

Adriana Iamnitchi

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RESEARCH SUMMARY

Distributed systems, with emphasis on designing, implementing and experimenting with algorithms, services and applications for large-scale networked-systems. In particular: system characterization for Grids and peer-to-peer networks, usage-aware resource management, data management in distributed scientific collaborations, social networks characterization, utility/cloud computing.

EDUCATION

Ph.D. in Computer Science, University of Chicago	2003
M.Sc. in Computer Science, University of Chicago	1999
M.Sc. in Computer Science, Politehnica University of Bucharest, Romania	1996
B.Sc. in Computer Science, Politehnica University of Bucharest, Romania	1995

EMPLOYMENT

Assistant Professor, Computer Science and Engineering, University of South Florida	2005–present
Visiting Assistant Professor, Computer Science Department, Duke University	2004–2005
IT Consultant, Romsys Romania	1996–1997
Analyst Programmer, Val Informatique SRL, Romania	1994–1996

PUBLICATIONS (Available at <http://www.cse.usf.edu/~anda>)

Refereed Journals

- [1] Workload Characterization in a High-Energy Data Grid and Impact on Resource Management, Adriana Iamnitchi, Shyamala Doraimani, Gabriele Garzoglio. To appear in Journal of Cluster Computing.
- [2] The Globus Replica Location Service: Design and Experience, Ann L. Chervenak, Robert Schuler, Matei Ripeanu, Muhammad Ali Amer, Ian Foster, Shishir Bharati, Adriana Iamnitchi, Carl Kesselman. To appear in IEEE Transactions on Parallel and Distributed Systems.
- [3] Beyond Music Sharing: An Evaluation of Peer-to-Peer Data Dissemination Techniques in Large Scientific Collaborations, Samer Al-Kiswany, Matei Ripeanu, Adriana Iamnitchi and Sudharshan Vazhkudai, Journal of Grid Computing, Volume 7, Issue 1, pages 91–114, March 2009.
- [4] Mapping the Gnutella Network: Properties of Large-Scale Peer-to-Peer Systems and Implications for System Design, Matei Ripeanu, Ian Foster, Adriana Iamnitchi. IEEE Internet Computing Special Issue on Peer-to-Peer Networking, vol. 6(1), pages 50–57, February 2002.
- [5] Performance Predictions for a Numerical Relativity Package in Grid Environments, Matei Ripeanu, Adriana Iamnitchi, Ian Foster. International Journal of High Performance Computing Applications, vol. 15(4), pages 375–387, Winter 2001.

Refereed Conferences

- [6] Individual and Social Behavior in Tagging Systems, Elizeu Santos-Neto, David Condon, Nazareno Andrade, Adriana Iamnitchi, Matei Ripeanu. The 20th ACM Conference on Hypertext and Hypermedia (HyperText), Torino, Italy, June 2009
- [7] P2P Systems Meet Mobile Computing: A Community-Oriented Software Infrastructure for Mobile Social Applications, Cristian Borcea and Adriana Iamnitchi. SelfMan workshop, Isola di San Servolo (Venice), Italy, October 2008.
- [8] File Grouping for Scientific Data Management: Lessons from Experimenting with Real Traces, Shyamala Doraimani and Adriana Iamnitchi. The 17th ACM/IEEE Symposium on High Performance Distributed Computing (HPDC), Boston, MA, June 2008.
- [9] Amazon S3 for Science Grids: a Viable Solution? Mayur Palankar, Adriana Iamnitchi, Matei Ripeanu, Simson Garfinkel. Data-Aware Distributed Computing Workshop (DADC), Boston, MA, June 2008.
- [10] Data Transfers in the Grid: Workload Analysis of Globus GridFTP, Nicolas Kourtellis, Lydia Prieto, Adriana Iamnitchi, Gustavo Zarrate, Dan Fraser, Data-Aware Distributed Computing Workshop (DADC), Boston, MA, June 2008.
- [11] Content Reuse and Shared Interest in Tagging Communities, Elizeu Santos-Neto, Matei Ripeanu and Adriana Iamnitchi. AAAI 2008 Spring Symposia–Social Information Processing, Stanford, CA, March, 2008.
- [12] Tracking User Attention in Collaborative Tagging Communities, Elizeu Santos-Neto, Matei Ripeanu, and Adriana Iamnitchi. Workshop on Contextualized Attention Metadata (CAMA'07), Vancouver, Canada, June 2007.
- [13] Are P2P Data-Dissemination Techniques Viable in Today's Data Intensive Scientific Collaborations?, Samer Al Kiswany, Matei Ripeanu, Adriana Iamnitchi, and Sudarshan Vazhkudai, European Conference on Parallel Computing (EuroPar), Rennes, France, August 2007.
- [14] In Search of Simplicity: A Self-Organizing Group Communication Overlay, Matei Ripeanu, Adriana Iamnitchi, Ian Foster, Anne Rogers, IEEE International Conference on Self-Adaptive and Self-Organizing Systems, July 2007.
- [15] Toward a Doctrine of Containment: Grid Hosting with Adaptive Resource Control, Lavanya Ramakrishnan, Jeffrey S. Chase, Laura Grit, Adriana Iamnitchi, David Irwin, Aydan Yumerefendi. Supercomputing'06, November 2006, Tampa, FL, USA.
- [16] Filecules in High-Energy Physics: Characteristics and Impact on Resource Management, Adriana Iamnitchi, Shyamala Doraimani, Gabriele Garzoglio. HPDC'06, June 2006, Paris, France.
- [17] Model-Driven Placement of Compute Tasks and Data in a Networked Utility, Piyush Shivam, Adriana Iamnitchi, Aydan Yumerefendi, Jeff Chase. IEEE International Conference on Autonomic Computing (ICAC), July 2005 (short paper).
- [18] Interest-Aware Information Dissemination in Small-World Communities, Adriana Iamnitchi and Ian Foster. HPDC'05, July 2005, Raleigh, NC, USA.
- [19] Small-World File-Sharing Communities, Adriana Iamnitchi, Matei Ripeanu, Ian Foster. INFOCOM'04, March 2004, Hong Kong.
- [20] On Death, Taxes, and the Convergence of Peer-to-Peer and Grid Computing, Ian Foster, Adriana Iamnitchi. 2nd International Workshop on Peer-to-Peer Systems (IPTPS'03), February 2003, Berkeley, CA, USA.

- [21] Giggle: A Framework for Constructing Scalable Replica Location Services, Ann Chervenak, Ewa Deelman, Ian Foster, Leanne Guy, Wolfgang Hoschek, Adriana Iamnitchi, Carl Kesselman, Peter Kunst, Matei Ripeanu, Robert Schwartzkopf, Heinz Stockinger, Kurt Stockinger, Brian Tierney. Supercomputing (SC2002), November 2002, Baltimore, MD, USA.
- [22] A Peer-to-Peer Approach to Resource Location in Grid Environments, Adriana Iamnitchi, Ian Foster, Daniel C. Nurmi. Proceedings of the 11th Symposium on High Performance Distributed Computing (HPDC 11), August 2002, Edinburgh, UK. (short paper).
- [23] Improving Data Availability through Dynamic Model-Driven Replication in Large Peer-to-Peer Communities, Kavitha Ranganathan, Adriana Iamnitchi, Ian Foster. Global and Peer-to-Peer Computing on Large Scale Distributed Systems Workshop (GP2PC), May 2002, Berlin, Germany.
- [24] Locating Data in (Small-World?) Peer-to-Peer Scientific Collaborations, Adriana Iamnitchi, Matei Ripeanu, Ian Foster. 1st International Workshop on Peer-to-Peer Systems (IPTPS'02), March 2002, Cambridge, MA, USA.
- [25] On Fully Decentralized Resource Discovery in Grid Environments, Adriana Iamnitchi, Ian Foster. International Workshop on Grid Computing, November 2001, Denver, CO, USA.
- [26] Cactus Application: Performance Predictions in Grid Environments, Matei Ripeanu, Adriana Iamnitchi, Ian Foster. EuroPar, August 2001, Manchester, UK.
- [27] A Problem-Specific Fault-Tolerance Mechanism for Asynchronous, Distributed Systems, Adriana Iamnitchi, Ian Foster. Proceedings of the 2000 International Conference on Parallel Processing (ICPP), August 2000, Toronto, Canada.

Book Chapters, Invited Papers, and Editorials

- [28] A Peer-to-Peer Approach to Resource Location in Grid Environments. Adriana Iamnitchi, Ian Foster. Book chapter in J. Weglarz, J. Nabrzyski, J. Schopf, and M. Stroinski eds. *Grid Resource Management*, Kluwer Publishing, 2003.
- [29] Editorial: Special Issue on Global and Peer-to-Peer Computing, Franck Cappello, Adriana Iamnitchi and Mitsuhiro Sato. *Journal of Grid Computing*, Volume 4, Number 3/September, 2006, 223-224, Springer Netherlands.
- [30] A dynamically Adaptive, Unstructured Multicast Overlay, Matei Ripeanu, Ian Foster, Adriana Iamnitchi, Anne Rogers. Invited paper to Dagstuhl Seminar Proceedings: Service Management and Self-Organization in IP-based Networks, 2005.
- [31] Editorial: Peer-to-Peer Computing and Interaction with Grids, Adriana Iamnitchi and Domenico Talia, *Future Generation Computer Systems*, Volume 21, Issue 3, 1 March 2005, Pages 331-332

Short Papers and Posters (Refereed)

- [32] MobiDew: Socially-Aware Data Management for Mobile Users. Nicolas Kourtellis, Joshua Finnis, Adriana Iamnitchi, Cristian Borcea, HotMobile, Santa Cruz, CA, February 2009.
- [33] S4: A Simple Storage Service for Sciences, Matei Ripeanu, Adriana Iamnitchi, 16th IEEE International Symposium on High Performance Distributed Computing (HPDC) - Hot Topics Track, Monterey Bay, CA, June 2007.
- [34] Amazon S3 for Science Grids: a Viable Solution?, M. Palankar, A. Onibokun, A. Iamnitchi, M. Ripeanu, poster, 4th USENIX Symposium on Networked Systems Design & Implementation (NSDI'07), Boston, MA, April 2007.

FUNDING

Tango Panopticon (College of Engineering Interdisciplinary Scholarship Program, University of South Florida). Adriana Iamnitchi and Robert Lawrence (Department of Art & Art History). Project dates: 03/2009–05/2010. Amount: \$15,000 (+\$5,000 matching funds from the College of The Arts).

Collaborative Research–ANET: Mobius: A Multi-Tier Socially-Aware Network Infrastructure (National Science Foundation). Adriana Iamnitchi (PI), Jay Ligatti (co-PI), Cristian Borcea (PI at NJ Inst of Tech), and Quentin Jones (co-PI at NJ Inst of Tech). NSF NeTS awards CNS-0831785 (USF) and CNS-0831753 (NJIT). Project dates: 9/1/08–8/31/11. Amount: \$429,999 (USF) + \$409,978 (NJ Inst of Tech).

Ice Deposits in Caves: a Novel Paleoclimate Archive (Interdisciplinary Research Grant, University of South Florida). Bogdan Onac (PI, USF Department of Geology), Jonathan Wynn (co-PI, USF Department of Geology), Adriana Iamnitchi (co-PI), Robert Lawrence (co-PI, USF Department of Art & Art History), Angelica Feurdean (co-PI, Oxford University), Norel Rimbu (co-PI, Alfred Wegener Institute). Project dates: 05/2008–04/2010. Amount: \$42,000.

CT-ISG: Collaborative Research: Trustworthy Enforcement of Domain-independent Run-time Policies (National Science Foundation). Jay Ligatti (PI), Adriana Iamnitchi (co-PI), and Lujo Bauer (PI at Carnegie Mellon University). NSF CyberTrust awards CNS-0716343 (USF) and CNS-0716216 (CMU). Project dates: 8/1/07–7/31/10. Amount: \$300,000 (USF) + \$50,000 (CMU).

Terrain Analysis for Human-Robot Interaction (Chi-Systems). Robin Murphy (PI), Adriana Iamnitchi (co-PI). Project dates: 01/2007–08/2007. Amount: \$107,000.

Usage-Aware Cache Management in Science Grids, (New Researcher Grant, University of South Florida). Adriana Iamnitchi (PI). Project dates: 05/2006–04/2007. Amount: \$9,700.

TEACHING AND COURSE DEVELOPMENT**Instructor**, University of South Florida

Basics of Parallel and Distributed Systems (<i>new</i> , graduate and undergraduate level)	Spring 2009
Operating Systems (graduate level)	Spring 2008, 2009
Internet-Scale Networked-Systems (<i>new</i> , graduate level)	Spring 2008
Operating Systems (undergraduate level)	Spring'06, Spring'07, Fall'07, Fall'08
Federated Distributed Systems (<i>new</i> , graduate level)	Fall 2005, 2006
Terrain Analysis for Human-Robot Interaction (<i>new</i> , seminar, graduate level)	Spring 2007
Distributed Systems (<i>new</i> , seminar, graduate level)	Spring 2007

Invited Lecturer, Universidad Carlos III de Madrid, Departamento de Informatica

Peer-to-Peer Systems, Grid and Cloud Computing: Real-life Instances of Distributed Systems (graduate level)	8-hour seminar March 2009
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Instructor, Duke University

Federated Distributed Systems (graduate level)	Fall 2004
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Teaching Assistant, University of Chicago

Algorithms; Practicum in Distributed Objects; Advanced Object Oriented Design & Development; Unix Systems Programming; Networks; Large-Scale Networked Systems (all at graduate level).	1998–2002
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Teaching Assistant, Politehnica University of Bucharest, Romania

Formal Languages (undergraduate level)	Spring 1996
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RESEARCH SUPERVISION

Current PhD students:

- Nicolas Kourtellis (since 2006)
- Joshua Finnis (since 2008)

Current MS students:

- Paul Anderson (since 2008)
- Zachary King (since 2008)

Graduated MS student (with thesis):

- Shyamala Doraimani.
MS Thesis: *Filecules: a New Granularity for Resource Management in Grids*, May 2007.

INVITED TALKS

Filecules and Small Worlds in Scientific Communities: Characteristics and Significance

- Universidad Carlos III de Madrid, Departamento de Informatica, July 2008.
- New Jersey Institute of Technology, Department of Computer Science, February 2007.

Filecules and Small Worlds in the DZero Workload: Characteristics and Relevance for Data Management, Fermi National Accelerator Laboratory, August 2007

What do scientists & peer-to-peer users have in common? Usage Patterns in Distributed System. DePaul University CTI Women in Science Event, Chicago, July 2007.

Amazon S3 for Science Grids: When Simple is Expensive, Distributed Systems Laboratory Workshop, Department of Computer Science, University of Chicago, May 2007.

Exploiting Small-World Usage Patterns in File-Sharing Communities

- University of Florida, October 2005.
- Microsoft Research (Silicon Valley), December 2004.
- University of North Carolina at Chapel-Hill, November 2004.

On the Convergence of Peer-to-Peer and Grid Computing, Winter 2004 Joint Techs/APAN (Asia Pacific Advanced Network Consortium), Honolulu, Hawaii, January 2004.

Capabilities of P2P that Grids Should Exploit: Looking at Deployed Systems, Peer-to-Peer and Grids: Synergies and Opportunities Workshop at Global Grid Forum (GGF9), Chicago, October 2003.

Locating Data in (Small-World?) Peer-to-Peer Scientific Collaborations

- Université de Paris-Sud, June 2002.
- Fermi National Accelerator Laboratory, August 2002.

Centralized vs. Decentralized Design for Internet Applications, The Workshop on Internet-scale Software Technologies (TWIST 2000), Irvine, CA, July 2000.

AWARDS/HONORS

- Teaching Award, Department of Computer Science, University of Chicago, 2001 and 2002.
- Exceptional Contribution Award, Department of Computer Science, University of Chicago, 2002.

- NATO fellowship to attend the Marktoberdorf Summer School, 1998.

PROFESSIONAL SERVICE

Guest editor for:

- Special Issue on Global and Peer-to-Peer Computing for the Journal of Grid Computing (Elsevier), September 2006.
- Special Issue on Peer-to-Peer Computing and Interaction with Grids, Future Generation Computer Systems, March 2005.

Program co-chair for:

- International Workshop on Peer-to-Peer Systems (IPTPS), 2008.
- Workshop on Global and Peer-to-Peer Computing (GP2PC), 2004, 2005 and 2006.

NSF panelist 2007, 2008.

Organizer of the Grid@Duke workshop – a forum of grid leaders and Duke scientists aimed at exploring the opportunities that grid technologies can bring to the Duke research community.

Technical Program Committee Member for:

- Euro-Par, Peer-to-Peer Topic vice-chair 2009
- International Conference on High Performance Computing and Communications (HPCC) 2009
- International Conference on Distributed Computing Systems (ICDCS) 2007, 2009
- International Heterogeneity in Computing Workshop (HCW) 2008, 2009
- International Workshop on Peer-to-Peer Systems (IPTPS) 2007, 2009
- Workshop on Large-Scale System and Application Performance (LSAP) 2009
- Decentralized Self-Management for Grids, P2P, and User Communities (Selfman) 2008
- Data-Aware Distributed Computing workshop (DADC) 2008
- International Workshop on Middleware for Grid Computing 2006
- Supercomputing 2006
- GridNets 2006
- International Conference on Grid Computing (Grid) 2006, 2007
- Modeling and Simulation of P2P networks 2006
- International Conference on Parallel Processing (ICPP) 2004, 2005, 2006
- International Conference On Principles Of Distributed Systems (OPODIS) 2004
- Workshop on Global and Peer-to-Peer Computing (GP2PC) 2003, 2008.

Referee for IEEE Transactions in Parallel and Distributed Systems, IEEE/ACM Transactions on Networking, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Systems, Man, and Cybernetics, ACM Computing Surveys, Computer Networks, Journal of Parallel Computing (Elsevier), International Parallel and Distributed Processing Symposium (IPDPS).

Reviewer for grant funding programs such as Kentucky Science and Engineering Foundation, and research funding programs of Sweden, Israel, and The Netherlands.