

RENATO J. FIGUEIREDO

ELECTRICAL AND COMPUTER ENGINEERING,
UNIVERSITY OF FLORIDA
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EDUCATION

1995–2001 Purdue University West Lafayette, IN
Ph.D., Computer Engineering
Advisor: Professor José A. B. Fortes
Thesis: On the Performance and Programming of Heterogeneous Distributed Shared-Memory Multiprocessors Organized as Processor-and-Memory Hierarchies

1994–1995 University of Campinas São Paulo, Brazil
M.S., Electrical Engineering
Advisor: Professor Ivanil S. Bonatti
Thesis: Behavioral Synthesis of Hardware Circuits Using SDL (in Portuguese)

1989–1994 University of Campinas São Paulo, Brazil
B.S., Electrical Engineering

PROFESSIONAL EXPERIENCE

2008–present University of Florida Gainesville, FL
Associate Professor of Electrical and Computer Engineering

2002–present University of Florida Gainesville, FL
Assistant Professor of Electrical and Computer Engineering

2001–2002 Northwestern University Evanston, IL
Assistant Professor of Electrical and Computer Engineering

1998–2001 Purdue University West Lafayette, IN
Graduate Research Assistant

1997–1998 Purdue University West Lafayette, IN
Teaching Assistant

1993–1995 University of Campinas São Paulo, Brazil
Research Assitant

1993–1994 R&D Center, Telecomm. of Brazil São Paulo, Brazil
Research Intern

HONORS AND AWARDS

- 1995-1999 CAPES (Brazilian government agency)
 - Ph.D. Fellowship
- 1999/2000 Society of Hispanic Professional Engineers and Purdue University
 - Maria Canto Neuberger Award
- 1997/1998 Purdue University
 - Estus H. and Vashti L. Magoon Award for Excellence in Teaching

RESEARCH GRANTS

Principal Investigator

- “CRI:CRD Archer - Seeding a Community-based Computing Infrastructure for Computer Architecture Research and Education”, National Science Foundation, 2008-2011. Co-PIs: D. Lilja, L. John, D. Kaeli, G. Memik, S. McKee, G. Tyson, A. Roy
- “Machine Learning and Predictive Models in Support of Autonomic Computing in Virtualized Data Centers”, IBM Faculty Award, 2007-2008. Sole PI.
- “High performance I/O Virtualization Architecture: A simulation based approach”, Intel Corporation, 2006-2007. Sole PI.
- “Coastal and Estuarine Science Cyberinfrastructure: Training and Deployment” (Co-PIs Peter Sheng, José A. B. Fortes, Justin Davis), National Science Foundation (NSF), 2005-2007.
- “Virtualized Grids for On-demand Provisioning”, IBM Shared University Research (SUR), 2003-2004.
- “Collaborative Research: Resource and Data Management for Virtualized End-resources in Computational Grids” (Collaborative with José A. B. Fortes, Co-PI Peter A. Dinda), National Science Foundation (NSF), 2002-2005
- “Collaborative Research on Wide-area Network Computing using Virtual Machines”, (collaborative with José A. B. Fortes, co-PI Peter A. Dinda), NSF, 2002-2005.

- “TTR: Fine-Grain Data Management in Computational Grids and Applications in Network-Enabled Medical Imaging for Early Cancer Detection”, (co-PI Vadim Backman), NSF, 2002-2005.

Co-PI

- Co-PI, “A Regional Storm Surge and Inundation Model Testbed for SECOORA”. PIs: Y. P. Sheng, R. Luettich, R. Weisberg, L. Xie, NOAA, 2008-2010.
- Co-PI, “Center for Autonomic Computing”. PI: José A. B. Fortes. National Science Foundation, 2008-2013.
- Co-PI, “SDCI NMI New: Middleware for Missing Links in Virtualized Grids”. PI: José A. B. Fortes. National Science Foundation, 2007-2009.
- Co-PI, “QoS and autonomies in virtualized Grid and data-center environments”. PI: José A. B. Fortes. Intel Corp., 2006.
- Co-PI, “DDDAS-TMRP: Dynamic Data-Driven Brain-Machine Interfaces”. PI: José A. B. Fortes, Co-PIs Jose Principe, Justin Sanchez, Linda Hermer, NSF, 2006-2009.
- Co-PI, “Virtualized Data Centers for Grid-computing and Enterprise Applications”. PI: José A. B. Fortes. Intel Corp., 2005.
- Co-PI, “NMI Deployment – nanoHUB”, National Science Foundation (NSF), 10/01/04-9/30/07. PI: Sebastien Goasguen (Purdue University).
- Co-PI, “Computational Resources for Web-enabled Memory-Intensive Nanotechnology Simulations”, Army Research Office, equipment grant. PI: Jose Fortes
- Co-PI, “Autonomic Computing applied to Biomolecular Simulations”, IBM Shared University Research, equipment grant. PI: Jose Fortes
- Co-PI, “SURA Coastal Ocean Observing and Prediction (SCOOP) Program”, Office of Naval Research, 10/01/04-9/30/05. PI at U. Florida: Peter Sheng.
- Co-PI, “Development of a Prototype SURA-SCOOP Modeling Grid”, Southeastern Universities Research Association (SURA), 12/1/03 – 9/30/04. PI: Peter Sheng.

- Co-P.I. (P.I.s at Purdue University: Mark Lundstrom, Suppriyo Datta), “Network for Computational Nanotechnology (nCn)”, NSF, 2002-2007
- Co-P.I. (P.I.s at Purdue University: Mark Lundstrom, Suppriyo Datta), “NASA Institute for Nanoelectronics and Computing (INAC)”, NASA, 2002-2007.
- Co-P.I. (José A. B. Fortes), “Grid Computing on Virtual Machines”, IBM Shared University Research (SUR) grant, 2002-2003.

PUBLICATIONS

Journals:

A. Ganguly, D. Wolinsky, P. O. Boykin, R. Figueiredo, “Improving Peer Connectivity in Wide-area Overlays of Virtual Workstations”, *Cluster Computing Journal*, to appear.

J. Zhang and R. Figueiredo, “Learning-aided Predictor Integration for System Performance Prediction”, *Cluster Computing*, pp. 425-442, October 2007.

A. Ganguly, A. Agrawal, P. Boykin and R. Figueiredo, “WOW: Self-Organizing Wide Area Overlay Networks of Virtual Workstations”, *Journal of Grid Computing*, 5(2), June 2007, pp. 151-172 (Special issue, invited as one of five nominated best papers from HPDC-2006).

R. Figueiredo, V. Backman, Y. Liu and J. Paladugula, “Architecture and Performance of a Grid-enabled Lookup-based Biomedical Optimization Application: Light Scattering Spectroscopy”, *IEEE Transactions on Information Technology in Biomedicine*, 11(2), March 2007, pp. 170-178.

A. Matsunaga, M. Tsugawa, S. Adabala, R. Figueiredo, H. Lam and J. Fortes, "Science Gateways Made Easy: the In-VIGO Approach", *Concurrency and Computation: Practice and Experience*, 19(6), October, 2006, pp. 905-919.

C. Jeffery, R. Figueiredo, “Hierarchical Fault Tolerance for Nanoscale Memories”, *IEEE Transactions on Nanotechnology*, 5(4), July 2006, pp 407-414.

M. Zhao, J. Zhang and R. Figueiredo, “Distributed File System Virtualization Techniques Supporting On-Demand Virtual Machine Environments for Grid Computing”, *Cluster Computing Journal*, 9(1), January 2006, pp. 45-56.

J. Fortes, R. Figueiredo and M. Lundstrom, “*Virtual Computing Infrastructures for Nanoelectronics Simulation*”, Proceedings of the IEEE, 93(10), August 2005, pp 1839-1847.

Sumalatha Adabala, Vineet Chadha, Puneet Chawla, Renato Figueiredo, José A. B. Fortes, Ivan Krsul, Andrea Matsunaga, Mauricio Tsugawa, Jian Zhang, Ming Zhao, Liping Zhu, and Xiaomin Zhu, “*From Virtualized Resources to Virtual Computing Grids: The In-VIGO System*”, Future Generation Computing Systems, special issue on Complex Problem-Solving Environments for Grid Computing, David Walker and Elias Houstis, Editors, 21(6), April 2005, pp 896-909.

Renato J. Figueiredo, Nirav H. Kapadia and José A. B. Fortes. “*Seamless Access to Decentralized Storage Services in Computational Grids via a Virtual File System*”, Cluster Computing Journal, 7(2), April 2004, pp. 113-122.

Ali Butt, Sumalatha Adabala, Nirav Kapadia, Renato Figueiredo, Jose Fortes, “*Grid-computing Portals and Security Issues*”, Journal of Parallel and Distributed Computing (JPDC), 63(10), October 2003, pp 1006-1014.

Nirav H. Kapadia, Renato J. Figueiredo and José A. B. Fortes. “*PUNCH: Web Portal for Running Tools*”, IEEE Micro, 20(3), May/June 2000, pp 38-47.

Renato J. Figueiredo, José A. B. Fortes, Rudolf Eigenmann, Nirav H. Kapadia, Valerie Taylor, Alok Choudhary, Luis Vidal and Jan-Jo Chen. “*On the Use of Simulation and Parallelization Tools in Computer Architecture and Programming Courses*”, Computers in Education Journal, 10(1), Jan-Mar 2001, pp 19-27.

Periodicals:

R. Figueiredo, P. Dinda, J. Fortes, “*Resource Virtualization Renaissance*”, invited paper, guest editor introduction, IEEE Computer Magazine 38(5), Special Issue on Virtualization, May 2005, pp. 28-31.

M. Lundstrom, G. Klimeck, S. Goasguen, M. McLennan, R. Figueiredo and J. Fortes, “*The Network for Computational Nanotechnology: A Global Infrastructure for Researchers, Educators, and Students*”, International Union of Materials Research Society Facets 4(2), 2005, pp. 1-7.

Conference and workshop proceedings:

K. Keahey, R. Figueiredo, J. A. B. Fortes, T. Freeman, M. Tsugawa, “*Science Clouds: Early Experiences in Cloud Computing for Scientific Applications*”, Cloud Computing and its Applications (CCA) Workshop, Oct 2008.

R. Figueiredo, P. O. Boykin, J. A. B. Fortes, T. Li, J-K. Peir, D. Wolinsky, L. John, D. Kaeli, D. Lilja, S. McKee, G. Memik, A. Roy, G. Tyson, “Archer: A Community Distributed Computing Infrastructure for Computer Architecture Research and Education”, invited paper, The 4th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom), Orlando, FL, Nov 2008.

P. St Juste, D. Wolinsky, J. Xu, M. Covington, R. Figueiredo, “On the Use of Social Networking Groups for Automatic Configuration of Virtual Grid Environments”, Proceedings of GCE (Grid Computing Environments) Workshop, with SuperComputing, Austin, TX, Nov. 2008.

C. Jeffery and R. Figueiredo, “Reducing Fault Detection Latencies in Virtually-Lockstepped Systems”, Proceedings of 3rd Workshop on Dependable Architectures (with the 41st International Symposium on Microarchitecture), Lake Como, Italy, Oct. 2008.

M. Zhao, P. Rattanamrong, J. DiGiovanna, B. Mahmoudi, R. Figueiredo, J. Sanchez, J. Principe, J. Fortes, “BMI Cyberworkstation: Enabling Dynamic Data-Driven Brain-Machine Interface Research through Cyberinfrastructure”, Proceedings of the 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Vancouver, CA, Aug. 2008.

R. Figueiredo, P. O. Boykin, P. St Juste, D. Wolinsky, “Social VPNs: Integrating Overlay and Social Networks for Seamless P2P Networking”, Proceedings of IEEE WETICE COPS (Collaborative Peer-to-peer Systems), Rome, Italy, June 2008. **Best paper award.** (Acceptance rate: 24%)

A. Ganguly, D. Wolinsky, P. O. Boykin, R. Figueiredo, “Improving peer-connectivity in Wide-area Overlays of Virtual Workstations”, Proceedings of International Symposium on High Performance Distributed Computing (HPDC), Boston, MA, June 2008. **Best paper award.** (Acceptance rate: 17.5%)

S. Goasguen, K. Madhavan, D. Wolinsky, R. Figueiredo, J. Frey, A. Roy, P. Ruth and D. Xu, “Middleware Integration and Deployment Strategies for Cyberinfrastructures”, Proceedings of International Conference on Grid and Pervasive Computing (GCC), Kunming, China, May 2008.

V. Chadha, D. Wolinsky and R. Figueiredo, “Provisioning of Virtual Environments for Wide Area Desktop Grids through Redirect-on-write Distributed File System”, Proceedings of 2nd PCGrid Workshop, with IPDPS, April 2008.

D. Wolinsky and R. Figueiredo, "Simplifying Resource Sharing in Voluntary Grid Computing with the Grid Appliance", Proceedings of 2nd PCGrid Workshop, with IPDPS, April 2008.

C. Jeffery and Renato Figueiredo 'Towards Byzantine Fault Tolerance in Many-core Computing Platforms', short paper, IEEE Pacific Rim Dependable Computing Conference (PRDC), Melbourne, Australia, Dec 2007.

V. Chadha and R. Figueiredo, "ROW-FS: A User-level Virtualized Redirect-on-write Distributed File System for Wide Area Applications", Proceedings of 14th Annual IEEE International Conference on High Performance Computing, Goa, India, December 2007 (Acceptance rate: 21%)

G. Venkatasubramanian, P. O. Boykin, R. Figueiredo 'Design of High-Yield Defect-Tolerant Self-Assembled Nanoscale Memories'. In IEEE/ACM International Symp. on Nanoscale Architectures (NANOARCH), 2007.

M. Zhao, R. Figueiredo 'Experimental Study of Virtual Machine Migration in Support of Reservation of Cluster Resources'. In 2nd International Workshop on Virtualization Technologies in Distributed Computing (VTDC), Nov. 2007.

M. Zhao and R. Figueiredo, "A User-level Secure Grid-wide File System", Proceedings of Supercomputing'2007, Reno, NV (acceptance rate: 20%).

J. DiGiovanna, L. Marchal, P. Rattanathamrong, M. Zhao, S. Darmanjian, B. Mahmoudi, J. Sanchez, J. Príncipe, L. Hermer-Vazquez, R. Figueiredo, and J. Fortes, "Towards Real-Time Distributed Signal Modeling for Brain Machine Interfaces", Dynamic Data Driven Application Systems Workshop – DDDAS – International Conference on Computational Science 2007.

V Chadha, R. Illikkal, R. Iyer, J. Moses, D. Newell, R. Figueiredo, "I/O Processing in a Virtualized Platform: A Simulation-Driven Approach", Proceedings of the ACM Virtual Execution Environments (VEE) Conference, San Diego, CA, June 2007 (Acceptance rate: 27%).

J. Zhang, M. Yousif, R. Carpenter, R. Figueiredo, "Application Resource Demand Phase Analysis and Prediction in Support of Dynamic Resource Provisioning", Poster, Proceedings of the IEEE International Conference on Autonomic Computing, Jacksonville, FL, June 2007. (Acceptance rate: 17%)

A. Ganguly, J. Yin, H. Shaikh, D. Chess, T. Eilem, R. Figueiredo, H. Hansom, A. Mohindra, G. Pacifici, "*Reducing Complexity of Software Deployment with Delta Configuration*", Proceedings of 10th IFIP/IEEE International Symposium on Integrated Management, May 2007.

J. Zhang and R. Figueiredo, “*Adaptive Predictor Integration for System Performance Prediction*”, Proceedings of International Parallel and Distributed Processing Symposium (IPDPS), San Diego, CA, March 2007 (Acceptance rate: 26%).

A. Ganguly, D. Wolinsky, P. O. Boykin and R. Figueiredo, “*Decentralized Dynamic Host Configuration in Wide-Area Overlays of Virtual Workstations*”, Invited paper. Proceedings of First Workshop on Large-Scale and Volatile Desktop Grids (PCGrid), with IPDPS-2007.

D. Wolinsky, A. Agrawal, P. O. Boykin, J. Davis, A. Ganguly, V. Paramygin, P. Sheng, R. Figueiredo ‘*On the Design of Virtual Machine Sandboxes for Distributed Computing in Wide Area Overlays of Virtual Workstations*’. In Proc. First Workshop on Virtualization Technologies in Distributed Computing (VTDC), with Supercomputing, Nov. 2006.

J. Bintz et al, “*SCOOP: Enabling A Network of Ocean Observations for Mitigating Coastal Hazards*”, Proceedings of The Coastal Society's 20th Biennial Conference, May 2006.

J. Fortes, R. Figueiredo, L. Hermer-Vazquez, J. Principe, J. Sanchez, “*A New Architecture for Deriving Dynamic Brain-Machine Interfaces*”, Dynamic Data Driven Application Systems Workshop – DDDAS – International Conference on Computational Science 2006.

G. Venkatasubramanian and R. Figueiredo, “*A Nanoscale Memory Interface Scheme Based on Hierarchical Memory Mapping*”, Proceedings of the IEEE Nano Conference, Cincinnati, OH, July 2006.

A. Ganguly, A. Agrawal, P. Boykin and R. Figueiredo, 'WOW: Self-Organizing Wide Area Overlay Networks of Virtual Workstations', Proceedings of IEEE International High Performance Distributed Computing (HPDC), Paris, France, 2006, pp 30-41. (Acceptance rate: 15%; one of the five nominated articles for best paper award)

J. Zhang and R. Figueiredo, “*Autonomic Feature Selection for Application Classification*”, Proceedings of the IEEE International Conference on Autonomic Computing, Dublin, Ireland, June 2006, pp 43-52. (Acceptance rate: 22%)

M. Zhao, J. Xu and R. Figueiredo, “*Towards Autonomic Grid Data Management with Virtualized Distributed File Systems*”, Proceedings of the IEEE International Conference on Autonomic Computing, Dublin, Ireland, June 2006, pp. 209-218. (Acceptance rate: 22%)

M. Zhao and R. Figueiredo, "Application-Tailored Cache Consistency for Wide-Area File Systems", Proceedings of IEEE International Conference on Distributed Computing Systems (ICDCS), Lisbon, Portugal, 2006. (Acceptance rate: 14%).

A. Ganguly, A. Agrawal, P. Boykin and R. Figueiredo, 'IP over P2P: Enabling Self-configuring Virtual IP Networks for Grid Computing', Proceedings of 20th IEEE International Parallel & Distributed Processing Symposium., Rhodes Island, Greece, 2006. (Acceptance rate: 23%)

J. Zhang, R. Figueiredo, 'Application Classification Through Monitoring and Learning of Resource Consumption Patterns', Proceedings of 20th IEEE International Parallel & Distributed Processing Symposium., Rhodes Island, Greece, 2006. (Acceptance rate: 23%).

J. R. Davis, V. A. Paramygin, A. Ganguly, R. J. Figueiredo, and Y. P. Sheng, "Simulation of Storm Surge Using Grid Computing", Proceedings of Estuarine and Coastal Modeling, American Society of Civil Engineers, 2006, pp 357-374.

A. Matsunaga, M. Tsugawa, S. Adabala, R. Figueiredo, H. Lam and J. Fortes, "*Science gateways made easy: the In-VIGO approach*", Global Grid Forum workshop on Science Gateways, Chicago, IL, June 2005.

A. Matsunaga, M. Tsugawa, M. Zhao, L. Zhu, V. Sanjeevan, S. Adabala, R. Figueiredo, H. Lam, and J. Fortes "*On the Use of Virtualization and Service Technologies to Enable Grid-Computing*", Proceedings of Europar, Lecture Notes on Computer Science 3648, 2005, pp 1-12.

M. Zhao, V. Chadha, R. Figueiredo , "*Supporting Application-Tailored Grid File System Sessions with WSRF-Based Services*", Proc. of the IEEE International Symposium on High Performance Distributed Computing (HPDC), July 2005. Acceptance rate: 21%.

Abhishek Agrawal, Arijit Ganguly, P. Oscar Boykin, and Renato J. Figueiredo, "*Towards P2P-routed IP Overlay Networks for Grid Virtual Machines*", Poster, extended abstract published on 14th International Symposium on High Performance Distributed Computing, July 2005

V. Ravinuthula, J. Harris, C. Jeffery, R. Figueiredo and J. Fortes "*Using Time and Redundancy for Nanocomputation*", GOMACTech (Government Microcircuit Applications and Critical Technology Conference), April 2005

Davis, J. R., Sheng, Y.P, and Figueiredo, R. J. "*Grid-based particle tracking in Florida Bay*". Proceedings of 8th Estuarine and Coastal Modeling Conference, American Society of Civil Engineers, pp. 900-913, Nov. 2004.

I. Krsul, A. Ganguly, J. Zhang, J. Fortes, R. Figueiredo, “*VMPplants: Providing and Managing Virtual Machine Execution Environments for Grid Computing*”, In Proc. of Supercomputing Conference, Pittsburgh, PA, November 2004. Acceptance rate: 30%.

Ninad Ghodke, Renato J. Figueiredo “*On the Implications of Machine Virtualization for DRM and Fair Use: A Case Study of a Virtual Audio Device Driver*”. In Proceedings of 4th ACM DRM Workshop, Washington, DC, August 2004. (Acceptance rate: 37%).

Casey Jeffery, Ahmet Basagalar, Renato Figueiredo, “*Dynamic Sparing and Error Correction Techniques for Fault Tolerance in Nanoscale Memory Structures*”, Proceedings of IEEE Conference on Nanotechnology (IEEE-Nano), Munich, Germany, August 2004

Ming Zhao, Jian Zhang, Renato Figueiredo , “*Distributed File System Support for Virtual Machines in Grid Computing*”, Proceedings of the 13th IEEE High Performance and Distributed Computing (HPDC), June 2004 (Acceptance rate: 16%)

Jithendar Paladugula, Ming Zhao, Renato Figueiredo, “*Support for Data-Intensive, Variable-Granularity Grid Applications via Distributed File System Virtualization – A Case Study of Light Scattering Spectroscopy*”, Proceedings of the 4th IEEE Workshop on Challenges of Large-Scale Applications in Distributed Environments (CLADE), June 2004 (Acceptance rate: 40%)

Sumalatha Adabala, Andréa Matsunaga, Maurício Tsugawa, Renato Figueiredo, José A. B. Fortes, “*Single Sign-On in In-VIGO: Role-based Access via Delegation Mechanisms Using Short-lived User Identities*”, Proceedings of the 18th IEEE/ACM Intl. Parallel and Distributed Processing Symposium (IPDPS), April 2004 (Acceptance rate: 31%).

Renato J. Figueiredo, Peter A. Dinda, Jose A. B. Fortes, “*A Case for Grid Computing on Virtual Machines*”, Proc. 23rd IEEE International Conf. on Distributed Computing Systems (ICDCS), May 2003. (Acceptance: 18%)

“*Nanoelectronic Adaptive Systems*”, J. Fortes, M. Davis, J. Harris, R. Figueiredo, in GOMACtech (Government Microcircuit Applications and Critical Technology Conference), Tampa, FL, March 2003

Ali R. Butt, Sumalatha Adabala, Nirav H. Kapadia, Renato J. Figueiredo and José A. B. Fortes. “*Fine-Grain Access Control for Securing Shared Resources in Computational Grids*”, Proceedings, 16th IEEE/ACM International Parallel and Distributed Processing Symposium (IPDPS), April 2002.

Renato J. Figueiredo, Nirav H. Kapadia and José A. B. Fortes. "*Towards Coordinated Work on the Grid: Data Sharing Through Virtual File Systems*", Process Coordination and Ubiquitous Computing, pp 151-160, CRC Press, Dan Marinescu and Craig Lee, Editors, 2003.

Renato J. Figueiredo and José A. B. Fortes. "*Hardware Support for Extracting Coarse-grain Speculative Parallelism in Distributed Shared-Memory Multiprocessors*", Proceedings, International Conference on Parallel Processing (ICPP), September 2001.

Renato J. Figueiredo, Nirav H. Kapadia and José A. B. Fortes. "*The PUNCH Virtual File System: Seamless Access to Decentralized Storage Services in a Computational Grid*", Proceedings, IEEE International Symposium on High Performance Distributed Computing (HPDC), August 2001. (Leading conference in distributed computing. Acceptance rate: 41%)

Nirav H. Kapadia, Renato J. Figueiredo and José A. B. Fortes. "*Enhancing the Scalability and Usability of Computational Grids via Logical User Accounts and Virtual File Systems*", Proceedings, IEEE Heterogeneous Computing Workshop (HCW) 2001.

Insung Park, Nirav H. Kapadia, Renato Figueiredo, Rudolf Eigenmann and José A. B. Fortes. "*Towards an Integrated, Web-Executable Parallel Programming Tool Environment*", Proceedings, IEEE/ACM High Performance Networking and Computing Conference (SC-2000), November 2000.

Renato J. Figueiredo, Jeffrey P. Bradford and José A. B. Fortes. "*Improving the Performance of Heterogeneous DSMs via Multithreading*", Proceedings, 4th International Meeting on Vector and Parallel Processing (VECPAR), June 2000, pp 621-632 (paper selected for publication on Lecture Notes in Computer Science Vol 1981, Springer-Verlag, 2001, pp 168-180).

Renato J. Figueiredo, José A. B. Fortes, Rudolf Eigenmann, Nirav H. Kapadia, Sumalatha Adabala, Jose Miguel-Alonso, Valerie Taylor, Miron Livny, Luis Vidal and Jan-Jo Chen. "*A Network-Computing Infrastructure for Tool Experimentation Applied to Computer Architecture Education*". Workshop on Computer Architecture Education (WCAE), June 2000. (also appears in the IEEE TCCA Newsletter, September 2000).

Renato J. Figueiredo and José A. B. Fortes. "*Impact of Heterogeneity on DSM Performance*", Proceedings of the 6th International Symposium on High-Performance Computer Architecture (HPCA), January 2000, pp 26-35 (Leading conference in computer architecture. Acceptance rate: 21%)

José A. B. Fortes, Nirav H. Kapadia, Rudolf Eigenmann, Renato J. Figueiredo, Valerie Taylor, Alok Choudhary, Luis Vidal and Jan-Jo Chen. "*On the Integration of Computer Architecture and Parallel Programming Tools Into*

Computer Curricula", Proceedings of the 1999 Annual Society for Engineering Education (ASEE) Conference.

Renato J. Figueiredo, José A. B. Fortes and Zina Ben-Miled. "*Spatial Data Locality With Respect to Degree of Parallelism in Processor-and-Memory Hierarchies*", Proceedings of the 1998 VECPAR conference, also selected for publication in Lecture Notes in Computer Science Vol 1573, Springer-Verlag, 1999, pp 396-410.

Renato J. Figueiredo, José A. B. Fortes, Zina Ben-Miled, Valerie Taylor and Rudolf Eigenmann. "*Impact of Computing-in-Memory on the Performance of Processor-and-Memory Hierarchies*". Proceedings, 11th International Conference on Parallel and Distributed Computing Systems (PDCS), September 1998, pp 43-50.

Ivanil S. Bonatti and Renato J. Figueiredo. "*Stobt: an SDL-to-Hardware Translator*", Proceedings of the Asia and South Pacific Design Automation Conference (ASP-DAC), August 1995.

Ivanil Bonatti and Renato J. Figueiredo, "*An Algorithm for the Translation of SDL to Synthesizable VHDL*", Current Issues in Electronic Modeling, Vol. 3, 1995.

Technical reports

Ninad Ghodke, Renato J. Figueiredo "*Towards Virtual Remote Devices for Mobile Computing - A Case Study of a Virtual CD-ROM*". Tech. Rep. TR-04-002, ACIS Laboratory, University of Florida, 08/2004

Renato J. Figueiredo, "*VP/GFS: An Architecture for Virtual Private Grid File Systems*". In TR-ACIS-03-001, ACIS Laboratory, University of Florida, 05/2003

Renato J. Figueiredo, Peter A. Dinda and José A. B. Fortes. "*A Case for Grid Computing on Virtual Machines*", TR-ACIS-02-001, ECE, University of Florida, .

Renato J. Figueiredo and José A. B. Fortes. "*Hardware Support for Data Dependence Speculation in Distributed Shared-Memory Multiprocessors via Cache-Block Reconciliation*", TR-ECE-00-6, School of ECE, Purdue University, May 2000.

Renato J. Figueiredo and José A. B. Fortes. "*Impact of Heterogeneity on DSM Performance*", TR-ECE-99-13, School of ECE, Purdue University, Oct 1999.

Renato J. Figueiredo, José A. B. Fortes, Zina Ben-Miled, Valerie Taylor, Rudolf Eigenmann. "*Impact of Computing-in-Memory on the Performance of Processor-and-Memory Hierarchies*", TR-ECE-98-1, School of ECE, Purdue University, January 1998.

PRESENTATIONS

“Self-configuring Virtual Networks and Applications in High-throughput Computing”, invited talk, HPDC Program Committee Workshop, Munich, Germany, March 2009.

“Archer: A Community Distributed Computing Infrastructure for Computer Architecture Research and Education”, invited talk, The 4th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom), Orlando, FL, Nov 2008.

“Self-organizing Virtual Networks for Zero-configuration Virtual Machine Clusters and Social VPNs”, invited talk, IBM Corporation, White Plains, NY, Oct. 2008.

“Self-organizing Virtual Networks for Zero-configuration Virtual Machine Clusters and Social VPNs”, invited talk, Intel Corporation, Portland, OR, Oct. 2008.

“Facilitating the Deployment of Ad-hoc Virtual Organizations with Integrated Social and Overlay Networks”, Hot Topics session, Intl. Symp. on High Performance Distributed Computing (HPDC), Boston, MA, June 2008.

“Provisioning of Virtual Environments for Wide Area Desktop Grids through Redirect-on-write Distributed File System”, 2nd PCGrid Workshop, with IPDPS, Miami, FL, April 2008.

Invited talk, *“Wide-area Overlays of Virtual Workstations (WOW): Simplifying Deployment of Distributed Systems Through Virtualization and Self-organization”*, Louisiana State University, Dec. 2007.

Invited talk, *“Analysis of I/O performance and application phase behavior in virtualized platforms”*, Second Intel Virtualization Summit, Portland, OR, Nov. 2007

Panel presentation, *“Challenges and strategies for successfully applying CP”*, NSF CI-TEAM Workshop, Washington, DC, July 2007.

Tutorial, *“Using nanoHUB.org as a Science Gateway”*, TeraGrid 2007, Madison, WI, June 2007.

Invited talk, *“Self-configuring Condor Virtual Machine Appliances for Ad-Hoc Grids”*, Condor Week, Madison, WI, April 2007.

Invited talk, *“Decentralized Dynamic Host Configuration in Wide-Area Overlays of Virtual Workstations”*, First Workshop on Large-Scale and Volatile Desktop Grids, Long Beach, CA, March 2007.

Invited talk, *“Grid Virtual Appliances for Self-Configuring High-Throughput*

Computing”, Workshop on High Performance Distributed Computing, Chicago, IL, March 2007.

Invited talk, “*Towards autonomies and networking in virtualized data centers*”, presented at Intel Innovation Center, Folsom, CA, Nov. 7th 2006

“*In-VIGO: Making the nanoHUB Virtually Yours*”, Online seminar, CI-Channel, June 6th 2006.

Invited talk, “*Self-configuring IP-over-P2P Overlays: Interconnecting Virtual Machines for Wide-area Computing*”, Trends in High-Performance Distributed Computing Workshop, Vrije University, March 2006.

“*Using Resource Virtualization Techniques to Grid-Enable Coupled Coastal Ocean Models*”, SURA Grid Application Planning Workshop, Atlanta, GA, January 2005.

“*On the Implications of Machine Virtualization for DRM and Fair Use: A Case Study of a Virtual Audio Device Driver*”, ACM Digital Rights Management Workshop, Washington, DC, October 2004

“*A Case for Grid Computing on Virtual Machines*”, International Conference on Distributed Computing Systems (ICDCS), Providence, RI, May 2003.

“*Resource and Data Management for Virtualized End-resources in Computational Grids*”, NSF NMI PI workshop, Chicago, IL, July 2002

“*Memory-centric Architectures?*”, INAC/nCn PI kickoff meeting, West Lafayette, IN, Feb. 2003

“*Towards Coordinated Work on the Grid: Data Sharing Through Virtual File Systems*”, Mini-Workshop on Internet Process Coordination and Ubiquitous Computing, Orlando, FL, Dec 2001.

“*Hardware Support for Extracting Coarse-grain Speculative Parallelism in Distributed Shared-Memory Multiprocessors*”, ICPP-2001, Valencia, Spain, September 2001.

“*The PUNCH Virtual File System: Seamless Access to Decentralized Storage Services in a Computational Grid*”, HPDC-2001, San Francisco, CA, August 2001.

“*Virtual Machines and PUNCH*”, invited talk, VMware, Inc, Palo Alto, CA, August 2001.

Exhibitor, PUNCH research exhibit booth, SC2000, Dallas, TX, November 2000.

“*NETCARE: A Network Computing Infrastructure for Tool Experimentation*

Applied to Computer Architecture Education", WCAE-2000 (held in conjunction with 27th ISCA), Vancouver, Canada, June 2000.

"Improving the Performance of Heterogeneous DSMs via Multithreading", 4th VECPAR, Porto, Portugal, June 2000.

"A File-System for PUNCH", invited talk, Center for Information Technology Integration (CITI), University of Michigan, Ann Arbor, MI, June 2000.

"Impact of Heterogeneity on DSM Performance", 6th HPCA, Toulouse, France, January 2000.

"Impact of Computing-in-Memory on the Performance of Processor-and-Memory Hierarchies", 11th PDCS, Chicago, IL, September 1998.

TEACHING

Instructor, undergraduate courses

Instructor, EEL-4713C, Computer Architecture – University of Florida, Spring 2008 (enrollment: 10; overall instructor evaluation: 4.29/5.0).

Instructor, EEL-4713C, Computer Architecture – University of Florida, Spring 2007 (enrollment: 16; overall instructor evaluation: 4.00/5.0).

Instructor, EEL-4713C, Computer Architecture – University of Florida, Spring 2006 (enrollment: 15; overall instructor evaluation: 4.13/5.0).

Instructor, EEL-4713C, Computer Architecture – University of Florida, Spring 2005 (enrollment: 19; overall instructor evaluation: 4.33/5.0)

Instructor, ECE-361, Computer Architecture-I – Northwestern University, Winter 2002 (undergraduate; enrollment: 13; student evaluation: 5.0/6.0)

Instructor, ECE-203, Introduction to Logic Design – Northwestern Univ., Fall 2001 (undergraduate; enrollment: 58; student evaluation: 5.2/6.0)

Instructor, graduate courses

Instructor, EEL-6892, Virtual Computers – University of Florida, Fall 2008 (enrollment: 38; overall instructor evaluation: 4.11/5.0)

Instructor, EEL-6892, Virtual Computers – University of Florida, Fall 2007 (enrollment: 21; overall instructor evaluation: 4.71/5.0)

Instructor, EEL-6892, Virtual Computers – University of Florida, Fall 2006
(enrollment: 19; overall instructor evaluation: 4.25/5.0)

Instructor, EEL-6892, Virtual Computers – University of Florida, Fall 2005
(enrollment: 9; overall instructor evaluation: 4.89/5.0)

Instructor, EEL-6935, Virtual Computers – University of Florida, Fall 2004
(enrollment: 6; overall instructor evaluation: 5.0/5.0)

Instructor, EEL-6935, Virtual Computers – University of Florida, Spring
2004 (enrollment: 20; overall instructor evaluation: 4.27/5.0)

Instructor, EEL-5764, Computer Architecture – University of Florida, Fall
2003 (enrollment: 37; overall instructor evaluation: 4.27/5.0)

Instructor, EEL-6935, Virtual Computers – University of Florida, Spring
2003 (enrollment: 20; overall instructor evaluation: 4.65/5.0)

Instructor, EEL-5764, Computer Architecture – University of Florida, Fall
2002 (enrollment: 38; overall instructor evaluation: 4.03/5.0)

Instructor, ECE-453, Advanced Computer Architecture – Northwestern
University, Spring 2002 (graduate; enrollment: 7)

Teaching Assistant

During 1997-1998 at Purdue University, for the following courses:

EE-565 - Computer Architecture (graduate)

EE-463 - Computer Organization (undergraduate)

EE-365 - Introduction to the Design of Digital Computers (undergraduate)

EE-202 - Circuit Theory – Purdue University (undergraduate)

SERVICE:EDITORIAL

IEEE Computer, Guest Editor, Special Issue on Virtualization, May 2005.

SERVICE:CONFERENCE AND JOURNAL ARTICLE REVIEWS

Journal of Parallel and Distributed Computing (2006)

Journal of Grid Computing (2006)

ACM Journal of Emerging Technologies in Computing (2005).

IEEE Transactions on Computers (1999, 2001, 2006, 2008).

IEEE Transactions on Parallel and Distributed Systems (2003, 2004, 2007, 2008)

International Journal of Parallel Programming (2000)

International Conference on Supercomputing (1999)

International Conference on Parallel Computing (2001)

Cluster Computing Journal (2002)

International Parallel and Distributed Processing Symposium (2001, 2002, 2005, 2006)

Supercomputing Conference (2003)

Europar (2004)

SERVICE:PANELS AND EXTERNAL COMMITTEES

Program Chair, VTDC-2009, Third International Virtualization Technologies in Distributed Computing Workshop

Technical Program Committee, Workshop on Managed Multi-core Systems (MMCS), 2009.

Technical Program Committee, CCGrid 2009, International Conference on Cluster Computing and the Grid.

Technical Program Committee, ICAC-2009, International Conference on Autonomic Computing

Technical Program Committee, HPDC-2009, The 18th IEEE International Symposium on High Performance Distributed Computing

Technical Program Committee, 5th International Workshop on System Management Technologies, Processes, and Services (SMTPS), 2009

Technical Program Committee, Workshop on Large-Scale and Volatile Desktop Grids (PCGrid 2009)

Technical Program Committee, Workshop on Managed Multi-core Systems (MMCS), 2008

Panelist, Workshop on Managed Multi-core Systems (MMCS), 2008

Technical Program Committee, CollaborateCom 2008, 4th International

Conference on Collaborative Computing: Networking, Applications and Worksharing

Session Chair, CollaborateCom 2008, 4th International Conference on Collaborative Computing: Networking, Applications and Worksharing

Technical Program Committee, VECPAR-2008, Eighth International Meeting on High Performance Computing for Computational Science

Technical Program Committee, Virtualization Performance Analysis, Characterization and Tools Workshop, 2008

Technical Program Committee, Workshop on Large-Scale and Volatile Desktop Grids (PCGrid 2008)

Technical Program Committee, IEEE Cluster 2008

Technical Program Committee, IEEE/ACM Supercomputing 2008

Technical Program Committee, HPDC-2008, The 17th IEEE International Symposium on High Performance Distributed Computing

Workshops Chair, HPDC-2008, The 17th IEEE International Symposium on High Performance Distributed Computing

Session Chair, HPDC-2008, The 17th IEEE International Symposium on High Performance Distributed Computing

Technical Program Committee, Workshop on the Interaction between Operating Systems and Computer Architecture (WIOSCA 2007).

Technical Program Committee, VTDC-2007, Second International Virtualization Technologies in Distributed Computing Workshop

Technical Program Committee, IFIP International Conference on Network and Parallel Computing (NPC 2007)

Local Arrangements Chair, ICAC-2007, IEEE International Conference on Autonomic Computing

Technical Program Committee, Workshop on Large-Scale and Volatile Desktop Grids (PCGrid 2007)

Technical Program Committee, HCW-2007, The 16th Heterogeneous Computing Workshop.

Technical Program Committee, HPDC-2007, The 16th IEEE International Symposium on High Performance Distributed Computing.

Session Chair, VTDC-2006, First International Virtualization Technologies in Distributed Computing Workshop.

Technical Program Committee, VTDC-2006, First International Virtualization Technologies in Distributed Computing Workshop.

Technical Program Committee, GCC-2006, Fifth International Conference on Grid and Cooperative Computing.

Technical Program Committee, VECPAR-2006, Seventh International Meeting on High Performance Computing for Computational Science.

Technical Program Committee, HPDC-2006, The 15th IEEE International Symposium on High Performance Distributed Computing.

Technical Program Committee, HCW-2006, The 15th Heterogeneous Computing Workshop.

Panelist, NSF Major Research Instrumentation (MRI), April 2005.

Research proposal reviewer, Foundation for Science and Technology (FCT, Portugal), 2003, 2004

Panelist, NSF Graduate Research Fellowship, March 2003

Panelist, NSF Information Technology Research (ITR), March 2003

Program Committee, International Parallel and Distributed Processing Symposium (2003)

Participant, steering committee of the ACM/Sigmicro online resources

SERVICE:INTERNAL

Computer Engineering Division chair (2009)

Member of the following committees at the University of Florida: Faculty Search Committee (Spring 2005), Computer Engineering Search Committee (Fall'04), Curriculum Committee (Fall'03), Graduate Aid Committee (Spring'04, Fall'05, Spring'06, Spring'07, Spring'08)

Member, Computing Facilities Committee, Northwestern University, 2001-2002.

Organized the “Distinguished CS/ECE Lecture Series in Systems in Architecture”, Northwestern University, 2001-2002

PROFESSIONAL SOCIETIES

Member, Institute of Electrical and Electronics Engineers and Association for Computing Machinery (S.I.G. in Computer Architecture).