NICHOLAS DEL RIO

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EDUCATION

University of Texas at El Paso
Ph.D. in Computer Science   **2013**
Dissertation: "A Declarative Domain-Independent Approach for Querying and Generating Visualizations"

University of Texas at El Paso
M.S. in Computer Science   **2007**
Thesis: Provenance Support for Quality Assessment of Scienti�‾c Results: A User Study

University of Texas at El Paso
B.S. in Computer Science   **2004**
Areas of Concentration: Software Engineering

AWARDS

Department of Homeland Security Scholarship   **2008 – 2011**
University of Texas at El Paso Cotton Memorial Scholarship   **2006 – 2007**
Outstanding Computer Science Graduate Student   **2013**

TEACHING EXPERIENCE

University of Texas at El Paso
Lecture/Teaching Assistant to Dr. Paulo Pinheiro da Silva in "Web Science"   **Spring Semester 2011**
Developed syllabus, lectured, and administered grades for Semantic Web portion of class

University of Texas at El Paso
Lecture/Teaching Assistant to Dr. Paulo Pinheiro da Silva in "Programming Languages"   **Spring Semester 2011**
Lectured and administered grades for functional programming portion of class

WORK EXPERIENCE

University of Texas at El Paso
Postdoctoral Researcher   **June 2013 – Current**
Investigate solutions for integrating semantic geospatial data into a service-oriented species-modeling infrastructure.

National Aeronautics and Space Administration (NASA) Goddard Space Flight Center Intern
Intern Researcher   **June 2011 – August 2011**
Investigate solutions for integrating my dissertation visualization research into Giovanni, an online platform for statistical analysis of environmental data.

University of Texas at El Paso
Cyber-ShARE Researcher   **2010 – 2013**
Develop Semantic enabled visualization technologies needed to support dissertation research.

University of Texas at El Paso
Department of Homeland Security Researcher   **2007 – 2009**
Develop visualization methods for disseminating logical proofs generated by threat-detection systems.

University of Texas at El Paso
Pan American Center for Earth and Environmental Sciences (PACES) Researcher   **2004-2006**
Investigate and develop solutions for porting geologic-based mapping applications to the Web

Nicholas Del Rio – Resume

RESEARCH INTERESTS AND ASSOCIATED SKILLS

- Semantic Web
    - Web Ontology Language (OWL)
    - SPARQL Protocol and RDF Query Language (SPARQL)
    - Pellet and other DL Reasoning Systems
    - Protegé and OWL-API
    - Jena API
- Linked Data
    - Simple Knowledge Organization System (SKOS)
    - Vocabulary of Interlinked Datasets (VOID)
    - Data Catalog (DCAT)
- Service Orchestration
    - Semantic Automated Discovery and Integration (SADI)
    - OWL-Service (OWL-S)
- Provenance
    - PROV Ontology (PROV-O)
    - Proof Markup Language (PML)
- Visualization
    - Data Driven Documents (D3)
    - Visualization Toolkit (VTK)
    - Generic Mapping Tools (GMT)
    - NCAR Command Language (NCL)
    - ParaView

SELECTED PUBLICATIONS

2013

- Nicholas Del Rio et al. **Elseweb meets sadi: Supporting data-to-model integration for biodiversity forecasting**. *AAAI Fall Symposium on Discovery Informatics: Discovery Informatics: AI Takes a Science-Centered View on Big Data*, Arlington, Virginia, November 15-17

2012

- Nicholas Del Rio and Paulo Pinheiro da Silva. **Capturing and Using Knowledge about the Use of Visualization Toolkits**. *AAAI Fall Symposium on Discovery Informatics: The Role of AI Research in Innovating Scientific Processes*, Arlington, Virginia, November 2-4

- Nicholas Del Rio, Deana Pennington, Karl Benedict and Paulo Pinheiro da Silva. **Streamlining the Integration of Data Access and Analysis Services**. *American Geophysical Fall Meeting (AGU 2012)*, San Francisco, Calif., Dec. 3-7

2011

- Nicholas Del Rio and Paulo Pinheiro da Silva. **Visualization Queries**. *American Geophysical Fall Meeting (AGU 2011)*, San Francisco, Calif., Dec. 5-9

- Nicholas Del Rio, Gregory Leptoukh, Christopher Lynnes and Paulo Pinheiro da Silva. **Towards Infusing Giovanni with a Semantic and Provenance Aware Visualization System**. *American Geophysical Fall Meeting (AGU 2011)*, San Francisco. Calif., Dec. 5-9

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 The 2nd Workshop on the Theory and Pratice of Provenance (TaPP'10) at USENIX*, San Jose, CA, February 2010.

- Nicholas Del Rio, Paulo Pinheiro da Silva and Hugo Porras. **Browsing Proof Markup Language Provenance: Enhancing the Experience**. *In Proceedings of the 3rd International Provenance and Annnotation Workshop (IPAW 2010)*, LNCS, Springer, Troy, NY, June 15-16, pages 274-276, 2010.

- Nicholas Del Rio and Paulo Pinheiro da Silva. **Leveraging an ESIP Data-Type Ontology to Support Visualization**. *American Geophysical Fall Meeting (AGU 2011)*, San Francisco, Calif., Dec.13-17

2009

- Nicholas Del Rio, Paulo Pinheiro da Silva and Raed Aldouri. **Identifying and Explaining Map Quality Through Provenance: A User Study.** *In Proceedings of the Workshop of Explanation-Aware Computing (EXACT 2009)*, LNCS, Springer, Pasadena, Calif., July 11-13, 2009.

- James Michaelis, Li Ding, Zhenning Shangguan, Stephan Zednik, Rui Huang, Paulo Pinheiro da Silva, Nicholas Del Rio and Deborah L. McGuinness. **Towards Usable and Interoperable Workflow Provenance: Empirical Case Studies using PML**. *In Proceedings of the Workshop on the role of Semantic Web in Provenance Management (SWPM 2009)*, IEEE Internet Computing, Washington DC, USA, October 25, 2009.

2008

- Paulo Pinheiro da Silva, Nicholas Del Rio, Vladik Kreinovich, and Alejandro Castaneda. **TrustMap: Towards Trust Recommendations for Maps.** *In Proceedings of the Terra Cognita 2008 Workshop*, October 26, 2008, Karlsruhe, Germany.

- Paulo Pinheiro da Silva, Deborah L. McGuinness, Nicholas Del Rio, Li Ding. **Inference Web in Action: Lightweight Use of the Proof Markup Language.***International Semantic Web Conference (ISWC 2008).* 2008: 847-860

- Pinheiro da Silva, Geoff Sutcliffe, Cynthia Chang, Li Ding, Nick del Rio, Deborah L. McGuinness. **Presenting TSTP Proofs with Inference Web Tools.** *In Proceedings of the First International Workshop on Practical Aspects of Automated Reasoning (PAAR/ESHOL 2008)*. 2008.

2007

- Nicholas Del Rio and Paulo Pinheiro da Silva. **Identifying and Explaining Map Imperfections Through Knowledge Provenance Visualization**. *Technical report UTEP-CS-07-43a*, The University of Texas at El Paso, June 2007.

- 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)*, Mexico City, Mexico. Volume 4853 of LNCS, pages 20-35. Springer, 2007.

- Nicholas Del Rio and Paulo Pinheiro da Silva. **Probe-it! visualization support for provenance.** *In Proceedings of the Second International Symposium on Visual Computing (ISVC 2)*, Lake Tahoe, NV, USA. Volume 4842 of LNCS, pages 732-741. Springer, 2007.