

# Leopoldo BERTOSI

Professor

Academy: Transformation

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## Education

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1988      Doctorate in mathematics, Pontificia Universidad Catolica, Chile

## Experience

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### Full-time academic positions

Since 2022      Professor, SKEMA Business School, Canada

## Publications

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### Peer-reviewed journal articles

BERTOSI, L. and MILANI, M. (2023). Extending sticky-Datalog via finite-position selection functions: Tractability, algorithms, and optimization. *Enterprise Information Systems*, 114, pp. 102156.

ARENAS, M., BARCELO, P., BERTOSI, L. and MONET, M. (2023). On the Complexity of SHAP-Score-Based Explanations: Tractability via Knowledge Compilation and Non-Approximability Results. *Journal of Machine Learning Research*, 24(63), pp. 1-58.

BERTOSI, L., KIMELFELD, B., LIVSHITS, E. and MONET, M. (2023). The Shapley Value in Database Management. *ACM SIGMOD Record*, 52(2), pp. 6-17.

BERTOSI, L. (2023). Declarative Approaches to Counterfactual Explanations for Classification. *Theory and Practice of Logic Programming*, 23(3), pp. 559-593.

BERTOSI, L. (2022). 3 Overview of Talks 3.1 SHAP Explanations with Booleans Circuit Classifiers. *Dagstuhl Report*, 11(8).

BERTOSI, L., LIVSHITS, E., KIMELFELD, B. and SEBAG, M. (2021). The Shapley Value of Tuples in Query Answering. *Logical Methods in Computer Science*, 17(3), pp. 22.1-22.33.

BERTOSI, L., LIVSHITS, E., KIMELFELD, B. and SEBAG, M. (2021). Query Games in Databases. *ACM SIGMOD Record*, 50(1), pp. 78-85.

BERTOSI, L. (2021). Specifying and Computing Causes for Query Answers in Databases via Database Repairs and Repair Programs. *Knowledge and Information Systems*, 63, pp. 199-231.

BERTOSI, L. and GEERTS, F. (2020). Data Quality and Explainable AI. *ACM Journal of Data and Information Quality*, 12(2).

BERTOSI, L. and MILANI, M. (2018). Ontological Multidimensional Data Models and Contextual Data Quality. *ACM Journal of Data and Information Quality*, 9 / 3(14), pp. 1-36.

BERTOSI, L. and SALIMI, B. (2017). Causes for Query Answers from Databases: Datalog Abduction, View-Updates, and Integrity Constraints. *International Journal of Approximate Reasoning*, 90, pp. 226-252.

BAHMANI, Z., BERTOSSI, L. and VASILOGLOU, N. (2017). ERBlox: Combining matching dependencies with machine learning for entity resolution. *International Journal of Approximate Reasoning*, 83, pp. 118-141.

BERTOSSI, L. and BRAVO, L. (2017). Consistency and Trust in Peer Data Exchange Systems. *Theory and Practice of Logic Programming*, 17(2), pp. 148-204.

BERTOSSI, L. and SALIMI, B. (2017). From Causes for Database Queries to Repairs and Model- Based Diagnosis and Back. *Theory of Computing Systems*, 61(1), pp. 191-232.

BERTOSSI, L. and LI, L. (2013). Achieving Data Privacy through Secrecy Views and Null- Based Virtual Updates. *IEEE Transactions on Knowledge and Data Engineering*, 25(5), pp. 987-1000.

BERTOSSI, L., RODRÍGUEZ, M.A. and CANIUPÁN, M. (2013). Consistent Query Answering under Spatial Semantic Constraints. *Information Systems*, 38(2), pp. 244-263.

ANDREA RODRÍGUEZ, M., BERTOSSI, L. and CANIUPÁN, M. (2013). Consistent query answering under spatial semantic constraints. *Information Systems*, 38(2), pp. 244-263.

BERTOSSI, L., KOLAH, S. and LAKSHMANAN, L.V.S. (2013). Data Cleaning and Query Answering with Matching Dependencies and Matching Functions. *Theory of Computing Systems*, 52(3), pp. 441-482.

BERTOSSI, L., GARDEZI, J. and KIRINGA, L. (2012). Matching Dependencies: Semantics and Query Answering. *Frontiers of Computer Science*, 6, pp. 2478-292.

BERTOSSI, L., BRAVO, L., FRANCONI, E. and LOPATENKO, A. (2008). The complexity and approximation of fixing numerical attributes in databases under integrity constraints. *Information Systems*, 33(4-5), pp. 407-434.

### **Books and book editor**

BERTOSSI, L. (2011). *Database Repairing and Consistent Query Answering*. Springer, 105 pages.

BERTOSSI, L., HUNTER, A. and SCHAUB, T. (2005). *Inconsistency Tolerance*. Springer, 300 pages.

### **Book chapters**

BERTOSSI, L. (2023). From Database Repairs to Causality in Databases and Beyond. In: Hameurlain, A., Tjoa, A.M., Boucelma, O., Toumani, F. eds. *Transactions on Large-Scale Data- and Knowledge-Centered Systems LIV. Lecture Notes in Computer Science*. 1st ed. Berlin, Heidelberg: Springer, pp. 119-131.

BERTOSSI, L. (2023). Attribution-Scores and Causal Counterfactuals as Explanations in Artificial Intelligence". In 'Reasoning Web: Causality, Explanations and Declarative Knowledge. In: Leopoldo Bertossi & Guohui Xiao (ed.). *Reasoning Web: Causality, Explanations and Declarative Knowledge*. 1st ed. Springer, pp. 22.

BERTOSSI, L. (2022). 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. Springer Lecture Notes in Computer Science*, 1st ed. Springer, pp. 145-184.

BERTOSSI, L. (2013). Generic and Declarative Approaches to Data Quality Management. In: *Handbook of Data Quality - Research and Practice*. 1st ed. Springer, pp. 181-212.

BERTOSSI, L. (2009). Inconsistent Databases. In: *Encyclopedia of Database Systems*. 1st ed. Springer, pp. 1410-1414.

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BERTOSSI, L. and BRAVO, L. (2005). Consistent Query Answers in Virtual Data Integration Systems. In: *Inconsistency Tolerance. Lecture Notes in Computer Science*. 1st ed. Springer, pp. 42-83.

### **Non peer-reviewed journal articles**

BERTOSSI, L. and CANIUPÁN, M. (2010). The Consistency Extractor System: Answer Set Programs for Consistent Query Answering in Databases. *Data & Knowledge Engineering*, 69(6), pp. 545-572.