Juan Sequeda

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Education

University of Texas at Austin **2008 - Present**
PhD Student in Computer Science

Advisor: Daniel P. Miranker

University of Texas at Austin **2006 - 2008**
Bachelor of Science in Computer Science

Universidad del Valle – Cali, Colombia **2003 - 2006**
90 credits towards System and Computer Engineering

Fellowships

NSF Graduate Research Fellowship	2010 - 2013
University of Texas Graduate School Diversity Fellowship	2008 - 2009
National Instruments Endowed Scholarship for Excellence	2007 - 2008
Intel Foundation Undergraduate Research Fellowship	2007

Academic Experience

Graduate Research Assistant - University of Texas at Austin **September 2008 - Present**

- Ultrawrap: created a novel approach that exposes legacy data in relational databases as a RDF without the need of replicating the data, using views. Our experiments provide evidence that existing commercial SQL query engines already subsume important algorithms needed to support effective SPARQL execution on relationally stored data. Execution speed of SPARQL queries is comparable to semantically equivalent SQL queries. These results have not been achieved before.

Invited Researcher – Pontificia Universidad Catolica de Chile **March 2011, June 2011**

- Developed and formalized a direct mapping between relational databases to RDF and OWL and proved fundamental and desirable properties. Advised by Marcelo Arenas.

Invited Researcher – Universidad Politecnica de Madrid **May 2009 – August 2009**

- Developed a method to automatically extract ontologies from sensor network data. Presented a proposal of representing sensor stream data following linked data principles. Advised by Asuncion Gomez-Perez and Oscar Corcho.

Undergraduate Research Assistant - University of Texas at Austin **October 2006 – May 2008**

- Developed a mapping from relational schemas to ontologies and presented a completeness theorem. This work was the starting point for my PhD research.
- Morphster: this project facilitates systematic biologist to create ontologies through the novel concept of Image Driven Ontology editing. My participation in this project has been in the creation of a web based image ontology browser tool and translations between OBO and OWL ontological languages.

Work Experience

Lead Technical Architect - Smartbridge **January 2007 – November 2009**

- Was the first employee. Designed, developed and coordinated a web-based project management system for temporal staff agencies which enables them to have online access to all their projects, staff planning, salaries, statistics and communication with employees. Interacted and communicated in a cross-cultural environment between with the management team in Switzerland and the development team in Colombia.

Publications

Manuscript In submission

- Juan F. Sequeda and Daniel P. Miranker. Ultrawrap: SPARQL Execution on Relational Data

Journal

- Marcelo Arenas, Claudio Gutierrez, Daniel P. Miranker, Jorge Perez and Juan F. Sequeda. (2012) Querying Semantic Data on the Web. SIGMOD Record 41(4): 6-17
- Juan F. Sequeda, Syed Hamid Tirmizi, Oscar Corcho and Daniel P. Miranker: (2011) Survey of directly mapping SQL databases to the Semantic Web. Knowledge Eng. Review 26(4): 445-486
- Syed Hamid Tirmizi, Stuart Aitken, Dilvan A. Moreira, Chris Mungall, Juan F. Sequeda, Nigam H. Shah, and Daniel P. Miranker. (2011) Mapping between OBO and OWL ontology languages. Journal of Biomedical Semantics, 2(Suppl 1): S3

Referred Conference

- Juan F. Sequeda, Marcelo Arenas and Daniel P. Miranker. (2012) On Directly Mapping Relational Databases to RDF and OWL. In Proceedings of 21th World Wide Web Conference (WWW2012). Lyon, France. Acceptance Rate 18%
- Juan F. Sequeda, Marcelo Arenas and Daniel P. Miranker (2012) Ontology-Based Data Access using Views. In Proceedings of 6th International Conference Web Reasoning and Rule Systems (RR 2012) Vienna, Austria
- Syed H. Tirmizi, Juan F. Sequeda and Daniel P. Miranker (2008) Translating SQL Applications to the Semantic Web. In Proceedings of the 19th International Database and Expert Systems Application Conference (DEXA2008). Turin, Italy

Proceedings Editor

- Juan F. Sequeda, Andreas Harth and Olaf Hartig (2012). Proceedings of the Third International Workshop on Consuming Linked Data (COLD2012), in conjunction with the 11th International Semantic Web Conference (ISWC2012). CEUR Workshop Proceedings. Vol-905.
- Olaf Hartig, Andreas Harth and Juan F. Sequeda (2011). Proceedings of the Second International Workshop on Consuming Linked Data (COLD2011), in conjunction with the 10th International Semantic Web Conference (ISWC2011). CEUR Workshop Proceedings. Vol-782.
- Olaf Hartig, Andreas Harth and Juan F. Sequeda (2010). Proceedings of the First International Workshop on Consuming Linked Data (COLD2010), in conjunction with the 9th International Semantic Web Conference (ISWC2010). CEUR Workshop Proceedings. Vol-65.

Workshops

- Juan F. Sequeda, Freddy Priyatna and Boris Villazon-Terrazas. (2012) Relational Database to RDF Mapping Patterns. 3rd Workshop on Ontology Patterns (WOP2012) at ISWC 2012
- Aibo Tian, Juan F. Sequeda, Daniel P. Miranker. (2012) On Ambiguity and Query-Specific Ontology Mapping. Ontology Matching Workshop (OM2012) at ISWC 2012.
- Daniel P. Miranker, Rodolfo K. Depena, Hyunjoon Jung, Juan F. Sequeda and Carlos Reyna. (2012) Diamond: A SPARQL Query Engine, for Linked Data Based on the Rete Match. Artificial Intelligence meets the Web of Data Workshop, co-located at ECAI 2012
- Syed H. Tirmizi, Stuart Aitken, Dilvan A. Moreira, Chris Mungall, Juan F. Sequeda, Nigam H. Shah, Daniel P. Miranker: OBO & OWL: Roundtrip Ontology Transformations. In Proceedings of SWAT4LS 2009
- Juan F. Sequeda, Oscar Corcho and Asuncion Gomez-Perez. (2009) Generating Data Wrapping Ontologies from Sensor Networks: a case study. In Proceedings of 2nd Semantic Sensor Network Workshop at ISWC2009
- Juan F. Sequeda and Oscar Corcho (2009) Linked Stream Data: a position paper. In Proceedings of 2nd Semantic Sensor Network Workshop at ISWC2009
- Juan F. Sequeda, Syed H. Miranker and Daniel P. Miranker(2007) SQL Databases are a Moving Target. Position Paper for W3C Workshop on RDF Access to Relational Databases.

Poster and Demos

- Aibo Tian, Juan F. Sequeda, Daniel P. Miranker (2012) Queries, the Missing Link in Automatic Data Integration. ISWC 2012.
- Daniel P. Miranker, Rodolfo K. Depena, Hyunjoon Jung, Juan F. Sequeda and Carlos Reyna. (2012) Diamond Debugger Demo: Rete-Based Processing of Linked Data. 6th International Rule Challenge at RuleML 2012
- Juan F. Sequeda, Marcelo Arenas and Daniel P. Miranker. (2011) A Completely Automatic Direct Mapping of Relational Databases to RDF and OWL. In Proceedings of Posters and Demos at the 10th International Semantic Web Conference (ISWC2011)
- Juan F. Sequeda and Daniel P. Miranker. (2011) SPARQL Execution as Fast as SQL Execution on Relational Data. In Proceedings of Posters and Demos at the 10th International Semantic Web Conference (ISWC2011)
- Juan F. Sequeda, Rudy Depena and Daniel P. Miranker. (2009) Ultrawrap: Using SQL Views for RDB2RDF. In Proceedings of Posters and Demos at the 8th International Semantic Web Conference (ISWC2009)
- Juan F. Sequeda, Syed Hamid Tirmizi, Daniel P. Miranker. (2008) A Bootstrapping Architecture for Integration of Relational Databases to the Semantic Web. In Proceedings of Posters and Demos at the 7th International Semantic Web Conference (ISWC2008)

Tutorial

- Juan F. Sequeda, Barry Norton, Daniel P. Miranker. (2013) Relational Database to RDF (RDB2RDF) Tutorial: Theory and Practice. Tutorial at the 10th Extended Semantic Web Conference (ESWC2013).
- Olaf Hartig, Juan Sequeda, Jamie Taylor and Patrick Sinclair. (2010) How to consume linked data on the web: tutorial description. At WWW 2010: 1347-1348
- Juan F Sequeda, Olaf Hartig, Patrick Sinclair and Jamie Taylor. (2009) How to consume linked data on the web. At ISWC 2009

Technical Reports

- Juan F. Sequeda, Daniel P. Miranker. (2012) Ultrawrap: SPARQL Execution on Relational Data. University of Texas at Austin. Department of Computer Science. Technical Report# TR-12-10.
- Marcelo Arenas, Alexandre Bertails, Eric Prud'hommeaux, Juan F. Sequeda. (2012) A Direct Mapping of Relational Data to RDF. W3C Proposed Recommendation 14 August 2012
- Juan F. Sequeda, Marcelo Arenas, Daniel P. Miranker. (2011) On Directly Mapping Relational Databases to RDF and OWL (extended version). Technical Report arXiv:1202.3667v3.
- Juan Sequeda, Olaf Hartig:. (2011) Towards a Query Language for the Web of Data (A Vision Paper). arXiv:1110.3017
- Juan F. Sequeda, J.F. Alexander Garcia-Castro, Oscar Corcho, Syed H. Tirmizi and Daniel P. Miranker (2009) Overcoming databases heterogeneity to facilitate social networks: the Colombian displaced population as a case study. In Proceedings of 18th World Wide Web Conference (WWW2009). WWW in Iberoamerica Track. Madrid, Spain
- S. Sahoo, W. Halb, S. Hellmann, K. Idehen, T. Thibodeau, S. Auer, J.F. Sequeda and A. Ezzat (2009). A Survey of Current Approached for Mapping of Relational Databases to RDF. W3C Incubator Report.
- Juan F. Sequeda. (2008) On Direct Mapping for Integrating SQL Databases to the Semantic Web. Bachelors Thesis. Technical Report 08-09. The University of Texas at Austin, Department of Computer Sciences

Travel Awards

- 2012 International Conference on Web Reasoning and Rule Systems - Vienna, Austria
- 2011 International Semantic Web Conference - Bonn, Germany 2009
- International Semantic Web Conference - Virginia, USA 2009
- World Wide Web Conference - Madrid, Spain 2008
- International Semantic Web Conference - Karslruhe, Germany
- 2008 Pan-American Advanced Studies Institute: Cyberinfrastructure for International Collaborative Biodiversity and Ecological Informatics - San Jose, Costa Rica

Professional Services

Program Committee

- 2009: LDOW
- 2010: ESWC, LDOW, I-SEMANTICS
- 2011: ESWC, LDOW, CAEPIA, LHD, I-SEMANTICS, Sub-reviewer for ISWC and IJCAI
- 2012: ISWC, ESWC (Linked Data Track Co-chair), ICWE, LDOW, OEDW, I-SEMANTICS
- 2013: AAAI, K-CAP, ESWC

Organizing Committee

- 1st Linked Data-a-thon co-located at ISWC 2009
- 1st International Workshop on Consuming Linked Data (COLD 2010)

- Linked Data Triplification Challenge 2010
- 2nd International Workshop on Consuming Linked Data (COLD 2011)
- Linked Data Triplification Challenge 2011
- 2nd Linked Data-a-thon co-located at ISWC 2011
- International Semantic Web Conference 2011 – Publicity Chair
- 3rd International Workshop on Consuming Linked Data (COLD 2012)

Industry

- Program Advisory Committee for 2011, 2012, 2013 Semantic Technology Conference
- Presentations given at 2010, 2011, 2012 Semantic Technology Conference
- Invited Expert at W3C RDB2RDF Working group
- Blogger on SemanticWeb.com

Community

- Founder and Executive Director – Semantic Web Austin
- Founder of Empowering Leadership Alliance at UT Austin. Minority CS Student Organization

Press

- The Enterprise Problem Linked Data May Solve - IT Business Edge - April 20, 2010
- 10 Ideas For Web of Data Apps - Read Write Web - April 15, 2010
- Interview with Juan Sequeda: "I believe Linked Data will enable new killer apps that are only possible thanks to Linked Data. " - Semantic Web Company - April 14, 2010
- An Open Letter to the City of Austin - Austin Startup - January 27, 2010
- Smart tech reconnects Colombians - BBC News - September 9, 2009
- Missing Colombians database - BBC Digital Planet Podcast - September 2009

Other

- Language: English (native), Spanish (native), German (speak, read, write intermediate), Swiss German (speak intermediate)
- Dual citizenship: USA and Colombia