

# Curriculum Vitae

Dr. Leopoldo E. Bertossi

September 22, 2024

## 1 Current Positions

- Researcher. Universidad San Sebastián, Faculty of Engineering, Architecture and Design. Santiago de Chile. Since June 2024.
- Emeritus Professor. Carleton University, School of Computer Science, Ottawa, Canada. Since 2019, with independent grad supervision status.  
Faculty member of the Carleton University Institute for Data Science (CUIDS), and Professor of the Graduate Program in Data Science, Carleton University (Ottawa, Canada). Since 2022.  
Full Professor with tenure between July 2001 - July 2019.
- Graduate Supervisor Universidad Adolfo Ibáñez (UAI, Santiago, Chile), and Senior UAI Fellow. Since August 2019.  
Full Professor, and Director of Graduate Programs (MSc, and PhD) in Data Science between August 2019 - July 2022.
- Senior Researcher at the “Millennium Institute for Foundational Research on Data” (IMFD, Chile). Since March 2018.
- International Research Collaborator. “National Research Center for AI Research” (CENIA). Since 2022.

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**Citizenship:** Chilean, Canadian and Italian.

**Languages:** Spanish (native), English, German. Partial: French, Italian.

## 2 Research and Scientific Interests

- Explainable AI and Data Management
- Causality in AI and Data Management
- Machine Learning
- Uncertain Data and Knowledge
- Statistical Relational Learning
- Probabilistic Graphical Models

- Logico-Probabilistic Knowledge Representation
- Ontologies and Knowledge Graphs
- Business Intelligence
- Intelligent Information Systems
- Data Management and Databases
- Data Science
- Data Analytics and Multidimensional Databases
- Data Quality
- Data Integration
- Logic Programming and Answer-Set Programming
- Logic in Computer Science
- Foundations of Probability and Statistical Methods

**Scientific Societies Memberships:** Association for Computing Machinery (ACM), ACM Special Interest Group on Management of Data (SIGMOD), ACM Special Interest Group on Algorithms and Computation Theory (SIGACT), ACM Special Interest Group on Logic and Computation, American Association for Artificial Intelligence (AAAI), Chilean Computer Science Society (SCCC).

### 3 Organizational and Managerial Positions (main, longer term)

1. Member Search Committee. Editor-In-Chief “IEEE Intelligent Systems” Magazine. 2024.
2. Director of Graduate Program in Data Science (PhD and MSc). Universidad Adolfo Ibáñez, Faculty of Engineering and Sciences. Santiago, Chile. 2020-2022.
3. Chief Talent Officer. Data Observatory Foundation. Santiago, Chile. 2020-2022.
4. Theme Leader on “Adaptive Data Quality” (one of four themes). NSERC Strategic Network on Business Intelligence (BIN), Canada, 2008-2012.
5. Acting Associate Director; School of Computer Science, Carleton University. August 2004 - July 2005.
6. Chair of the “NSERC Accelerate” Grant Committee, Computer Science and Engineering, 2009.
7. Member of the NSERC Computing and Information Sciences Grant Selection Committee (GSC 330). 2003 - 2005.
8. Departmental Chair. Department of Computer Science, School of Engineering, Pontifical Catholic University of Chile (PUC, Chile). 1994 - 1996.
9. Member ACM SIGMOD Latin America Liaison Committee. 2000 - 2003.
10. President of the Chilean Computer Science Society (SCCC). Nov. 1995 - Oct. 1996 and Nov. 1998 - Oct. 2000.
11. Secretary of the Chilean Computer Science Society (SCCC). Nov. 1992 - Oct. 1995.
12. Coordinator of the Chilean-German Collaboration Program on Information Technology. Appointed by the Chilean Government. 1998-2001.
13. Director of the “DIPUC Program for Information Science and Data Analysis”, PUC, Chile. June 2000 - Aug. 2001.

## 4 Education

1. 1988: “Doctor in Exact Sciences (Mathematics)”, Pontificia Universidad Catolica de Chile (PUC), (PhD program based on oral qualifying examinations and a research thesis). Thesis title: “The Formal Language Lt and Topological Products”. Thesis Supervisor: Prof. Dr. Jörg Flum (Univ. of Freiburg, Germany).
2. 1982: “Magister en Ciencias Exactas (Matematica)”, PUC, (a masters degree based on courses, written qualifying examinations and a research thesis). Thesis title: “Chuaqui’s Definition of Probability in Some Stochastic Processes”. Thesis Supervisor: Prof. Dr. Rolando Chuaqui.
3. 1976: “Licenciado en Matematica”, PUC (a five year bachelor degree in mathematics).
4. 1959-1971: Liceo Experimental “Manuel de Salas” (elementary and high school).

## 5 Honors and Recognitions

1. Senior UAI Fellow, Universidad Adolfo Ibáñez (Santiago, Chile). Since September 2020.
2. Invited to give the “Gems of PODS” presentation at the ACM Principles of Database Systems (PODS), Amsterdam, July 2019, “to highlight particularly elegant or important papers that have appeared in PODS, and which are of interest to a broader community”.
3. First Fellow of the Alberto Mendelzon WS on Foundations of Data Management (AMW), June 2017.
4. Special Recognition of the Brazilian Computer Science Society, June 2017.
5. Doctor Honoris Causa. Universidad Privada Antenor Orrego, Peru. November 2015.
6. Faculty Fellow, Center for Advanced Studies, IBM Toronto Lab., since 2003.
7. Member of the 2016 Computer Science, Mathematics and Statistics RTI NSERC Selection Committee.
8. Member of the ACM Distinguished Speakers Program, 2007-2014.
9. Member of the PhD Council, Faculty of Engineering, University of Calabria, Italy, since 2011.
10. Theme Leader of “Adaptive Data Cleaning”, one of the four research themes of the “NSERC Strategic Network on Business Intelligence (BIN)”, a five year project with funding of \$1,400,000 per year. 2008-2010.
11. Pauli Fellow of the “Wolfgang Pauli Institute (WPI) Vienna”. Austria, 2006.
12. Chair of the “NSERC Accelerate” Grant Committee, Computer Science and Engineering, 2009.

13. Member of the NSERC Computing and Information Sciences Grant Selection Committee (GSC 330). 2003-2005.
14. External Professor, European Masters Program in Computational Logic (Free University of Bozen-Bolzano, Italy; Technische Universitaet Dresden, Germany; Universidade Nova de Lisboa, Portugal; Technische Universitaet Wien, Austria; Universidad Politecnica de Madrid, Spain). Since 2004.
15. Official visiting professor University of Calabria, Rende, Calabria. Since 2013.
16. (First) Honorary Member of the Chilean Computer Science Society (SCCC). Nov. 2003.

### 5.1 Major international invitations:

1. Universite Paris-Cite, May-June 2023.
2. DBAI Group of Technical University Wien, Austria, with support from the “Vienna Center for Logic and Algorithms” and the Wolfgang Pauli Society, 2017.
3. Invited professor, Free University of Bozen-Bolzano, Italy, Knowledge Representation and Databases Group, 2005.
4. Research Scholarship, Berlin-Brandenburg Graduate College “Distributed Information Systems” (three months) at the Technical University Berlin. 1998.
5. DAAD Scholarship (three months) at the Technical University of Berlin. Institute for Distributed Information Systems. 1997.
6. Visiting Research Professor, Fakultät für Informatik, Technical University of Berlin. Sept. 97 - Feb. 98.
7. Visiting Research Professor, Dept. d’Informatique, Fac. Sciences de Luminy, Universite de Marseille, France. Jan. 97 - Feb. 97.
8. UNDP-UNESCO Research Fellow, Mathematics Institute, Department of Mathematical Logic and Foundations of Mathematics, University of Freiburg, Germany. 1986.
9. German Academic Exchange Program (DAAD) Scholarship, Mathematics Institute, Department of Mathematical Logic and Foundations of Mathematics, University of Freiburg, Germany. 1978-79.

## 6 Employment History

1. Professor at Skema Business School Canada, Montreal, Canada. July 2022 - June 2024.
2. Senior UAI Fellow and Full Professor Universidad Adolfo Ibañez (UAI), Faculty of Engineering and Sciences, Santiago, Chile. Sept. 2019 - July 2022.
3. Senior Computer Scientist at RelationalAI Inc., Toronto, Canada. Since August 2018 - August 2019.

4. Member of RelationalAI Inc. Academic Network, Toronto, Canada. Since August 2019 - April 2020.
5. Full Professor, School of Computer Science, Carleton University, Canada. Since 2001. Emeritus since Sept. 2019.
6. Adjunct full professor, School of Engineering, University of Concepción, Chile. 2009-2010.
7. Associate Professor, Computer Science Department, School of Engineering, PUC. 1992-2001.
8. Visiting Assistant Professor, Department of Electrical Engineering and Computer Science, University of Wisconsin-Milwaukee, USA. 1990-91.
9. Visiting Assistant Professor, Department of Computer Science, University of Toronto, Canada. 1989-90.
10. Associate Professor, Mathematics Department, Computer Science Program, PUC. 1989-1992.
11. Assistant Professor, Mathematics Department, PUC. 1984-1988.
12. Lecturer, Probability and Statistics Department, PUC. 1982-83.
13. Lecturer, Mathematics Department, PUC. 1976-81.
14. Full-Time Consultant, Statistics Department, State Computing Enterprise (ECOM), Chile. 1975-76.

## 7 Scholarly and Professional Activities

1. Chairman, Computer Science Department, School of Engineering, PUC. 1994-1996.
2. President of the Chilean Computer Science Society (SCCC). Nov.95-Oct.96. Nov.98-Oct.2000.
3. Secretary of the Chilean Computer Science Society (SCCC). Nov.92-Oct.95.
4. Member Advisory Committee, Graduate Studies Office, PUC. 1996-1997.
5. Member Advisory Committee, Research and Graduate Studies Office, School of Engineering, PUC. 1998-2001.
6. Member of Graduate Scholarships Program Committee (Mathematics and Statistics), CONICYT<sup>1</sup>. Dec. 98 - July 01.
7. Member PhD Programs Accreditation Committee (Mathematics, Statistics and Computer Science), CONICYT. Dec. 98 - 2001.

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<sup>1</sup>The Governmental Funding Agency for Scientific and Technological Research in Chile.

8. Coordinator of the Chilean-German Collaboration Program on Information Technology. Appointed by the Chilean Government. 1998-2001.
9. Executive Editor “Revista de la Sociedad Chilena de Ciencia de Computacion (Journal of the Chilean Computer Science Society). 1994-2001, SCCC.
10. Member Editorial Board, SADIO Electronic Journal, Sociedad Argentina de Informatica e Investigacion Operativa (Journal of the Argentinean Informatics and Operation Research Society). 1998-2001.
11. Member Editorial Board of “AI Communications” (the European AI Journal). 2000-2005, IOS Press.
12. Member ACM SIGMOD Latin America Liaison Committee. Since 2000.
13. Director of the DIPUC Program for Information Science and Data Analysis, PUC. June 2000 - Aug. 2001.
14. Member of the “Logic and Foundations of Computing Group”, University of Ottawa and Carleton University. Since 2001.
15. Member of Promotion and Tenure Committee, School of Computer Science, Carleton University. Since July 2002.
16. Member of Carleton University’s Senate. Chair of the Senate’s Computing Policies Committee. (2003 -2005)
17. Acting Associate Director; School of Computer Science, Carleton University. August 2004 - July 2005.
18. Founder and Member of Steering Committee of the “Alberto Mendelzon Workshop on Foundations of Data Management”. An international event held on a yearly basis, since 2006.
19. Professor of PhD course at Technical University of Milan (Politecnico di Milano), Milan, Italy, June 2013.
20. Professor of PhD course at University of Rome “La Sapienza”, Rome, Italy, Oct. 2013.
21. Professor of PhD course at University of Calabria, Rende, Italy, Nov. 2013.
22. Visiting Researcher, LogicBlox Inc., Atlanta, GA, USA, Feb.-March 2014.
23. Design of the “Institute of Data Science”, Universidad del Desarrollo (UDD), Chile, 2015, as consultant.
24. Consultant for ALife, Montreal, Canada, on AI techniques for movie scene design. 2007-2008.

## 8 Publications

### Books

1. L. Bertossi. *Database Repairing and Consistent Query Answering*. Morgan & Claypool Publishers, September 2011. ISBN: 9781608457625.
2. L. Bertossi. *Logic for Computer Science* (in Spanish). Ediciones Pontificia Universidad Catolica de Chile, 1996, 310 pp., ISBN 956-14-0404-4.

### Edited Books (not proceedings)

3. L. Bertossi and Guohui Xiao. *Reasoning Web. Causality, Explanations and Declarative Knowledge*. Springer LNCS 13759, 2023.
4. L. Bertossi, A. Hunter and T. Schaub. *Inconsistency Tolerance in Data and Knowledge Base Systems and Software Specifications*. Springer, State of the Art Series, LNCS 3300, 2004.
5. L. Bertossi, G. Katona, B. Thalheim and K.-D. Schewe. *Semantics in Databases*. Springer, LNCS 2582, 2003.

### Edited Proceedings

6. G. Ianni, D., Lembo, L. Bertossi, W. Faber, B. Glimm, G. Gottlob and S. Staab. “Reasoning Web. Semantic Interoperability on the Web”. Springer LNCS 10370, 2017.
7. J. J. Alferes, L. Bertossi, G. Governatori, P. Fodor and D. Roman. Rule Technologies Research, Tools, and Applications: 10th International Symposium, RuleML 2016 Stony Brook, NY, USA, July 6-9, 2016 Proceedings. Springer LNCS 9718, 2016.
8. M. Arenas and L. Bertossi. Proceedings of the 3rd Alberto Mendelzon Workshop on Foundations of Data Management (AMW 09), 2009. CEUR Proceedings 450.
9. L. Bertossi and H. Christiansen. Proceedings of 3rd Workshop on Logic in Databases (LID 09). 2009.
10. G. Navarro, L. Bertossi and Y. Kohayakawa. *Proceedings of the 4th IFIP International Conference on Theoretical Computer Science (TCS 2006)*. IFIP Springer Series, Springer, 2006.

### Book Chapters (non-proceeding papers)

11. L. Bertossi. “Attribution-Scores in Data Management and Explainable Machine Learning”. Invited paper in Proc. ADBIS 2023, Springer LNCS 13985, pp. 16-33. arXiv 2308.00184.

12. L. Bertossi. “Attribution-Scores and Causal Counterfactuals as Explanations in Artificial Intelligence”. In *Reasoning Web. Causality, Explanations and Declarative Knowledge*. Springer LNCS 13759, 2023, pp. 1-22. arXiv 2303.02829.
13. L. Bertossi. “Score-Based Explanations in Data Management and Machine Learning: An Answer-Set Programming Approach to Counterfactual Analysis”. In: Simkus M., Varzinczak I. (eds) *Reasoning Web. Declarative Artificial Intelligence*. Reasoning Web 2021. Lecture Notes in Computer Science, vol 13100. Springer, 2022, pp. 145-184. arXiv 2106.10562.
14. L. Bertossi. “Score-Based Explanations in Data Management and Machine Learning”. Survey paper by invitation. *Scalable Uncertainty Management*, 2020. Springer LNCS 12322, pp. 17-31.
15. L. Bertossi and L. Bravo. “Generic and Declarative Approaches to Data Quality Management”. In S. Sadiq (ed.), *Handbook of Data Quality - Research and Practice*, Springer, 2013, pp. 181-212.
16. L. Bertossi and G. Jayaraman. “Designing, Specifying and Querying Metadata for Virtual Data Integration Systems”. Proc. International Conference on Data Management in Grid and P2P Systems (Globe 2009), Springer LNCS 5697, pp. 72-84. Invited paper for keynote presentation.
17. L. Bertossi. “Inconsistent Databases”. In *Encyclopedia of Database Systems*, Springer, 2009, 6 pp.
18. L. Bertossi, A. Hunter and T. Schaub. “Introduction to Inconsistency Tolerance”. In *Inconsistency Tolerance*, Springer LNCS 3300, State of the Art Series, 2004, pp. 1-14.
19. L. Bertossi and L. Bravo. “Consistent Query Answers in Virtual Data Integration Systems”. In *Inconsistency Tolerance*. Springer LNCS 3300, 2004, pp. 42–83.
20. P. Barcelo, L. Bertossi and L. Bravo. “Characterizing and Computing Semantically Correct Answers from Databases with Annotated Logic and Answer Sets”. In *Semantics in Databases*, Springer LNCS 2582, 2003, pp. 1–27.
21. L. Bertossi and J. Chomicki. “Query Answering in Inconsistent Databases”. In *Logics for Emerging Applications of Databases*, J. Chomicki, G. Saake and R. van der Meyden (eds.), Springer, 2003, pp. 43-83.
22. L. Bertossi, J. Pinto and R. Valdivia. “Specifying Database Transactions and Active Rules in the Situation Calculus”. In *Logical Foundations for Cognitive Agents. Contributions in Honor of Ray Reiter*. F. Pirri and H. Levesque (eds.), Springer, June 1999, pp. 41–56.
23. M. Arenas and L. Bertossi. “The Dynamics of Database Views”. In *Transactions and Change in Logic Databases*, H. Decker, B. Freitag, M. Kifer and A. Voronkov (eds.), Springer, LNCS 1472, 1998, pp. 197–226.



## Journal Publications

24. L. Bertossi. “From Database Repairs to Causality in Databases and Beyond”. Transactions on Large-Scale Data- and Knowledge-Centered Systems LIV (TLDKS), Springer LNCS 14160, 2023, pp. 119-131. arXiv 2306.09374.
25. L. Bertossi, B. Kimelfeld, E. Livshits and M. Monet. “The Shapley Value in Database Management”. *ACM Sigmod Record*, 2023, 52(2):6-17.
26. M. Arenas, P. Barcelo, L. Bertossi, M. Monet. “On the Complexity of SHAP-Score-Based Explanations: Tractability via Knowledge Compilation and Non-Approximability Results”. *Journal of Machine Learning Research*, 2023, 24(63):1-58. arXiv 2104.08015.
27. L. Bertossi and M. Milani. “Extending Sticky-Datalog<sup>±</sup> via Finite-Position Selection Functions: Tractability, Algorithms, and Optimization”. *Information Systems*, 2023, 114, 102-156. arXiv 2108.00903.
28. L. Bertossi. “Declarative Approaches to Counterfactual Explanations for Classification”. *Theory and Practice of Logic Programming*, 2023, 23(3):559-593. arXiv 2011.07423.
29. E. Livshits, L. Bertossi, B. Kimelfeld and M. Sebag. “The Shapley Value of Tuples in Query Answering”. *Methods of Logic in Computer Science*, 2021, 17(3):22.1-22.33.
30. E. Livshits, L. Bertossi, B. Kimelfeld and M. Sebag. “Query Games in Databases”. *ACM SIGMOD Record*, 2021, 50(1):78-85. **Research Highlights Award paper.**
31. L. Bertossi. “Specifying and Computing Causes for Query Answers in Databases via Database Repairs and Repair Programs”. *Knowledge and Information Systems*, 2021, 63(1):199-231. <https://doi.org/10.1007/s10115-020-01516-6>.
32. L. Bertossi and F. Geerts. “Data Quality and Explainable AI”. *ACM Journal of Data and Information Quality*, 2020, 12(2):1-9.
33. L. Bertossi and M. Milani. “Ontological Multidimensional Data Models and Contextual Data Quality”. *ACM Journal of Data Quality*, 2018, 9(3):14.1-14.36.
34. L. Bertossi, L. and B. Salimi. “Causes for Query Answers from Databases: Datalog Abduction, View-Updates, and Integrity Constraints”. *International Journal of Approximate Reasoning*, 2017, 90:226-252.
35. Z. Bahmani, L. Bertossi and N. Vasiloglou. “ERBlox: Combining Matching Dependencies with Machine Learning for Entity Resolution”. *Journal of Approximate Reasoning*, 2017, 83:118-141. DOI: 10.1016/j.ijar.2017.01.003.
36. L. Bertossi and L. Bravo. “Consistency and Trust in Peer Data Exchange Systems”. *Theory and Practice of Logic Programming*, 2017, 17(2):148-204. doi:10.1017/S147106841600017X.
37. L. Bertossi and B. Salimi. “From Causes for Database Queries to Repairs and Model-Based Diagnosis and Back”. *Theory of Computing Systems*, 2017, 61(1):191-232. DOI 10.1007/s00224-016-9718-9.

38. L. Bertossi and L. Li. “Achieving Data Privacy through Secrecy Views and Null-Based Virtual Updates”. *IEEE Transactions on Data and Knowledge Engineering*, 2013, 25(5):987-1000.
39. A. Rodriguez, L. Bertossi and M. Caniupan. “Consistent Query Answering under Spatial Semantic Constraints”. *Information Systems*, 2013, 38:244-263.
40. L. Bertossi, S. Kolahi and L. Lakshmanan. “Data Cleaning and Query Answering with Matching Dependencies and Matching Functions”. *Theory of Computing Systems*, 2013, 52(3):441-482.
41. J. Gardezi, L. Bertossi and I. Kiringa. “Matching Dependencies: Semantics and Query Answering”. *Frontiers of Computer Systems*, Springer, 2012, 6(3):278-292.
42. M. Caniupan and L. Bertossi. “The Consistency Extractor System: Answer Set Programs for Consistent Query Answering in Databases”. *Data & Knowledge Engineering*, 2010, 69(6):545-572.
43. L. Bertossi, L. Bravo, E. Franconi and A. Lopatenko. “Complexity and Approximation of Fixing Numerical Attributes in Databases under Integrity Constraints”. *Information Systems*, 2008, 33(4):407-434.
44. L. Bertossi. “Consistent Query Answering in Databases”. *ACM Sigmod Record*, June 2006, 35(2):68-76.
45. L. Bravo and L. Bertossi. “Disjunctive Deductive Databases for Computing Certain and Consistent Answers to Queries from Mediated Data Integration Systems”. *Journal of Applied Logic*, 2005, 3(2):329-367.
46. L. Bertossi and C. Schwind. “Analytic Tableaux for Querying Inconsistent Databases”. *Annals of Mathematics and Artificial Intelligence*, 2004, 40(1-2):5-35.
47. M. Arenas, L. Bertossi and J. Chomicki. “Answer Sets for Consistent Query Answers”. *Theory and Practice of Logic Programming*, 2003, 3(4&5):393-424.
48. M. Arenas, L. Bertossi, J. Chomicki, X. He, J. Spinrad and V. Raghavan. “Scalar Aggregation in Inconsistent Databases”. *Theoretical Computer Science*, 2003, 296(3):405-434.
49. M. Arenas and L. Bertossi. “Hypothetical Temporal Queries in Databases”. *Journal of Intelligent Information Systems*, 2002, 19(2):231-259.
50. L. Bertossi, M. Arenas and C. Ferretti. “SCDBR: An Automated Reasoner for Specifications of Database Updates”. *Journal of Intelligent Information Systems*, Kluwer, 1998, 10(3):253–280.
51. D. Fuller, S. Bocic and L. Bertossi. “Towards Efficient Partial Evaluation in Logic Programming”. *New Generation Computing*, 1996, 14(2):237–259.
52. C. Bastarrica, L. Bertossi and R. Valdivia. “Semantic Query Optimization: A Practical Case” (in Spanish). *Revista de la Sociedad Chilena de Ciencia de Computacion*, 1996, 1(1):31-44. (ISSN 0717-4276)

53. L. Bertossi and R. Reiter. “Circumscription and Generic Mathematical Objects”. *Fundamenta Informaticae*, 1994, 21(1-2):113–124.
54. L. Bertossi. “Circumscription in Data Logic for Data Type Specification”. *Journal of Logic and Computation*, 1994, 4(1):89–96.
55. L. Bertossi. “The Outer Capacity of an Internal Set Function”. *Zeitschrift für mathematische Logik und Grundlagen der Mathematik*, 1991, 37:571–573.
56. L. Bertossi. “The Formal Language  $L_t$  and Topological Products”. *Zeitschrift für mathematische Logik und Grundlagen der Mathematik*, 1990, 36:89–94.
57. L. Bertossi. “An Example of Convergence Rate in the Finite Elements Method” (in Spanish). *Revista de Matemáticas Aplicadas* (ISSN 0716-3096), 1987, 9(1):27-33.
58. L. Bertossi. “Chuaqui’s Definition of Probability in some Stochastic Processes”. *Revista Colombiana de Matemática*, 1985, 19:25-30.

### Refereed Conference Proceedings

59. S. Cifuentes, L. Bertossi, N. Pardal, S. Abriola, M. V. Martinez and M. Romero. “The Distributional Uncertainty of the SHAP Score in Explainable Machine Learning”. Proc. 27th European Conference on Artificial Intelligence (ECAI-2024).
60. F. Azua and L. Bertossi. “The Generalized Causal-Effect Score in Data Management (short paper)”. Proceedings of the Conference on Governance, Understanding and Integration of Data for Effective and Responsible AI (Guide-AI’24), 2024 pp. 32-35. DOI: <https://doi.org/10.1145/3665601.3669843>
61. L. Bertossi and J.E. Leon. “Efficient Computation of Shap Explanation Scores for Neural Network Classifiers via Knowledge Compilation”. Proc. ‘Logic in AI’ (JELIA’23), Springer LNCS 14281, 2023, pp. 49-64 arXiv 2303.06516.
62. L. Bertossi and J.E. Leon. “Compiling Neural Network Classifiers into Boolean Circuits for Efficient Shap-Score Computation” (short paper). Proc. AMW 2023, CEUR-WS Proc. Vol. 3409, 4 pp.
63. L. Bertossi. Second-Order Specifications and Quantifier Elimination for Consistent Query Answering in Databases (extended abstract). Conference submission, 2021. Proc. Workshop on Second-Order Quantifier Elimination and Related Topics (SOQE’21), collocated with KR 2021. CEUR Proceedings Vol-3009, pp. 28-36, 2021.
64. L. Bertossi and G. Reyes. “Answer-Set Programs for Reasoning about Counterfactual Interventions and Responsibility Scores for Classification”. In *Inductive Logic Programming*, Springer LNAI 13191, 2022, pp. 41-56. Proc. 1st International Joint Conference on Learning and Reasoning (IJCLR’21). Extended version: arXiv 2107.10159.
65. L. Bertossi. “Reasoning about Counterfactuals and Explanations: Problems, Results and Directions”. In *Informal Proceedings of 2nd Workshop on Explainable Logic-Based Artificial Intelligence (XLoKR’21)*. Co-located with KR’21. Posted as Corr arXiv Paper arxiv:2108.11004.

66. M. Arenas, P. Barcelo, L. Bertossi and M. Monet. “The Tractability of SHAP-scores over Deterministic and Decomposable Boolean Circuits”. Proc. AAAI 2021. Posted as Corr arXiv Paper arxiv:2007.14045 [cs.LG].
67. L. Bertossi. “An ASP-Based Approach to Counterfactual Explanations for Classification”. Proc. RuleML-RR 2020. Springer LNCS 12173, pp. 70-81. Corr arXiv Paper arxiv:2004.13237, 2020.
68. L. Bertossi, J. Li, M. Schleich, D. Suciu and Z. Vagena. “Causality-based Explanation of Classification Outcomes”. Proc. ACM DEEM@SIGMOD 2020, pp. 6:1-6:10.
69. E. Livshits, L. Bertossi, B. Kimelfeld and M. Sebag. “The Shapley Value of Tuples in Query Answering”. Proc. ICDT 2020. CoRR Arxiv Paper abs/1904.08679, 2019.
70. L. Bertossi. “Repair-Based Degrees of Database Inconsistency”. Proc. LPNMR 2019. Springer LNCS 11481, 2019, pp. 195-209. Extended version as Corr Arxiv Paper cs.DB/1809.10286, 2018.
71. L. Bertossi. “Database Repairs and Consistent Query Answering: Origins and Further Developments”. Gems of PODS Paper. Proc. PODS 2019, pp. 48-58.
72. E. Livshits, L. Bertossi, B. Kimelfeld and M. Sebag. “The Shapley Value of Tuples in Query Answering” (abstract paper). Proc. 3rd International Workshop on Enumeration Problems & Applications (WEPA), 2019, 3 pp.
73. L. Bertossi, G. Gottlob and R. Pichler. “Datalog: Bag Semantics via Set Semantics. Proc. International Conference on Database Theory, ICDT 2016.  
<http://drops.dagstuhl.de/opus/volltexte/2019/10318/pdf/LIPIcs-ICDT-2019-16.pdf>
74. L. Bertossi. “Measuring and Computing Database Inconsistency via Repairs”. Proc. SUM’18. Springer LNCS 11142, 2018, pp. 368-372.
75. L. Bertossi. “Characterizing and Computing Causes for Query Answers in Databases from Database Repairs and Repair Programs”. Proc. FoIKS’18, Springer LNCS 10833, 2018, pp. 55-76.
76. L. Bertossi. “Causality in Databases: Answer-Set Programs and Integrity Constraints”. Proc. Alberto Mendelzon International Workshop on Foundations of Data Management (AMW’18). CEUR-WS Proceedings, Vol-2100, 2018.
77. L. Bertossi. “The Causality/Repair Connection in Databases: Causality-Programs”. Proc. SUM’17, Springer LNCS 10564, 2017.
78. L. Bertossi and M. Milani. “The Ontological Multidimensional Data Model in Quality Data Specification and Extraction (extended abstract and progress report)”. Proc. BICOD’17, Springer LNCS 10365, pp. 126-130.
79. L. Bertossi and M. Milani. “The Ontological Multidimensional Data Model (extended abstract)”. Proc. AMW’17, CEUR-WS Proc. Vol-1912. Posted as Corr Arxiv Paper cs.DB/1703.03524. 5 pages.
80. Z. Bahmani and L. Bertossi. “Enforcing Relational Matching Dependencies with Datalog for Entity Resolution”. Proc. FLAIRS, 2017.

81. M. Milani, A. Cali and L. Bertossi. “Hybrid Approach to Query Answering under Expressive Datalog+/-”. Proc. RR’16, Springer LNCS 9898, 2016, pp. 144-158.
82. M. Milani and L. Bertossi. “Extending Weakly-Sticky Datalog+/-: Query-Answering Tractability and Optimization”. Proc. RR’16, Springer LNCS 9898, 2016, pp. 128-143.
83. B. Salimi, L. Bertossi, D. Suciu and G. Van den Broeck. “Quantifying Causal Effects on Query Answering in Databases”. Proc. 8th USENIX Workshop on the Theory and Practice of Provenance (TaPP’16). Corr Arxiv Paper cs.DB/1603.02705.
84. M. Milani, A. Cali, and L. Bertossi. “Query Answering on Expressive Datalog+- Ontologies”. Proc. Alberto Mendelzon International Workshop on Foundations of Data Management (AMW’16). CEUR-WS Proc. Vol-1644, 2016.
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## Other Publications

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152. L. Bertossi and J. E. Leon. “Opening Up the Neural Network Classifier for Shap Score Computation”. arXiv paper 2303.06516v1, 2023.
153. L. Bertossi. “Answer-Set Programs for Repair Updates and Counterfactual Interventions”. arXiv paper 2209.12110, 2022.
154. L. Bertossi. “Second-Order Specifications and Quantifier Elimination for Consistent Query Answering in Databases”. arXiv paper cs.DB/2108.08423, 2021.
155. L. Bertossi and F. Rizzolo. “Contexts and Data Quality Assessment”. arXiv Paper cs.DB/1608.04142, 2016.
156. A. Lopatenko and L. Bertossi. “Complexity of Consistent Query Answering in Databases under Cardinality-Based and Incremental Repair Semantics (extended version)”. Extended version of ICDT 2007 paper. arXiv paper cs.DB/1605.07159, 2016.
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169. L. Bertossi, I. Mikenberg and V. Marshall. “Foundations of Mathematics” (in Spanish). Facultad de Matematicas, PUC, 1985, 250 pp.
170. L. Bertossi. “Introduction to Nonstandard Analysis and its Applications in Probability” (in Spanish). *Notas Matematicas 14*, Pontificia Universidad Catolica de Chile, 1983, 73 pp. (survey monograph).
171. L. Bertossi. “Introduction to Factor Analysis and its Applications with SPSS” (in Spanish). Technical Report, ECOM, 1976, 200 pp.

## 9 Keynote Conference Presentations and Tutorials

1. “Causality, Attribution-Scores and Repairs in Databases”. Tutorial at the ‘European Conference on Advances in Databases and Information Systems’ (ADBIS), Barcelona, Spain, 2023.
2. “From Database Repairs to Causality in Databases and Beyond”. Keynote at ‘Base des Donnes Avances’ conference (BDA), Clermont-Ferrand, France, 24-27 Oct. 2022.
3. Keynote at 2nd Samsung Workshop on Neuro-Symbolic AI, June 2022. “Counterfactual-Based Explanations for Classification Outcomes: Semantics and Reasoning”.
4. Round Table Member. “Are We Diverse and Inclusive?”. VLDB, 2021.
5. “Explanations in Data Management and Artificial Intelligence”. Keynote at “Alberto Mendelzon International Workshop on Foundations of Data”, 2021.
6. Course “Score-Based Explanations in Data Management and Machine Learning: An Answer-Set Programming Approach to Counterfactual Anaysis”. Reasoning Web School (RW’21), 2021.
7. Tutorial “Score-Based Explanations in Data Management and Machine Learning”. International Conference on Scalable Uncertainty Management (SUM), September 2020.
8. “Gems of PODS” presentation at the ACM Principles of Database Systems (PODS) conference, Amsterdam, July 2019.
9. Tutorial. “Declarative Approaches to Data Quality Assessment and Cleaning”. 31st British International Conference on Databases (BICOD), 10-12 July 2017, London, UK.
10. “Datalog $\pm$  Multidimensional Ontologies and Data Quality”. Gottlob Celebration WS, Genova, Dec. 2016.
11. ”ERBlox: Combining Matching Dependencies with Machine Learning for Entity Resolution”. CLEI’15, Oct. 2015, Arequipa, Peru.

12. “ERBlox: Combining Matching Dependencies with Machine Learning for Entity Resolution”. Keynote presentation. XII Congreso Internacional De Ingenieria de Software y Sistemas De Informacion. Nov. 2015, Trujillo, Peru.
13. “Ontology-Based Data Access Subjects, Issues and Trends”. Tutorial. XII Congreso Internacional De Ingenieria de Software y Sistemas De Informacion. Nov. 2015, Trujillo, Peru.
14. “Machine Learning: Some Techniques in Statistical Learning and Modeling”. Tutorial at the CIWS Summer School, PUC, Santiago de Chile, Jan. 10, 2015.
15. “Datalog Extensions as Ontology Representation Languages and their Applications”. Keynote presentation at the Ninth Latin American Workshop on Logic/Languages, Algorithms and New Methods of Reasoning (LANMR 2014), Valle de Bravo, Mexico, Nov. 2014.
16. “Ontology-Based Data Access Subjects, Issues and Trends”. Keynote presentation at COMTEL, Lima, Peru, October 2014.
17. “Semantic Constraints for Data Quality Assessment and Cleaning”. Keynote presentation at COMTEL, Lima, Peru, October 2014.
18. “Logica y Probabilidad en Representacion de Conocimiento” (in Spanish). Keynote presentation at Jornadas Rolando Chuaqui, Santiago de Chile, October 2014.
19. “Statistical Relational Learning with Logical Constraints”. Four session mini-course at School of Engineering, P. Catholic University of Chile (PUC), Santiago de Chile, June-July 2014.
20. “Inconsistency Management in Data and Knowledge Bases”. Compact, 2-week PhD course. University of Calabria, Rende, Nov. 2013.
21. “Inconsistency Management in Data and Knowledge Bases”. Compact, 2-week PhD course (with Domenico Lembo and Antonella Poggi). University of Rome, La Sapienza, Oct. 2013.
22. “Data Integration”. Compact, 3-week PhD course. Politecnico Di Milano, Milano, Italy, June 2013.
23. “Evolution and Change in Relational Databases An Overview of Some Issues”. Keynote presentation at Dagstuhl Seminar Foundations and Challenges of Change and Evolution in Ontologies (12441), Schloss Dagstuhl, Germany, Oct. 28 - Nov. 02, 2012.
24. “Research in Computer Science and IT: How and Where Are We (Going)? A Chilean Perspective”. Keynote presentation at Encuentros 2011, Berkeley, Nov. 2011.
25. “Semantic Constraints for Data Quality Assessment and Cleaning”. Keynote presentation at the International Conference of the Chilean Computer Science Society (SCCC’11). Curico, Chile, Nov. 2011.
26. “Semantic Constraints for Data Quality Assessment and Cleaning”. Tutorial at the Italian Database Conference (SEBD 11). Maratea, June 2011.

27. “Using Answer Set Programs to Specify Virtual Data Integration Systems under the LAV Approach: Obtaining Consistent Query Answers”. Keynote presentation at the Fifth Latin American Workshop on Non-Monotonic Reasoning 2009, Tlaxcala, Mexico, Nov. 2009.
28. “Data Integration and Data Quality”. Presentation at IBM CAS University Days, Toronto, September 2009.
29. “Designing, Specifying and Querying Metadata for Virtual Data Integration Systems”. Keynote presentation at International Conference on Data Management in Grid and P2P Systems (Globe 2009), Linz, Austria, September 2009.
30. “From Consistent Query Answering to Query Rewriting: A Detour Around Answer Set Programs”. Keynote presentation at Logic in Databases Workshop (LID 08), Rome, May 2008.
31. “Data Integration”. Tutorial at 2nd Workshop on Foundation on Databases and the Web, Punta del Este, Uruguay, October 23-26, 2007.
32. “Consistent Query Answering in Relational and XML Databases”. Plenary talk, Workshop on the Web, Universitat Pompeu Fabra, Barcelona, January 9, 2007.
33. “The Logics of Consistent Query Answering in Databases”. Advanced Course at European Summer School in Logic, Language and Information (ESSLI 2005), Edimburgh, August 2005.
34. “Consistent Query Answering in Databases”. Tutorial at the Italian Database Conference (SEBD 04). Sardinia, June 2004.
35. “Description Logics and its Applications”. Tutorial at the International Conference of the Chilean Computer Science Society (SCCC), Arica, Chile, November 2004.
36. “Virtual Data Integration”. Tutorial at the International Conference of the Chilean Computer Science Society (SCCC), Chillan, Chile, November 2003.
37. “Datawarehouses and Data Mining”. X National Congress of Systems Engineering Students. Cartagena de Indias, Colombia, May 2001.

## 10 Invited Presentations (other)

1. “Applying Logic to the Specification and Computation of Attribution Scores in Explainable Machine Learning”. ‘Foundational Aspects of Neuro-Symbolic AI’ WS. Santiago and Los Andes, Chile. March 4-8, 2024.
2. “Tractability and Optimization of Shap-Score Computation for Explainable AI”. Dagstuhl Seminar 24032, Germany, Jan. 2024.
3. “Explanation Scores in Data Management”. Ontario Database Day, McMaster U., Dec. 13, 2023.

4. “Tractability and Optimization of Shap-Score Computation for Explainable AI”. MIAI Seminar, U. Grenoble, France, Nov. 2023.
5. “Tractability and Optimization of Shap-Score Computation for Explainable AI”. ESILV - Ecole Supérieure d’Ingénieurs Léonard de Vinci, Paris, France, Nov. 2023.
6. “Explanation Scores in Machine-Learning-Based Classification Systems”. CENIA, the National Center for AI (Chile), Nov. 2023.
7. “What is an Interpretation in AI?”. EPURAI WS, SKEMA Paris, Nov. 2023.
8. “From Hilbert to Turing and Beyond”. U. Clermont-Ferrand, Oct. 2023.
9. “Computing Shapley Values as Explanation Scores in Data Management and Machine Learning”. U. Paul Sabatier, Toulouse, May, 2023.
10. “Computing Shapley Values as Explanation Scores in Data Management and Machine Learning”. U. Paris Cite, May 2023.
11. “Computing Shapley Values as Explanation Scores in Data Management and Machine Learning”. U. California San Diego, May 2023.
12. “Computing Shapley Values as Explanation Scores in Data Management and Machine Learning”. U. Clermont-Ferrand, June 2023.
13. “Explainable AI for Classification and Decision Systems. Presentation at ”CUIDS Distinguished Speaker Series”, Carleton University Institute for Data Science Seminar. March 2023.
14. “Score-Based Explanations in Data Management and ML-Based Classification”. Presentation at “Data Science Forum”, RBC, Toronto, January, 2023.
15. “Correct Inference and Learning in the Presence of Incomplete Data”. Skema Prism Seminar, Dec. 2022.
16. “Explainable Artificial Intelligence and Classification Systems”. Skema Masterclass. Oct. 2022.
17. “Artificial Intelligence: Origins, Schools and Problems”. Chilean Naval Academy, June 2022.
18. “Score-Based Explanations for Classification Results”. AIAI + LFCS Seminar, University of Edinburgh, July 2021.
19. “SHAP Explanations with Booleans Circuit Classifiers”. Dagstuhl Seminar “Extending the Synergies Between SAT and Description Logics” (21361), September, 2021.
20. “Score-Based Explanations in Data Management and Machine Learning”. Data Science Seminar, University Paris-Descartes, Jan. 2021.
21. “Score-Based Explanations in Data Management and Machine Learning”. DataLab Seminar, Northeastern University, Boston, USA, July 3rd, 2020.

22. “Variations on a Causality Theme in Databases”. Dagstuhl Seminar on “Dependence and Independence Logic”, Jan. 2019.
23. “Combining Declarative Approaches to Data Cleaning with Machine Learning for Entity Resolution: Some New Trends in Data Science”. Universidad Adolfo Ibañez (UAI, Santiago, Chile), June 2018.
24. “The Ontological Multidimensional Data Model in Datalog<sup>±</sup>”. Talk at Universidad Nacional del Sur, Bahia Blanca, Argentina, June 2017.
25. “Datalog<sup>±</sup> Multidimensional Contexts for Data Quality: Quality Data Extraction and Query Answering Algorithms”. Politecnico di Milano, Italy, Dec. 1st, 2016.
26. “Extending Weakly-Sticky Datalog<sup>±</sup>: Query-Answering Tractability and Optimization”. Seminar of the Center for Semantic Web Research, P. Catholic University of Chile, July 2016.
27. “ERBlox: Combining Matching Dependencies with Machine Learning for Entity Resolution”. Universidad del Bio-Bio, Concepcion, Chile, May 2015.
28. “Logical and Probabilistic Knowledge Representation and Reasoning”. Cognitive Science Seminar, Carleton University, January 2015.
29. “Contexts and Multidimensional Data Quality Assessment and Cleaning”. Seminar of the Center for Semantic Web Research, University of Chile, June 2014.
30. “Semantic Constraints, Contexts and Multidimensional Data Quality Assessment and Cleaning”. Departmental Seminar, Dept. of Computer Science, P. Catholic University of Chile (PUC), Santiago de Chile, June 2014.
31. “From Hilbert to Turing and beyond”. Mathematical Engineering Seminar, P. Catholic University of Chile (PUC), Santiago de Chile, June 2014.
32. “Datalog<sup>±</sup>: Its Languages and Evaluation Issues”. Talk at LogicBlox, Atlanta, April, 2014.
33. “Contexts and Multidimensional Data Quality Assessment and Cleaning”. University of Toronto, January 2014.
34. “Matching Dependencies for Entity Resolution in Databases”. University of Rome, La Sapienza, Italy, Sept. 2013.
35. “Semantic Constraints for Data Quality Assessment and Cleaning”. University of Milano (Bicocca), Milano, Italy, June 2013.
36. “Entity Resolution with Matching Dependencies: Beyond Certainty”. BIN AGM, Vancouver, May 2013.
37. “Query Rewriting in Datalog for On-The-Fly Entity Resolution”. BIN AGM, Toronto, Nov. 2012.
38. “Business Intelligence: Recent Experiences in Canada”. Universidad del Desarrollo (UDD), Santiago, Chile, August 2012.



39. “Multidimensional Contexts for Data Quality Assessment”. University of Chile, Santiago, Chile, August 2012.
40. “Semantic Constraints for Data Quality Assessment and Cleaning”. Simon Fraser University, Vancouver, Canada, July 2012.
41. “Repair-Oriented Relational Schemas for Multidimensional Databases”. University of Calabria, Cosenza/Rende, Italy, May 2012.
42. “Repair-Oriented Relational Schemas for Multidimensional Databases”. Polytechnic University of Milan, Italy, April 2012.
43. “Contexts for Data Quality Assessment and Cleaning”. BIN/IBM WS, IBM Watson Research Center, NY, February, 2012.
44. “Information Agents in a Peer Data Exchange System”. University of Calabria, Cosenza, June 2011.
45. “Information Agents in a Peer Data Exchange System”. University of Washington, Seattle, April 2011.
46. “Multidimensional Databases: Consistency Handling and Contexts”. Seminar series, Universidad de la Republica, Montevideo, Uruguay, May 2011.
47. “Some Scientific Challenges in Data Management for Business Intelligence”. Oxford University, England, February 2011.
48. “Some Scientific Challenges in Data Management for Business Intelligence”. Birkbeck College London, England, February 2011.
49. “From Consistent Query Answering to Query Rewriting: A Detour Around Answer Set Programs”. University of British Columbia, October 2009.
50. “Information Integration and Business Intelligence”. Universidad del Bio-Bio, Concepcion, Chile, June 2009.
51. “Information Integration and Business Intelligence”. Universidad Catolica de San Pablo, Arequipa, Peru, May 2009.
52. “Information Integration and Business Intelligence”. Universidad Peruana Union, Juliaca, Peru, May 2009.
53. “Information Agents in a Peer Data Exchange System”. Universite du Quebec en Outaouais, Feb. 2009.
54. “Data Quality in Information Integration and Business Intelligence”. Adolfo Ibañez University, Chile, Dec. 2008.
55. “From Hilbert to Turing and beyond”. University of Concepcion, Chile, Dec. 2008.
56. “Information Agents in a Peer Data Exchange System”. University of Bio-Bio, Chile, Dec. 2008.

57. "Dealing with Inconsistent Data Sources: Scientific and Technical Challenges". University College Dublin, Ireland, Sept. 2008.
58. "Taking Advantage of Answer Set Programs for Consistent Query Answering". 1st Symposium on XML, Logic, and Automata, Grantown-on-Spey, Scotland, 18-20 July, 2008.
59. "Information Agents in a Peer Data Exchange System". University of Chile, Santiago, Chile, May 2008.
60. "Information Agents in a Peer Data Exchange System". University of Rome 3, Rome, Italy, May 2008.
61. "Virtual Data Integration and Global Consistency". Tutorial at Catholic University of Chile, Dec. 2007.
62. "Virtual Data Integration". Tutorial at University of Concepcion, Chile, Dec. 2007.
63. "The Semantics of Consistency and Trust in P2P Data Exchange Systems". Universidad de la Republica, Uruguay, October 2007.
64. "Consistent Query Answering in Databases Under Cardinality-Based Repair Semantics". University of Edinburgh, May 2007.
65. "Consistent Query Answering in Databases Under Minimum Cardinality Semantics". University of Toronto, Dec. 2006.
66. "Consistent Query Answering in Databases: Recent Developments". University of Concepcion, Nov. 2006.
67. "Static and Incremental Complexity of Consistent Query Answering under Attribute- and Cardinality-based Repairs". Freiburg University, Germany, July 2006.
68. "Consistent Query Answering from Inconsistent Databases". University of Talca, Chile, April 2006.
69. "Cardinality-based Semantics for Consistent Query Answering: Incremental and Parameterized Complexity". Workshop 'Logic and Databases'. Isaac Newton Institute for Mathematical Sciences, Cambridge, February 2006.
70. "Consistent Query Answering in Databases". Simon Fraser University, Vancouver, March 2005.
71. "Consistent Query Answering in Virtual Data Integration Systems". Simon Fraser University, Vancouver, March 2005.
72. "Consistent Answers from Integrated Data Sources". University at Buffalo, April 2005.
73. "Consistent Query Answering in Databases". University of Akureyri, Iceland, April 2005.
74. "Consistent Answers from Integrated Data Sources". Queen's University, May 2005.

75. "Complexity and Approximation of Fixing Numerical Attributes in Databases Under Integrity Constraints". Technical University of Vienna, August 2005.
76. "Complexity and Approximation of Fixing Numerical Attributes in Databases Under Integrity Constraints". Ottawa University, December 2005.
77. "Query Answering in P2P Data Exchange Systems". Dagstuhl Seminar on Logic-Based Information Agents, Dagstuhl, April 2004.
78. "Common Sense Reasoning in Knowledge-Based Systems". Cognitive Science Seminar, Cognitive Science Program at Carleton University, January 2003.
79. "Consistently Querying Data Integration Systems". Free University Bolzano, Italy, May 2003.
80. "Semantically Correct Answers from Inconsistent Databases". Dagstuhl Seminar on Inconsistency Tolerance, June 2003.
81. "Implementing Consistent Query Answering in Databases". IBM Center for Advanced Studies, Toronto Lab., September 2003.
82. "Obtaining Consistent Answers from Databases". Universite du Quebec en Outaouais, October 2003.
83. "Querying Inconsistent Databases". Ottawa University, December 2001.
84. "Querying Inconsistent Databases". University of Chile, May 2002.
85. "Consistent Answers from Integrated Data Sources". Concordia University, Montreal, Canada, October 2002.
86. "Specifying Database Repairs for Querying Inconsistent Databases". State University of New York at Buffalo, September 2000.
87. "Answer Sets for Consistent Query Answering in Inconsistent Databases". Dagstuhl-Seminar on Semantics of Databases. Dagstuhl, Germany, January 2001.
88. "Inconsistency Issues in Databases". II Chilean/German Workshop on Information Technology, GMD-FIRST Berlin, January 2001.
89. "Querying Inconsistent Databases". Universite de Marseille, February 2001.
90. "Querying Inconsistent Databases". Carleton University, Ottawa, Canada, March 2001.
91. "Querying Inconsistent Databases". University of Toronto, Canada, November 2001.
92. "Querying Inconsistent Databases". York University, Toronto, Canada, February 2000.
93. "Querying Inconsistent Databases". Simon Fraser University, Vancouver, Canada February 2000.
94. "Implementing Consistent Query Answering in Inconsistent Databases". Dagstuhl-Seminar on Logic for Emerging Applications of Databases. Dagstuhl, Germany, July 2000.

95. "Handling Inconsistency in Databases: An Approach from Computational Logic". II Jornadas Rolando Chuaqui. School of Mathematics, Catholic University of Chile, May 2000.
96. "Research on Information Technology in Chile". In European Union - Latin America Initiative for Cooperation in Information Society Technologies. IST Info Day in Buenos Aires, June 2000.
97. "Specifying Database Repairs for Querying Inconsistent Databases". Universidad de Lujan, Argentina, June 2000.
98. "Consistent Query Answering in Inconsistent Databases". University of Paris (Orsay), January 1999.
99. "Specifying Temporal Databases in an Extended Event Calculus". University of Marseille (Luminy), February 1999.
100. "Specifying Database Updates in the Situation Calculus". Seminar Institute FIRST of the GMD, Adlershoff, Berlin, Germany, February 1998.
101. "Using History Encoding for Answering Historical Queries in Databases". University of Marseille (Luminy), February 1998.
102. "Using History Encoding for Answering Historical Queries in Databases". Instituto Tecnico Superior, Lisbon, Portugal, February 1998.
103. "Applications of the Situation Calculus to Specification of Database Updates" and "Querying Inconsistent Databases". University of Ceara, Fortaleza, Brazil, November 1998.
104. "Scientific Aspects of Computing". International Conference of the Chilean Computer Science Society. Antofagasta, November 1998.
105. "Answering Historical Queries in Databases". Department of Computer Science, University of Marseille (Luminy), France, January 1997.
106. "Answering Historical Queries in Databases". Department of Computer Science, University of Torino, Italy, February 1997.
107. "Proving Database Integrity Constraints by Automated Induction". University of Brasilia, Brazil, February 1997.
108. "Proving Database Integrity Constraints by Automated Induction". New Jersey Institute of Technology, USA, May 1997.
109. "Specifying Database Updates in the Situation Calculus". Distributed Systems Colloquium, Technical University of Berlin, October 1997.
110. "Using History Encoding for Answering Historical Queries in Databases". Database Colloquium, University of Freiburg, Germany October 1997.
111. "Specifying the Dynamics of Database Views". Database Colloquium, Technical University Cottbus, Germany, December 1997.

112. “Proving Database Integrity Constraints by Automated Induction”. Workshop on Deduction. Humboldt University, Berlin, Germany, December 1997.
113. “Proving Integrity Constraints with a Rewrite Rule based Theorem Prover”. Dagstuhl-Seminar on Automation of Mathematical Induction, 1995.
114. “Applications of the Situation Calculus to Database Updates Specifications: Research Proposal”. Workshop on Automation of Proof by Mathematical Induction. Eleventh National Conference on Artificial Intelligence, AAAI-93, 1993.
115. “Nonmonotonic Reasoning” and “Circumscription and Generic Mathematical Objects”. Seminar on Computational Logic, Instituto de Estudios Avanzados, IVIC, Caracas, Venezuela, 1992.

## 11 Supervision

### Postdocs

- Completed
  1. Flavio Rizzolo. Carleton University, July 2009 - June 2011.
  2. Solmaz Kolahi. Univ. British Columbia, Canada. External supervision. 2010.

### PhD Students

- Completed
  1. Zeinab Bahmani. “Declarative Entity Resolution via Matching Dependencies and Combining Matching Dependencies with Machine Learning for Entity Resolution”. PhD Program in Computer Science, Carleton University. August 2017.
  2. Mostafa Khaghani-Milani. “Multidimensional Ontologies for Contextual Quality Data Specification and Extraction”. PhD Program in Computer Science, Carleton University. January 2017.
  3. Babak Salimi. “Query-Answer Causality in Databases and its Connections with Reverse Reasoning Tasks in Data and Knowledge Management”. PhD in Computer Science, Carleton University. Dec. 2015.
  4. Mohammad (Sina) Ariyan. “A Multidimensional Data Model with Subcategories for Expressing and Repairing Summarizability”. PhD in Computer Science, Carleton University, 2014.
  5. Loreto Bravo. “Handling Inconsistency in Databases and Data Integration Systems”. PhD in Computer Science, Carleton University. 2007.
  6. Monica Caniupan. “Optimizing and Implementing Repair Programs for Consistent Query Answering in Databases”. PhD in Computer Science, Carleton University. 2007.

7. Andrei Lopatenko. “Logic Based Data Integration”. Univ. Manchester (UK). External supervision. 2006.
8. Pablo Saez. “Proving Database Integrity Constraints by Automated Induction”. Doctor in Sciences of Engineering, PUC. 1999.

## Masters Students

- Completed

1. Arthur E. Kathan, “Diagnosis of Multiple Faults from First Principles Using Compact Representations”, Master of Science in Electrical Engineering Thesis, University of Wisconsin-Milwaukee. Graduated, Dec. 1990.
2. Tania Bedrax-Weiss. “Assessment of Reiter’s Solution to the Frame Problem for Database Updates” (in Spanish). Magister in Sciences of Engineering, PUC. Graduated, Dec. 1995.<sup>2</sup>
3. Bernardo Siu. “Historical Queries in Databases” (in Spanish). Magister in Sciences of Engineering, PUC. Graduated, May 1996.
4. Karina Bottinelli. “Design and Implementation of a Computational System based on Metacognition for Learning Logic” (in Spanish). Magister in Sciences of Engineering, PUC. Graduated, Aug. 1997.
5. Marcelo Arenas. “Dynamic and Consistency Issues in Databases” (in Spanish). Magister in Sciences of Engineering, PUC. Graduated, July 1998.
6. Carlos Mareco. “Specification and Implementation of Temporal Databases in an Extended Event Calculus” (in Spanish). Magister in Sciences of Engineering, PUC. Graduated, June 1999.
7. Alexander Celle. “Implementation of Consistent Answers in Inconsistent Databases”. Magister in Sciences of Engineering, PUC. Graduated, June 2000.
8. Rosa Maria Alvarez. “Using Semantic Information for Optimizing Data Mining Algorithms” (in Spanish). Magister in Sciences of Engineering, University of Concepcion. Graduated, September 2000.
9. Alvaro Cortes. “Consistent Answers from Integrated Data Sources” (in Spanish). Magister in Sciences of Engineering, PUC. Graduated, June 2002.
10. Pablo Barcelo. “Applications of Annotated Predicate Calculus and Logic Programs to Querying Inconsistent Databases”. Magister in Sciences of Engineering, PUC. Graduated, August 2002.
11. Sandra Villalobos. “Inconsistency Handling in XML Databases”. Magister in Sciences of Engineering, PUC. Graduated, October 2003.
12. Gayathri Jayaraman. “A Mediator-Based Data Integration System for Query Answering using an Optimized Extended Inverse Rules Algorithm”. Masters Program in Computer Engineering, Carleton University. Graduated, May 2010.
13. Lechen Li. “Achieving Data Privacy Through Virtual Updates”. Masters Program in Computer Science, Carleton University. Graduated, January 2011.

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<sup>2</sup>The Magister in Engineering Sciences Program at the PUC requires a thesis based on original research

14. Mahkameh Yaghmaie. “Repair-Oriented Relational Schemas for Multidimensional Databases”. Masters Program in Computer Science, Carleton University. December 2011.
  15. Aida Maleki. “Multidimensional Contexts for Data Quality Assessment”. Masters Program in Computer Science, Carleton University. January 2013.
  16. Pourya Saljoughi. “JowsDatalog: an Ontology Based Data Access Tool for Jointly-Weakly-Sticky Datalog<sup>±</sup> Programs”. Masters Program in Computer Science, Carleton University. May 2019.
  17. Jorge León. “Efficient Computation of Shap Explanation Scores for Neural Network Classifiers via Knowledge Compilation”. Masters of Science in Data Science, Universidad Adolfo Ibáñez, Chile. June, 2023.
  18. Felipe Azúa. “The Generalized Causal-Effect Score in Databases”. Masters of Science in Data Science, Universidad Adolfo Ibáñez, Chile. August, 2024.
- Ongoing Masters
    18. Zahra Mousavi. MSc Data Science, Carleton University, Canada. Since Sept. 2023.
    19. Mohamad Alipour. MSc Data Science, Carleton University, Canada. Since Sept. 2023.
    20. Sergiu Buhatel. MSc Data Science, Carleton University, Canada. Since Sept. 2024.

**External Member of Graduate Thesis Committees:** Anahi Gajardo-Schulz (PhD. Ecole Normale Supérieure de Lyon & University of Chile, 2001), Dongming Liang (PhD. York University, Canada, 2004), Eric Evangelista (MSc. Simon Fraser University, 2004), Andrei Lopatenko (PhD. University of Manchester, England, 2006), Marco Ruzzi (PhD. University of Rome, La Sapienza, 2006), Ariel Fuxman (PhD. University of Toronto, 2006), Agnes Boskovitz (PhD. Australian National University, Canberra, 2007), Solmaz Kolahi (PhD. University of Toronto, 2007), Mehedi Masud (PhD. Ottawa University, 2009), Ali Kiani Tallaei (PhD. Concordia University, 2010), Wei Jiang (PhD. University of Waterloo, 2010), Xing Tan (PhD. University of Toronto, 2011), Ahmad Altamini (PhD. Concordia University, 2012), Dmitriy Zheleznyakov (PhD. Free University of Bolzano-Bozen, Italy, 2013), Jaroslav Slichta (PhD. York University, Toronto, Canada, 2013), Jiewen Wu (PhD. University of Waterloo, 2013), Rana Awada (PhD. Ottawa University, 2014), Simon Razniewski (PhD. Free University of Bolzano-Bozen, Italy, 2014), Chelsea Battell (MSc. Math. Ottawa University, 2016). Daniel Hernandez (Dr. Ciencia de Computacion, U. de Chile, 2017). Ali Moallemi (PhD. Concordia University, 2019). Lorenzo Marconi (Dr. in Computer Science, U. La Sapienza, Rome, 2024).

## 12 Conference and Workshop Organization

1. Organizing Committee. Workshop on Foundational Aspects of Neuro-Symbolic Computing (FANeSy). Chile, March 2024.
2. Co-organizer of the “Reasoning Web” Summer School. Co-located with ”Declarative AI”, Week of September 12th, 2022.

3. Organizing Committee. International Workshop “Emerging Challenges in Data Management Research”. Santa Cruz, Chile, Nov. 2019. <http://dbai2019.imfd.cl/#>
4. International Spring School on Uncertainty in AI and Data Management. Santiago, Chile, Nov. 2019.  
[https://ingenieria.uai.cl/international-spring-school-on-uncertainty\\_in\\_ai\\_and\\_data\\_management/](https://ingenieria.uai.cl/international-spring-school-on-uncertainty_in_ai_and_data_management/)
5. Member Scientific Advisory Board of the “Reasoning Web Summer School” (RW 2017).
6. PC-cochair and organizer. ‘Uncertain Reasoning’ track at Flairs, Marco Island, Florida, USA, 2017.
7. PC-cochair. 10th International Web Rule Symposium (RuleML), July 2016, Stony Brook University, New York, USA.
8. General Chair. The Alberto Mendelzon International Workshop on Foundations of Data Management (AMW 2013). Puebla, Mexico, 2013.
9. Member of the Steering Committee of the “Alberto Mendelzon” International Workshop on Foundations of Data Management, since 2005.
10. The Alberto Mendelzon International Workshop on Foundations of Data Management (AMW 2009). Arequipa, Peru, May 2009.
11. II Workshop on Foundations of Databases and the Web (AMW). Punta del Este, Uruguay, October 23-26, 2007.
12. Workshop on Foundations of Databases and the Web. In honor to Alberto Mendelzon. San Rafael Glacier, Chile, 2006.
13. Second International Workshop on Exchange and Integration of Data (EID 2006). Brixen-Bressanone, June, 2006.
14. Workshop on Exchange and Integration of Data. Toronto, 2004.
15. Dagstuhl-Seminar Nr. 03241. Inconsistency Tolerance in Database, Knowledgebase and Software Systems. June 2003.
16. Steering Committee. Winter School on Semantics and Applications (WSSA 2003). Montevideo, Uruguay, 2003.
17. Latin American Committee for Local Arrangements. International Joint Conference on Artificial Intelligence (IJCAI 2003). Acapulco, Mexico, 2003.
18. 2nd Chilean-German Workshop on Information Technology, Berlin, 2001.
19. Dagstuhl-Seminar Nr. 01021. Semantics of Databases. January 2001.
20. Workshop on Inconsistency in Data and Knowledge. International Joint Conference on Artificial Intelligence (IJCAI 2001), Seattle, 2001.
21. Encuentro Chile Ciencia 2000. Santiago de Chile, 2000.
22. NSF/CONICYT Workshop on Collaborative Research in Information Technology. Viña del Mar, Chile, 2000.
23. Chilean-German Kickoff Workshop on Information Technology, Santiago de Chile, 1999.
24. Chilean-French Workshop on Complex Mathematical Systems. Santiago de Chile, 1999.
25. II Jornadas Chilenas de Computación, Chilean Computer Science Society (SCCC 1994). Concepción, Chile, 1994.
26. I Jornadas Chilenas de Computación, Chilean Computer Science Society (SCCC 1993). La Serena, Chile, 1993.



## 13 Conference Program Committees

1. Principles of Knowledge Representation and Reasoning, KR 2024.
2. RuleML+RR 2024. Bucharest, Romania.
3. AAAI Conference on Artificial Intelligence (AAAI 2024).
4. International Joint Conference on Artificial Intelligence (IJCAI 2024).
5. 16th International Conference on Scalable Uncertainty Management (SUM 2024)
6. Workshop on “Implementing AI Ethics Through a Behavioural Lens”. Co-located with ECAI 2024.
7. Member of Program Committee Board (PCB) of IJCAI. 2022-24.
8. Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI 2023).
9. European Conference on Logics in Artificial Intelligence (JELIA 2023).
10. International Conference of Database Theory (ICDT 2023).
11. 20th International Conference on Principles of Knowledge Representation and Reasoning (KR 2023).
12. EXplainable hEalthCare data Management and ANalytics (EXEC-MAN). WS at ADBIS 2023.
13. SACAIR 2022. The 2022 Southern African Conference for Artificial Intelligence Research.
14. Co-chair “Reasoning Web” Summer School. Co-located with “Declarative AI”, 2022.
15. 5th International Workshop on the Resurgence of Datalog in Academia and Industry (Datalog 2.0), 2022.
16. 15th International Conference on Scalable Uncertainty Management, SUM 2022.
17. 2018 International Symposium on Foundations of Information and Knowledge Systems (FoIKS), 2022.
18. Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI-22).
19. VLDB 2022.
20. International Joint Conference on Rules and Reasoning (RuleML+RR), 2021.
21. ICML Workshop on Algorithmic Recourse, 2021.
22. IJCAI 2021, Aug. 2021, Montreal Canada.
23. Thirty-Fifth AAAI Conference on Artificial Intelligence, 2021. AAAI’21.
24. 18th International Conference on Principles of Knowledge Representation and Reasoning (KR 2021).
25. The 25th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-2021), May 11-14, 2021.
26. European Conference on Logics in Artificial Intelligence (JELIA), May 17-20, 2021, Klagenfurt, Austria.
27. IEEE 37th International Conference on Data Engineering (ICDE), 2021.
28. IJCAI-PRICAI 2020. Yokohama, Japan, July 11-17, 2020.
29. KR2020. 17th International Conference on Principles of Knowledge Representation and Reasoning. Rhodes, Greece, 12-18 September 2020.
30. International Conference on Scalable Uncertainty Management (SUM 2020). September 23-25, 2020, Bolzano, Italy.
31. Scientific Advisory Board of Reasoning Web Summer School (RW 2020). Oslo, Norway, June 2020.
32. RuleML+RR 2020 (4th International Joint Conference on Rules and Reasoning). Oslo,

- Norway, June 2020.
33. Thirty-Fourth AAAI Conference on Artificial Intelligence. February 7-12, 2020, New York, NY, USA.
  34. Pacific-Asia Conference on Knowledge Discovery and Data Mining PAKDD 2020. Singapore, May 11-14, 2020.
  35. ECAI 2020. June 8-12, 2020, Santiago de Compostela, Spain.
  36. ESWC 2020. Heraklion (Greece), May 31 to June 4, 2020.
  37. Social Media Analytics for Health intelligence (SMA4H). WS co-located with “IEEE/WIC/ACM International Conference on Web Intelligence Web Intelligence = AI in the Connected World”. Thessaloniki, Greece, 14-17 of October 2019.
  38. IJCAI-2019, Macau, China, 2019.
  39. ISWC-2019, New Zealand, 26-30 October 2019.
  40. International Joint Conference on Rules and Reasoning (RuleML+RR 2019), Bolzano, Italy, 16-19 September, 2019.
  41. European Conference on Logics in Artificial Intelligence, JELIA 2019. Rende (Italy), 2019.
  42. Bx 2019 (8th International Workshop on Bidirectional Transformations). Collocated with “Philadelphia Logic Week (PLW) 2019”, 2019.
  43. Extended Semantic Web Conference (ESWC), 2019, Portoroz, Slovenia.
  44. 16th International Conference on Mobile Systems and Pervasive Computing, MobiSPC-2019, 2019, Halifax, Canada.
  45. A.P. Ershov Informatics Conference, PSI, 2019, Novosibirsk, Akademgorodok, Russia.
  46. 33rd AAAI Conference on Artificial Intelligence (AAAI’19), Honolulu, USA, 2019.
  47. DATALOG 2.0. Philadelphia, USA, 2019.
  48. IEEE International Conference on Data Engineering (ICDE’19), Macau, China, 2019.
  49. IJCAI-ECAI-2018, Stockholm, Sweden, 2018.
  50. 1st International Workshop on Social Media Analytics for Healthcare (SMA4H) Co-located with Web Intelligence (WI’18), Santiago de Chile, 2018.
  51. 16th International Conference on Principles of Knowledge Representation and Reasoning (KR’18). Tempe, Arizona, 2018.
  52. International Conference on Scalable Uncertainty Management (SUM’18), Milano, Italy, 2018.
  53. International Semantic Web Conference (ISWC’18), Monterey, USA, 2018.
  54. KI 2018 (German Conference on Artificial Intelligence), Berlin, Germany, 2018.
  55. International Joint Conference on Rules and Reasoning (RuleML+RR 2018), Luxembourg, 2018.
  56. FLAIRS, Florida, USA, 2018.
  57. EDBT 2018 (demo track). Vienna, Austria, 2018.
  58. FoIKS 2018 (Tenth International Symposium on Foundations of Information and Knowledge Systems), Budapest, Hungary, 2018.
  59. Theory and Practice of Provenance Workshop (TaPP’17), Seattle, USA, 2017.
  60. International Semantic Web Conference (ISWC’17). Vienna, Austria, 2017.
  61. International Conference on Data Science, Technology and Applications (DATA), 2017, Madrid, Spain.
  62. KI 2017 (The 40th German Conference on Artificial Intelligence), 2017, Dortmund, Germany.

63. International Joint Conference on Rules and Reasoning (RuleML+RR 2017), London, UK, 2017.
64. SUM 2017 (11th International Conference on Scalable Uncertainty Management), Granada, Spain, 2017.
65. International Conference on Management of Data (COMAD), 2017.
66. ACM SIGMOD-SIGACT-SIGART Symposium on Principles of Database Systems (PODS), 2017.
67. 10th International Conference on Web Reasoning and Rule Systems (RR'16). Aberdeen, Scotland, 2016.
68. 9th International Symposium on Foundations of Information and Knowledge Systems (FoIKS'16). Linz, Austria, 2016.
69. Brazilian Symposium on Databases (SBBD'16). Salvador, Bahia, Brazil, 2016.
70. International Joint Conference on Artificial Intelligence (IJCAI'16). New York City, 2016.
71. Theory and Practice of Provenance Workshop (TaPP'16), Washington DC, 2016.
72. PC-cochair, International Web Rule Symposium (RuleML), 2016.
73. Senior PC Member, International Workshop on the Web and Databases (WebDB'16). Co-located with ACM SIGMOD 2016.
74. EDBT 2015, Bordeaux, France, 2016. Demo Track Program Committee member.
75. International Joint Conference on Artificial Intelligence (IJCAI), Buenos Aires, Argentina, 2015.
76. International Conference on Scalable Uncertainty Management (SUM), Quebec City, 2015.
77. International Conference on Web Reasoning and Rule Systems (RR), Berlin, 2015.
78. Brazilian Symposium on Databases (SBBD), Itaipava - Petropolis, Brazil, 2015.
79. Editorial board of special issue of the Journal on Data Semantics on Rule Reasoning, 2015.
80. Program Committee SIGMOD/PODS Ph.D. Symposium, Melbourne, Australia, 2015.
81. Program Committee AAAI, Austin, USA, 2015.
82. International Conference of the Chilean Computer Science Society (SCCC 14), Talca, Chile.
83. 8th International Conference on Scalable Uncertainty Management (SUM 2014), Oxford, UK, 2014.
84. Ershov Informatics Conference (the PSI Conference Series, 9th edition), 2014, Peterhof, St. Petersburg, Russia.
85. International Conference on Web Reasoning and Rule Systems (RR'14), PhD Consortium. Athens, Greece, 2014.
86. International Conference on Web Reasoning and Rule Systems (RR'14). Athens, Greece, 2014.
87. Eighth International Symposium on Foundations of Information and Knowledge Systems (FoIKS 2014). Bordeaux, France, 2014.
88. VI Congreso Internacional de Computacion y Telecomunicaciones (COMTEL), Lima, Peru, 2014.
89. The 5th International Workshop on Acquisition, Representation and Reasoning with Contextualized Knowledge (ARCOE-LogIC 2013), 2013, Corunna, Spain.
90. VLDB 2014. PC Member.

91. ACM Symposium on Principles of Database Systems (PODS), 2013, New York, USA.
92. NoCoDA (Non-Conventional Data Access) 2013. Co-located with the 22nd ACM International Conference on Information and Knowledge Management (CIKM 2013), San Francisco, CA, USA, 2013.
93. VLDB 2013, “Demonstrations” track, Riva del Garda, Italy, 2013.
94. SUM 2013 (7th International Conference on Scalable Uncertainty Management), 2013, Washington D.C.
95. 7th International Conference on Web Reasoning and Rule Systems (RR’13). Mannheim, Germany, 2013.
96. LPNMR 2013, International Conferences on Logic Programming and Nonmonotonic Reasoning. Corunna, Spain, 2013.
97. Alberto Mendelzon International WS on Foundations of Data Management (AMW 2012), PhD Track. Ouro Preto, Brazil, 2012
98. 4th International Workshop on Acquisition, Representation and Reasoning with Contextualized Knowledge (ARCOE), 2012, Montpellier, France.
99. WS on NON-CONventional Data Access (NoCoDA), co-located with ER12, 2012, Florence, Italy.
100. International Conference on Scalable Uncertainty Management (SUM), Marburg, Germany, 2012.
101. 2012. Latin American Workshop on Logic / Languages, Algorithms and New Methods of Reasoning (LANMR), 2012, Mexico, D.F.
102. IV Congreso Internacional de Computacion y Telecomunicaciones (COMTEL), 2012, Lima, Peru.
103. Mexican International Conference on Artificial Intelligence (MICA I 2012), San Luis Potosi, Mexico, 2012.
104. Extended Semantic Web Conference (ESWC 2012), Semantic Data Management track. Heraklion, Greece, 2012.
105. International Symposium on Foundations of Information and Knowledge Systems (FoIKS), Kiel, Germany, 2012.
106. Seventh Latin American Workshop on Logic/Languages, Algorithms and New Methods of Reasoning (LANMR’11), Toluca, Mexico, 2011.
107. Senior PC, IJCAI 2011. 22nd International Joint Conference on Artificial Intelligence, Barcelona, Spain, 2011.
108. ACM Conference on Information and Knowledge Management, CIKM 2011 (DB Track), Glasgow, 2011.
109. 30th International Conference of the Chilean Computer Science Society (SCCC 2011). Curico, Chile, 2011.
110. Second International Workshop on Logic-Based Interpretation of Context: Modeling and Applications (Log-IC 2011). In conjunction with LPNMR 2011, Vancouver, Canada, 2011.
111. Annual International Conference of Computer Science and Software Engineering (CASCON 2011), IBM Centers for Advanced Studies, Markham, Ontario, Canada, 2011.
112. Fifth International Conference on Scalable Uncertainty Management (SUM 2011), Dayton, Ohio, USA, 2011.
113. Workshop on “Data, Logic and Inconsistency” (DALI). Collocated with DEXA 2011, Toulouse, 2011.

114. International Database Engineering & Applications Symposium (IDEAS 2011). Portugal, 2011.
115. The Ershov Informatics Conference (PSI Conference), 2011, Novosibirsk, Akademgorodok, Russia.
116. International Conference on Flexible Query Answering Systems (FQAS 2011). Ghent, Belgium, 2011.
117. International Conference on Logic Programming and Nonmonotonic Reasoning (LP-NMR 2011), Vancouver, Canada.
118. International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE 2010). Crete, Greece, 2010.
119. The Alberto Mendelzon International Workshop on Foundations of Data Management (AMW 2010). Buenos Aires, Argentina, 2010.
120. The International ACM Conference on Management of Emergent Digital EcoSystems (ACM MEDES'10), Bangkok, Thailand, 2010.
121. 14th International Conference on Knowledge-based and Intelligent Information & Engineering Systems (KES 2010), 2010, Cardiff, Wales, UK.
122. Fourth International Conference on Scalable Uncertainty Management (SUM 2010). Toulouse, 2010.
123. Third International Conference on Data Management in Grid and P2P Systems (Globe 2010), Bilbao, Spain, 2010.
124. 4th International Conference on Web Reasoning and Rule Systems (RR 2010). Bresanone (Italy), 2010.
125. VLDB 2010. Singapore, 2010.
126. International Conference on Database and Expert Systems Applications (DEXA 2010), Bilbao, Spain, 2010.
127. Sixth International Symposium on Foundations of Information and Knowledge Systems (FoIKS 2010), Sofia, Bulgaria, 2010.
128. First International Workshop on Logic-Based Interpretation of Context: Modelling and Applications. In conjunction with (LPNMR 2009), Potsdam, 2009.
129. International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE 2009), Vilamoura, Algarve-Portugal, 2009.
130. Annual International Conference of Computer Science and Software Engineering (CASCON 2009), IBM Centers for Advanced Studies, Markham, Ontario, Canada, 2009.
131. **PC Co-chair.** International Workshop on Logic in Databases (LID 2009), Roskilde, Denmark, 2009.
132. International Conference on Web Reasoning and Rule Systems (RR 2009). Virginia, USA, 2009.
133. International Conference on Scalable Uncertainty Management (SUM 2009). Washington DC, USA, 2009.
134. Advanced Knowledge-based Systems. Invited Session of the 13th International Conference on Knowledge-based and Intelligent Information & Engineering Systems (KES 2009). Santiago, Chile, 2009.
135. International Conference on Web Information Systems Engineering (WISE 2009), Poznan, Poland, 2009.
136. International Conference on Data Management in Grid and P2P Systems (Globe 2009), Linz, Austria, 2009.

137. International Conference on Logic Programming and Nonmonotonic Reasoning (LP-NMR 2009), Potsdam, Germany, 2009.
138. International Conference on Database and Expert Systems Applications (DEXA 2009), Linz, Austria, 2009.
139. Sixth European Semantic Web Conference (ESWC 2009), Heraklion, Greece, 2009.
140. International Conference on Database Theory (ICDT 2009), St. Petersburg, 2009.
141. **PC Co-chair.** Alberto Mendelzon International Workshop on Foundations of Data Management (AMW 2009). Arequipa, Peru, 2009.
142. Non-Monotonic Reasoning Conference (NMR 2008). Sydney, Australia, 2008.
143. International Semantic Web Conference (ISWC 2008), Karlsruhe, Germany, 2008.
144. International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE 2008), Monterrey, Mexico, 2008.
145. Advanced Knowledge-based Systems, invited Session of the 12nd International Conference on Knowledge-based and Intelligent Information & Engineering Systems (KES 2008), Zagreb, Croatia, September, 2008.
146. Annual International Conference of Computer Science and Software Engineering (CASCON 08), Markham, Canada, 2008.
147. Second International Conference on Web Reasoning and Rule Systems (RR2008), Colocated with ISWC 2008, Karlsruhe, 2008.
148. 7th International Conference on Web Information Systems Engineering (WISE 2008), Karlsruhe, 2008.
149. International RuleML Symposium on Rule Interchange and Applications (RuleML-2008), Orlando, 2008.
150. International Conference on Scalable Uncertainty Management (SUM 2008), Naples, 2008.
151. Symposium Logic In Databases (LID 2008), Rome, 2008.
152. Eleventh International Conference on Principles of Knowledge Representation and Reasoning (KR 2008), Sydney, 2008.
153. Fifth European Semantic Web Conference (ESWC 2008), Tenerife, Spain, 2008.
154. Fifth International Symposium on Foundations of Information and Knowledge Systems (FoIKS 2008), Pisa, Italy, 2008.
155. Latin American Theoretical Informatics Conference (LATIN 2008). Rio de Janeiro, 2008.
156. International Workshop on “Living with Uncertainties”, co-located with the 22nd International on Automated Software Engineering (ASE 2007), Atlanta, USA, 2007.
157. International RuleML Symposium on Rule Interchange and Applications (RuleML-2007). Orlando, USA, 2007.
158. 4th Semantic Web and Databases Workshop (SWDB 2007). Collocated with VLDB 07, Vienna, Austria, 2007.
159. 6th International Semantic Web Conference and the 2nd Asian Semantic Web Conference, 2007 (ISWC+ASWC’07), Busan, Korea, 2007.
160. International Conference on Conceptual Modeling (ER 2007). Auckland, New Zealand, 2007.
161. Scalable Uncertainty Management Conference (SUM 2007), Washington DC., USA, 2007.
162. European Semantic Web Conference (ESWC 2007), Innsbruck, Austria, 2007.

163. Noveno Simposio Argentino de Inteligencia Artificial (ASAI 2007). Mar del Plata, Argentina, 2007.
164. Third International Advanced Database Conference (IADC 2007). Track “Advances in Querying Non-Conventional Data Sources”, San Diego, USA, 2007.
165. 5th International Conference on ”Research, Innovation & Vision for the Future (RIVF)”. Information and Communications Technology. Track on Integrated Information Systems: Semantic Concepts & Interoperability. Hanoi, Vietnam, 2007.
166. Second International Conference on Rules and Rule Markup Languages for the Semantic Web (RuleML 2006). Atlanta, USA, 2006.
167. 16th Annual International Conference of Computer Science and Software Engineering (CASCON 2006). Toronto, Canada, 2006.
168. International Workshop on Nonmonotonic Reasoning (NMR 2006). Lake District, England, 2006.
169. FLOC/ICLP Workshop on Applications of Logic Programming in the Semantic Web and Semantic Web Services. Seattle, USA, 2006.
170. **PC Co-Chair.** IFIP International Conference on Theoretical Computer Science at the IFIP World Computer Congress (WCC 2006), Santiago de Chile, Chile, 2006.
171. Fourth International Symposium on Foundations of Information and Knowledge Systems (FoIKS 2006). Budapest, 2006.
172. 4th International Conference in Computer Sciences “Research, Innovation & Vision for the Future”. Ho Chi Minh City, Vietnam, 2006.
173. ACM Symposium on Principles of Database Principles (PODS’06). Chicago, 2006.
174. EDBT Workshop on Inconsistency and Incompleteness in Databases (IIDB 2006). Muenchen, 2006.
175. 10th East-European Conference on Advances in Databases and Information Systems (ADBIS 2006). Thessaloniki, 2006.
176. 8th International Conference on Logic Programming and Nonmonotonic Reasoning (LP-NMR 2005). Cosenza, Italy, 2005.
177. International Conference on Ontologies, Databases and Applications of SEMantics (ODBASE 2005). Cyprus, 2005.
178. International Conference of the Chilean Computer Science Society (SCCC’05). Santiago de Chile, 2005
179. INFOMIX Workshop on Data Integration. Co-located with LPNMR’05. Diamante, Italy, 2005.
180. International Conference on Database Theory (ICDT 2005). Edinburgh, 2005.
181. Third International Symposium on Foundations of Information and Knowledge Systems (FoIKS 2004). Vienna, 2004.
182. International Conference on Very Large Databases (VLDB 2004). Toronto, 2004.
183. IASTED International Conference on Databases and Applications (DBA 2004). Innsbruck, 2004.
184. Workshop on Theory and Applications of LP&NMR. Mexican International Conference on Artificial Intelligence. Mexico City, 2004.
185. Eighth East-European Conference on Advances in Databases and Information Systems (ADBIS 2004). Budapest, 2004.
186. CASCON 2004, Toronto, 2004.
187. Workshop on Deduction and Reasoning Techniques. IBERAMIA, Puebla, Mexico,

- 2004.
188. Fifteenth International Conference on Software Engineering and Knowledge Engineering (SEKE 2003). San Francisco, 2003.
  189. East-European Conference on Advances in Databases and Information Systems (ADBIS 03). Dresden, 2003.
  190. Brazilian Symposium on Databases (SBBD 2003). Manaus, 2003.
  191. Jornadas Iberoamericanas de Ingenieria de Software e Ingenieria de Conocimiento (IISIC 2003). Valdivia, Chile, 2003.
  192. Sixth East-European Conference on Advances in Databases and Information Systems (ADBIS 2002). Slovakia, 2002.
  193. Workshop on Paraconsistent Computational Logic at FLoC 02/ICLP 02. Copenhagen, 2002.
  194. Non-Monotonic Reasoning Conference (NMR 2002). Toulouse, 2002.
  195. 4th International Conference on Software Engineering and Knowledge Engineering (SEKE 2002). Ischia, Italy, 2002.
  196. Sixth East-European Conference on Advances in Databases and Information Systems (ADBIS 2002). Bratislava, Slovakia, 2002.
  197. Fifth International Conference on Flexible Query Answering Systems (FQAS 2002). Copenhagen, Denmark, 2002.
  198. XXII International Conference of the Chilean Computer Science Society (SCCC 2002). Copiapo, Chile, 2002
  199. I Workshop Chileno de Bases de Datos. Jornadas Chilenas de Computacion. Copiapo, Chile, 2002.
  200. Second International Symposium on Foundations of Information and Knowledge Systems (FoIKS 2002). Schloss Salzau, Germany, 2002.
  201. Latin American Theoretical Informatics (LATIN 2002). Cancun, Mexico, 2002.
  202. XX International Conference Chilean Computer Science Society (SCCC 2000). Santiago de Chile, 2000.
  203. Thirteenth International Conference on Software Engineering & Knowledge Engineering (SEKE 2001), Buenos Aires, Argentina, 2001.
  204. East-European Conferences on Advances in Databases and Information Systems (ADBIS 2001). Vilnius Lithuania, 2001.
  205. Program Committee. XVI Brazilian Symposium on Databases (SBBD 2001). Rio de Janeiro, 2001.
  206. **PC Co-Chair.** Workshop on Inconsistency in Data and Knowledge. International Joint Conference on Artificial Intelligence (IJCAI 2001), Seattle, 2001.
  207. XV Brazilian Symposium on Databases (SBBD 2000). Joao Pessoa, 2000.
  208. International Symposium on Foundations of Information and Knowledge Systems (FoIKS 2000), Burg, Germany, 2000.
  209. Symposium on Advances in Databases and Information Systems (ADBIS 2000). Prague, Czech Republic, 2000.
  210. Brazilian Artificial Intelligence Symposium (SBIA 2000). Sao Paulo, Brazil, 2000.
  211. Seventh Ibero-American Conference on Artificial Intelligence (IBERAMIA 2000). Sao Paulo, Brazil, 2000.
  212. 14th IEEE Automated Software Engineering Conference (ASE 1999). Cocoa Beach, Florida, USA, 1999.



213. Sixth Ibero-American Conference on Artificial Intelligence (IBERAMIA 1998). Lisbon, Portugal, 1998.
214. Joint Conference on Declarative Programming (APIA-GULP-PRODE 1998). A Coruna, Spain, 1998.
215. 13th IEEE Automated Software Engineering Conference (ASE 1998). Honolulu, Hawaii, 1998.
216. Joint Conference on Declarative Programming (APIA-GULP-PRODE 1997). Grado, Italy, 1997.
217. 12th IEEE Automated Software Engineering Conference (ASE 1997). Lake Tahoe, USA, 1997.
218. Pacific Rim Conference on Artificial Intelligence (PRICAI 1996). Cairns, Australia, 1996.
219. XXII Latin American Conference on Informatics (CLEI 1996). Bogota, 1996.
220. Joint Conference on Declarative Programming (APIA-GULP-PROCADE 1996). San Sebastian, Spain, 1996.
221. Second International Symposium Latin American Theoretical Informatics (LATIN 1995). Valparaiso, 1995.
222. XX Latin American Conference on Informatics (CLEI 1994), Ciudad de Mexico 1994.
223. XIII International Conference Chilean Computer Science Society (SCCC 1993). La Serena, Chile, 1993.

## 14 Funding<sup>3</sup> (some)

1. 2023-2027: NSERC Discovery Grant. “Explanations and Interpretation in Machine Learning”. Ca\$ 41K per year.
2. 2022-2023: SKEMA’s Startup Fund. CA\$ 20 per year.
3. 2016-2018: LogicBlox, PhD student grant. \$20,000 per year.
4. 2016-2021: NSERC Discovery Grant. “Causality in Data Management: Foundations and Applications”. \$31,000 per year.
5. NSERC Engage. With Gnowit. \$25,000, 2015.
6. NSERC Engage. With Red Tiger Labs. \$25,000, 2015.
7. 2011-2015: NSERC Discovery Grant. “Contexts as Metadata for Data Management”. \$29,000 per year.
8. 2009-2013: NSERC Strategic Network on Business Intelligence” (BIN). Funding from NSERC and industry, \$1,400,000 per year. Individual grant: \$60,000 per year.
9. BIN Network, Carleton University: \$5,000 per year, 2009-20013.
10. NSERC/IBM CRD Grant (with Jarek Gryz, York U.), approx. \$30,000 per year, 2009-2012.
11. 2006-10: NSERC. Discovery Grant. Ca\$35,400 per year.
12. 2006 : IBM. IBM CAS Faculty Fellowship. Ca\$ 21,015.
13. 2002-05: NSERC. Discovery Grant. Ca\$25,000 per year,
14. 2005 : IBM. IBM CAS Faculty Fellowship. US\$10,000
15. 2004 : IBM. IBM CAS Faculty Fellowship. Ca\$26,000
16. 2003 : IBM. IBM CAS Faculty Fellowship. Ca\$10,700

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<sup>3</sup>Amounts are per year; and conversion rates, when applicable, are as of year of the grant.

17. 2001 : Carleton University. Startup Grant. Ca\$20,000
18. 2000-01: FONDECYT. Research Grant. US\$25,146 (FONDECYT is the standard research funding program of CONICYT, the Chilean Agency for Research Funding.)
19. 2000-01: CONICYT. International Cooperation Grant. US\$3,500
20. 1999-00: CONICYT/NSF. International Research Exchange with USA. Ca\$11,000
21. 1999-00: CONICYT/BMBF. International Research Exchange with Germany. Ca\$10,000
22. 1998-00: CONICYT/ECOS. International Research Exchange with France. Ca\$10,000
23. 1998-99: FONDECYT. Research Grant. US\$29,000
24. 1998-99: CONICYT. International Cooperation Grant. US\$3,500
25. 1993-95: FONDECYT. Research Grant. US\$29,170
26. 1993 : CONICYT/SAREC. International Research Exchange with Sweden. US\$5,000

## 15 Teaching

### SKEMA Business School

1. “AI and ML for Business”, Raleigh (NC), USA, 2023.
2. “AI and ML for Finance”, Raleigh (NC), USA, 2023.
3. “AI, Society and Sustainability”, Lille, France, 2024.

### Universidad Adolfo Ibáñez

1. “Quantitative and Algorithmic Reasoning”. General undergraduate, 2021.
2. “Advanced Topics in Data Management and Data Analytics”. Graduate course, 2020.
3. “Statistical Relational Artificial Intelligence”. Graduate course, 2020.

### Carleton University

1. Undergraduate, until Winter term 2019: Data Management for Business Intelligence. Transaction Processing Systems. Discrete Structures. Knowledge Representation. Database Management Systems. Logic for Computer. Theory of Computation (Automata, Formal Languages and Computability). Semantic Web: Concepts and Techniques. Computational Logic and Automated Reasoning. Fall term 2023: Knowledge Representation in AI.
2. Graduate, until Winter term 2019: (cross-listed for senior UG students) Knowledge Representation in Artificial Intelligence (Fall term 2023). Until Winter term 2029: Statistical Relational Learning. Data Management for Business Intelligence. Data Integration. Semantics of Deductive Databases. Knowledge Representation. Computational Logic. Fall term 2023: Knowledge Representation in AI.

### PUC, Computer Science (1992-2001)

1. Undergraduate: Logic for Computer Science, Discrete Mathematics for Computer Science, Modern Database Systems.
2. Graduate: Design and Analysis of Algorithms, Computational Complexity, Logic and Knowledge Representation, Semantics of Logic Programming, Deductive Databases, Advanced Topics in Databases, Emerging Methodologies in Databases.

### University of Wisconsin-Milwaukee (1990)

1. Undergraduate: Discrete Information Structures.

2. Graduate: Artificial Intelligence.

**University of Toronto (1989-90)**

1. Undergraduate: Introduction to Computer Science, Discrete Mathematics for Computer Science (twice), Effective and Efficient Computing.

**PUC, Mathematics (1976-1992)**

1. Probability Theory and Applications
2. Statistical Methods
3. Numerical Methods
4. Mathematical Logic
5. Computability Theory
6. Foundations of Mathematics
7. Axiomatic Set Theory
8. Varia (calculus, linear algebra, etc.)

**Other Courses (some)**

1. Logic for Computer Science (graduate). Universidad Mayor San Simon, Cochabamba, Bolivia. 1996.
2. Logic for Computer Science (CC51I). Computer Science Department, University of Chile. First semester 1994.
3. Artificial Intelligence. University of Tarapaca, Arica, Chile. 1992.