

DIEGO CALVANESE

CURRICULUM VITAE – JULY 2022

1 PERSONAL DATA

Born in Innsbruck, Austria in 1966. Nationality: Italian.

Languages: Italian (mother tongue), German (mother tongue), English (C2 - IELTS).

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2 EDUCATION

11/1996 Ph.D. in Computer Science and Engineering, Sapienza Univ. di Roma, Italy.

12/1990 Graduation cum laude in Electronics Engineering, Sapienza Univ. di Roma, Italy.

3 EMPLOYMENT

11/2019 – today Wallenberg Guest Professor in Artificial Intelligence for Data Management at the Department of Computing Science, Umeå University, Sweden.

01/2015 – today Tenured full professor in Computer Engineering (ING-INF/05), Faculty of Computer Science, Free Univ. of Bozen-Bolzano (unibz), Italy.

02/2015 – 09/2019 Vicedean for Research, Faculty of Computer Science, unibz, Italy.

01/2014 – 10/2018 Director of the PhD Program in Computer Science, unibz, Italy.

10/2010 – 12/2013 Faculty representative in the Research Committee of unibz, Italy.

03/2004 – 10/2007 Director of the MSc Program in Computer Science, unibz, Italy.

11/2003 – 12/2014 Tenured associate professor in Computer Engineering (ING-INF/05), Faculty of Computer Science, unibz, Italy.

09/2000 – 10/2003 Tenured assistant professor in Computer Engineering (ING-INF/05), Faculty of Engineering, Sapienza Univ. di Roma, Italy.

02/1991 – 07/1992 Responsible for software development, “Ionen-Technik”, Innsbruck, Austria.

4 HONORS

2021 Classic Paper Award at the *35th AAAI Conf. on Artificial Intelligence* (AAAI), for the most influential AAAI paper of past 15 years.

2021 Nominated Fellow of the *Asia-Pacific Artificial Intelligence Association* (AAIA).

2019 Nominated Fellow of the *Association for Computing Machinery* (ACM).

2019 Best paper award at the *23rd IEEE Int. Enterprise Distributed Object Computing Conf.* (EDOC).

2019 Best reviewer award for the *Journal of Software and Systems Modeling*.

2018 Best paper award at the *17th Int. Conf. of the Italian Association for Artificial Intelligence* (AI*IA).

2017 Best paper award at the *2nd Int. Joint Conf. on Rules and Reasoning* (RuleML+RR).

2016 Best paper award at the *14th Int. Conf. on Business Process Management* (BPM).

2016 *Semantic Web Journal* outstanding paper award.

2015 Nominated Fellow of the *European Association for Artificial Intelligence* (EurAI).

2013 Best paper award at the *7th Int. Conf. on Web Reasoning and Rule Systems* (RR).

2013 Award for the most influential 10 year paper of the *Int. Conf. on Service Oriented Computing* (ICSOC).

2013 Recipient of the first edition of the *South-Tyrolean Scientific Prize*.

2012 *Wolfgang Pauli Fellowship*, Technical Univ. Vienna, Austria.

2008 *IBM Research Award* for research achievements on artifact-centric systems.

5 RESEARCH IMPACT

Member of the Research Centre for Knowledge and Data (KRDB) at the Faculty of Computer Science of unibz, where I carry out research on Knowledge Representation in Artificial Intelligence, Databases, Information Systems, and Business Process Modeling. In these areas, I authored more than 400 publications in top-tier venues, such as AIJ, JAIR, ACM TOCL, IC, JCSS, IS, SWJ, IJCAI, AAAI, KR, PODS, ICDT, VLDB, EDBT, ICDE, EDBT, LICS, ISWC, BPM, CAiSE, ICSOC. I am one of the editors of the *Description Logic Handbook*. My research excellence is testified also by bibliometric data: my current h-index is 74, and my i-10 index 254, with more than 35000 overall citations, of which more than 8000 in the last 5 years (source: Google Scholar, 31 July 2022).

I have established research collaborations with well known researchers, such as Marcelo Arenas (UPC Chile), Franz Baader (Univ. of Dresden, Germany), Alexander Borgida (Rutgers Univ., USA), Giuseppe De Giacomo (Sapienza Univ. di Roma, Italy), Thomas Eiter (Univ. of Vienna, Austria), Richard B. Hull (IBM Research, USA), Maurizio Lenzerini (Sapienza Univ. di Roma, Italy), Ernest Teniente (UPC, Spain) Moshe Y. Vardi (Rice Univ, USA), Michael Zakhariashev (Birkbeck College London, UK).

6 RESEARCH GRANTS

I have been coordinator and principal investigator of several international, national, and local research projects in the areas of knowledge representation, data management, and business process management, acquiring more than €4 000 000 in research grants, including the following:

07/2022 – 12/2024 PI, *Dense and Deep Geographic Virtual Knowledge Graphs* (D2G2), DFG and Prov. of Bolzano; € 293 500.

03/2021 – 02/2022 Coordinator, *Heterogeneous Data Integration into Virtual Knowledge Graphs* (HIVE), Sparkasse Foundation; € 52.400.

10/2020 – 12/2022 PI, *Medieval Explorations in Neuro-Science* (MENS), Province of Bolzano, € 120.000.

11/2019 – 04/2023 PI, *Intelligent Open Data Exploration* (INODE), H2020 INFRAEOSC-02-2019, € 765.500.

09/2019 – 02/2023 PI, *High quality Open data Publishing and Enrichment* (HOPE), PRIN Italy, € 155.332.

04/2019 – 03/2022 PI, *Data Integration for Energy Efficiency* (IDEE), EFRE-FESR 2014-2020, € 245.250.

03/2019 – 02/2021 PI, *Process-aware Analytics Support based on Conceptual Models for Event Logs* (PACMEL), EU CHIST-ERA, € 126.160.

06/2016 – 05/2019 Coordinator, *Knowledge-Aware Operational Support* (KAOS), Euregio IPN, € 110.250.

11/2012 – 10/2016 PI, *Scalable End-user Access to Big Data* (Optique), EU FP7 IP, € 873.000.

06/2010 – 05/2013 PI, *Artifact-centric Service Interoperation* (ACSI), EU FP7 STREP, € 452.800.

02/2007 – 02/2009 PI, *New Technologies and Tools for the Integration of Web Search Services* (NGS), PRIN Italy, € 66.500.

09/2005 – 12/2008 Coordinator, *Thinking Ontologies* (TONES), EU FP6 STREP, € 352.000.

7 ORGANIZATION OF SCIENTIFIC EVENTS

I contributed to the organization of many international conferences, workshops, and PhD schools, among which: co-chair of KRDB 2002; technical organization chair of VLDB 2001; organization chair of ICDT 2003; co-chair of DL 2003; co-chair of SEBD 2005; co-chair of the 8th EDBT Summer School in 2007; PC co-chair of RR 2008; local chair of RR 2010; PC co-chair of SWAP 2010; co-organizer of a 2013 Dagstuhl Seminar; co-organizer and PC co-chair of IRCDL 2015; PC co-chair of DL 2015; PC chair of ACM PODS 2015; general chair of the 28th ESSLLI Summer School in 2016; general chair of the Bolzano Rules and Artificial Intelligence Summit (BRAIN) 2019; PC co-chair of GCAI 2019; PC co-chair of KR 2020; general chair of the 32nd ESSLLI Summer School in 2021. PC co-chair of APWeb-WAIM 2022; general chair of IJCKG 2022; general chair of SEBD 2023; PC chair of IJCAI-ECAI 2026.

I served in more than 150 organization and program committee roles. I have been invited many times to present my research work, and I have been keynote speaker at PODS 2013, AIMS 2014, JELIA 2014, DL 2016, AMW 2016, CLEI-LACLO 2018, AIKE 2020, CSICC 2021, ICCS 2021.

8 MEMBERSHIP OF STEERING COMMITTEES

11/2021 – today Member of the Advisory Committee of the Int. Conference on Principles of Knowledge Representation and Reasoning (KR).

01/2019 – today President of the Web Reasoning and Rule Systems Association (RRA).

11/2018 – 11/2021 Member of the Steering Committee of the Int. Conference on Principles of Knowledge Representation and Reasoning (KR).

06/2015 – 10/2018 Member of the Description Logic Steering Committee.

10/2014 – today Member of the Advisory Team of the CEUR Workshop Proceedings Series.

06/2014 – 05/2017 Member of the Executive Committee of the ACM Symposium on the Principles of Database Systems (PODS).

02/2013 – today Elected member of the Mgmt. Board of the Cons. Interuniv. Naz. per l'Informatica (CINI), Italy.

10/2008 – 12/2018 Member of the Steering Committee of the Int. Conf. on Web Reasoning and Rule Systems.

02/2008 – 12/2012 Member of the World-Wide-Web Consortium (W3C) OWL working group.

04/2002 – 06/2007 Member of the Description Logic Steering Committee.

9 EDITORIAL BOARDS

Associate editor of AIJ and past associate editor of JAIR. Member of the editorial board of the IOS Press series *Studies on the Semantic Web*.

10 INDUSTRIAL LEADERSHIP

04/2019 Originator and co-founder of ONTOPIC S.R.L. (<https://ontopic.ai/>), the first spin-off of unibz, developing advanced AI-based solutions for data integration and management.

01/2017 – today Director of the *Smart Data Factory* (<https://smart.inf.unibz.it/en>), the laboratory for technology transfer of the Faculty of Computer Science of unibz.

11 TEACHING ACTIVITY

I have carried out a wide range of teaching and academic activities, including teaching several courses at the BSc, MSc, and PhD level on databases, knowledge representation, data integration, conceptual modeling, theory of computing, languages and compilers, formal languages, and foundations of programming, a selection of which is listed below. I am the author of several university textbooks on the foundations of programming.

Ph.D. Level and Professional Courses

- 12/2000 *Data Integration*, Ph.D. in Computer Engineering, Sapienza Univ. di Roma.
- 12/2001 *Introduction to Computer Science*, Master in ICT, Sapienza Univ. di Roma.
- 08/2003 *Description Logics for Conceptual Data Modeling in UML*, ESSLLI, Vienna (Austria).
- 09/2003 *Introduction to Programming*, Course on Information System for Public Administrations.
- 10/2003 *Database Systems and Database Design*, Course on Information System for Public Administrations.
- 11/2005 *View-based Query Processing*, Ph.D. program in Computer Engineering, Sapienza Univ. di Roma.
- 07/2006 *Query Processing in Data Integration Systems*, PhD Summer School, Univ. of Bolzano, Innsbruck, Trento.
- 09/2009 *Ontology-based Data Management*, Masters Ontology Spring School, Pretoria (South Africa).
- 06/2010 *Reasoning and Query Answering in Lightweight Ontology Languages*, Univ. de La Habana, Havana (Cuba).
- 08/2010 *Answering Queries in Description Logics: Theory and Applications*, ESSLLI, Copenhagen (Denmark).
- 04/2013 *Description Logics, Ontology-based Data Access, and Reasoning*, PhD School in Inf., Vienna (Austria).
- 06/2014 *Description Logics for Information Modeling and Data Access*, IT4BI, UPC, Barcelona (Spain).
- 11/2014, 09/2015, 02/2016, 02/2017, 02/2018, 02/2019, 02/2020, 02/2021, 02/2022, 02/2023: *Research Methods*, PhD in Computer Science, unibz (Italy).
- 01/2015 *End-User Access to Big Data Using Ontologies*, BigDat, Tarragona (Spain).
- 02/2017 *Data-aware Processes: Modeling, Mining, and Verification*, BigDat, Bari (Italy).
- 07/2017 *Verification of Data-centric Systems*, LAIVe Summer School, Vienna (Austria).
- 07/2017 *Verification of Data-aware Processes*, ESSLLI, Toulouse (France).
- 01/2020 *Virtual Knowledge Graphs for Data Integration*, BigDat, Ancona (Italy).

BSc and MSc Level Courses

- 1996/97, 1997/98: *Foundations of Computer Science* (50 hours), Univ. Diploma in Electrical Eng., Sapienza Univ. di Roma.
- 1998/99, 1999/00, 2000/01, 2001/02, 2002/03: *Foundations of Computer Science* (100 hours), Fac. of Eng., Sapienza Univ. di Roma.
- 2002/03, 2003/04: *Databases* (50 hours), Faculty of Eng., Sapienza Univ. di Roma.
- 2004/05, 2005/06, 2006/07: *Introduction to Programming* (60 hours), BSc in Applied Computer Science, unibz.
- 2004/05, 2005/06, 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/12, 2013/14, 2014/15, 2015/16, 2016/17, 2017/18: *Theory of Computing* (72 hours), MSc in Computer Science, unibz.
- 2007/08, 2008/09, 2009/10, 2010/11: *Formal Languages* (24 hours), BSc in Applied Computer Science, unibz.
- 2007/08, 2008/09: *Knowledge Bases and Databases* (24 hours), MSc in Computer Science, unibz.
- 2009/10, 2010/11: *Knowledge Representation and Ontologies* (24 hours), MSc in Computer Science, unibz.
- 2011/12: *Knowledge Representation and Ontologies* (48 hours), MSc in Computer Science, unibz.
- 2013/14: *Ontology and Database Systems* (72 hours), MSc in Computer Science, unibz.
- 2013/14: *Seminars in Knowledge Representation* (36 hours), MSc in Computer Science, unibz.
- 2014/15: *Knowledge Representation and Ontologies* (72 hours), MSc in Computer Science, unibz.
- 2015/16, 2016/17, 2017/18: *Knowledge Representation and Ontologies* (48 hours), MSc in Computer Science, unibz.
- 2015/16: *Computer Science for Communication Science* (45 hours), BSc in Science and Culture of Comm., unibz.
- 2018/19, 2019/20, 2020/21, 2021/22, 2022/23: *Introduction to Databases* (60 hours), BSc in Computer Science, unibz.
- 2018/19, 2019/20, 2021/22, 2022/23: *Data Integration* (60 hours), MSc in Computational Data Science, unibz.
- 2020/21: *Data and Process Modeling for Business Informatics* (40 hours), BSc in Informatics and Management of Digital Business, unibz.

I have been the supervisor or co-supervisor of 16 PhD students, 9 of which already successfully graduated at the Faculty of Computer Science of unibz.

12 SELECTED PUBLICATIONS

- [1] F. Baader, D. Calvanese, D. McGuinness, D. Nardi, and P. F. Patel-Schneider, eds. *The description logic handbook: theory, implementation, and applications*. 2nd ed. Cambridge University Press, 2007.
- [2] D. Calvanese, M. Lenzerini, and D. Nardi. Unifying class-based representation formalisms. *J. of Artificial Intelligence Research* 11 (1999), pp. 199–240.
- [3] D. Calvanese, G. De Giacomo, and M. Lenzerini. Representing and reasoning on XML documents: A description logic approach. *J. of Logic and Computation* 9.3 (1999), pp. 295–318.
- [4] D. Calvanese, G. De Giacomo, and M. Lenzerini. Modeling and querying semi-structured data. *Networking and Information Systems* 2.2 (1999), pp. 253–273.
- [5] D. Calvanese, G. De Giacomo, and R. Rosati. Data integration and reconciliation in data warehousing: Conceptual modeling and reasoning support. *Networking and Information Systems* 2.4 (1999), pp. 413–432.
- [6] D. Calvanese, G. De Giacomo, M. Lenzerini, D. Nardi, and R. Rosati. Data integration in data warehousing. *Int. J. of Cooperative Information Systems* 10.3 (2001), pp. 237–271.
- [7] D. Calvanese, T. Catarci, and G. Santucci. LAURIN: A distributed digital library of newspaper clippings. *World Wide Web J.* 4.1/2 (2001), pp. 5–20.
- [8] D. Calvanese, G. De Giacomo, M. Lenzerini, and M. Y. Vardi. Rewriting of regular expressions and regular path queries. *J. of Computer and System Sciences* 64.3 (2002), pp. 443–465.
- [9] A. Cali, D. Calvanese, G. De Giacomo, and M. Lenzerini. On the role of integrity constraints in data integration. *Bull. of the IEEE Computer Society Technical Committee on Data Engineering* 25.3 (2002), pp. 39–45.
- [10] G. Lanfranchi, P. Della Peruta, A. Perrone, and D. Calvanese. Toward a new landscape of system management in an autonomic computing environment. *IBM Systems J.* 42.1 (2003), pp. 119–128.
- [11] D. Calvanese, G. De Giacomo, M. Lenzerini, and M. Y. Vardi. Reasoning on regular path queries. *SIGMOD Record* 32.4 (2003), pp. 83–92.
- [12] A. Cali, D. Calvanese, G. De Giacomo, and M. Lenzerini. Data integration under integrity constraints. *Information Systems* 29.2 (2004), pp. 147–163.
- [13] D. Calvanese and G. De Giacomo. Data integration: A logic-based perspective. *AI Magazine* 26.1 (2005), pp. 59–70.
- [14] D. Calvanese, G. De Giacomo, and M. Y. Vardi. Decidable containment of recursive queries. *Theoretical Computer Science* 336.1 (2005), pp. 33–56.
- [15] D. Berardi, D. Calvanese, G. De Giacomo, M. Lenzerini, and M. Mecella. Automatic service composition based on behavioral descriptions. *Int. J. of Cooperative Information Systems* 14.4 (2005), pp. 333–376.
- [16] D. Berardi, D. Calvanese, and G. De Giacomo. Reasoning on UML class diagrams. *Artificial Intelligence* 168.1–2 (2005), pp. 70–118.
- [17] D. Calvanese, L. Dragone, D. Nardi, R. Rosati, and S. M. Trisolini. Enterprise modeling and data warehousing in Telecom Italia. *Information Systems* 31.1 (2006), pp. 1–32.
- [18] D. Calvanese, G. De Giacomo, M. Lenzerini, and M. Y. Vardi. View-based query processing: On the relationship between rewriting, answering and losslessness. *Theoretical Computer Science* 371.3 (2007), pp. 169–182.
- [19] D. Calvanese, G. De Giacomo, D. Lembo, M. Lenzerini, and R. Rosati. Tractable reasoning and efficient query answering in description logics: the *DL-Lite* family. *J. of Automated Reasoning* 39.3 (2007), pp. 385–429.
- [20] A. Poggi, D. Lembo, D. Calvanese, G. De Giacomo, M. Lenzerini, and R. Rosati. Linking data to ontologies. *J. on Data Semantics* 10 (2008), pp. 133–173.
- [21] D. Calvanese, G. De Giacomo, and M. Lenzerini. Conjunctive query containment and answering under description logics constraints. *ACM Trans. on Computational Logic* 9.3 (2008), pp. 22.1–22.31.
- [22] D. Calvanese, G. De Giacomo, D. Lembo, M. Lenzerini, and R. Rosati. Inconsistency tolerance in P2P data integration: An epistemic logic approach. *Information Systems* 33.4–5 (2008), pp. 360–384.
- [23] M. Ortiz, D. Calvanese, and T. Eiter. Data complexity of query answering in expressive description logics via tableaux. *J. of Automated Reasoning* 41.1 (2008), pp. 61–98.
- [24] D. Calvanese, G. De Giacomo, M. Lenzerini, M. Mecella, and F. Patrizi. Automatic service composition and synthesis: the Roman Model. *Bull. of the IEEE Computer Society Technical Committee on Data Engineering* 31.3 (2008), pp. 18–22.
- [25] A. Cali, D. Calvanese, and D. Martinenghi. Dynamic query optimization under access limitations and dependencies. *J. of Universal Computer Science* 15.1 (2009), pp. 33–62.
- [26] A. Artale, D. Calvanese, R. Kontchakov, and M. Zakharyashev. The *DL-Lite* family and relations. *J. of Artificial Intelligence Research* 36 (2009), pp. 1–69.
- [27] D. Calvanese, G. De Giacomo, D. Lembo, M. Lenzerini, A. Poggi, M. Rodriguez-Muro, R. Rosati, M. Ruzzi, and D. F. Savo. The Mastro system for ontology-based data access. *Semantic Web J.* 2.1 (2011). Listed among the **5 most cited papers in the first five years of the *Semantic Web Journal***, pp. 43–53.
- [28] D. Calvanese, G. De Giacomo, M. Lenzerini, and R. Rosati. View-based query answering in description logics: semantics and complexity. *J. of Computer and System Sciences* 78 (2012), pp. 26–46.

- [29] A. Queralt, A. Artale, D. Calvanese, and E. Teniente. OCL-Lite: finite reasoning on UML/OCL conceptual schemas. *Data and Knowledge Engineering* 73 (2012), pp. 1–22.
- [30] C. Thorne and D. Calvanese. Tractability and intractability of controlled languages for data access. *Studia Logica* 100.4 (2012), pp. 787–813.
- [31] D. Calvanese, G. De Giacomo, D. Lembo, M. Lenzerini, and R. Rosati. Data complexity of query answering in description logics. *Artificial Intelligence* 195 (2013), pp. 335–360.
- [32] E. Kharlamov, D. Zheleznyakov, and D. Calvanese. Capturing model-based ontology evolution at the instance level: The case of *DL-Lite*. *J. of Computer and System Sciences* 79.6 (2013), pp. 835–872.
- [33] D. Calvanese, G. De Giacomo, M. Lenzerini, and M. Y. Vardi. On simplification of schema mappings. *J. of Computer and System Sciences* 79.6 (2013), pp. 816–834.
- [34] B. Bagheri Hariri, D. Calvanese, M. Montali, G. De Giacomo, R. De Masellis, and P. Felli. Description logic Knowledge and Action Bases. *J. of Artificial Intelligence Research* 46 (2013), pp. 651–686.
- [35] D. Calvanese, M. Ortiz, M. Simkus, and G. Stefanoni. Reasoning about explanations for negative query answers in *DL-Lite*. *J. of Artificial Intelligence Research* 48 (2013), pp. 635–669.
- [36] D. Calvanese, S. Hartmann, and E. Teniente. Automated reasoning on conceptual schemas (Dagstuhl Seminar 13211). *Dagstuhl Reports* 3.5 (2013), pp. 43–77.
- [37] D. Calvanese and T. Lukasiewicz. Preface to the special issue on selected papers presented at the 4th International Conference on Web Reasoning and Rule Systems (RR 2010). *Semantic Web J.* 4.4 (2013), p. 349.
- [38] D. Calvanese, T. Eiter, and M. Ortiz. Answering regular path queries in expressive description logics via alternating tree-automata. *Information and Computation* 237 (2014), pp. 12–55.
- [39] D. Calvanese, M. Koubarakis, and D. Toman. Preface to the special issue on ontology-based data access. *J. of Web Semantics* 33 (2015), pp. 1–2.
- [40] D. Calvanese, P. Liuzzo, A. Mosca, J. Remesal, M. Rezk, and G. Rull. Ontology-based data integration in EPNet: Production and distribution of food during the Roman Empire. *Engineering Applications of Artificial Intelligence* 51 (2016), pp. 212–229.
- [41] M. Montali and D. Calvanese. Soundness of data-aware, case-centric processes. *Int. J. on Software Tools for Technology Transfer* 18.5 (2016), pp. 535–558.
- [42] M. Arenas, E. Botoeva, D. Calvanese, and V. Ryzhikov. Knowledge base exchange: The case of OWL 2 QL. *Artificial Intelligence* 238 (2016), pp. 11–62.
- [43] 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 J.* 8.3 (2017). **Semantic Web Journal outstanding paper award for 2016**, pp. 471–487.
- [44] S. Ahmetaj, D. Calvanese, M. Ortiz, and M. Simkus. Managing change in graph-structured data using description logics. *ACM Trans. on Computational Logic* 18.4 (2017), 27:1–27:35.
- [45] D. Calvanese, G. De Giacomo, M. Montali, and F. Patrizi. First-order mu-calculus over generic transition systems and applications to the Situation Calculus. *Information and Computation* 259.3 (2018), pp. 328–347.
- [46] S. Abiteboul, M. Arenas, P. Barceló, M. Bienvenu, D. Calvanese, C. David, R. Hull, E. Hüllermeier, B. Kimelfeld, L. Libkin, W. Martens, T. Milo, F. Murlak, F. Neven, M. Ortiz, T. Schwentick, J. Stoyanovich, J. Su, D. Suci, V. Vianu, and K. Yi. Research directions for principles of data management (Dagstuhl Perspectives Workshop 16151). *Dagstuhl Manifestos* 7.1 (2018), pp. 1–29.
- [47] D. Calvanese, M. Dumas, Ü. Laurson, F. M. Maggi, M. Montali, and I. Teinmaa. Semantics, analysis and simplification of DMN decision tables. *Information Systems* 78 (2018), pp. 112–125.
- [48] D. Calvanese, M. Montali, M. Dumas, and F. M. Maggi. Semantic DMN: Formalizing and reasoning about decisions in the presence of background knowledge. *Theory and Practice of Logic Programming* 19.4 (2019), pp. 536–573.
- [49] D. Zheleznyakov, E. Kharlamov, W. Nutt, and D. Calvanese. On expansion and contraction of DL-Lite knowledge bases. *J. of Web Semantics* 57 (2019), pp. 1–19.
- [50] E. Güzel Kalayci, S. Brandt, D. Calvanese, V. Ryzhikov, G. Xiao, and M. Zakharyashev. Ontology-based access to temporal data with Ontop: A framework proposal. *Applied Mathematics and Computer Science* 29.1 (2019), pp. 17–30.
- [51] D. Lanti, G. Xiao, and D. Calvanese. VIG: Data scaling for OBDA benchmarks. *Semantic Web J.* 10.2 (2019), pp. 413–433.
- [52] G. Xiao, L. Ding, B. Cogrel, and D. Calvanese. Virtual Knowledge Graphs: An overview of systems and use cases. *Data Intelligence* 1.3 (2019), pp. 201–223.
- [53] E. Botoeva, D. Calvanese, B. Cogrel, J. Corman, and G. Xiao. Ontology-based data access – Beyond relational sources. *Intelligenza Artificiale* 13.1 (2019), pp. 21–36.
- [54] D. Calvanese, S. Ghilardi, A. Gianola, M. Montali, and A. Rivkin. SMT-based verification of data-aware processes: A model-theoretic approach. *Mathematical Structures in Computer Science* 30.3 (2020), pp. 271–313.
- [55] L. Ding, G. Xiao, D. Calvanese, and L. Meng. Consistency assessment for open geodata integration: an ontology-based approach. *GeoInformatica* 25.4 (2021), pp. 733–758.

- [56] S. Amer-Yahia, G. Koutrika, M. Braschler, D. Calvanese, D. Lanti, H. Lücke-Tieke, A. Mosca, T. Mendes de Farias, D. Papadopoulos, Y. Patil, G. Rull, E. Smith, D. Skoutas, S. Subramanian, and K. Stockinger. INODE: Building an end-to-end data exploration system in practice. *SIGMOD Record* 50.4 (2021), pp. 23–29.
- [57] D. Calvanese, S. Ghilardi, A. Gianola, M. Montali, and A. Rivkin. Model completeness, uniform interpolants and superposition calculus (With applications to verification of data-aware processes). *J. of Automated Reasoning* 65.7 (2021), pp. 941–969.
- [58] X. Wang and D. Calvanese. Editorial for special issue of Journal of Big Data Research on “Big data meets knowledge graphs”. *Big Data Research* 25 (2021), p. 100215.
- [59] L. Ding, G. Xiao, A. Pano, C. Stadler, and D. Calvanese. Towards the next generation of the LinkedGeoData project using virtual knowledge graphs. *J. of Web Semantics* 71 (2021), p. 100662.
- [60] D. Calvanese, D. Lanti, T. Mendes De Farias, A. Mosca, and G. Xiao. Accessing scientific data through knowledge graphs with Ontop. *Patterns* 2 (2021), pp. 1–10.