

Leonardo Salayandía

Curriculum Vitae

Contact

Department of Computer Science
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Research Interests

Cyberinfrastructure, Semantic Web, Knowledge Representation, Knowledge Bases, Scientific Workflows, Process Specification, Ontologies, Provenance, Software Engineering.

Education

Ph.D. Candidate, Computer Science, in progress (expected Spring 2012)

University of Texas at El Paso, El Paso, TX

Advisors: Prof. Ann Q. Gates and Prof. Paulo Pinheiro da Silva

GPA: 3.87/4.0

M.S., Computer Science, December 2002

University of Texas at El Paso, El Paso, TX

Thesis: *A Study of the Validity and Utility of PAPI Performance Counter Data*

Adviser: Prof. Patricia J. Teller

GPA: 3.63/4.0

B.S., Computer Science, May 1998

University of Texas at El Paso, El Paso, TX

GPA: 3.45/4.0

Employment

6/2003–present

Research Specialist and Lecturer
Computer Science Department, University of Texas at El Paso
El Paso, TX

6/2002–5/2003

Graduate Research Assistant
Computer Science Department, University of Texas at El Paso
El Paso, TX

8/2001–5/2002

Teaching Assistant
Computer Science Department, University of Texas at El Paso
El Paso, TX

5/1998–8/2001

Production General Manager
Talleres Diversificados de Juárez
Ciudad Juárez, Chihuahua, México

Teaching

Spring 2011 Computer Architecture II: Advanced Computer Design and Implementation
Computer Science Department, University of Texas at El Paso
El Paso, TX

Publications

Journal Papers and Book Chapters

- Ann Q. Gates, Paulo Pinheiro da Silva, Leonardo Salayandia, Omar Ochoa, Aida Gandara, and Nicholas Del Rio. Use of abstraction to support geoscientists' understanding and production of scientific artifacts. In G.Randy Keller and Chaitan Baru, editors, *Geoinformatics: Cyberinfrastructure for the Solid Earth Sciences*. Cambridge University Press, to appear.
- Paulo Pinheiro da Silva, Leonardo Salayandia, and Ann Q. Gates. Ci-miner: Semantically enhancing scientific processes. In *Earth Science Informatics*, volume 2(4), pages 249–269. Springer Berlin/Heidelberg, 2009.
- Leonardo Salayandia and Ann Q. Gates. Towards a workflow management system for service oriented modules. In Wei-Tek Tsai, editor, *International Journal of Simulation and Process Modelling (IJSPM)*, volume 3 issue 1/2, pages 18–25. Inderscience, Olney, Buckinghamshire, UK, 2007.

Conference and Workshop Papers

- Aida Gandara, Leonardo Salayandia, and Aline Jaimes. Ci-server framework: Cyberinfrastructure over the semantic web. In *Proceedings of the Environmental Information Management (EIM) 2011 Conference*, Santa Barbara, CA, September 2011.
- Leonardo Salayandia and Paulo Pinheiro da Silva. On the use of semantic abstract workflows rooted on provenance concepts. In *Proceedings of The 3rd International Provenance and Annotation Workshop (IPAW 2010)*, Troy, NY, June 2010.
- Eric Stephan, Todd Halter, Terence Critchlow, Paulo Pinheiro da Silva, and Leonardo Salayandia. Using domain requirements to achieve science-oriented provenance. In *Proceedings of The 3rd International Provenance and Annotation Workshop (IPAW 2010)*, Troy, NY, June 2010.
- Paulo Pinheiro da Silva, Leonardo Salayandia, Nicholas Del Rio, and Ann Q. Gates. On the use of abstract workflows to capture scientific process provenance. In *Proceedings of the 2nd Workshop on the Theory and Practice of Provenance (TaPP'10)*, San Jose, CA, February 2010.
- Leonardo Salayandia, Steven Roach, and Ann Q. Gates. Program synthesis from workflow-driven ontologies. In *Proceedings of the Annual Meeting of the North American Fuzzy Information Processing Society, 2008 (NAFIPS 2008)*, pages 1–6, New York, NY, May 2008. IEEE Computer Society.
- Nicholas Del Rio, Paulo Pinheiro da Silva, Ann Q. Gates, and Leonardo Salayandia. Semantic annotation of maps through knowledge provenance. In *Proceedings of the Second International Conference on Geospatial Semantics (GeoS)*, volume 4853/2007 of LNCS, pages 20–35, Berlin/Heidelberg, November 2007. Springer Berlin/Heidelberg.
- Ann Q. Gates, G. Randy Keller, Leonardo Salayandia, Paulo Pinheiro da Silva, and Flor Salcedo. The gravity data ontology: Laying the foundation for workflow-driven ontologies. In *Proceedings of the Second International Conference on Geospatial Semantics (GeoS)*, volume 4853/2007 of LNCS, pages 278–287, Berlin/Heidelberg, November 2007. Springer Berlin/Heidelberg.
- Leonardo Salayandia, Paulo Pinheiro da Silva, Ann Q. Gates, and Flor Salcedo. Workflow-driven ontologies: An earth sciences case study. In *Proceedings of the 2nd IEEE International Conference on e-Science and Grid Computing*, Amsterdam, Netherlands, December 2006.

Leonardo Salayandia, Paulo Pinheiro da Silva, Ann Q. Gates, and Alvaro Rebellon. A model-based workflow approach for scientific applications. In *Proceedings of the 6th OOPSLA Workshop on Domain-Specific Modeling*, Portland, OR, October 2006.

Leonardo Salayandia, Yuan Huang, Ann Q. Gates, and Steven Roach. Geonet: Use of grid technologies in geoinformatics for the transition zone between the colorado plateau and the basin & range province. In A. K. Sinha, editor, *Geoinformatics: Data to Knowledge*. Geological Society of America, 2006.

Raed Aldouri, G. Randy Keller, Ann Q. Gates, Jorge Rasillo, Leonardo Salayandia, Vladik Kreinovich, John Seeley, Priscilla Taylor, and Steven Holloway. Geon: Geophysical data add the 3rd dimension in geospatial studies. In *Proceedings of the ESRI International User Conference 2004*, page 1898, San Diego, CA, August 2004.

Shirley Moore, Daniel Terpstra, Kevin London, Philip Mucci, Patricia Teller, Leonardo Salayandia, Alonso Bayona, and Manuel Nieto. Papi deployment, evaluation, and extensions. In *DOD UGC '03: Proceedings of the 2003 DoD User Group Conference*, page 349, Washington, DC, USA, 2003. IEEE Computer Society.

Technical Reports

Paulo Pinheiro da Silva, Leonardo Salayandia, and Ann Q. Gates. Wdo-it! a tool for building scientific workflows from ontologies. Technical Report UTEP-CS-07-50, University of Texas at El Paso, El Paso, TX, September 2007.

Leonardo Salayandia and Aaron Velasco. Building a seismology workflow-driven ontology: A case study. Technical Report UTEP-CS-07-06, University of Texas at El Paso, El Paso, TX, January 2007.

Posters and Talks

Aline Jaimes, Leonardo Salayandia, Christine Laney, and Craig E. Tweedie. Cyberinfrastructure for eddy covariance systems: From site selection to data analysis. In *American Geophysical Union, Fall Meeting 2011, abstract*, San Francisco, CA, December 2011.

Christine Laney, Aline Jaimes, Ryan Cody, Ari Kassan, Gesuri Ramirez, Leonardo Salayandia, and Craig E. Tweedie. Cyberinfrastructure to support collaborative research within small ecology labs. In *American Geophysical Union, Fall Meeting 2011, abstract*, San Francisco, CA, December 2011.

Leonardo Salayandia, Paulo Pinheiro da Silva, and Ann Q. Gates. Widening the adoption of workflows to include human and human-machine scientific processes. In *American Geophysical Union, Fall Meeting 2010, abstract IN43C-04*, San Francisco, CA, December 2010.

Aline Jaimes, Leonardo Salayandia, Irbis Gallegos, Ann Q. Gates, and Craig Tweedie. New cyberinfrastructure for studying land-atmosphere interactions using eddy covariance techniques. In *American Geophysical Union, Fall Meeting 2010, abstract IN23A-1357*, San Francisco, CA, December 2010.

Leonardo Salayandia and Aida Gandara. Enhancing workflow-driven ontologies: A meta model to create conceptual workflows at multiple abstraction levels. In *Proceedings of the Annual Meeting of the Computing Alliance of Hispanic Serving Institutions, 2009 (CAHSI 2009)*, San Francisco, CA, January 2009.

Leonardo Salayandia, Paulo Pinheiro da Silva, and Ann Q. Gates. Workflows + ontologies: Harnessing the grid to advance the geosciences. Talk at the GEON Cyberinfrastructure Workshop, Moscow, Russia, June 2007.

Leonardo Salayandia. Workflow-driven ontologies for the geosciences. Talk at the GEON Cyberinfrastructure Workshop, Beijing, China, July 2006.

Leonardo Salayandia. Evaluating bdi agents to integrate resources over cyberinfrastructure. In Shailaja R. Brady, A. Krishna Sinha, and Linda C. Gundersen, editors, *Geoinformatics 2006 Abstracts, USGS Scientific Investigations Report 2006-5201*, page 13, Reston, VA, May 2006.

Julio C. Olaya, Leonardo Salayandia, Ann Q. Gates, and G. Randy Keller. Talwani—a profile modeling tool adaptable to cyberinfrastructure. In Shailaja R. Brady, A. Krishna Sinha, and Linda C. Gundersen, editors, *Geoinformatics 2006 Abstracts, USGS Scientific Investigations Report 2006-5201*, page 49, Reston, VA, May 2006.

Other Papers

Leonardo Salayandia. A study of the validity and utility of papi performance counter data. Master's thesis, University of Texas at El Paso, December 2002.

Professional Service

Conference and book chapter reviewing

- 11th Intl Conf on Autonomous Agents and Multiagent Systems (AAMAS 2012)
- Data provenance and data management for eScience (2011)
- 3rd Intl Provenance and Annotation Workshop (IPAW 2010)
- 6th Annual European Semantic Web Conf (ESWC 2009)
- 20th Intl Conf on Software Engineering and Knowledge Engineering (SEKE 2008)
- 5th Intl Symp on Parallel and Distributed Processing and Applications (ISPA 2007)
- 3rd Annual European Semantic Web Conf (ESWC 2006)
- 36th Frontiers in Education Conf (FIE 2006)

Activities and Honors

President of the Association for Computing Machinery (ACM) Local Student Chapter
Fall 1998

Emergent Leaders Program
Spring 1998

UPE Computer Science Honor Society
Fall 1997

Golden Key National Honor Society
Spring 1997

Texas College of Mines (TCM)
Spring 1997

Technical Skills

Proficient

C#, Java, HTML/RDF/OWL/XML, SQL, Linux, Windows

Familiar

AspectJ, Awk, C, C-shell, CSS, LaTeX, Matlab, Perl, Prolog, PHP, Python, Visual Basic, AIX, MacOS, SunOS, Drupal, Plone/Zope/DTML/TAL

Miscellaneous

Languages: English, Spanish (native)