

Davide Lanti

Via dei Portici 47
39100, Bolzano
Bolzano
Italy

Email: `davide.lanti.sersante@gmail.com`

Personal Information

`Date of Birth:` 02/03/1986
`Place of Birth:` Teramo
`Nationality:` Italian

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Education

Dates 04/01/2014 - ongoing
Title or Qualification PhD in Computer Science
Thesis Title Benchmarking and Optimization of Ontology-based Data Access Systems
Subject Area Semantic Web, Knowledge Representation Systems, Databases, Logic
Institution(s) Free University of Bolzano/Bozen
Place(s) Bozen-Bolzano (Italy)

Dates 01/03/2016 - 31/07/2016
Title or Qualification Visiting student at INRIA
Argument Ontology-based Data Access Optimization
Institution(s) Inria-Saclay Ile-de-France
Place(s) Saclay-Paris (France)

Dates 1/10/2010 - 11/04/2013
Title or Qualification Master Degree in Computational Logic
Final Mark 1.3/4.0 (German System), A (ECTS System)
Subjects Covered Propositional Logic
First Order Logic
Modal Logic
Model Checking
SAT Solving
Foundations of Logic Programming, and Prolog
Answer Sets Programming
Term Rewriting Systems
Description Logics, and Fuzzy Description Logics
Information Integration
English
Institution(s) Free University of Bozen-Bolzano, Technische Universität Dresden
Place(s) Bolzano (Italy), Dresden (Germany)

Dates 01/10/2005 - 15/03/2010
Title or Qualification Bachelor Degree in Computer Science
Final Mark 110/110 cum Laude
Thesis Title DALI Interpreter Re-engineering and Integration with the Semantic Web
Subjects Covered Foundations of Computer Science and Mathematics
Programming Languages and Computer Architectures
Mathematical Analysis
Probability Calculus
Institution(s) Università de L'Aquila
Place L'Aquila (Italy)

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Experience in Academic Teaching

Dates 25/10/2016 - 30/09/2017 (ongoing)
University Free University of Bozen-Bolzano
Type of Collaboration Teaching Assistant (tutor)
Course Name Operating Systems
Academic Level Undergraduate
Task Description Bash Scripting
Results of Evaluations Ongoing course
Place(s) Bolzano-Bozen (Italy)

Other Academic Responsibilities

Dates A.Y. 2014/2015
University Free University of Bozen-Bolzano
Responsibility Faculty-level PhD Students' Representative
Boards PhD Committee
Students Council
Faculty Computer Science
Place(s) Bolzano-Bozen (Italy)

Dates A.Y. 2015/2016
University Free University of Bozen-Bolzano
Responsibility Faculty-level PhD Students' Representative
Boards PhD Committee
Students Council
Faculty Computer Science
Place(s) Bolzano-Bozen (Italy)

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Work Experience

Dates	01/10/2013 - 31/12/2013
Company	Free University of Bozen-Bolzano
Type of Collaboration	Fixed-term Contract
Task Description	<i>Ontology-based Data Access</i> (OBDA) goal is to access heterogeneous physical data sources through a unified conceptual layer provided by a mediating ontology. My work focused on the production of a survey on OBDA research and the understanding of the weaknesses of implemented OBDA systems, through empirical analysis (benchmark).
Place(s)	Bolzano-Bozen (Italy)
Dates	01/11/2012 - 31/03/2013
Company	SAP A.G.
Type of Collaboration	Internship
Task Description	<i>Complex Event Processing</i> (CEP) describes search patterns inside a continuous stream of events. In this internship I implemented and tested a software component that can flexibly migrate resource demanding components (i.e., <i>correlated aggregations</i>) of queries over an existing CEP system (more specifically, over Sybase Event Stream Processor) to SAP HANA database.
Place(s)	Dresden (Germany)
Dates	2005-2009 (Occasionally)
Company	Abruzzo Vetro - Ardagh Glass
Type of Collaboration	Fixed-term Contract
Task Description	Manual checking and discarding of defective glass bottles.
Place(s)	Montorio al Vomano (Italy)

Attended Events

Summer Schools

Dates	15/08/2016 - 26/08/2016
Name	European Summer School in Logic, Language and Information (ESSLLI)
Attended Lectures Talks	Description Logics Type Theory Algebraic Specification and Verification Logic Foundations of Databases Probabilistic Interpretation Ontology-mediated Query Answering
Place(s)	Bozen-Bolzano (Italy)

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Dates 31/08/2015 - 04/08/2015
Name Reasoning Web Summer School (RW) + RR Doctoral Consortium
Attended Lectures Talks Fuzzy Description Logics
 Modal Higher Order Logic
 TPTP (Automated Theorem Proving Competitions)
 Legal RuleML
 Datalog+/-
 Answer Set Programming
Given Talk(s) Benchmarking and Optimization of OBDA Systems
Poster(s) Benchmarking and Optimization of OBDA Systems
Place(s) Berlin (Germany)


Dates 26/01/2015 - 30/01/2015
Name International Winter School on Big Data (BigDat)
Attended Lectures Talks Decision Trees for Big Data Analytics
 Programming with Big Data
 Data-stream Security
 Search Engines
 Online Social Networks
 Kernel Models for Big Data
Place(s) Tarragona (Spain)

Dates 08/09/2014 - 13/09/2014
Name Reasoning Web Summer School (RW)
Attended Lectures Talks Linked Data
 Description Logics
 Query-processing for RDF Databases
 Graph Databases
 Ontology-based Query Answering
 Temporal Ontology-based Data Access
 Probabilistic Databases
 Smart Cities
Poster(s) Machine Learning on Graphs
Place(s) The NPD Benchmark for OBDA Systems
 Athens (Greece)

Dates 27/07/2014 - 1/08/2014
Name EATCS Young Researchers School—Automata, Logic and Games
Attended Lectures Talks Logic Foundations of Databases
Place(s) Telč (Czech Republic)

Dates 29/01/2014 - 31/01/2014
Name Foundations and Challenges of Change in Ontologies and Databases (FCCOD)
Attended Lectures Talks Talks regarding dynamic aspects of logic and data access (Temporal Logics)
Given Talk(s) A Survey of Temporal Extensions of DLs
Place(s) Bolzano-Bozen (Italy)

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Dates 01/08/2011 - 12/08/2011
Name European Summer School in Logic, Language and Information (ESSLLI)
Attended Lectures Talks Logic in Action
Logics of knowledge and strategic abilities in multi-agent systems
Ordinals and Cardinals
Strategies in Game: A logic automata study
Place(s) Ljubljana (Slovenia)

Conferences

Dates 06/07/2016 - 09/07/2016
Name International Web Rule Symposium (RuleML)
Topic(s) Rule Systems
Ontology-based Data Access
Legal Rules and Reasoning
Given Talk(s) OBDA Constraints for Effective Query Answering
Talk Video <https://www.youtube.com/watch?v=ivc3jy3a7w>
Place(s) Stony-Brook, New York (USA)

Dates 04/08/2015 - 05/08/2015
Name International Conference on Web Reasoning and Rule Systems (RR)
Topic(s) Rule Systems
Given Talk(s) (Doctoral Consortium): Benchmarking and Optimization of OBDA Systems
Place(s) Berlin (Germany)

Dates 19/10/2014 - 23/10/2014
Name International Semantic Web Conference
Topic(s) Semantic Web
Place(s) Riva del Garda (Italy)

Dates 20/07/2014 - 24/07/2014
Name International Conference on Principles of Knowledge Representation and Reasoning (KR)
Topic(s) Knowledge Representation and Reasoning
Place(s) Wien (Austria)

Dates 7/01/2013 - 11/01/2013
Name Learning and Intelligent Optimization Conference (LION)
Topic(s) Combinatorial Optimization
Large-scale Parallelization in Search
Games and Computational Intelligence
Given Talk(s) Information Sharing in Parallel SAT Solving
Place(s) Catania (Italy)

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Workshops

Dates 20/10/2014
Name International Workshop on Scalable Semantic Web
Topic(s) Semantic Web repositories etc.
Given Talk(s) The NPD Benchmark for OBDA Systems
Place(s) Riva del Garda (Italy)

Dates 17/07/2014 - 20/07/2014
Name International Workshop on Description Logics (DL)
Topic(s) Description Logics
Place(s) Wien (Austria)

Dates 13/07/2014
Name OWL Reasoner Evaluation Workshop (ORE)
Topic(s) Knowledge Representation Systems
OWL Benchmarks
Given Talk(s) A Scalable Benchmark for OBDA Systems: Preliminary Report
Place(s) Wien (Austria)

Dates 14/04/2014 - 17/04/2014
Name EPCL PhD Workshop 2014
Topic(s) Static and dynamic aspects of OBDA
Argumentation theory
SAT Solving
Semantic Web
Computer Science (Polynomial Hierarchy)
Given Talk(s) Towards a Scalable Benchmark for OBDA Systems
Place(s) Dresden (Germany)

Meetings

Dates 11/06/2014 - 14/06/2014
Name OPTIQUE Plenary Meeting
Topic(s) OPTIQUE—Scalable End-user Access to Big Data
Place(s) Rome (Italy)

Language Skills

Native Italian Speaker
Excellent knowledge of English language, both written and oral.

Language Certificates

Institutional paper based TOEFL, August 06 2010. Released by the Wayne State University (Michigan) with a score of 580.

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FCE certificate, obtained in 2011.

Actual Position

I am a PhD student at the Free University of Bozen-Bolzano. My research is focused on Ontology-based Data Access (OBDA), where OBDA concerns about accessing heterogeneous physical data sources through a conceptual layer provided by a mediating ontology. In particular, I am interested in benchmarking and optimization of OBDA systems.

In was a former student of *EMCL*, the European Master in Computational Logic. During this master I studied the problem of autarky search through a Conflict-Driven Clause Learning solver. In particular, I introduced a new algorithm to find autark assignments in propositional formulae in conjunctive normal form. In my master thesis, I focused the attention on information sharing in search space partitioning parallel SAT solvers, where a SAT solver is a procedure to solve the boolean satisfiability problem. This work lead to an improvement of previous state-of-the-art techniques, and it is currently being successfully exploited by the present state-of-the-art cooperative parallel SAT solver, *PCASSO*, that was submitted to the SAT Competitions 2013 and 2014.

Theoretical Knowledge

I have a deep knowledge in fields closely related to my research, such as Description Logics, Semantic Web, RDBMS Systems, Benchmarking, and Theoretical Computer Science. I have a solid knowledge in the field of Computational Logic (Classical Logic, Non-Monotonic Logic, Modal Logic) and in the theory of Logic Programming (Prolog Procedural and Declarative Interpretations). I know the principles of Model Checking, and hence both temporal (modal) logics Linear Temporal Logic and Computational Tree Logic. I have also some knowledge in the area of Term Rewriting Systems. In the past I acquired some knowledge in the area of Operations Research and Combinatorial Optimization (also from the Constraint Programming view of these kind of problems).

Practical Knowledge

Known Programming Languages

Imperative : Good knowledge of C++ and C. Excellent knowledge of Java.

Functional, Logic, etc. : Fair knowledge of Lisp, Haskell, OcaML, Prolog, ASP.

Web : Fair knowledge of PHP.

Constraint Programming : Good knowledge of ECLiPSe.

Script : Excellent knowledge of Bash, fair knowledge of Python and Javascript.

Other Skills

Good knowledge of LATEX and Beamer.

Fair knowledge of Sybase Event Stream Processor.

Research Interests

I am interested in everything related to logic, and I actively worked in the area of SAT solving SAT solvers. I am now working in the context of Ontology-based Data Access systems, with particular focus on the problems of benchmarking and optimization.

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Prizes

2015: Best Doctoral Consortium Contribution Award in RR Conference 2015

Scholarships, Waivers, etc.

Date Granted 2016
Award Holder(s) Davide Lanti
Funding Body Euregio
Title Euregio Grant for participation at ESSLLI Summer School 2016
Amount Received Fee Waiver, corresponding to 450 Eur.

Date Granted 2014-2016
Award Holder(s) Davide Lanti
Funding Body Free University of Bozen-Bolzano
Title Phd bursary

Date Granted 2011
Award Holder(s) Davide Lanti
Funding Body Province of Bozen-Bolzano
Title Bursary "per meriti particolari" (special merit)
Amount Received 1160 Eur.

Publications

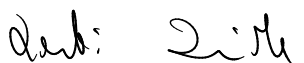
Papers in Refereed International Journals

- [JI-1] M. Giese, A. Soylu, G. Vega-Gorgojo, A. Waaler, P. Haase, E. Jiménez-Ruiz, D. Lanti, M. Rezk, G. Xiao, Ö. L. Özçep, and R. Rosati. Optique: Zooming in on big data. *IEEE Computer*, 48(3):60–67, 2015. DOI: [10.1109/MC.2015.32](https://doi.org/10.1109/MC.2015.32). *
- [JI-2] D. Calvanese, B. Cogrel, S. Komla-Ebri, R. Kontchakov, D. Lanti, M. Rezk, M. Rodriguez-Muro, and G. Xiao. Ontop: Answering SPARQL queries over relational databases. *Semantic Web Journal*. (to appear), 2016. *

Papers in Refereed International Conferences

- [CI-3] Davide Lanti and N. Manthey. Sharing information in parallel search with search space partitioning. In *Proceedings of the 7th International Conference on Learning and Intelligent Optimization (LION 2013)*, Lecture Notes in Computer Science, pages 52–58. Springer, 2013. DOI: [10.1007/978-3-642-44973-4_6](https://doi.org/10.1007/978-3-642-44973-4_6). *
- [CI-4] Davide Lanti, M. Rezk, G. Xiao, and D. Calvanese. The NPD benchmark: Reality check for OBDA systems. In *Proceedings of the Eighteenth International Conference on Extending Database Technology (EDBT 2015)*, pages 617–628. OpenProceedings.org, 2015. DOI: [10.5441/002/edbt.2015.62](https://doi.org/10.5441/002/edbt.2015.62). *
- [CI-5] T. Bagosi, D. Calvanese, J. Hardi, S. Komla-Ebri, D. Lanti, M. Rezk, M. Rodriguez-Muro, M. Slusnys, and G. Xiao. The ontop framework for ontology based data access. In *The Semantic Web and Web Science - 8th Chinese Conference, CSWS 2014, Wuhan, China, August 8-12*,

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2014, *Revised Selected Papers*, volume 480 of *Communications in Computer and Information Science*, pages 67–77. Springer, 2014. DOI: [10.1007/978-3-662-45495-4_6](https://doi.org/10.1007/978-3-662-45495-4_6).

- [CI-6] E. Kharlamov, D. Hovland, E. Jiménez-Ruiz, D. Lanti, H. Lie, C. Pinkel, M. Rezk, M. G. Skjæveland, E. Thorstensen, G. Xiao, D. Zheleznyakov, and I. Horrocks. Ontology based access to exploration data at statoil. In *Proceedings of the 14th International Semantic Web Conference (ISWC 2015)*, pages 93–112. Springer International Publishing, 2015. DOI: [10.1007/978-3-319-25010-6_6](https://doi.org/10.1007/978-3-319-25010-6_6).
- [CI-7] D. Calvanese, B. Cogrel, S. K. Ebri, D. Lanti, M. Rezk, and G. Xiao. How to stay ontop of your data: Databases, ontologies and more. In *Proceedings of the 12th Extended Semantic Web Conference, Posters & Demos Track (ESWC 2015)*, volume 9341 of *Lecture Notes in Computer Science*. Springer, 2015. DOI: [10.1007/978-3-319-25639-9_4](https://doi.org/10.1007/978-3-319-25639-9_4).
- [CI-8] D. Hovland, Davide Lanti, M. Rezk, and G. Xiao. OBDA constraints for effective query answering. In *Proceedings of the 10th International Web Rule Symposium (RuleML 2016)*, volume 9718 of *Lecture Notes in Computer Science*, pages 269–286. Springer, 2016. DOI: [10.1007/978-3-319-42019-6_13](https://doi.org/10.1007/978-3-319-42019-6_13). *
- [CI-9] Davide Lanti, G. Xiao, and D. Calvanese. An evaluation of VIG with the BSBM benchmark. In *Proceedings of the the 15th International Semantic Web Conference (ISWC 2015), Posters & Demos Track*, volume 1690 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2016.

Papers in Refereed National Conferences and Workshops

- [CN-10] D. Calvanese, B. Cogrel, E. G. Kalayci, S. Komla-Ebri, R. Kontchakov, D. Lanti, M. Rezk, M. R. Muro, and G. Xiao. OBDA with the ontop framework. In *Proceedings of the 23rd. Italian Symposium on Database Systems (SEBD 2015)*, pages 296–303. Curran Associates, Inc., 2015. ISBN: [978-1-5100-1007-7](https://doi.org/978-1-5100-1007-7).

Papers in Refereed International Workshops

- [WI-11] A. Irfan, D. Lanti, and N. Manthey. Modern cooperative parallel SAT solving. In *Proceedings of The International Workshop on Pragmatics of SAT 2013*, volume 29 of *EPiC Series in Computing*, pages 41–54. EasyChair, 2013.
- [WI-12] A. Balint, D. Lanti, A. Irfan, and N. Manthey. Clas – a parallel SAT solver that combines CDCL, look-ahead and SLS search strategies. In *Proceedings of SAT Competition 2014*, volume B-2014-2 of *Department of Computer Science Series of Publications B*, page 21. University of Helsinki, Helsinki, Finland, 2014.
- [WI-13] D. Calvanese, Davide Lanti, M. Rezk, M. Slusnys, and G. Xiao. A scalable benchmark for OBDA systems: Preliminary report. In *Proceedings of the Third International Workshop on OWL Reasoner Evaluation (ORE 2014)*, volume 1207 of *CEUR Electronic Workshop Proceedings*, <http://ceur-ws.org>, pages 36–43. CEUR-WS.org, 2014.
- [WI-14] Davide Lanti, M. Rezk, M. Slusnys, G. Xiao, and D. Calvanese. The NPD benchmark for OBDA systems. In *Proceedings of the 10th International Workshop on Scalable Semantic Web Knowledge Base Systems (SSWS 2014)*, volume 1261 of *CEUR Electronic Workshop Proceedings*, <http://ceur-ws.org>, pages 3–18. CEUR-WS.org, 2014.
- [WI-15] Davide Lanti, G. Xiao, and D. Calvanese. Fast and simple data scaling for OBDA benchmarks. In *Proceedings of the Workshop on Benchmarking Linked Data (BLINK 2016)*, volume 1700 of *CEUR Electronic Workshop Proceedings*, <http://ceur-ws.org>, pages 62–77. CEUR-WS.org, 2016.

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Technical Reports and Project Deliverables

- [TR-16] E. Botoeva, D. Calvanese, B. Cogrel, E. G. Kalayci, S. Komla-Ebri, D. Lanti, M. Rezk, G. Xiao, A. Artale, E. Franconi, W. Nutt, , and S. Tessaris. Optique Project Deliverable D6.3. Optique Project Consortium, 2015.
- [TR-17] K. Bereta, E. Botoeva, D. Calvanese, B. Cogrel, D. Lanti, M. Rezk, S. Komla-Ebri, and G. Xiao. Optique Project Deliverable D6.2. Optique Project Consortium, 2014.
- [TR-18] D. Lanti, M. Rezk, G. Xiao, and D. Calvanese. The NPD benchmark: Reality check for OBDA systems. Technical report. Technical report, Free University of Bozen-Bolzano, 2015. Available at <http://www.inf.unibz.it/~dlanti/techreport373%20EQT.pdf>.
- [TR-19] D. Hovland, *Davide Lanti*, M. Rezk, and G. Xiao. OBDA Constraints for Effective Query Answering (Extended Version). *ArXiv e-prints*, May 2016. Available at <http://arxiv.org/abs/1605.04263>.
- [TR-20] *Davide Lanti*, G. Xiao, and D. Calvanese. Data Scaling in OBDA Benchmarks: The VIG Approach. *ArXiv e-prints*, July 2016. Available at <http://arxiv.org/abs/1607.06343>.

National Journals and Newsletters in Italian

- [NTNI-21] S. Costantini, D. Lanti, and A. Paolucci. Agenti ed ontologie: verso la web intellicence. *AIDAinformazioni*, 28(2):63–86, 2011.

Other Publications

- [O-22] D. Lanti. Benchmark and optimization of OBDA systems. In *Doctoral Consortium of the 9th International Conference on Web Reasoning and Rule System (RR 2015)*, 2016. To appear.

The undersigned declares that the information contained in the curriculum vitae is true. The undersigned gives her permission for the personal details that she has supplied to be processed as per Italian legislative decree 196/2003 for any procedures that are connected to this selection procedure and any contracts that may be drawn up as a consequence.

Bolzano, November 3, 2016

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