

Professor Bernardo Cuenca Grau  
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## Curriculum Vitae (Updated April-2023)

### 1 General Information

#### Research Interests

Artificial Intelligence, Knowledge Representation and Reasoning, Computational Logic, Automated Reasoning, Knowledge Graphs, Semantic Web, Data Management, Database Theory, Graph Representation Learning, Machine Learning on Graphs.

#### Employment History

- *2015 – Present*: Full Professor in Computer Science, Dept. of Computer Science, Univ. of Oxford.
- *2014 – 2015*: Associate Professor, Dept. of Computer Science, University of Oxford.
- *2012 – 2018*: Research Lecturer, Dept. of Computer Science, University of Oxford.
- *2009 – 2017*: Royal Society University Research Fellow, Dept. of Computer Science, University of Oxford.
- *2007 – 2009*: Postdoctoral Researcher, Dept. of Computer Science, University of Oxford.
- *2005 – 2007*: Postdoctoral Researcher, School of Computer Science, University of Manchester (UK).
- *2003 – 2005*: Visiting Scholar, University of Maryland Institute for Advanced Computer Studies, (USA).
- *2002 – 2005*: Doctoral Fellow funded by the Spanish Ministry of Education. Univ. of Valencia (Spain).

#### Appointments in Oxford Colleges

- *2018 – Present*: Tutorial Fellow, Keble College.
- *2018 – Present*: Director of Studies (Computer Science), Keble College.
- *2013 – 2018*: Supernumerary Fellow, Oriel College.
- *2010 – 2018*: College Lecturer in Computer Science (Non-Stipendiary), Oriel College.

#### Education

- PhD in Computer Science, University of Valencia, Spain, graduated ‘Cum Laude’ in Nov. 2005.
- Licenciatura (combined BSc and MSc) in Physics, University of Valencia, Spain, graduated in 2001.

#### Other Appointments

- *Oct 2020 – Present*: Undergraduate Admissions Coordinator. Department of Computer Science, Oxford
- *Feb 2017 – Jan 2019*: Member of the Board of Directors. Covatic Limited.
- *Aprl 2017 – Present*: Member of the Board of Directors. Oxford Semantic Technologies Limited.

### 2 Research Activities

#### Awards

I have received the following awards (in reverse chronological order).

- **Teaching Commendation.** Awarded by the Department of Computer Science at Oxford for outstanding student feedback in 2022.
- **Teaching Award.** Awarded by the Department of Computer Science at Oxford for outstanding student feedback on the 2021 Artificial Intelligence course.
- **Semantic Web Science Association (SWSA) 10 Year Impact Award for 2021.** The SWSA Ten-Year Award recognizes the highest impact papers from the ISWC proceedings 10 years after their publication. The award was received for the paper “LogMap: Logic-based and Scalable Ontology Matching” published at ISWC 2011.
- **Mathematical and Physical and Life Sciences Division (MPLS) commercial impact award, honourable mention, 2021.**
- **IJCAI-2017 Distinguished Paper Award.** Best paper award for the work entitled “Foundations of Declarative Data Analysis Using Limit Datalog Programs ” at the International Joint Conference of Artificial Intelligence (IJCAI-2017). IJCAI is the most prestigious conference in the field of Artificial Intelligence worldwide and it is highly competitive; more than 2,500 papers were submitted to the conference in 2017, and only one paper was selected for the award.
- **Best Reviewer, 2017.** Best reviewer award at the International Semantic Web Conference (ISWC-2017).
- **Research and Recognition Award, 2016.** Departmental award for an outstanding achievement that goes beyond the natural expectations of the role.
- **Recognition of Distinction, 2015.** I was awarded the title of Full Professor in Computer Science in July 2015 (the 2015 Recognition of Distinction Exercise). The title was awarded upon fulfillment of the following three criteria:
  - *Research Excellence.* An ongoing research record which is characterised by a significant influence on the field of study, and is of a high order of excellence and of international standing, and the quality of which in terms of research distinction is at least equal to that expected of those appointed to full professorships at other leading international research universities.
  - *Teaching.* An ongoing record of effective teaching for the University and for colleges concomitant with the duties of the university post and the college fellowship (where one is held).
  - *Administration.* An ongoing record of involvement in University and/or college administration concomitant with the duties of the university post and the college fellowship (where one is held), and demonstrable competence in such administration.
- **AAAI-2010 Outstanding Paper Award.** at the Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2010). The AAAI conference is, together with IJCAI, the top annual conference in the field of Artificial Intelligence. The conference received 982 submissions on that year, where only two papers were selected for the award.
- **Royal Society University Research Fellowship.** Awarded in 2009 by the Royal Society. The aim of the fellowship is to provide outstanding scientists that have the potential to become leaders in their chosen field with the opportunity to build an independent research career. Covering all areas of the life and physical sciences, including engineering, but excluding clinical medicine, it has a success rate of approximately 5%.
- **Oxford University Computing Laboratory Merit Award, October 2009.** Departmental award for an outstanding achievement that goes beyond the natural expectations of the role.
- **ESWC-2006 Best Paper Award.** Third European Semantic Web Conference (ESWC-2006). The ESWC conference is the main venue for Semantic Technologies in Europe.
- **Beca de Ministerio para la Formación del Profesorado Universitario.** Fully-funded doctoral fellowship awarded by the Spanish government. Extremely competitive fellowship awarded after a national-level competition process.

## Grants

I have been awarded research grants for a total value of over £4.5 million both in the capacity of a principal investigator and a co-investigator. These grants were awarded by the most prestigious funding bodies in UK and

Europe, including EPSRC, the Royal Society, and the European Union.

I have been awarded the following research grants as a **Principal Investigator**:

- OASIS: Ontology Reasoning over Frequently-changing and Streaming Data. : EP/S032347/1. From 01/10/2019 to 30/09/2022. Total value: £961,132.
- Query Formulation and Processing for Large-scale Semantic Repositories in the Energy Domain. EPSRC Impact Acceleration Award. From April 2016 to March 2017. Total value: £58,647.
- Score!: Scalable and Complete Reasoning with Incomplete Ontology Reasoners. EPSRC Standard Responsive Mode Grant EP/J020214/1. From Jan 2013 to Jan 2016. Total value: £555,708.
- LogMap: Logic-based Methods for Ontology Mapping. EPSRC First Grant EP/I005706/1. From Jan 2011 to Nov 2012. Total value: £101,657.
- Privacy in Ontology-based Information Systems. Royal Society University Research Fellowship. From Oct 2009 to Sep 2014. Total value: £614,934.
- Semantics-Aware Data Management: Scalable Querying under Privacy Constraints. Royal Society University Research Fellowship Renewal. From Oct 2014 to Sep 2017. Total value: £275,000.

I have been awarded the following research grants as a **Co-investigator**

- ConCur: Knowledge Base Construction and Curation; EPSRC EP/V050869/1; Standard responsive model EPSRC grant. From Dec. 2021 to Nov. 2024. Total value: £1,131,073.
- ED3: Enabling Analytics Over Diverse Distributed Datasources; EPSRC EP/N014359/1; From April 1st 2016 to 31st March 2019. Total value: £866,527. Standard responsive mode EPSRC grant.
- DBOnto: Bridging Databases and Ontologies; EPSRC EP/L012138/1; Total value: £1,263,746. Platform Grant. From Jan. 2014 to Jan. 2019.
- Optique: Scalable End-user Access to Big Data; EC 318338. Total amount (for Oxford, excluding other partners): Total value: €841,929. European FP7 IP project. From Nov. 2012 to Oct. 2016.
- Personalised Broadcasting Policy Management using Semantic Technologies. EPSRC Impact Acceleration Account. From April 2016 to March 2017. Total Value: £53,786.

### **Supervision and Mentoring of Early Career Academics and Postdoctoral Researchers**

I have mentored and supervised the following postdoctoral researchers and early career academics.

- Dr. David Tena Cucala (EPSRC project OASIS): 2019-Present. Postdoc at Oxford University.
- Dr. Pan Hu (EPSRC project OASIS): 2019-2021. Associate professor at Shanghai Jiaotong.
- Dr. Michal Zawidzki (funded by EPSRC project OASIS): 2019-Present. Senior researcher at Oxford University.
- Dr. Przemyslaw Walega (funded by EPSRC project OASIS): 2018-Present. Senior researcher at Oxford University.
- Dr. Charalampos Nikolaou (funded by EPSRC project ED3): 2016-2019. Senior software engineer at Infor.
- Dr. Evgeny Kharlamov (Senior Research Fellow): 2016-2018. Senior scientist at Bosch.
- Dr. E. V. Kostylev (Departmental Lecturer, Dept. of Computer Science, Oxford): 2017-2021. Associate professor at University of Oslo.
- Dr. Ernesto Jimenez Ruiz (funded by EPSRC project LogMap): 2011-2012. Lecturer at City, Univ. of London.
- Dr. Mark Kaminski (funded by EPSRC project Score!): 2013-2016. German patent office.
- Dr. Cristina Feier (funded by EPSRC project Score!): 2013-2015.
- Dr. Sarunas Marciuska (funded by EPSRC project Score!): 2014-2016. Senior software engineer at Microsoft.

- Dr. Yavor Nenov (funded by EPSRC project Score!): 2014-2016. Chief scientific officer at Oxford Semantic Tech.
- Dr. Evgeny Sherkhonov (funded by IAA award): 2016-2017. Senior data scientist at Farfetch.

### Invited Presentations and Tutorials

1. *Temporal and Stream Reasoning with DatalogMTL*. Invited talk at the 2022 Stream Reasoning Workshop.
2. *DatalogMTL: Theory and Practice of Temporal Reasoning*. Tutorial at the Int. Conference on the Principles of Knowledge Representation and Reasoning (KR-2022).
3. *Characterising Graph Neural Networks Using Logical Rules*. Dagstuhl Seminar on Structure and Learning. Sept. 2021.
4. *Logical Foundations of Declarative Data Analysis*. Invited departmental seminar at the Free University of Bozen-Bolzano (Italy). February 2018.
5. *Logical Foundations of Linked Data Anonymisation*. Invited departmental seminar at TU Dresden, Germany. August 2017.
6. *Ontologies, Semantic Technologies, and the Semantic Web: The Story so Far*. Invited talk at several top Chinese Universities, including Peking University (PKU), Beijing Institute of Technology (BIT), Nankai University, Sichuan University and Fudan University. China, 2016.
7. *Ontology Reasoning with Incomplete Reasoners*. Departmental Seminar, Univ. of Bozen-Bolzano (Italy). 2011.
8. *Completeness Guarantees for Incomplete Ontology Reasoners*. Departmental Seminar, Univ. of Liverpool. 2011.
9. *Ontology-based Information Systems: Past, Present and Future*. Keynote at the IEEE Workshop on Semantic Analytics. Belfast, UK. 2011.
10. *Representing Structured Objects Using Description Graphs*. Keynote at the Workshop on Reasoning on the Web: Scalability and Commonsense. 2008
11. *Modularizing OWL Ontologies*. Invited talk at IBM Watson Research Center. Hawthorne, USA, 2005.
12. *Evolution of OWL 2 QL and OWL 2 EL Ontologies*. Tutorial at the 9th OWL: Experiences and Directions Workshop (OWLEd). Crete. May 2012.
13. *OWL 2: Theory and Practice*. Tutorial at the International Semantic Web Conference (ISWC), 2010.
14. *Learning from the Masters: Understanding Ontologies Found on the Web*. Tutorial at the International Semantic Web Conference (ISWC), November 2006.

## List of Publications

According to Google Scholar, my work has received over 15,000 citations, my h-index is 46 and my i10-index 109.

## Journal Publications

1. Finite Materialisability of Datalog Programs with Metric Temporal Operators. Przemyslaw Walega, Michal Zawidzki, and Bernardo Cuenca Grau. *Journal of Artificial Intelligence Research (JAIR)*. Volume 76. January 2023.
2. Stream Reasoning with DatalogMTL. Przemyslaw Walega, Mark Kaminski, Dingmin Wang, and Bernardo Cuenca Grau. *Journal of Web Semantics (JWS)* Vol. 76, Elsevier. 2023.
3. The Complexity and Expressive Power of Limit Datalog. Mark Kaminski, Egor V. Kostylev, Bernardo Cuenca Grau, Boris Motik and Ian Horrocks. *Journal of the ACM (JACM)*, Volume 62, Issue 1. February 2022.
4. The Delay and Window Size Problems in Rule-based Stream Reasoning. Alessandro Ronca, Mark Kaminski, Bernardo Cuenca Grau, and Ian Horrocks. *Artificial Intelligence (AIJ)*, Vol. 306, 2022 (DOI 10.1016/j.artint.2022.103668).
5. Pay-as-you-go Consequence-Based Reasoning for the Description Logic  $\mathcal{SROIQ}$ . David Tena Cucala, Bernardo Cuenca Grau and Ian Horrocks. *Artificial Intelligence (AIJ)*. Volume 298, 2021.
6. Logical Foundations of Linked Data Anonymisation. Bernardo Cuenca Grau and Egor V. Kostylev. *Journal of Artificial Intelligence Research (JAIR)*. Volume 64, pages 253–314, 2019.
7. Foundations of Ontology-Based Data Access under Bag Semantics. Charalampos Nikolaou, Egor V. Kostylev, George Konstantinidis, Mark Kaminski, Bernardo Cuenca Grau, and Ian Horrocks. *Artificial Intelligence (AIJ)*. Volume 274. Pages 91–132. 2019.
8. Limit Datalog: A Declarative Query Language for Data Analysis. Bernardo Cuenca Grau, Ian Horrocks, Mark Kaminski, Egor V. Kostylev, and Boris Motik. *SIGMOD Rec.* 48(4): 6-17, 2019.
9. Consequence-Based Reasoning for Description Logics with Disjunctions and Number Restrictions. Andrew Bate, Boris Motik, Bernardo Cuenca Grau, David Tena Cucala, Frantisek Simancik, Ian Horrocks. *Journal of Artificial Intelligence Research (JAIR)*. Volume 63, Pages 625-690, 2018.
10. Logical Foundations of Information Disclosure in Ontology-Based Data Integration. Michael Benedikt, Bernardo Cuenca Grau, and Egor V. Kostylev. *Artificial Intelligence Journal (AIJ)*. Elsevier. Volume 262, Issue C, pages 52-95, 2018.
11. Query Nesting, Assignment, and Aggregation in SPARQL 1.1. Mark Kaminski, Egor V. Kostylev, and Bernardo Cuenca Grau. *ACM Transactions on Database Systems (TODS)*. Volume 42(3), pages 17:1-17:46. 2017.
12. Datalog Rewritability of Disjunctive Datalog Programs and Non-Horn Ontologies. Mark Kaminski, Yavor Nenov, Bernardo Cuenca Grau. *Artificial Intelligence Journal (AIJ)*, pp. 90-118, 2016.
13. Module Extraction in Expressive Ontology Languages via Datalog Reasoning. Ana Armas Romero, Mark Kaminski, Bernardo Cuenca Grau, Ian Horrocks. *Journal of Artificial Intelligence Research (JAIR)*. Vol. 55, pages 499-564. 2016.
14. Faceted Search over RDF-Based Knowledge Graphs. Marcelo Arenas, Bernardo Cuenca Grau, Evgeny Kharlamov, Sarunas Marciuska, Dmitry Zheleznyakov. *Journal of Web Semantics (JWS)*. Volumes 37–38, March 2016, Pages 55–74.
15. PAGODA: Pay-As-You-Go Ontology Query Answering Using a Datalog Reasoner. Yujiao Zhou, Bernardo Cuenca Grau, Yavor Nenov, Mark Kaminski, and Ian Horrocks *Journal of Artificial Intelligence Research (JAIR)*. Volume 54, pages 309-367, November 2015.

16. Acyclicity Notions for Existential Rules and Their Application to Query Answering in Ontologies. B. Cuenca Grau, I. Horrocks, M. Krötsch, C. Kupke, D. Magka, Z. Wang. *J. of Artificial Intelligence Research (JAIR)*, Vol. 47, pages 741-808, 2013.
17. Reasoning over Ontologies with Hidden Content: The Import-by-Query Approach. B. Cuenca Grau and B. Motik. *J. of Artificial Intelligence Research (JAIR)*. Vol 45, pages 197-255, 2012.
18. Completeness Guarantees for Incomplete Ontology Reasoners: Theory and Practice. B. Cuenca Grau, B. Motik, G. Stoilos, and I. Horrocks. *J. of Artificial Intelligence Research (JAIR)*. Vol. 43, pages 419-476. 2012.
19. Supporting concurrent ontology development: Framework, algorithms and tool. E. Jiménez Ruiz, B. Cuenca Grau, I. Horrocks, R. Berlanga. *Data & Knowledge Engineering (DKE)*, 70:1, pages 146-164. 2011. Elsevier.
20. Logic-based Assessment of the Compatibility of UMLS Ontology Sources. E. Jiménez Ruiz, B. Cuenca Grau, I. Horrocks, R. Berlanga. *Journal of Biomedical Semantics. BMC*. Vol. 2, March 2011.
21. Incremental Classification of Description Logics Ontologies. B. Cuenca Grau, C. Halaschek-Wiener, Y. Kazakov, and B. Suntisrivaraporn. *J. of Automated Reasoning (JAR)*, 44:4, pages 337-369. 2010. Springer.
22. Privacy in Ontology-based Information Systems: A Pending Matter. B. Cuenca Grau. *Semantic Web Journal*, Vol. 1, pages 137-141, 2010. IOS Press.
23. Representing Ontologies Using Description Logics, Description Graphs, and Rules. B. Motik, B. Cuenca Grau, I. Horrocks, U. Sattler. *Artificial Intelligence (AIJ)* 173(14):1275-1309, 2009. Elsevier.
24. OWL 2: The Next Step for OWL. B. Cuenca Grau, I. Horrocks, B. Motik, B. Parsia, P. Patel-Schneider, U. Sattler. *Journal of Web Semantics (JWS)*, Vol. 6, Number 4, pp 309-322. 2008. Elsevier.
25. Modular Reuse of Ontologies: Theory and Practice. B. Cuenca Grau, I. Horrocks, Y. Kazakov, U. Sattler. *Journal of Artificial Intelligence Research (JAIR)*, Vol 31, pp 273-318, 2008. AAAI Press.
26. Pellet: A Practical OWL DL Reasoner. E. Sirin, B. Parsia, B. Cuenca Grau, A. Kalyanpur, Y. Katz. *Journal of Web Semantics (JWS)*, Volume 5, Issue 2, 2007. Elsevier.
27. Combining OWL Ontologies Using  $\mathcal{E}$ -connections. B. Cuenca Grau, B. Parsia, and E. Sirin. *Journal Of Web Semantics (JWS)*, Volume 4, Issue 1, 2006. Pages 40-59. Elsevier.
28. Swoop: A Web Ontology Editing Browser. A. Kalyanpur, B. Parsia, E. Sirin, B. Cuenca Grau, and J. Hendler. *Journal of Web Semantics (JWS)*. Volume 4, Issue 2, pages 144-153, 2006. Elsevier.

### Conference Publications

1. Cardinality-Minimal Explanations for Monotonic Neural Networks. Ouns El-Harzli, Bernardo Cuenca Grau, and Ian Horrocks. In *Proceedings of the 32nd International Joint Conference on Artificial Intelligence (IJCAI-2023)*. Macao, S.A.R.
2. Efficient Embeddings of Logical Variables for Query Answering over Incomplete Knowledge Graphs. Dingmin Wang, Yeyuan Chen, and Bernardo Cuenca Grau. In *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI-2023)*. Washington DC, USA.
3. Materialisation-based Reasoning in DatalogMTL with Bounded Intervals. Przemyslaw Walega, Michal Zawidzki, Dingmin Wang, and Bernardo Cuenca Grau. In *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI-2023)*. Washington DC, USA.
4. Seminaïve Materialisation in DatalogMTL. Dingmin Wang, Przemyslaw Walega, and Bernardo Cuenca Grau. In *Proceedings of DeclarativeAI-2022*.
5. Faithful Approaches to Rule Learning. David Tena Cucala, Bernardo Cuenca Grau, Boris Motik. *Proc. of the 19th International Conference on the Principles of Knowledge Representation and Reasoning (KR-2022)*.

6. Explainable GNN-Based Models over Knowledge Graphs. David Tena Cucala, Bernardo Cuenca Grau, Egor V. Kostylev, and Boris Motik. Proc. of the 10th International Conference on Learning Representations.
7. MeTeoR: Practical Reasoning in Datalog with Metric Temporal Operators. Dingmin Wang, Pan Hu, Przemyslaw A. Walega, and Bernardo Cuenca Grau. Proc. of the 26th AAAI Conference on Artificial Intelligence (AAAI-2022).
8. INDIGO: GNN-Based Inductive Knowledge Graph Completion Using Pair-Wise Encoding. Shuwen Liu, Egor V. Kostylev, Bernardo Cuenca Grau, and Ian Horrocks. In Proc. of the 35th Conference on Neural Information Processing Systems (NeurIPS 2021).
9. DatalogMTL with Negation Under Stable Models Semantics. Przemyslaw Walega, David Tena Cucala, Egor V. Kostylev, and Bernardo Cuenca Grau. Proceedings of the 18th International Conference on the Principles of Knowledge Representation and Reasoning (KR-2021). Held virtually, Nov. 2021.
10. Finitely Materialisable Datalog Programs with Metric Temporal Operators. Przemyslaw Walega, Michal Zawidzki, and Bernardo Cuenca Grau. Proceedings of the 18th International Conference on the Principles of Knowledge Representation and Reasoning (KR-2021). Held virtually, Nov. 2021.
11. Stratified Negation in Datalog with Metric Temporal Operators. David Tena Cucala, Przemyslaw Walega, Bernardo Cuenca Grau and Egor V. Kostylev. Proc. of the 25th AAAI Conference on Artificial Intelligence (AAAI 2021). Held virtually, Feb. 2021.
12. Tractable Fragments of Datalog with Metric Temporal Operators. Przemyslaw Walega, Bernardo Cuenca Grau, Mark Kaminski, Egor V. Kostylev. Proc. of the 29th International Joint Conference on Artificial Intelligence (IJCAI 2020). July 2020.
13. DatalogMTL over the Integer Timeline. Przemyslaw Walega, Bernardo Cuenca Grau, Mark Kaminski, Egor V. Kostylev. Proceedings of the 17th International Conference on the Principles of Knowledge Representation and Reasoning (KR-2020), pages 768-777. Sept. 2020.
14. Complexity and Expressive Power of Disjunction and Negation in Limit Datalog. Mark Kaminski, Egor V. Kostylev, Bernardo Cuenca Grau, Ian Horrocks. Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI 2020). New York, USA, February 2020.
15. Query-based Entity Comparison in Knowledge Graphs Revisited. Alina Petrova, Egor V. Kostylev, Bernardo Cuenca Grau and Ian Horrocks. Proceedings of the 18th International Semantic Web Conference (ISWC 2019). Auckland, New Zealand, October 2019.
16. Bag Semantics of DL-Lite with Functionality Axioms. Gianluca Cima, Charalampos Nikolaou, Egor V. Kostylev, Mark Kaminski, Bernardo Cuenca Grau and Ian Horrocks. Proceedings of the 18th International Semantic Web Conference (ISWC 2019). Auckland, New Zealand, October 2019.
17. DatalogMTL: Computational Complexity and Expressive Power. Przemyslaw Walega, Bernardo Cuenca Grau, Mark Kaminski, and Egor V. Kostylev. Proc. of the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019). Macao, China, August 2019.
18. Satisfaction and Implication of Integrity Constraints in Ontology-based Data Access. Charalampos Nikolaou, Bernardo Cuenca Grau, Egor V. Kostylev, Mark Kaminski, and Ian Horrocks. Proc. of the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019). Macao, China, August 2019.
19. Reasoning over Streaming Data in Metric Temporal Datalog. Przemyslaw Walega, Mark Kaminski, and Bernardo Cuenca Grau. Proc. of the Thirty-third International AAAI Conference on Artificial Intelligence (AAAI 2019).
20. The Window Validity Problem in Rule-based Stream Reasoning. Alessandro Ronca, Mark Kaminski, Bernardo Cuenca Grau and Ian Horrocks. Proc. of the 16th International Conference on the Principles of Knowledge Representation and Reasoning (KR 2018), pages 571-581. Tempe, Arizona, October 2018.

21. Stratified Negation in Limit Datalog Programs. Mark Kaminski, Bernardo Cuenca Grau, Boris Motik, Egor V. Kostylev and Ian Horrocks. Proc. of the 27th International Joint Conference on Artificial Intelligence (IJCAI 2018), pages 1875–1881. Stockholm, Sweden, July 2018.
22. Consequence-based Reasoning for Description Logics with Disjunction, Inverse Roles, Number Restrictions, and Nominals. David Tena Cucala, Bernardo Cuenca Grau and Ian Horrocks. Proc. of the 27th International Joint Conference on Artificial Intelligence (IJCAI 2018), pages 1970–1976. Stockholm, Sweden, July 2018.
23. Stream Reasoning in Temporal Datalog. Alessandro Ronca, Mark Kaminski, Bernardo Cuenca Grau, Boris Motik, and Ian Horrocks. Proc. of the Thirty-Second International AAAI Conference on Artificial Intelligence (AAAI 2018), pages 1941–1948. New Orleans, USA, February 2018.
24. The Bag Semantics of Ontology-Based Data Access. Charalampos Nikolaou, Egor V. Kostylev, George Konstantinidis, Mark Kaminski, Bernardo Cuenca Grau and Ian Horrocks. Proc. of the 26th International Joint Conference on Artificial Intelligence (IJCAI 2017). Melbourne, Australia, August 2017.
25. Foundations of Declarative Data Analysis Using Limit Datalog Programs. Mark Kaminski, Bernardo Cuenca Grau, Boris Motik, Egor V. Kostylev and Ian Horrocks. Proc. of the 26th International Joint Conference on Artificial Intelligence (IJCAI 2017). Melbourne, Australia, August 2017. **[IJCAI Distinguished Paper Award]**.
26. Semantic Faceted Search with Aggregation and Recursion. Evgeny Sherkhonov, Bernardo Cuenca Grau, Evgeny Kharlamov and Egor V. Kostylev. Proc. of the 16th International Semantic Web Conference (ISWC 2017). Vienna, Austria, October 2017.
27. Entity Comparison in RDF Graphs. Alina Petrova, Evgeny Sherkhonov, Bernardo Cuenca Grau, and Ian Horrocks. Proc. of the 16th International Semantic Web Conference (ISWC 2017). Vienna, Austria, October 2017.
28. SemFacet: Making Hard Faceted Search Easier. Evgeny Kharlamov, Luca Giacomelli, Evgeny Sherkhonov, Bernardo Cuenca Grau, Egor V. Kostylev and Ian Horrocks. Proc. of the 26th ACM International Conference on Information and Knowledge Management (CIKM 2017), Demo Track.
29. Source Information Disclosure in Ontology-Based Data Integration. Michael Benedikt, Bernardo Cuenca Grau, and Egor V. Kostylev. Proc. of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI 2017). San Francisco, California, USA, February 2017.
30. Capturing Industrial Information Models with Ontologies and Constraints: The Siemens Use Case. Evgeny Kharlamov, Bernardo Cuenca Grau, Ernesto Jimenez-Ruiz, Steffen Lamparter, Gulnar Mehdi, Martin Ringsquandl, Yavor Nenov, Stephan Grimm, Mikhail Roshchin and Ian Horrocks. Proc. of the 15th International Semantic Web Conference (ISWC 2016). Kobe, Japan, 2016.
31. Extending Consequence-Based Reasoning to *SRIQ*. Andrew Bate, Boris Motik, Bernardo Cuenca Grau, Frantisek Simancik and Ian Horrocks. Proc. of the 15th International Conference on the Principles of Knowledge Representation and Reasoning (KR 2016). Cape Town, South Africa, April 2016.
32. Reformulating Ontological Queries Using Materialised Rewritings. In Proceedings of the 6th ACM Conference on Web Intelligence, Mining, and Semantics (WISM). Nimes, France, June 2016.
33. Semantics and Expressive Power of Subqueries and Aggregates in SPARQL 1.1. Mark Kaminski, Egor V. Kostylev and Bernardo Cuenca Grau. Proc. of the 25th International World Wide Web Conference (WWW-2016). Montreal, Canada, 2016.
34. Logical Foundations of Privacy-Preserving Publishing of Linked Data. Bernardo Cuenca Grau and Egor V. Kostylev. Proc. of the 30th AAAI Conference on Artificial Intelligence (AAAI). Phoenix, Arizona, Feb. 2016.
35. SOMM: Industry Oriented Ontology Management Tool. Evgeny Kharlamov, Bernardo Cuenca Grau, Ernesto Jimenez-Ruiz, Steffen Lamparter, Gulnar Mehdi, Martin Ringsquandl, Yavor Nenov, Stephan Grimm, Mikhail Roshchin and Ian Horrocks Proc. of the 15th International Semantic Web Conference (ISWC 2016), Poster and Demo Track. Kobe, Japan, 2016.

36. SemFacet: Faceted Search over Ontology Enhanced Knowledge Graphs. Bernardo Cuenca Grau, Evgeny Kharlamov, Sarunas Marciuska, Dmitriy Zheleznyakov and Marcelo Arenas. Proc. of the 15th International Semantic Web Conference (ISWC 2016), Poster and Demo Track. Kobe, Japan, 2016.
37. Computing Horn Rewritings of Description Logics Ontologies. Mark Kaminski, Bernardo Cuenca Grau. Proc. of the 24th International Joint Conference on Artificial Intelligence (IJCAI). Buenos Aires, Argentina, July 2015.
38. Controlled Query Evaluation for Datalog and OWL 2 Profile Ontologies. Bernardo Cuenca Grau, Evgeny Kharlamov, Egor Kostylev, Dmitriy Zheleznyakov. Proc. of the 24th International Joint Conference on Artificial Intelligence (IJCAI). Buenos Aires, Argentina, July 2015.
39. The Combined Approach to Query Answering Beyond the OWL 2 Profiles. Cristina Feier, David Carral, Giorgio Stefanoni, Bernardo Cuenca Grau, and Ian Horrocks. Proc. of the 24th International Joint Conference on Artificial Intelligence (IJCAI). Buenos Aires, Argentina, July 2015.
40. Ontology Module Extraction via Datalog Reasoning. A. Armas Romero, M. Kaminski, B. Cuenca Grau, and I. Horrocks. Proc. of the 29th AAAI Conference on Artificial Intelligence (AAAI). Austin, Texas, January 2015.
41. Faceted Search over Ontology-Enhanced RDF Data. M. Arenas, B. Cuenca Grau, E. Kharlamov, S. Marciuska, and D. Zheleznyakov. Proc. Int. Conf. on Information & Knowledge Management (CIKM). ACM. Pages 939-948. Shaghai, China, 2014.
42. Pushing the Boundaries of Tractable Ontology Reasoning. D. Carral, C. Feier, B. Cuenca Grau, P. Hitzler and I. Horrocks. Proc. of the 13th Int. Semantic Web Conf. (ISWC). Riva de Garda, Italy, 2014. Pages 148-163, Springer LNCS. **[Best Student Paper Runner-Up]**.
43. Computing Datalog Rewritings for Disjunctive Datalog Programs and Description Logic Ontologies. M. Kaminski, Y. Nenov, and B. Cuenca Grau. Proc. of the 8th International Conference on Web Reasoning and Rule Systems (RR). Athens, Greece, 2014. Pages 76-91. Springer LNCS.
44. On the Semantics of SPARQL Queries with Optional Matching Under Entailment Regimes. E. Kostylev, B. Cuenca Grau. 13th Int. Semantic Web Conf. (ISWC). Riva de Garda, Italy, 2014. pp 374-389, Springer LNCS.
45. Datalog Rewritability of Disjunctive Datalog Programs and its Applications to Ontology Reasoning. M. Kaminski, Y. Nenov, B. Cuenca Grau. Proc. 28th AAAI Conf. (AAAI). Quebec, 2014. pp 1077-1083. AAAI Press.
46. Pay-as-you-go OWL Query Answering Using a Triple Store. Y. Zhou, Y. Nenov, B. Cuenca Grau, and I. Horrocks. Proc. of the 28th AAAI Conference (AAAI). Quebec, Canada, 2014. pp 1142-1148. AAAI Press.
47. EL-ifying Ontologies. D. Carral, C. Feier, B. Cuenca Grau, P. Hitzler, and I. Horrocks. Proc. of the 7th Int. Joint Conference on Automated Reasoning (IJCAR-2014), Vienna, Austria, 2014. Pages 464-469. Springer LNCS.
48. SemFacet: Semantic Faceted Search over Yago. M. Arenas, B. Cuenca Grau, E. Kharlamov, S. Marciuska, Dmitriy Zheleznyakov, M. Arenas and E. Jiménez Ruiz. In Proceedings of the 23thrd International World Wide Web Conference (WWW), Companion Volume. Pages 123-126. ACM. 2014.
49. Towards Semantic Faceted Search. M. Arenas, B. Cuenca Grau, E. Kharlamov, S. Marciuska, D. Zheleznyakov. Pro. 23thrd Int. World Wide Web Conference (WWW), Companion Volume. Pages 219-220. ACM. 2014.
50. Controlled Query Evaluation over OWL 2 RL Ontologies. B. Cuenca Grau, E. Kharlamov, E. Kostylev, and D. Zheleznyakov. Proc. 12th Int. Semantic Web Conference (ISWC). Sydney, 2013. pp 49-65. Springer LNCS.
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52. Computing Datalog Rewritings beyond Horn Ontologies. B. Cuenca Grau, B. Motik, G. Stoilos, and I. Horrocks. Proc. 23thrd Int. Joint Conference on Artificial Intelligence (IJCAI). Beijing, China, 2013. AAAI Press.

53. Making the most of your triple store: Query answering in OWL 2 using an RL reasoner. Y. Zhou, B. Cuenca Grau, I. Horrocks, Z. Wu and J. Banerjee Proc. 22nd Int. World Wide Web Conf. (WWW). pp 1569-1580. ACM 2013.
54. MORE: Modular Combination of OWL Reasoners for Ontology Classification. A. Armas Romero, B. Cuenca Grau, and I. Horrocks. Proc. 11th Int. Semantic Web Conf. (ISWC), Boston, US, 2012. pp 1-16. Springer LNCS.
55. Large-scale Interactive Ontology Matching: Algorithms and Implementation. E. Jiménez Ruiz, B. Cuenca Grau, Y. Zhou, and I. Horrocks. Proc. 20th European Conf. on Artificial Intelligence (ECAI). Montpellier, France, 2012. Pages 444-449, IOS Press.
56. Benchmarking Ontology-based Query Rewriting Systems. M. Imprialou, G. Stoilos, and B. Cuenca Grau. Proc. of the 26th AAAI Conf. on Artificial Intelligence (AAAI), Toronto (Canada), 2012. Pages 779-785, AAAI press.
57. Ontology Evolution under Semantic Constraints. B. Cuenca Grau, E. Jiménez Ruiz, E. Kharlamov, and D. Zhelenyakov. Proc. of the 13th Int. Conference on Principles of Knowledge Representation and Reasoning (KR 2012), Rome, Italy, 2012. Pages 137-147, AAAI Press.
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59. LogMap: Logic-based and Scalable Ontology Matching. E. Jiménez Ruiz and B. Cuenca Grau. Proceedings of the 10th Int. Semantic Web Conference (ISWC). Bonn, Germany, 2011. Pages 273-288, Springer LNCS. [**SWSA 10 Year Award**]
60. Repairing Ontologies for Incomplete Reasoners. G. Stoilos, B. Cuenca Grau, B. Motik and I. Horrocks. Proc. of the 10th Int. Semantic Web Conference (ISWC 2011). Bonn, Germany, 2011. Pages 681-696. Springer LNCS.
61. What to Ask to an Incomplete Semantic Web Reasoner? B. Cuenca Grau and G. Stoilos. Proc. 22nd Int. Joint Conference on Artificial Intelligence (IJCAI). Barcelona, Spain, 2011. Pages 2226-2231.
62. Completeness Guarantees for Incomplete Reasoners. G. Stoilos, B. Cuenca Grau and I. Horrocks. Proc. 9th Int. Semantic Web Conference (ISWC). Shanghai, 2010. Pages 747-763, Springer LNCS. [**Best Paper Runner-up**]. (one of the top 3 papers in the conference)
63. How Incomplete is your Semantic Web Reasoner? G. Stoilos, B. Cuenca Grau and I. Horrocks. Proceedings of the Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2010). Atlanta, Georgia, USA, 2010. Pages: 1431-1436. AAAI Press. [**Outstanding Paper Award Winner**].
64. Pushing the Limits of Reasoning over Ontologies with Hidden Content. B. Cuenca Grau and B. Motik. Proc. 12th Int. Conf. on the Principles of Knowledge Representation and Reasoning (KR 2010). Toronto, Canada. May 2010. Pages: 214-224. AAAI Press.
65. Import-by-Query: Ontology Reasoning under Access Limitations. B. Cuenca Grau, B. Motik, and Y. Kazakov. Proc. 21st Int. Joint Conf. on Artif. Intelligence (IJCAI), 2009. Pasadena, USA. AAAI Press. pp 727-732.
66. Ontology Integration Using Mappings: Towards Getting the Right Logical Consequences. E. Jiménez Ruiz, B. Cuenca Grau, I. Horrocks and R. Berlanga. Proc. of the 6th European Semantic Web Conf. (ESWC), 2009. Heraklion, Greece. Springer LNCS. Pages: 173-187.
67. Representing Structured Objects using Description Graphs. B. Motik, B. Cuenca Grau, I. Horrocks, U. Sattler. 11th Int. Conf. on Principles of Knowledge Representation & Reasoning (KR), 2008. pp 296-306. AAAI Press.
68. Privacy-preserving Query Answering in Logic-based Information Systems. B. Cuenca Grau and I. Horrocks. Proc. 18th European Conf. on Artificial Intelligence (ECAI). Patras, Greece, 2008. Pages 40-44. IOS Press.

69. Metalevel Information in Ontology-Based Applications. T. Tran, P. Haase, B. Motik, B. Cuenca Grau, and I. Horrocks. Proc. 23rd AAAI Conf. on Artif. Intell. (AAAI), Chicago, US, 2008. pp 1237-1242. AAAI Press.
70. Safe and Economic Re-use of Ontologies: a Logic-based Methodology and Tool Support. E. Jimenez Ruiz, B. Cuenca Grau, T. Schneider, U. Sattler, R. Berlanga. Proc. 5th European Semantic Web Conf. (ESWC), Tenerife, Spain, 2008. Springer LNCS. Pages 185-199. **[Best Paper Runner-Up]** (one of the top 3 papers in the conference).
71. Structured Objects in OWL: Representation and Reasoning. B. Motik, B. Cuenca Grau, U. Sattler. Proc. 17th Int. World Wide Web Conf. (WWW), Beijing, China, 2008. Pages 555-564. ACM Press. **[Best Paper Runner-Up]** (one of the top 3 papers in the conference).
72. History Matters: Incremental Ontology Reasoning Using Modules. B. Cuenca Grau, C. Halascheck-Wiener, and Y. Kazakov. Proc. 6th Int. Semantic Web Conference (ISWC), Korea, 2007. Springer LNCS. Pages 183-196.
73. Just the Right Amount: Extracting Modules from Ontologies. B. Cuenca Grau, I. Horrocks, Y. Kazakov and U. Sattler. Proc. 16th Int. World Wide Web Conf. (WWW), Banff, Canada, 2007. Pages 717-727. ACM.
74. A Logical Framework for Modularity of Ontologies. B. Cuenca Grau, I. Horrocks, Y. Kazakov and U. Sattler. Proc. of the 20th Int. Joint Conf. on Artificial Intelligence, Hyderabad, India, 2007. Pages 298-303. AAAI Press.
75. Repairing Unsatisfiable Concepts in OWL Ontologies. A. Kalyanpur, B. Parsia, E. Sirin, B. Cuenca Grau. Proc. 3rd Europ. Semantic Web Conf. (ESWC), Budva, Montenegro, 2006. pp 170-184. Springer LNCS. **[Best Paper Award Winner]**.
76. From Wine to Water: Optimizing Description Logic Reasoning for Nominals. E. Sirin, B. Cuenca Grau, and B. Parsia. Proc. 10th Int. Conf. on Principles of Knowledge Representation and Reasoning (KR), Windermere, UK, 2006. Pages 90-99, AAAI Press.
77. Modularity and Web Ontologies. B. Cuenca Grau, B. Parsia, E. Sirin, and A. Kalyanpur. Proc. 10th Int. Conf. on Principles of Knowledge Representation & Reasoning (KR), Windermere, UK, 2006. pp 198-209, AAAI Press.
78. Integrating Datalog with OWL: Exploring the  $\mathcal{AL}$ -Log Approach. E. Ruckhaus, V. Kolovski, B. Parsia, and B. Cuenca Grau. Logic Programming, 22nd Int. Conf. (ICLP), Seattle, USA, 2006. pp 455-456. Springer LNCS.
79. Generalized Link Properties for Expressive  $\mathcal{E}$ -connections of Description Logics. B. Parsia and B. Cuenca Grau. Proc. 20th AAAI Conf. on Artificial Intelligence (AAAI), 2005, Pittsburgh, USA. pp 657-662. AAAI Press.
80. Semantic Web Research Trends and Directions. J. Golbeck, B. Cuenca Grau, C. Halaschek-Wiener, A. Kalyanpur, B. Parsia, A. Schain, E. Sirin, J. A. Hendler. Pattern Recognition and Machine Intelligence, First Int. Conference (PReMI). Kolkata, India, 2005. Pages 160-169. Springer LNCS.
81. Working with Multiple Ontologies on the Semantic Web. B. Cuenca Grau, B. Parsia, E. Sirin. Proc. 3thrd Int. Semantic Web Conf. (ISWC), Hiroshima, Japan, 2004. Pages 620-634. Springer LNCS.
82. A Possible Simplification of the Semantic Web Architecture. B. Cuenca Grau. Proc. 13th Int. World Wide Web Conf. (WWW). New York, USA, 2004. ACM. Pages 704-713.

#### **Publications in Peer-reviewed Workshops and Symposia**

1. Reasoning techniques in DatalogMTL. Przemyslaw Walega, Michał Zawidzki and Bernardo Cuenca Grau. In Proceedings of the Datalog 2.0 Workshop. CEUR Proceedings. 2022.
2. Implementation of a DatalogMTL reasoner. Dingmin Wang, Pan Hu, Przemyslaw Walega, and Bernardo Cuenca Grau. Stream Reasoning Workshop (SR-2021).
3. Sequoia: A Consequence Based Reasoner for SROIQ. David Tena Cucala, Bernardo Cuenca Grau and Ian Horrocks. Proc. 32nd International Workshop on Description Logics (DL-2019). Oslo, Norway, June 2019.

4. Bagging the DL-Lite Family Further. Gianluca Cima, Charalampos Nikolaou, Egor V. Kostylev, Mark Kaminski, Bernardo Cuenca Grau and Ian Horrocks. Proc. 32nd International Workshop on Description Logics (DL-2019). Oslo, Norway, June 2019.
5. Consequence-based Reasoning for Description Logics with Disjunction, Inverse Roles, and Nominals. David Tena Cucala, Bernardo Cuenca Grau and Ian Horrocks. Proc. 30th International Workshop on Description Logics (DL). Montpellier, France, 2017.
6. Ontology Module Extraction via Datalog Reasoning. Ana Armas Romero, Mark Kaminski, Bernardo Cuenca Grau, and Ian Horrocks. Proc. 29th International Workshop on Description Logics (DL). Cape Town, South Africa, 2016.
7. Extending the Combined Approach Beyond Lightweight Description Logics. Cristina Feier, David Carral, Giorgio Stefanoni, Bernardo Cuenca Grau, and Ian Horrocks. Proc. 28th International Workshop on Description Logics (DL). Athens, Greece. June 2015. CEUR.
8. Extending Consequence-Based Reasoning to *SHIQ*. Andrew Bate, Boris Motik, Bernardo Cuenca Grau, Frantisek Simancik, and Ian Horrocks. Proc. 28th International Workshop on Description Logics (DL). Athens, Greece. June 2015. CEUR.
9. Semantics of SPARQL under OWL 2 Entailment Regimes. Egor Kostylev and Bernardo Cuenca Grau. Proc. 28th International Workshop on Description Logics (DL). Athens, Greece. June 2015. CEUR.
10. Polynomial Horn Rewritings for Description Logics Ontologies. Mark Kaminski and Bernardo Cuenca Grau. Proc. 28th International Workshop on Description Logics (DL). Athens, Greece. June 2015. CEUR.
11. PAGOdA: Pay-as-you-go ABox Reasoning. Yujiao Zhou, Yavor Nenov, Bernardo Cuenca Grau, and Ian Horrocks. Proc. 28th International Workshop on Description Logics (DL). Athens, Greece. June 2015. CEUR.
12. Faceted Search over OWL 2 Life Science Datasets and Ontologies with SemFacet. B. Cuenca Grau, E. Kharlamov, S. Marciuska, Dmitriy Zheleznyakov and Y. Zhou. Proc. Int. Workshop on Semantic Web Applications for Life Sciences (SWAT4LS). Berlin, Germany, 2014. CEUR.
13. Enabling Faceted Search over OWL 2 with SemFacet. M. Arenas, B. Cuenca Grau, E. Kharlamov, S. Marciuska and D. Zheleznyakov. 11th OWL Experiences and Directions Workshop (OWLEd), Riva, Italy, 2014. CEUR.
14. Controlled Query Evaluation over Lightweight Ontologies. B. Cuenca Grau, E. Kharlamov, E. Kostylev and D. Zheleznyakov. Proc. 27th Int. Workshop on Description Logics (DL). Vienna, Austria, 2014. CEUR.
15. Pay-as-you-go Ontology Query Answering Using a Datalog Reasoner. Y. Zhou, Y. Nenov, B. Cuenca Grau and I. Horrocks. Proc. 27th Int. Workshop on Description Logics (DL). Vienna, Austria, 2014. CEUR.
16. Is Your Ontology as Hard as You Think? Rewriting Ontologies into Simpler DLs. D. Carral, C. Feier, A. Armas Romero, B. Cuenca Grau, P. Hitzler and I. Horrocks. Proc. 27th Int. Workshop on Description Logics (DL). Vienna, Austria, 2014. CEUR.
17. Datalog Rewriting Techniques for Non-Horn Ontologies. M. Kaminski, Y. Nenov and B. Cuenca Grau. Proc. 27th Int. Workshop on Description Logics (DL). Vienna, Austria, 2014. CEUR.
18. On Faceted Search over Knowledge Bases. B. Cuenca Grau, E. Kharlamov, Dmitriy Zheleznyakov, M. Arenas and S. Marciuska. Proc. 27th Int. Workshop on Description Logics (DL). Vienna, Austria, 2014. CEUR.
19. MORE: A Modular OWL Reasoner for Ontology Classification. A. Armas Romero, B. Cuenca Grau, I. Horrocks, and E. Jiménez Ruiz. 2nd Int. Workshop on OWL Reasoner Evaluation (ORE), Ulm, Germany, 2013. CEUR.
20. Is my Ontology Matching System Similar to yours? E. Jiménez Ruiz, B. Cuenca Grau, and I. Horrocks. Proc. Ontology Matching Workshop (OM), 2013. CEUR.

21. Towards Query Formulation and Query-Driven Ontology Extensions in OBDA. B. Cuenca Grau, M. Giese, I. Horrocks, T. Hubauer, E. Jimenez Ruiz, E. Kharlamov, M. Schmidt, A. Soylu, and D. Zheleznyakov. OWL: Experiences and Directions Workshop (OWLED), 2013. CEUR.
22. Sufficient Conditions for First-Order and Datalog Rewritability in  $\mathcal{ELU}$ . M. Kaminski and B. Cuenca Grau. Proc. 26th Int. Workshop on Description Logics (DL). Ulm, Germany, 2013.
23. Evaluating Mapping Repair Systems with Large Biomedical Ontologies. E. Jimenez Ruiz, C. Meilicke, B. Cuenca Grau and I. Horrocks. 26th Int. Workshop on Description Logics (DL). Ulm, Germany, 2013. CEUR.
24. On the Feasibility of Using OWL 2 Reasoners for Ontology Matching Problems. E. Jimenez Ruiz, B. Cuenca Grau, and I. Horrocks. Proc. OWL Reasoner Evaluation Workshop (ORE). Manchester, UK, 2012. CEUR.
25. Modular Combination of Reasoners for Ontology Classification. A. Armas Romero, B. Cuenca Grau, and I. Horrocks. Proc. of the 25th Int. Workshop on Description Logics (DL). Rome, Italy, 2012. CEUR.
26. Efficient Upper Bound Computation of Query Answers in Expressive Description Logics. Y. Zhou, B. Cuenca Grau, and I. Horrocks. Proc. of the 25th Int. Workshop on Description Logics (DL). Rome, Italy, 2012. CEUR.
27. Ontology Contraction: Beyond Propositional Paradise. B. Cuenca Grau, E. Kharlamov, and D. Zheleznyakov. Proc. 6th AMW Workshop on Foundations of Data Management. Brazil. 2012. CEUR
28. Exploiting the UMLS Metathesaurus in the Ontology Alignment Initiative. E. Jiménez Ruiz, B. Cuenca Grau, I. Horrocks. Workshop on Exploiting Large Knowledge Repositories (E-LKR), Castellón, Spain, 2012. CEUR.
29. How to Contract Ontologies. B. Cuenca Grau, E. Kharlamov, and D. Zheleznyakov. Proc. 9th OWL: Experiences and Directions Workshop (OWLED). Crete. 2012. CEUR.
30. LogMap 2.0: Towards Logic-based, Scalable and Interactive Ontology Matching. E. Jiménez Ruiz, B. Cuenca Grau, and Y. Zhou. Semantic Web Applications and Tools for Life Sciences (SWAT4LS). London, 2011. ACM.
31. LogMap results for OAEI 2011. E. Jimenez Ruiz, A. Morant, and B. Cuenca Grau. Proc. 6th Ontology Matching Workshop (OM). Bonn, Germany, 2011. CEUR.
32. Towards more challenging problems for ontology matching tools. E. Jimenez Ruiz and B. Cuenca Grau. Proc. 6th Ontology Matching Workshop (OM). Bonn, Germany, 2011. CEUR.
33. Repairing Incomplete Reasoners. G. Stoilos and B. Cuenca Grau. Proc. 24th Int. Workshop on Description Logics (DL). Barcelona, Spain, 2011. CEUR.
34. First Steps in the Logic-based Assessment of Post-composed Phenotypic Descriptions. E. Jiménez Ruiz, B. Cuenca Grau, R. Berlanga, and D. Rebholz-Shuhmann. Proc. Int. Workshop on Semantic Web Applications and Tools for Life Sciences (SWAT4LS). 2010. CEUR.
35. Towards a UMLS-based Silver Standard for Matching Bio-medical Ontologies. E. Jiménez Ruiz, B. Cuenca Grau, I. Horrocks, R. Berlanga. Proc. Workshop on Ontology Matching (OM). 2010. CEUR.
36. Towards a Logic-based Assessment of the compatibility of UMLS sources. E. Jiménez Ruiz, B. Cuenca Grau, I. Horrocks and R. Berlanga. Proc. Int. Workshop on Semantic Web Applications and Tools for Life Sciences (SWAT4LS). Amsterdam, The Netherlands, 2009. CEUR.
37. ContentCVS: A CVS-based Collaborative ONTOlogy ENgineering Tool (Demo Paper). E. Jiménez Ruiz, B. Cuenca Grau, I. Horrocks and R. Berlanga. Proc. Int. Workshop on Semantic Web Applications and Tools for Life Sciences (SWAT4LS). Amsterdam, The Netherlands, 2009. CEUR.
38. Importing Ontologies with Hidden Content. B. Cuenca Grau and B. Motik. Proc. 22nd Int. Workshop on Description Logics (DL). Oxford, UK, 2009. CEUR.

39. Building Ontologies Collaboratively Using ContentCVS. E. Jimenez Ruiz, B. Cuenca Grau, I. Horrocks and R. Berlanga. Proc. 22nd Int. Workshop on Description Logics (DL). Oxford, UK, 2009.
40. Modeling Ontologies Using OWL, Description Graphs and Rules. B. Motik, B. Cuenca Grau, and U. Sattler. Proceedings of the Fifth International Workshop OWL: Experiences and Directions (OWLEd 2008). Karlsruhe, Germany, Oct. 26-27 2008. CEUR Workshop Proceedings. Vol 432.
41. The Representation of Structured Objects in DLs Using Description Graphs. B. Motik, B. Cuenca Grau, and U. Sattler. Proc. 21st Int. Workshop on Description Logics (DL), Dresden, Germany, 2008. CEUR.
42. Safe and Economic Re-use of Ontologies: a logic-based methodology and tool support. E. Jimenez Ruiz, B. Cuenca Grau, U. Sattler, T. Schneider, R. Berlanga. Proc. 4th Int. Workshop: OWL Experiences and Directions (OWLEd), Washington DC, USA, 2008. CEUR.
43. Ontology Reuse: Better Safe than Sorry. B. Cuenca Grau, I. Horrocks, Y. Kazakov and U. Sattler. Proc. 20th Description Logic Workshop, Brixen, Italy, 2007. CEUR.
44. Extracting Modules from Ontologies: a Logic-based Approach. B. Cuenca Grau, I. Horrocks, Y. Kazakov and U. Sattler. Proc. Int. Workshop: OWL Experiences and Directions (OWLEd), Innsbruck, Austria 2007. CEUR.
45. Modular Ontology Languages Revisited. B. Cuenca Grau and O. Kutz. Proc. of the Workshop on Semantic Web for Collaborative Knowledge Acquisition (SWeCKa), Hyderabad, India, 2007.
46. Next Steps for OWL. B. Cuenca Grau, I. Horrocks, B. Parsia, P. Patel-Schneider and U. Sattler. Proc. Int. Workshop: OWL Experiences and Directions (OWLEd), Athens, USA. 2006. CEUR.
47. Will my Ontologies Fit Together? B. Cuenca Grau, I. Horrocks, O. Kutz, and U. Sattler. Proc. 19th Int. Workshop on Description Logics, Windermere, UK, 2006. Vol. 189 CEUR.
48. Beyond Asserted Axioms; Fine Grained Justifications for OWL DL Entailments. A. Kalyanpur, B. Parsia, and B. Cuenca Grau. Proc. 19th Int. Workshop on Description Logics (DL), Windermere, UK, 2006. Vol. 189 CEUR.
49. Automatic Partitioning of OWL Ontologies Using  $\mathcal{E}$ -connections. B. Cuenca Grau, B. Parsia, E. Sirin, and A. Kalyanpur. Proc. 18th Int. Workshop on Description Logics (DL), Edinburgh, UK, 2005. Vol. 147 CEUR.
50. Representing Qualitative Spatial Information in OWL DL. Y. Katz and B. Cuenca Grau. Proc. 1st Int. Workshop: OWL Experiences and Directions (OWLEd), Galway, Ireland 2005. CEUR Vol. 188.
51. Modularizing OWL Ontologies. B. Cuenca Grau, B. Parsia, E. Sirin, and A. Kalyanpur. Proc. KCAP Workshop on Ontology Management. Banff, Canada, 2005.
52. From  $\mathcal{SHOQ}(\mathcal{D})$  Towards  $\mathcal{E}$ -connections. B. Cuenca Grau, and B. Parsia. Proc. Int. Workshop on Description Logics (DL), Whistler, British Columbia, Canada, 2004. CEUR.

### Contributions to Books and Monographs

1. 15 Years of Consequence-based Reasoning. David Tena Cucala, Bernardo Cuenca Grau, and Ian Horrocks. Description Logic, Theory Combination and All That (Essays Dedicated to Franz Baader On the Occasion of his 60th Birthday). Lecture Notes in Computer Science Vol. 11560. Springer, 2019. Pages 573–587.
2. Ontology Integration Using  $\mathcal{E}$ -connections. B. Cuenca Grau, B. Parsia, E. Sirin. Modular Ontologies: Concepts, Theories and Techniques for Knowledge Modularization (Monograph). Lecture Notes in Computer Science Vol. 5445, pages 293-320. Springer 2009.
3. Extracting Modules from Ontologies: a Logic-based Approach. B. Cuenca Grau, I. Horrocks, Y. Kazakov and U. Sattler. Modular Ontologies: Concepts, Theories and Techniques for Knowledge Modularization (Monograph). Lecture Notes in Computer Science Vol. 5445, pages 159-186 Springer 2009.

### **Edited Proceedings**

1. O. Kutz, Joana Hois, Jie Bao, and B. Cuenca Grau (Eds.): Proc. 4th Int. Workshop on Modular Ontologies (WOMO), Toronto, Canada, 2010. IOS Press.
2. B. Cuenca Grau, I. Horrocks, B. Motik, U. Sattler (Eds.): Proc. 22nd Int. Workshop on Description Logics (DL), Oxford, UK, 2009. CEUR Vol. 477.
3. B. Cuenca Grau, Vasant Honavar, Anne Schlicht, Frank Wolter (Eds.): Proc. 2nd Int. Workshop on Modular Ontologies (WoMO), Whistler, Canada, October 28, 2007. CEUR Vol. 315.
4. B. Cuenca Grau, P. Hitzler, C. Shankey, Evan Wallace (Eds.): Proc. Workshop on OWL: Experiences and Directions (OWLED), Athens, Georgia, USA, 2006. CEUR Vol. 216.
5. B. Cuenca Grau, I. Horrocks, B. Parsia, P. F. Patel-Schneider (Eds.): Proc. Workshop on OWL: Experiences and Directions (OWLED), Galway, Ireland, 2005. CEUR Vol. 188.

### **Contributions to International Technology Standards**

I have contributed to the following World Wide Web Consortium (W3C) recommendation documents.

1. OWL 2 Web Ontology Language: Direct Semantics. Editor. W3C Recommendation. 2012 (Second Edition).
2. OWL 2 Web Ontology Language: Profiles. Editor. W3C Recommendation. 2012 (Second Edition).
3. OWL 2 Web Ontology Language: XML Serialization. W3C Recommendation. 2012 (Second Edition).
4. OWL 2 Web ontology Language: Mapping to RDF Graphs. W3C Recommendation. 2012 (Second Edition).

## **3 University Teaching**

I have lectured the following courses at Oxford, which are offered to both senior undergraduate students and graduate students.

- **Knowledge Representation and Reasoning** (2010–2014).
- **Computational Complexity** (2015–2018).
- **Artificial Intelligence** (2017–2022).

As a tutor at Oriel and Keble colleges I have tutored the following courses: Discrete Mathematics, Models of Computation, Design and Analysis of Algorithms, Algorithms and Data Structures, Introduction to Formal Proof, Intelligent Systems, Databases, Knowledge Representation and Reasoning, and Computational Complexity.

## **4 Graduate Supervision and Graduate Teaching**

### **Doctoral Students**

I have supervised the following doctoral students (viva date is indicated in parentheses).

1. David Tena Cucala. University of Oxford (March 2020). Currently a postdoc at Oxford University.
2. Alina Petrova. University of Oxford (January 2020). Currently a research scientist at Thomson Reuters Lab.
3. Dr. Alessandro Ronca. University of Oxford (December 2019). Currently, a postdoctoral researcher at the University of Rome, La Sapienza.
4. Dr. Andrew Bate. University of Oxford (January 2017). Currently a senior software engineer at Infor.
5. Dr. David Carral. Wright State University, USA (December 2016). Currently a researcher at Inria.

6. Dr. Yujiao Zhou. University of Oxford (September 2015). Currently a software engineer at Facebook, USA.
7. Dr. Ana Armas Romero. University of Oxford (October 2015). Currently a software engineer at Github.
8. Dr. Ernesto Jiménez Ruiz. Universidad Jaume I, Spain (June 2010). Currently a Lecturer at City, Univ. of London.

I am currently supervising the following doctoral students:

- Mr Maximilian Pfügel (2019–Present). University of Oxford.
- Mr. Dingmin Wang (2020—). University of Oxford.
- Miss Shuwen Liu (2019–). University of Oxford.
- Mr. Jingchuan Shi (2020–). University of Oxford.
- Mr. Ouns el-Harzi (2021–). University of Oxford

### **MSc and 4th Year Thesis Supervision**

I have supervised the following 4th year and MSc students: Jiaqi Wang (MSc) in 2022, Kieran Gal (4th Year), 2022; Junhui Yang (4th Year), in 2022; Thomas Dowley (4th Year), in 2019; David Tena Cucala (MSc), in 2016 (distinction and Hoare’s prize to the top MSc student); Daanish Rijhwani (MSc), in 2016; Alessandro Ronca (MSc), in 2015; Antón Morant (MSc), in 2011 (distinction); Martha Imprialou (MSc), in 2011 (distinction); Andrew Bate (4th Year), in 2012 (distinction); Yuan Gong (4th Year), in 2014; Shuo Zhang (MSc), in 2014.

Additionally, I have also acted as an academic supervisor and college advisor of numerous MSc students in the department.

### **Invited Courses and Graduate Seminars**

- *Logical foundations of ontology-based technologies*. A short course within the MSc in Soft Computing and Intelligent Systems. Dept. of Computer Science and Artificial Intelligence. University of Granada (Spain), 2012.
- *Ontology-based reasoning*. Short course within the MSc in Artificial Intelligence. Universidad Politécnica de Madrid (Spain). March 2011.
- *Ontology seminar*. Course at the Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain, 2008.

## **5 University Examining and Departmental Duties**

- Undergraduate Admissions Coordinator for CS and Joint Schools (2020–Present)
- Examiner for Parts A and B in Computer Science, Maths and Computer Science, and Computer Science and Philosophy. (2018–Present).
- DPhil scholarship committee, 2021.
- Undergraduate project assessor (2012—Present).
- IT Committee (2019–Present).
- DPhil. transfer and confirmation examiner in 2010, 2016, 2019, 2021.
- Recruitment panel member for Associate Professor post in Computational Medicine (2020).

## **6 Doctoral Examining**

I have been an **external examiner** for the following doctoral dissertations.

- Quentin Maniere. University of Bordeaux/CNRS (France). 2022

- Haoruo Zhao. University of Manchester (UK). 2022
- Davide Lanti. Free University of Bozen-Bolzano (Italy). February, 2018.
- Ana Ozaki Castillo. University of Liverpool (UK). April 2016.
- Julien Corman. University of Toulouse (France). Decemeber 2015.
- Nicolas Matentzoglu. University of Manchester (UK). November 2015.
- Valerio Santarelli. University of Rome “La Sapienza” (Italy). 2015.
- Melanie König. University of Montpellier 2 (France). October 2014.

I have been the **internal examiner** for the following dissertations.

- Ralph Abboud, University of Oxford, 2022.
- Eleonora Giunchiglia. University of Oxford. 2022.
- Fredah Banda. University of Oxford. 2021.
- Rodrigo Carvalho. University of Oxford. March 2019.

## 7 Engagement Outside the University

### Conference Organisation

- General chair for the 2020 International Workshop on Description Logics (DL-2020).
- Program Committee Chair for the 22nd International Workshop on Description Logics (DL-09).
- Organisational committee of the 4th Int. Workshop on Modular Ontologies (WOMO 2010)
- Organisational committee of the Workshop on Ontologies: Reasoning and Modularity (WORM 2008).
- Organisational committee of the 2nd International Workshop on Modular Ontologies (WoMo 2007).
- Organisational committee of the 2nd International Workshop OWL:Experiences and Directions (OWLEd 2006).
- Organisational committee of the First International Workshop OWL:Experiences and Directions (OWLEd 2005).

### Member of International Steering Committees and Working Groups

- Member of the Description Logics Steering Committee (2009-2012) and (2015-2018).
- Member of the W3C OWL Working Group (2007-2009).
- Member of the OWL: Experiences and Directions Workshop Steering Committee.

### Program Committee Membership in International Conferences

- NeurIPS 2023.
- ACM International Conference on Information and Knowledge Management (CIKM): 2015, 2014.
- International Joint Conference on Artificial Intelligence (IJCAI): 2023 (Senior PC), 2022 (Senior PC), 2020 (Senior PC), 2019, 2018, 2016, 2015 (Senior PC), 2013, 2011, 2009, 2007.
- AAAI Conference on Artificial Intelligence (AAAI): 2022, 2020 (senior PC), 2019 (Senior PC), 2018, 2017, 2016, 2015 (Senior PC), 2013, 2012, 2010, and 2006.
- European Conference on Artificial Intelligence (ECAI): 2014, 2012, 2010, and 2008.
- Int. Conference on the Principles of Knowledge Representation and Reasoning (KR): 2023, 2021, 2020, 2018, 2016, 2014 and 2012.

- International World Wide Web Conference (WWW): 2018, 2016 and 2010.
- Declarative AI: 2023, 2022.
- International Conference on Conceptual Modeling (ER): 2008.
- International Semantic Web Conference (ISWC): 2020, 2018, 2017, 2015, 2014, 2012, 2011, 2009, 2008, and 2007.
- Extended Semantic Web Conference (ESWC): 2013, 2012, 2011, 2010, 2009, 2008, and 2007.
- International Conference on Web Reasoning and Rule Systems (RR): 2022, 2014, 2013, and 2009.
- International Conference on Formal Ontology in Information Systems (FOIS): 2014.
- International Joint Conference on Semantic Technologies (JIST): 2012 and 2011.
- Asian Semantic Web Conference (ASWC): 2009 and 2008.
- Int. Conference on Ontologies, Databases, and Applications (ODBASE 2011).

### **Program Committee Membership in International Workshops and Symposia**

- International Workshop on Description Logics (DL): 2021, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, and 2007.
- International Workshop on OWL: Experiences and Directions (OWLEd): 2013, 2012, 2011, 2010, 2009.
- International Workshop on Debugging Ontologies and Ontology Mappings (WoDOOM): 2014, 2012.
- International Workshop on Scalable Semantic Web Knowledge Base Systems (ISSW): 2018, 2017.
- International Workshop on Modular Ontologies (WoMo): 2012, 2011, 2006.
- International Workshop on Nature Inspired Reasoning (NatuReS): NatuReS-2009, NatuReS-2008.
- International Workshop on Semantics Applied Technologies on Biomedical Informatics (SATBI 2011)
- Doctoral Consortium: 8th Extended Semantic Web Conference (ESWC 2011)
- 1st International Workshop on Business Rules and Ontologies (BuRO 2010)
- International Workshop of Self-Organization and Approximation Techniques for the Web of Data (SOAT2010)
- International Workshop on Evaluation of Semantic Technologies (IWEST 2010)
- ESWC 2008 Workshop: Knowledge Reuse and Re-engineering (KRRSW 2008)
- ESWC 2008 Workshop: Ontologies, Reasoning and Modularity (WORM 2008)
- 21st ACM Symposium on Applied Computing (SAC 2006).
- 11th International Workshop on Scalable Semantic Web Knowledge Base Systems (SSWS 2015).

### **Editorial Board in International Journals**

I am on the editorial board of the following international journals.

- Transactions on Data and Knowledge (2023-Present)
- Journal of Web Semantics. (2017-2023).
- ACM Transactions on the Web. (2017-Present).
- Semantic Web Journal (2017-Present)

## Reviewing for Journals

Artificial Intelligence (AIJ); J. of Artificial Intelligence Research (JAIR); J. of Automated Reasoning (JAR); J. of Web Semantics (JWS); J. of Information and Software Technology; AI Communications; Information Sciences; IEEE Transactions on Education; J. of Logic, Language and Information; Int. J. of Semantic Web and Information Systems; Applied Ontology; Data and Knowledge Engineering (DKE); Information and Computation; Journal of Logic and Computation (JLC); ACM Transactions on the Web; Knowledge-based Systems; Knowledge and Information Systems (KAIS); ACM Transactions on Intelligent Systems and Technology.

## International Standards

I have made numerous key technical contributions to the Web Ontology Language (OWL) 2 published by the World Wide Web Consortium,<sup>1</sup> and I contributed to many of the technical documents (see Publications section).

## Contributions to Research Councils

- Royal Society International Exchanges Evaluation Panel. From April 2015-December 2021.
- I am a member of the EPSRC Peer Reviewing College and regularly review proposals and participate in prioritisation panels for EPSRC.
- Foreign Expert for the Italian research evaluation agency (CINECA) in 2012-2013, and 2016.
- Member of the Committee of Experts for INRIA's evaluation (2019).

## Research Prototypes

- SemFacet (a semantic faceted search system): <http://www.cs.ox.ac.uk/isg/tools/SemFacet/>.
- PAGOdA (an ontology-based query answering system): <http://www.cs.ox.ac.uk/isg/tools/PAGOdA/>.
- SOMM (an ontotology development tool).
- PRISM (a module extraction system for ontologies): <https://www.cs.ox.ac.uk/isg/tools/Prism/>
- MORE (an ontology reasoner): <http://www.cs.ox.ac.uk/isg/tools/MORE/>.
- LogMap (an ontology matching system): <http://www.cs.ox.ac.uk/isg/tools/LogMap/>.
- ContentCVS (a versioning system for ontologies): <http://www.cs.ox.ac.uk/isg/tools/ContentCVS/>

## Industry Collaborations

*Oracle.* In 2012 I worked with research scientists at Oracle on novel techniques to enhance the reasoning capabilities of Oracle's RDF triple store. A paper describing the result of this collaboration was published in the research track of the World Wide Web Conference (WWW) in 2013.

*Optique.* The aim of the Optique EU project (see Grants section) is to provide scalable end-user access to Big Data. The ontology matching system LogMap, which we developed as part of a previous EPSRC grant, has become an integral part of the Optique platform, which is being exploited by the Norwegian Oil Company Statoil and Siemens.

*Siemens.* From 2015 I have worked with Siemens research scientists and engineers on the application of ontologies to industrial manufacturing applications. As a result of this project, we have developed a tool (SOMM) for ontology modeling and reasoning in the industrial manufacturing domain.

*EDF.* As of April 2016, I am collaborating with EDF France in a joint project funded by an IAA account. The goal of the project is to explore the applicability of our research prototypes SemFacet and PAGOdA to the EDF use cases.

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<sup>1</sup><http://www.w3.org/TR/owl-overview/>

## Technology Transfer

I am a University co-founder and member of the Board of Directors of two recently established spinout companies from the University of Oxford.

- *Oxford Semantic Technologies (OST)*. Formed in April 2017 with the goal of developing and commercialising knowledge graph and semantic technology solutions to data integration and regulatory compliance applications (See <https://www.oxfordsemantic.tech/>).
- *Covatic*. Formed in February 2017 with the goal of applying semantic technologies to the broadcasting industry. (See <http://www.covatic.com/>).