

Martín Rezk

Ph.D.

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Professional Experience

- 2019– **Data Scientist**, *DMM.com*, Japan.
Obligations: Leading a project focused on predicting (using machine learning) the type of issues that the user is facing in order to improve the UX.
- 2015–2019 **Data Scientist**, *Rakuten Inc.*, Japan.
Obligations: Leading an international project focused on: (i) semantic information extraction from (Japanese, German, French, Mandarin and English) text using machine learning; (ii) modeling and integrating semantic data. In addition, I worked 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- system is used for: (i) query-answering SPARQL queries over large relational databases; (ii) check consistency of the data w.r.t. the constraints in the ontology; (iii) virtual data integration; and (iv) Ontology-Based Data Access (OBDA).
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

- 2019– **Scala**, *Used for data crunching*, DMM, Japan.
- 2015– **Machine Learning**, *Word2Vec, CRF, K-means, linear/logistic regression, RNN.*, 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.*

Languages used in the past, *Java, 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

- Sept./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**, *Birkbeck 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.

Patents

- Sept./18 **Pending**, *PCT/JP2018/036461*, Japan.
- Oct./16 **Pending**, *PCT/JP2016/080422*, Japan.

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 EPNNet: 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*. 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*. IEEE Computer magazine (2015)

Conference Papers

- L. Alonso Alemany, L. Nio, M. Rezk, T. Zhang: *Accurate Product Attribute Extraction on the Field*. IEEE International Conference on Data Engineering (ICDE) 2019
- G. Xiao, D. Hovland, D. Bilidas, M. Rezk, M. Giese, D. Calvanese: *Efficient Ontology-Based Data Integration with Canonical IRI's*. Extended Semantic Web Conference (ESWC), 2018
- B. Charron, Y. Hirate, D. Purcell, M. Rezk: *Extracting Semantic Information for e-Commerce*. International Semantic Web Conference (2016)
- D. Lanti, M. Rezk, G. Xiao, and D. Calvanese, *The NPD Benchmark: Reality Check for OBDA Systems*. International Conference on Extending Database Technology, (EDBT), 2015.
- R. Kontchakov, M. Rezk, M. Rodriguez-Muro, G. Xiao, and M. Zakharyashev, *Answering SPARQL Queries over Databases and under OWL 2 QL Entailment Regime*. International Semantic Web Conference, (ISWC), 2014.
- See full list in my Google Scholar page: <https://scholar.google.it/citations?user=CqDcFtoAAAAJ&hl=en>

Selected Presentations

- 2018 **Invited Talk**, *Accurate Semantic Information Extraction in Rakuten*, University of Oslo, Norway.
- 2016 **Industry**, *On Extracting and Using Semantic Information*, Xerox, 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.

Peer-review And Other Research Activities

- WebConf-19 (ex WWW), ESWC-19, WebConf-18, ISWC-18, ESWC-18, ISWC-17, IJCAI-16

Languages

Spanish	Expert (Native Speaker)
English	Fluent
Italian	Intermediate
Japanese	Beginner

Others

- **Awards:** Best Journal Paper Award “Ontop: Answering SPARQL Queries over Relational Databases”, Top 7 KAIST Researchers in the BK21 Program (Korea, 2013), 2nd Place Tokyo Brazilian Jiu Jitsu Tournament (Tokyo, 2018), 3rd Place Asian Brazilian Jiu Jitsu Tournament (Tokyo, 2018), First place at stock market contest (Argentina, 2007), Kyokushin Karate National Champion (Argentina, 2007), 1st Place in several swimming competitions (Argentina, 1992-1997).