32% acceptance rate]
- [C5] Hasan Bulut, Geoffrey Fox, Dennis Gannon, Kangseok Kim, Sung-Hoon Ko, Sangmi Lee, Sangyoon Oh, Xi Rao, Shrideep Pallickara, Qinglin Pei, Marlon Pierce, Aleksander Slominski, Ahmet Uyar, Wenjun Wu, Choonhan Youn. An Architecture for e-Science and its Implications. Proceedings of the 2002 *International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS)*. International Society for Modeling & Simulation, pp 14-24.
- [C4] § Geoffrey Fox and Shrideep Pallickara. The Narada Event Brokering System: Overview and Extensions Proceedings of the 2002 *International Conference on Parallel and Distributed Processing Techniques and Applications* (PDPTA'02). Volume I pages 353-359. [38% acceptance rate]
- [C3] Geoffrey Fox, Ozgur Balsoy, Shrideep Pallickara, Ahmet Uyar, Dennis Gannon, Aleksander Slominski. Community Grids. Proceedings of the *International Conference on Computational Science (ICCS 2002)*. Amsterdam, Netherlands April 2002. pp 22-38. Lecture Notes in Computer Science (LNCS) published by Springer-Verlag 2002, ISBN 3-540-43591-3. [46% acceptance rate]
- [C2] § Geoffrey Fox and Shrideep Pallickara. JMS Compliance in the Narada Event Brokering System. Proceedings of the 2002 *International Conference on Internet Computing (IC-02)*. Vol 2 pp 391-397. [30% acceptance rate]
- [C1] Daniel Dias, Geoffrey Fox, Wojtek Furmanski, Vishal Mehra, Balaji Natarajan, H.Timucin Ozdemir, Shrideep Pallickara and Zeynep Ozdemir. Exploring JSDA, CORBA and HLA based MuTechs for Scalable Televirtual (TVR) Environments. *Workshop on Object Orientation and VRML in conjunction with the Virtual Reality Modeling Language Symposium*. Monterey, California 1998

7.4 PhD Dissertation and Masters Thesis

- [G2] § A Grid Event Service – *PhD Dissertation, June 2001. Syracuse University*. Advisor: Prof. Geoffrey Fox
- [G1] § Java Distributed Collaborative Environment (JDCE) – As a Test-bed for Distributed Object Technology *Masters Thesis, Aug '98 Syracuse University*. Advisor: Prof. Geoffrey Fox.

7.5 Non-overlapping Technical Reports [NOT PEER REVIEWED]

- [R4] Geoffrey Fox, Harshawardhan Gadgil, Shrideep Pallickara, Marlon Pierce, John Rundle, Andrea Donnellan, Jay Parker, Robert Granat, Greg Lyzenga, Dennis McLeod and Anne Chen. Complexity Computational Environments (CCE) Architecture NASA Technical Report September 2004.
- [R3] Geoffrey Fox Harshawardhan Gadgil, Shrideep Pallickara, Marlon Pierce, Robert L. Grossman, Yunhong Gu, David Hanley, Xinwei Hong . High Performance Data Streaming in Service Architectures. Technical Report Indiana University and University of Illinois at Chicago. July 2004
- [R2] G.C. Fox, W. Furmanski, H. T. Ozdemir, S. Pallickara. New Systems Technologies and Software Products for HPCC: Volume III – High Performance Commodity Computing on the Pragmatic Object Web Management White Paper for Research Consortium Inc (RCI). - Summer '98.
- [R1] Wojtek Furmanski, Daniel Dias, Balaji Natrajan, Vishal Mehra, Shrideep Pallickara. Prototype of a Scalable Tele-Virtual Environment on the Web Using VRML2.0 / JSDA IBM T. J. Watson Research Center, April 1997. Joint Project involving IBM-Watson Research Center & Syracuse University. Principal Investigator: Dr. Wojtek Furmanski.

8 Academic Advising

Current Graduate Advisees

Kathleen Ericson
 Wesley Lloyd
 Matthew Malensek
 Simon Sui

Supervised graduate degrees

Kathleen Ericson (MS, 2010)

PhD committee memberships

Department of Computer Science, Colorado State University [6]

Chengyu Fan, Kaustubh Gadhkari, Susmit Shannigrahi, Andrew Stone, He Yan, and Han Zhang

Department of Electrical Engineering & Computer Science, Syracuse University [2]

Dr Gurhan Gunduz and Dr. Ahmet Uyar

Masters thesis committee memberships

Department of Computer Science, Colorado State University

Internal Committee Member: Kiril Beyalev

9 Academic Service

Boards

International Journal of Autonomic Computing. Publishers: Inderscience, Geneva, Switzerland.

Member of Editorial Board (2008 – present)

Panels

NSF Panel 2010, 2011

co-Chair for the Panel on *Network Measurements* at the 35th Annual *IEEE Conference on Local Computer Networks* (LCN) in Denver. 2010.

Conferences

Program Committee, Workshops Chair. : *IEEE/ACM International Conference on Utility and Cloud Computing* Chicago, USA. 2012.

Program Committee. The 10th *IEEE International Symposium on Parallel and Distributed Processing with Applications*. Madrid, Spain. 2012.

Program Committee. The 14th *IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing*. Ottawa, Canada. 2012.

Program Committee CO-CHAIR: *IEEE/ACM International Conference on Utility and Cloud Computing*. Melbourne, Australia. 2011.

Program Committee, The 36th *IEEE Conference on Local Computer Networks (LCN)* 2011. Bonn, Germany.

Publicity Co-Chair. The 18th *IEEE International Conference on High Performance Computing (HiPC)* 2011). Bangalore, India.

Program Committee, The *IEEE International Conference on Cloud and Green Computing*, 2011. Melbourne Australia.

Publicity co-Chair; Program Committee. *IEEE International Conference on. Utility and Cloud Computing (UCC 2010)*. Chennai, India.

Program Committee. The 12th *IEEE International Conference on High Performance Computing and Communications (HPCC-10)*. 2010. Melbourne, Australia For the research track on Web Services and Internet Computing.

Program Committee, The 11th *IEEE International Conference on High Performance Computing and Communications (HPCC-09)*. Seoul, Korea., 2009. For the research track on Web Services and Internet Computing.

Program Committee, The 14th *IEEE International Conference on Parallel and Distributed Systems (ICPADS'08)*. Melbourne, Australia. For the track on Web and Peer-to-Peer Systems.

Program Committee, The 10th *IEEE International Conference on High Performance Computing and Communications (HPCC-08)*. DaLian, China. For the research track on Web Services and Internet Computing.

Departmental Service

Graduate Recruitment Committee, Computer Science Department (2011–)

Operations Committee, Computer Science Department (2010 – 2011)

Reviewing and finalization of scholarships and awards for undergraduate and graduate students. These included the *Patricia Mohilner Memorial* Scholarship and *Thomas J. Heidenfelder* Scholarship for undergraduate students and the *Anita Read Graduate Award*.

Approvals for use of the student tech fees for computer and networking equipment purchases within the various labs in the department.

Other Reviewing Activities

Reviewer, Austria Science Fund (FWF Der Wissenschaftsfonds): 2011, 2012

I also regularly review manuscripts for Journals including – *IEEE Transactions on Parallel and Distributed Systems*, *Journal of Concurrency and Computation: Practice & Experience*, and *IEEE Transactions on Knowledge and Data Engineering*.