

## Feiyi Wang – ORNL

### Research Interests

High performance storage system, parallel I/O and file systems; fault tolerance and system simulation; scientific data management and integration.

### Education and Training

Graduate	Beijing Jiaotong University	Computer Science	MS	1995
Graduate	North Carolina State University	Electrical and Computer Engineering	PhD	2000

### Research and Professional Experience

2015 – present	Joint Faculty Full Professor, Electrical Engineering and Computer Science Department, University of Tennessee.
2006 – present	Staff Researcher, National Center for Computational Sciences, Oak Ridge National Laboratory, Oak Ridge TN
2004 – 2006	Sr. Software Engineer, Cisco Systems Inc., Austin, TX
2001 – 2004	Principal Research Scientist, MCNC-RDI, Research Triangle Park, NC

### Synergistic Activities

- IEEE Senior Member
- Co-Principal Investigator, “Towards a Scalable and Resilient Infrastructure for Big Data”, July 2012 - September, 2014, ORNL’s Director’s R&D.
- Principal Investigator, “SITAR: A Scalable Intrusion Tolerant Architecture For Distributed Services”, Funded by DARPA ITO OASIS Program. Subcontractor: Duke University, Jul. 2000 - Aug. 2003. \$2,351,319.
- Investigator, “Ferret: Workflow based Intrusion Detection System”, Funded by Advanced Research and Development Activity (ARDA) of NSA. Jul. 2003 - Dec. 2004. \$750,000.
- Co-Principal Investigator, “GIANT: Global Intrusion Assessment Through Distributed Decision Making”, Funded by DARPA and U.S. Air Force Rome Laboratory under contract F30602-96-C-0325. May, 1998 - Jun. 2000. \$1,330,103.

### Related Publications

1. Lipeng Wan, Feiyi Wang, Sarp Oral, Devesh Tiwari, Sudharshan S. Vazhkudai, Qing Cao. “A Practical Approach for Reconciling Availability, Performance, and Capacity in Provisioning Extreme-scale Storage Systems”, To appear in: *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis. SC '15*.
2. Veronica G. Vergara Larrea, Sarp Oral, Dustin B. Leverman, Hai Ah Nam, Feiyi Wang, James Simmons. *A More Realistic Way of Stressing the End-to-end I/O System*, In: *Cray Users Group Workshop (CUG)*, 2015
3. Feiyi Wang, Sarp Oral, Saurabh Gupta, Devesh Tiwari, Sudharshan Vazhkudai. “Improving Large-Scale Storage System Performance via Topology-aware and Balanced Data Placement”, In: *The 20th IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, 2014
4. Feiyi Wang, Mark Nelson, Sarp Oral, Scott Atchley, Sage Weil, Bradley W. Settlemyer, Blake Caldwell, and Jason Hill. “Performance and Scalability Evaluation of the Ceph Parallel File System”, In: *Proceedings of the 8th Parallel Data Storage Workshop. PDSW*, Denver, Colorado, 2013
5. Feiyi Wang, John Harney, Galen Shipman, Dean William, and Luca Ciquini. “Building a Large-Scale Climate Data Systems for HPC Environment”, In: *IEEE 7th International Conference on Next*

*Generation Web Service Practices*, Salamanca, Spain, 2011.

6. Youngjae Kim, Junghee Lee, Sarp Oral, Dave Dillow, Feiyi Wang, and Galen Shipman. “Coordinating Garbage Collection for Arrays of Solid-State Drives”, In: *IEEE Transactions on Computers*, 63.4, pp. 888–901, April, 2014
7. Sarp Oral, James Simmons, Jason Hill, Dustin Leverman, Wang, Feiyi, Matt Ezell, Ross Miller, Douglas Fuller, Raghul Gunasekaran, Youngjae Kim, Saurabh Gupta, Devesh Tiwari, Sudharshan S. Vazhkudai, James H. Rogers, David Dillow, Galen M. Shipman, and Arthur S. Bland. “Best Practices and Lessons Learned from Deploying and Operating Large-scale Data-centric Parallel File Systems”, In: *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis. SC '14*, New Orleans, Louisiana, 2014, pp. 217–228.
8. Lipeng Wan, Zheng Lu, Qing Cao, Feiyi Wang, Sarp Oral, and Bradley Settlemyer. “SSD-optimized workload placement with adaptive learning and classification in HPC environments”, In: *30th Symposium on Mass Storage Systems and Technologies (MSST)*, June, 2014
9. Galen M. Shipman, David A. Dillow, Sarp Oral, Feiyi Wang, Douglas Fuller, Jason Hill, Zhe Zhang, Lessons Learned in Deploying the World’s Largest Scale Lustre File System, in the Proceedings of the Cray Users Group Meeting, 2010.
10. Feiyi Wang, Sarp Oral, Galen Shipman, Oleg Drokin, Tom Wang, Isaac Huang, Understanding Lustre Filesystem Internals, Technical Report ORNL/TM-2009/117, National Center for Computational Sciences, Apr, 2009

## Graduate Advisor

Felix Wu, University of California, Davis.

## Conflicts of Interest

- Rachana Ananthakrishnan, University of Chicago, Co-author
- Scott Atchley, Oak Ridge National Laboratory, Co-author
- Gavin M. Bell, Lawrence Livermore National Laboratory, Co-author, Collaborator
- Arthur S. Bland, Oak Ridge National Laboratory, Co-author
- Mike Brim, Oak Ridge National Laboratory, Co-author, Collaborator
- Blake Caldwell, Oak Ridge National Laboratory, Co-author
- Charles Cao, University of Tennessee, Collaborator
- Luca Cinquini, NOAA, Collaborator
- Daniel Crichton, NASA, Co-author
- Sebastien Denvil, Institut Pierre Simon Laplace, Co-author
- David Dillow, Google, Co-author
- Charles Doutriaux, Lawrence Livermore National Laboratory, Co-author
- Robert Drach, Lawrence Livermore National Laboratory, Co-author
- Matt Ezell, Oak Ridge National Laboratory, Co-author
- Sandro Fiore, Euro-Mediterranean Center on Climate Change, Co-author
- Douglas Fuller, Redhat, Co-author
- Estanislao Gonzalez, German Climate Computing Center (DKRZ), Co-author
- Raghul Gunasekaran, Oak Ridge National Laboratory, Co-author
- Saurabh Gupta, Oak Ridge National Laboratory, Co-author
- John Harney, Oak Ridge National Laboratory, Co-author
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- Philip Kershaw, STFC Rutherford Appleton Laboratory, Co-author
- Youngjae Kim, Oak Ridge National Laboratory, Co-author
- Veronica Vergara Larrea, Oak Ridge National Laboratory, Co-author

- Dustin Leverman, Oak Ridge National Laboratory, Co-author
- Chris Mattmann, Jet Propulsion Laboratory, Co-author
- Don Maxwell, Oak Ridge National Laboratory, Co-author
- Ross Miller, Oak Ridge National Laboratory, Co-author
- Mark Morgan, Institut Pierre Simon Laplace, Co-author
- Hai Ah Nam, Los Alamos National Laboratory, Co-author
- Mark Nelson, Redhat, Co-author
- Sarp Oral, Oak Ridge National Laboratory, Co-author, Collaborator
- Stephen Pascoe, STFC Rutherford Appleton Laboratory, Co-author
- Zed Pobre, Goddard Space Flight Center, Co-author
- James Rogers, Oak Ridge National Laboratory, Co-author
- Roland Schweitzer, Pacific Marine Environmental Laboratory, Co-author
- Bradley Settlemyer, Los Alamos National Laboratory, Collaborator
- Galen Shipman, Los Alamos National Laboratory, Co-author
- James Simmons, Oak Ridge National Laboratory, Co-author
- Devesh Tiwari, Oak Ridge National Laboratory, Co-author
- Sage Weil, Redhat, Co-author
- Dean Williams, Lawrence Livermore National Laboratory, Co-author
- Felix Wu, University of California, Advisor, Co-author, Collaborator