Martín Rezk

Ph.D.

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Professional Experience

2015–   **Data Scientist**, *Rakuten Inc., RIT.*, Tokyo, Japan.

Obligations: Leading an international project focused on semantic information extraction from (Japanese and French) text using machine learning. In addition, I am working on market segmentation, and stock market analysis.

2013-2015   **Postdoctoral Fellow / Team Leader (-*ontop*- Project)**, *Free University Bozen-Bolzano*, Italy, Project Title: Optique: Scalable End-User Access to Big Data.

The -*ontop*- project was focused on: *(i)* automatically answering conceptual queries over large relational databases; *(ii)* checking consistency of the data w.r.t. conceptual constraints; and *(iii)* virtual data integration.
See `http://ontop.inf.unibz.it`.
Obligations: Leading the -*ontop*- project, use case modeling (OWL/R2RML mapping language), providing logical foundations to different aspects of OBDA, contributing to the implementation and testing of -*ontop*-.
Software Development: Java.
Team Members: 7

2012–2013   **Postdoctoral Fellow**, *Korea Advanced Institute of Science and Technology*, South Korea, Project Title: LOD2: Creating Knowledge out of Interlinked Data..

See `http://semanticweb.kaist.ac.kr/nlp2rdf/`.
Obligations: Integrating NLP tools and exposing the outcome as an RDF graph. Modeling Korean Linguistic annotations.
Software Development: PHP, Java, Android SDK.

2011–2012   **Research Assistant**, *Free University Bozen-Bolzano*, Italy, Project Title: OntoRule: Ontologies meet Business Rules.

See `http://ontorule-project.eu/`.
Obligations: Providing formal semantics to the combination of Production Systems and Ontologies.

Education

2008–2012   **Ph.D**, *Free University of Bozen-Bolzano*, Italy, *Dissertation Title: Reasoning about Actions in Transaction Logic*.

Advisors: Prof. Michael Kifer (Stony Brook University, USA) and Prof. Werner Nutt (Free University of Bozen-Bolzano, KRDB Centre , Italy).

2004–2007   **Master in Computer Science**, *Universidad Nacional de Córdoba*, Argentina, *Dissertation Title: Formal Models of Kinship Relations for Natural Language Generation via Inference*.

Advisor: Dr. Laura Alonso Alemany (Universidad Nacional de Córdoba, Argentina)

2000–2004   **Bachelor in Computer Science**, *Universidad Nacional de Córdoba*, Argentina.

Software Development

Recent Experience

2015– **Machine Learning**, *Word2Vec, CRF, K-means, linear regression. Used for stock market analysis and information extraction*, Rakuten, Japan.

2015– **Python**, *Used for data analysis and machine learning*, Rakuten, Japan.

2013-2015 **Java**, *–ontop– OBDA System*, Free University of Bolzano, Italy.

General Skills

Primary programming languages, *Python/Java*.

Languages used in the past, *XSB, Flora 2, C, C++, Perl, PHP, Delphi*.

Databases, *SQL (MySQL, PostgreSQL, ORACLE, DB2, H2), NoSQL (MongoDB)*.

Network Administration, *GNU/Linux: DHCP server, mySQL server, Postfix server, SpamAssassin, Apache, Firewalls*.

Semantic Web, *SPARQL, SQL, OWL, RDF, SWRL, XML, OWL-API, Jena, Sesame, Ontop*.

Version Control, *Github, SVN*.

Research Visits

September/16 **Collaboration**, *PriceMinister*, Paris, France.
Semantic Information Extraction from text and images.

June/14 **Collaboration**, *IBM T.J. Watson Research Center*, New York, USA.
Topic: SPARQL-OWL Entailment Regime. Invited by Dr. Mariano Rodriguez-Muro.

Nov/13 **Collaboration**, *Bikrbeck University of London*, London, UK.
Topic: SPARQL-OWL Entailment Regime. Invited by Dr. Roman Kontchakov.

Oct/09– **Internship**, *Stony Brook University*, New York, USA.
Mar/11 Topic: Development of a full-fledged theory: Transaction Logic with Partially Defined Actions for programming and reasoning about actions over states. Invited by Prof. Michael Kifer.

Selected Publications And Presentations

Journal Papers

○ D. Calvanese, B. Cogrel, S. Komla, R. Kontchakov, D. Lanti, M. Rezk, M. Rodriguez-Muro, G. Xiao, *Ontop: Answering SPARQL queries over relational databases.*. Semantic Web Journal (2016)

○ D. Calvanese, P. Liuzzo, A. Mosca, J. Remesal, M. Rezk, G. Rull, *Ontology-based data integration in EPNet: Production and distribution of food during the Roman Empire.* Engineering Applications of Artificial Intelligence (2016)

○ M. Rodriguez-Muro and M. Rezk, *Efficient SPARQL-to-SQL with R2RML mappings.* Accepted in the Journal of Web Semantics (2015)

- M. Giese, P. Haase, E. Jiménez-Ruiz, D. Lanti, M. Rezk, R. Rosati, A. Soylu, G. Vega-Gorgojo, A. Waaler, G. Xiao, *Optique – Zooming In on Big Data Access*. Accepted in IEEE Computer magazine (2015)

- M. Rezk and M. Kifer, *Transaction Logic with Partially Defined Actions*. Journal on Data Semantics (2012)

- M. Rezk and L. Alonso Alemany, *Designing Topic Shifts with Graphs*. Revista Iberoamericana de Inteligencia Artificial (2007)

Conference Papers

- B. Charron, Y. Hirate, D. Purcell, M. Rezk: *Extracting Semantic Information for e-Commerce.* International Semantic Web Conference (ISWC), 2016

- D. Hovland, D. Lanti, M. Rezk, G. Xiao: *OBDA Constraints for Effective Query Answering*. RuleML, 2016

- D. Calvanese, A. Mosca, J. Remesal, M. Rezk, G. Rull: *A "historical case" of Ontology-Based Data Access.* Digital Heritage, 2015

- D. Lanti, M. Rezk, G. Xiao, and D. Calvanese, *The NPD Benchmark: Reality Check for OBDA Systems*. In Proc. of the The 18th International Conference on Extending Database Technology, (EDBT), 2015.

- R. Kontchakov, M. Rezk, M. Rodriguez-Muro, G. Xiao, and M. Zakharyaschev, *Answering SPARQL Queries over Databases and under OWL 2 QL Entailment Regime.* In Proc. of the the 13th International Semantic Web Conference, (ISWC), 2014.

- G. Xiao, M. Rezk, M. Rodriguez-Muro, and D. Calvanese, *Rules and Ontology Based Data Access*. In Proc. of the The Eighth International Conference on Web Reasoning and Rule Systems, (RR), 2014.

- Martin Rezk, Jungyeul Park, Yoon Yongun, Kyungtae Lim, John Larsen, Young-Gyun Hahm, and Key-Sun Choi, *Korean Linked Data on the Web: Text to RDF*. Joint International Semantic Technology Conference, 2012

- M. Rezk and M. Kifer, *Formalizing Production Systems with Rule-based Ontologies*. In Proc. of the Seventh International Symposium on Foundations of Information and Knowledge Systems, 2012

- M. Rezk and M. Kifer, *Reasoning with Actions in Transaction Logic*. In Proc. of the Fifth International Conference on Web Reasoning and Rule, 2011

- M. Rezk and M. Kifer, *On the Equivalence Between the L1 Action Language and TR-PAD*. In Proc. of the Fifth International Conference on Web Reasoning and Rule Systems, 2011

- Martin Rezk and Werner Nutt, *Combining Production Systems and Ontologies*. In Proc. of the Fifth International Conference on Web Reasoning and Rule Systems, 2011

○ J. de Bruijn and M. Rezk, *A Logic Based Approach to the Static Analysis of Production Systems*. In Proc. of the Third International Conference on Web Reasoning and Rule Systems, 2009

Workshop Papers

○ Elena Botoeva, Diego Calvanese, Benjamin Cogrel, Martin Rezk, Guohui Xiao: OBDA Beyond Relational DBs: A Study for MongoDB. Description Logics (2016)

○ Elena Botoeva, Diego Calvanese, Benjamin Cogrel, Martin Rezk, Guohui Xiao: *OBDA Over Non-Relational Databases*. AMW (2016)

○ Alessandro Mosca, JosÃl Remesal, Martin Rezk, Guillem Rull: *Knowledge Representation in EPNet.* (2016)

○ Davide Lanti, Martin Rezk, Mindaugas Slusnys, Guohui Xiao, and Diego Calvanese. *A Scalable Benchmark for OBDA Systems: Preliminary Report*. In Proc. of The OWL Reasoner Evaluation Workshop, Vienna, Austria, 2014.

○ Mariano Rodriguez-Muro, Martin Rezk, Josef Hardi, Mindaugas Slusnys, Timea Bagosi and Diego Calvanese. *Evaluating SPARQL-to-SQL Translation in Ontop*. In Proc. of the 2nd International Workshop on OWL Reasoner Evaluation, 94-100, Ulm, Germany, 2013.

○ See complete list: `http://www.inf.unibz.it/~mrezk/publications/publications.pdf`

Selected Presentations

2016 **Industry**, *On Extracting and Using Semantic Information*, Xerox, France.

2016 **Invited Talk**, *On Extracting and Using Semantic Information*, University of Mannheim, Germany.

2016 **Invited Talk**, *On Extracting and Using Semantic Information*, CEDAR-Ecole Polytechnique, France.

2015 **Tutorial**, *Ontology-based Data Access: From Theory to Practice*, ISWC, USA.

2014 **Tutorial**, *Ontologies Ontop Databases*, SWAT4LS, Germany.

2014 **Industry**, *Understanding the Big Data Riddle*, ICHEC, Ireland.

2014 **Industry**, *Answering SPARQL Queries over Databases and under OWL 2 QL Entailment Regime*, IBM T.J. Watson Research Center, USA.

2013 **Industry**, *OBDA and Ontop*, Machinalis (http://www.machinalis.com), Argentina.

Research and Academic Activities

Peer-review And Other Research Activities

2015 **Conference Program Committee Member**, *IJCAI-16, ISWC'17*.

2015 **Workshop Program Committee Member**, *WEDA'15, SW4CH'15, LD4IE2017*.

2012-2014 **Conference reviewer**, *CIKM'14, ISWC'14, DL'14, FroCos'13, OWLED'13, Coling'12, JIST'12*.

2012   **Organization Committee Member (Summer School)**, *Korea Advanced Institute of Science and Technology*, South Korea, International Asian Summer School on Linked Data.

Languages

Spanish   **Expert (Native Speaker)**

English   **Fluent**

Italian   **Intermediate**

Japanese   **Beginner**

Others

- **Awards**: Top 7 KAIST Researchers in the BK21 Program (Korea, 2013), 3rd Place in submissions only Long Island Brazilian Jiu Jitsu Tournament (USA, 2010), First place at stock market contest (Argentina, 2007), Kyokushin Karate National Champion (Argentina, 2007), 1st Place in several swimming competitions (Argentina, 1992-1997).