

MING ZHAO

School of Computing and Information Sciences
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RESEARCH INTERESTS

Distributed computing, virtualization, grid and high-performance computing, autonomic computing, cyberinfrastructure, distributed storage, and operating systems

EDUCATION

Ph.D. in Electrical and Computer Engineering May 2008
University of Florida, Gainesville, FL
Dissertation: File System Virtualization and Autonomic Services for Grid Data Management
Committee: Renato J. Figueiredo (Chair), José A. B. Fortes, Tao Li, Sanjay Ranka

M.E. in Pattern Recognition and Intelligent Systems, Automation July 2001
Tsinghua University, Beijing, China
Dissertation: A Human-computer Interaction System for Content-based Image Retrieval
Committee: Gang Rong (Chair), Zhaoqi Bian, Changshui Zhang, Jie Zhou

B.E. in Automation, Excellent Graduate Award winner July 1999
Tsinghua University, Beijing, China
Dissertation: An Approach to Automated Palmprint Recognition Based on K-L Transform

PROFESSIONAL EXPERIENCE

Assistant Professor August 15, 2008 - Present
School of Computing and Information Sciences, Florida International University, Miami, FL

Research Assistant January 2003 - Present
Advanced Computing and Information Systems Lab, University of Florida, Gainesville, FL

Research Intern May 2006 - August 2006
IBM Research Division, Austin Research Lab, Austin, TX

Research Assistant August 1999 - July 2001
National Key Lab of Intelligent Technology and Systems, Tsinghua University, Beijing, China

Teaching Assistant 2000
Department of Automation, Tsinghua University

PUBLICATIONS

Journals

- [J1] J. DiGiovanna, P. Rattanamrong, **M. Zhao**, B. Mahmoudi, L. Hermer, R. Figueiredo, J. C. Principe, J. Fortes, and J. C. Sanchez, "Cyber-Workstation Architecture for Computational Neuroscience", *Frontiers in Neuroengineering*, Vol. 2, Article 7, January 2010.

- [J2] J. Xu, **M. Zhao**, J. Fortes, R. Carpenter, M. Yousif, "Autonomic Resource Management in Virtualized Data Centers using Fuzzy-logic-based Approaches," *Cluster Computing*, Vol. 11, No. 3, Pages: 213-227, September 2008.
- [J3] **M. Zhao**, J. Zhang, and R. J. Figueiredo, "Distributed File System Virtualization Techniques Supporting On-demand Virtual Machine Environments for Grid Computing," *Journal of Cluster Computing*, vol. 9, no. 1, pp. 45-56, January 2006.
- [J4] S. Adabala, V. Chadha, P. Chawla, R. Figueiredo, J. Fortes, I. Krsul, A. Matsunaga, M. Tsugawa, J. Zhang, **M. Zhao**, L. Zhu, and X. Zhu, "From Virtualized Resources to Virtual Computing Grids: the In-VIGO System," *Journal of Future Generation Computing Systems*, vol. 21, no. 6, pp. 896-909, June 2005.
- [J5] **M. Zhao** and G. Rong, "A Human-computer Interaction System for Content-based Image Retrieval on Internet," *Journal of Tsinghua University (Science and Technology, Special Issue)*, August 2001.
- [J6] Z. Wang, **M. Zhao**, and Q. Yu, "Modeling of Branching Structures of Plants," *Journal of Theoretical Biology*, vol. 209, no. 4, pp. 383-394, April 2001.
- [J7] **M. Zhao**, W. Shu, G. Rong, and Z. Bian, "An Approach to Automated Palmprint Recognition Based on K-L Transform," *Journal of Tsinghua University (English abstract available on Ei Compendex)*, vol. 40, no. 9, pp. 100-103, September 2000.

Conference Proceedings

- [C1] S. Kundu, R. Rangaswami, K. Dutta, and **M. Zhao**, "Application Performance Modeling in a Virtualized Environment", *Proceedings of 16th IEEE International Symposium on High-Performance Computer Architecture (HPCA-16)*, January 2010.
- [C2] J. Xu, **M. Zhao**, and J. A. B. Fortes, "Cooperative Autonomic Management in Dynamic Distributed Systems", *Proceedings of 11th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2009)*, November 2009.
- [C3] J. C. Martinez, L. Wang, **M. Zhao**, and S. Masoud Sadjadi, "Experimental Study of Large-scale Computing on Virtualized Resources", *Proceedings of 3rd International Workshop on Virtualization Technologies in Distributed Computing (held in conjunction with ICAC-09) (VTDC 2009)*, June 2009.
- [C4] J. Xu, **M. Zhao**, J. A. B. Fortes, "Applying Network Science to Cooperative Autonomic Management in Dynamic Distributed Systems", *Network Science Report*, October 2008.
- [C5] **M. Zhao**, P. Rattanatamrong, J. DiGiovanna, B. Mahmoudi, R. Figueiredo, J. Sanchez, J. Príncipe, J. Fortes, "BMI Cyberworkstation: Enabling Dynamic Data-Driven Brain-Machine Interface Research through Cyberinfrastructure", *Proceedings of International Conference of Engineering in Medicine and Biology Society (EMBC)*, August 2008.
- [C6] **M. Zhao** and R. J. Figueiredo, "A User-level Secure Grid File System," *Proceedings of International Conference for High Performance Computing, Networking, Storage and Analysis (SC07)*, November 2007. (**Acceptance Rate: 20%**)
- [C7] **M. Zhao** and R. J. Figueiredo, "Experimental Study of Virtual Machine Migration in Support of Reservation of Cluster Resources," *Proceedings of 2nd International Workshop on Virtualization Technology in Distributed Computing (held in conjunction with SC07) (VTDC 2007)*, November 2007.
- [C8] J. Xu, **M. Zhao**, J. A. B. Fortes, R. Carpenter, and M. Yousif, "On the Use of Fuzzy Modeling in Virtualized Data Center Management," *Proceedings of 4th International Conference on Autonomic Computing (ICAC 2007)*, June 2007. (**Best Student Paper, Acceptance Rate: 14%**)

- [C9] J. DiGiovanna, L. Marchal, P. Rattanamrong, **M. Zhao**, S. Darmanjian, B. Mahmoudi, J. C. Sanchez, J. C. Principe, L. Hermer-Vazquez, R. Figueiredo, and J. Fortes, "Towards Real-time Distributed Signal Modeling for Brain Machine Interfaces," *Proceedings of International Conference on Computational Science*, pp. 964-971, May 2007.
- [C10] **M. Zhao** and R. J. Figueiredo, "Application-tailored Cache Consistency for Wide-area File Systems," *Proceedings of 26th International Conference on Distributed Computing Systems (ICDCS 2006)*, July 2006. (**Acceptance Rate: 13%**)
- [C11] **M. Zhao**, J. Xu, and R. J. Figueiredo, "Towards Autonomic Grid Data Management with Virtualized Distributed File Systems," *Proceedings of 3rd IEEE International Conference on Autonomic Computing (ICAC 2006)*, pp. 209-218, June 2006. (**Acceptance Rate: 20%**)
- [C12] A. Matsunaga, M. Tsugawa, **M. Zhao**, L. Zhu, V. Sanjeevan, S. Adabala, R. Figueiredo, H. Lam, and J. A. B. Fortes, "On the Use of Virtualization and Service Technologies to Enable Grid-computing," *Proceedings of 11th International Euro-Par Conference*, pp. 1-12, August 2005.
- [C13] **M. Zhao**, V. Chadha, and R. J. Figueiredo, "Supporting Application-tailored Grid File System Sessions with WSRF-based Services," *Proceedings of 14th IEEE International Symposium on High Performance Distributed Computing (HPDC 2005)*, pp. 24-33, July 2005. (**Top 5 Best Papers, Acceptance Rate: 17%**)
- [C14] **M. Zhao**, J. Zhang, and R. J. Figueiredo, "Distributed File System Support for Virtual Machines in Grid Computing," *Proceedings of 13th IEEE International Symposium on High Performance Distributed Computing (HPDC 2004)*, pp. 202-211, June 2004. (**Acceptance Rate: 15%**)
- [C15] J. Paladugula, **M. Zhao**, and R. J. Figueiredo, "Support for Data-intensive, Variable-granularity Grid Applications via Distributed File System Virtualization—A Case Study of Light Scattering Spectroscopy," *Proceedings of Challenges of Large Applications in Distributed Environments (held in conjunction with HPDC 2004) (CLADE/2004)*, pp. 12-21, June 2004.

Technical Reports

- [T1] **M. Zhao** and R. J. Figueiredo, "Virtual Machine Based Resource Reservation for Real-time Tasks," *Technical Report (TR-ACIS-07-01)*, University of Florida, October 2007.
- [T2] E. V. Hensbergen and **M. Zhao**, "Dynamic Policy Disk Caching for Storage Networking," *IBM Research Report (RC24123)*, November 2006.
- [T3] **M. Zhao** and R. J. Figueiredo, "Proxy Managed Client-side Disk Caching for the Virtual File System," *Technical Report (TR-ACIS-04-01)*, University of Florida, November 2004.

Working Papers

- [I1] **M. Zhao** and R. J. Figueiredo, "Application-tailored User-level Wide-area File Systems," submitted to *IEEE Transactions on Parallel and Distributed Systems*.
- [I2] **M. Zhao**, P. Rattanamrong, R. J. Figueiredo, and J. A. B. Fortes, "A Cyber-workstation for Dynamic Data-driven Brain-machine Interfaces," in preparation for conference submission.
- [I3] J. Xu, **M. Zhao**, and J. A. B. Fortes, "Cooperative Autonomic Management in Dynamic Distributed Systems," in preparation for journal submission.

GRANTS

- [G1] "Streamlining High-End Computing with Software Persistent Memory", National Science Foundation, CCF-0937964, January 1, 2010 – December 31, 2013 (Co-PI).
- [G2] "HECURA: Collaborative Research: QoS-driven Storage Management for High-end Computing Systems", National Science Foundation, CCF-0938045, September 1, 2009 – August 31, 2012 (PI).

TEACHING

Instructor COP 4610 - Operating Systems Principles, Spring 2010, Florida International University	Spring 2010
Instructor COP 6611 - Advanced Operating Systems, Florida International University	Fall 2009
Instructor CIS 5931 – Special Topics on Virtualized Systems, Florida International University	Spring 2009
Instructor COP 6611 – Advanced Operating Systems, Florida International University	Fall 2008
Teaching Assistant, Guest Lecturer EEL 6892 – Virtual Computers, University of Florida	Fall 2006, Fall 2007

SERVICE

Publicity Chair and PC Member of the 3rd International Workshop on Virtualization Performance: Analysis, Characterization and Tools (VPACT 2010)

Publicity Chair and PC Member of the 4th International Workshop on Virtualization Technologies in Distributed Computing (2010)

Cyber Chair of the 7th IEEE International Conference on Autonomic Computing (2010)

Graduate Committee Member of the School of Computing and Information Sciences, Florida International University (2009 – 2010)

Publicity Chair and Program Committee Member of the 3rd International Workshop on Virtualization Technologies in Distributed Computing (2009)

Infrastructure Committee of the School of Computing and Information Sciences, Florida International University (2008 – 2009)

Cyber Chair of 6th IEEE International Conference on Autonomic Computing (2009)

Cyber Chair of 5th IEEE International Conference on Autonomic Computing (2008)

Cyber Chair of 4th IEEE International Conference on Autonomic Computing (2007)

Official Journal Referee

- Journal on Cluster Computing (2008, 2009)
- IEEE Transactions on Parallel and Distributed Systems (2006)

External Conference Reviewer

- IEEE International Symposium on High Performance Distributed Computing (2004 - 2008)
- IFIP International Conference on Network and Parallel Computing (2007)

- International Conference on Distributed Computing Systems (2006)
- IEEE International Conference on Autonomic Computing (2006)
- International Meeting on High Performance Computing for Computational Science (2006)
- International Workshop on Virtualization Technology in Distributed Computing (2006)
- International Conference on High Performance Computing (2004)

Student Volunteer of International Conference for High Performance Computing, Networking, Storage and Analysis (2007), and IEEE International Conference on Autonomic Computing (2007)

Vice President of FACSS (Friendship Association of Chinese Students and Scholars) of the University of Florida (2003 - 2004)