

## INFORMAZIONI PERSONALI

## Luigi Bellomarini

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Vice Capo Divisione Ricerca Tecnologie Avanzate – Banca d'Italia

ESPERIENZA  
PROFESSIONALE

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- 2017 - oggi **Banca d'Italia**  
Banca d'Italia, via Nazionale, 91 – Roma  
Divisione Ricerca sulle Tecnologie Avanzate, Dipartimento ICT  
Vice Capo Divisione
- 2010 - 2017 **Banca d'Italia**  
Banca d'Italia, via Nazionale, 91 – Roma  
Divisione Applicazioni Statistiche, Dipartimento ICT
- 2022-2023 **Università Roma Tre**  
Didattica Integrativa Tecnologie e Architetture per la Gestione dei Dati, ING-INF/05
- 2021-2022 **Università Roma Tre**  
Didattica Integrativa Tecnologie e Architetture per la Gestione dei Dati, ING-INF/05
- 2020 – 2021 **Università Roma Tre**  
Didattica Integrativa corso Basi di Dati II, ING-INF/05
- 2019 – 2020 **Università Roma Tre**  
Didattica Integrativa corso Basi di Dati II, ING-INF/05
- 2018 - 2019 **Università Roma Tre**  
Didattica Integrativa corso Basi di Dati I, ING-INF/05  
Didattica Integrativa corso Basi di Dati II, ING-INF/05
- 2017 - 2018 **Università Roma Tre**  
Didattica Integrativa corso Basi di Dati II, ING-INF/05
- 2015 - 2016 **Università Roma Tre**  
Didattica Integrativa corso Basi di Dati I, ING-INF/05  
Didattica Integrativa corso Basi di Dati II, ING-INF/05
- 2008 - 2010 **Reply Spa**

Reply Spa, Corso Francia, 110 – Torino

Consulente IT

2008 **Università Roma Tre**

Laboratorio di Basi di Dati

Attività di ricerca su “Model management for schema maintenance”

COMPETENZE  
PROFESSIONALI E INTERESSI  
SCIENTIFICI

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- Teoria delle basi di dati
- Progettazione di basi di dati
- Schema and data translation
- Data integration and data exchange
- Knowledge representation and reasoning
- Knowledge graphs
- Progettazione e realizzazione di sistemi software complessi
- Gestione di progetti IT

ISTRUZIONE E FORMAZIONE

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2014 - 2017 **Dottorato di Ricerca in Informatica e Automazione**

Università degli Studi Roma Tre

2008 - 2009 **Master di II Livello**

Università degli Studi Roma Tre

Governo dei Sistemi Informativi: Sviluppo Gestione e Monitoraggio

2005 - 2007 **Laurea Magistrale in Ingegneria Informatica**

Votazione: 110 e lode

Università degli Studi Roma Tre

2003 - 2005 **Laurea in Ingegneria Informatica**

Votazione: 110 e lode

Università degli Studi Roma Tre

ALLEGATI

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- Allegato 1: elenco principali pubblicazioni

**Allegato 1**

Luigi Bellomarini, Andrea Gentili, Eleonora Laurenza, Emanuel Sallinger:  
Model-Independent Design of Knowledge Graphs (short paper). AMW 2023

Andrea Colombo, Luigi Bellomarini, Stefano Ceri, Eleonora Laurenza:  
Smart Derivative Contracts in DatalogMTL. EDBT 2023: 773-781

Teodoro Baldazzi, Luigi Bellomarini, Emanuel Sallinger:  
Reasoning over Financial Scenarios with the Vadalog System. EDBT 2023: 782-791

Luigi Bellomarini, Lorenzo Bencivelli, Claudia Biancotti, Livia Blasi, Francesco Paolo Conteduca, Andrea Gentili, Rosario Laurendi, Davide Magnanimi, Michele Savini Zangrandi, Flavia Tonelli, Stefano Ceri, Davide Benedetto, Markus Nissl, Emanuel Sallinger:  
Reasoning on company takeovers: From tactic to strategy. Data Knowl. Eng. 141: 102073 (2022)

Luigi Bellomarini, Ruslan R. Fayzrakhmanov, Georg Gottlob, Andrey Kravchenko, Eleonora Laurenza, Yavor Nenov, Stéphane Reissfelder, Emanuel Sallinger, Evgeny Sherkhonov, Sahar Vahdati, Lianlong Wu:  
Data science with Vadalog: Knowledge Graphs with machine learning and reasoning in practice. Future Gener. Comput. Syst. 129: 407-422 (2022)

Luigi Bellomarini, Davide Benedetto, Georg Gottlob, Emanuel Sallinger:  
Vadalog: A modern architecture for automated reasoning with large knowledge graphs. Inf. Syst. 105: 101528 (2022)

Teodoro Baldazzi, Davide Benedetto, Matteo Brandetti, Adriano Vlad, Luigi Bellomarini:  
Heuristic-based Reasoning on Financial Knowledge Graphs. EDBT/ICDT Workshops 2022

Luigi Bellomarini, Andrea Gentili, Eleonora Laurenza, Emanuel Sallinger:  
Model-Independent Design of Knowledge Graphs - Lessons Learnt From Complex Financial Graphs. EDBT 2022: 2:524-2:526

Mattia Scaccia, Iliaria Stocchi, Luigi Bellomarini:  
Neurosymbolic Reasoning: Building Neural Networks Using Datalog. EDBT/ICDT Workshops 2022

Adriano Vlad, Sahar Vahdati, Mojtaba Nayyeri, Luigi Bellomarini, Emanuel Sallinger:  
Towards Hybrid Logic-based and Embedding-based Reasoning on Financial Knowledge Graphs. EDBT/ICDT Workshops 2022

Luigi Bellomarini, Markus Nissl, Emanuel Sallinger:  
iTemporal: An Extensible Generator of Temporal Benchmarks. ICDE 2022: 2021-2033

Teodoro Baldazzi, Luigi Bellomarini, Marco Favorito, Emanuel Sallinger:  
On the Relationship between Shy and Warded Datalog+/- . KR 2022

Luigi Bellomarini, Livia Blasi, Rosario Laurendi, Emanuel Sallinger:  
Financial Data Exchange with Statistical Confidentiality: A Reasoning-based Approach. EDBT 2021: 558-569

Andrea Gulino, Stefano Ceri, Georg Gottlob, Emanuel Sallinger, Luigi Bellomarini:  
Distributed Company Control in Company Shareholding Graphs. ICDE 2021: 2637-2648

Teodoro Baldazzi, Luigi Bellomarini, Emanuel Sallinger, Paolo Atzeni:  
Eliminating Harmful Joins in Warded Datalog+/- . RuleML+RR 2021: 267-275

Luigi Bellomarini, Giuseppe Galano, Markus Nissl, Emanuel Sallinger:  
Rule-based Blockchain Knowledge Graphs: Declarative AI for Solving Industrial Blockchain Challenges. RuleML+RR (Supplement) 2021

Luigi Bellomarini, Markus Nissl, Emanuel Sallinger:  
Monotonic Aggregation for Temporal Datalog. RuleML+RR (Supplement) 2021

Teodoro Baldazzi, Luigi Bellomarini, Emanuel Sallinger, Paolo Atzeni:  
A System for Benchmarking Datalog+/- Reasoning (technical report). CoRR abs/2103.08588 (2021)

Luigi Bellomarini, Emanuel Sallinger:  
Harmless but Useful: Beyond Separable Equality Constraints in Datalog+/- . CoRR abs/2105.11147 (2021)

Luigi Bellomarini, Markus Nissl, Emanuel Sallinger:  
Query Evaluation in DatalogMTL - Taming Infinite Query Results. CoRR abs/2109.10691 (2021)

Paolo Atzeni, Luigi Bellomarini, Davide Benedetto, Emanuel Sallinger:  
Traversing Knowledge Graphs with Good Old (and New) Joins. Workshop on Knowledge Representation and Reasoning (ECAI 2020).

Luigi Bellomarini, Davide Magnanimi, Markus Nissl, Emanuel Sallinger:  
Neither in the Programs Nor in the Data: Mining the Hidden Financial Knowledge with Knowledge Graphs and Reasoning. Mining Data for Financial Application Workshop (ECML 2020)

- Paolo Atzeni, Luigi Bellomarini, Michela Iezzi, Emanuel Sallinger, Adriano Vlad:  
Weaving Enterprise Knowledge Graphs: The Case of Company Ownership Graphs. EDBT 2020: 555-566
- Luigi Bellomarini, Eleonora Laurenza, Emanuel Sallinger, Evgeny Sherkhonov:  
Reasoning Under Uncertainty in Knowledge Graphs. RuleML+RR 2020: 131-139
- Luigi Bellomarini, Eleonora Laurenza, Emanuel Sallinger:  
Rule-based Anti-Money Laundering in Financial Intelligence Units: Experience and Vision. RuleML+RR (Supplement) 2020: 133-144
- Luigi Bellomarini, Marco Benedetti, Stefano Ceri, Andrea Gentili, Rosario Laurendi, Davide Magnanini, Markus Nissl, Emanuel Sallinger:  
Reasoning on Company Takeovers during the COVID-19 Crisis with Knowledge Graphs. RuleML+RR (Supplement) 2020: 145-156
- Luigi Bellomarini, Emanuel Sallinger, Sahar Vahdati:  
Knowledge Graphs: The Layered Perspective. Knowledge Graphs and Big Data Processing 2020: 20-34
- Luigi Bellomarini, Emanuel Sallinger, Sahar Vahdati:  
Reasoning in Knowledge Graphs: An Embeddings Spotlight. Knowledge Graphs and Big Data Processing 2020: 87-101
- Luigi Bellomarini, Marco Benedetti, Andrea Gentili, Rosario Laurendi, Davide Magnanini, Antonio Muci, Emanuel Sallinger:  
COVID-19 and Company Knowledge Graphs: Assessing Golden Powers and Economic Impact of Selective Lockdown via AI Reasoning. CoRR abs/2004.10119 (2020)
- Nikolaos Konstantinou, Edward Abel, Luigi Bellomarini, Alex Bogatu, Cristina Civili, Endri Irfanie, Martin Koehler, Lacramioara Mazilu, Emanuel Sallinger, Alvaro A. A. Fernandes, Georg Gottlob, John A. Keane, Norman W. Paton:  
VADA: an architecture for end user informed data preparation. J. Big Data 6: 74 (2019)
- Paolo Atzeni, Luigi Bellomarini, Paolo Papotti, Riccardo Torlone:  
Meta-Mappings for Schema Mapping Reuse. PVLDB 12(5): 557-569 (2019)
- Luigi Bellomarini, Georg Gottlob, Emanuel Sallinger:  
Datalog-based Reasoning for Knowledge Graphs. AMW 2019
- Luigi Bellomarini, Daniele Fakhoury, Georg Gottlob, Emanuel Sallinger:  
Knowledge Graphs and Enterprise AI: The Promise of an Enabling Technology. ICDE 2019: 26-37
- Paolo Atzeni, Luigi Bellomarini, Paolo Papotti, Riccardo Torlone:  
GAIA: A Framework for Schema Mapping Reuse (extended abstract). SEBD 2019
- Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Marco De Leonardis:  
Executable schema mappings for statistical data processing. Distributed and Parallel Databases 36(2): 265-300 (2018)
- Luigi Bellomarini, Emanuel Sallinger, Georg Gottlob:  
The Vadalog System: Datalog-based Reasoning for Knowledge Graphs. PVLDB 11(9): 975-987 (2018)
- Luigi Bellomarini, Georg Gottlob, Andreas Pieris, Emanuel Sallinger:  
The Vadalog System: Swift Logic for Big Data and Enterprise Knowledge Graphs. AMW 2018
- Luigi Bellomarini, Georg Gottlob, Andreas Pieris, Emanuel Sallinger:  
Vadalog: A Language and System for Knowledge Graphs. RuleML+RR 2018: 3-8
- Luigi Bellomarini, Georg Gottlob, Andreas Pieris, Emanuel Sallinger:  
Swift Logic for Big Data and Knowledge Graphs - Overview of Requirements, Language, and System. SOFSEM 2018: 3-16
- Luigi Bellomarini, Georg Gottlob, Emanuel Sallinger:  
The Vadalog System: Datalog-based Reasoning for Knowledge Graphs. CoRR abs/1807.08709 (2018)
- Luigi Bellomarini, Ruslan R. Fayzrakhmanov, Georg Gottlob, Andrey Kravchenko, Eleonora Laurenza, Yavor Nenov, Stéphane Reissfelder, Emanuel Sallinger, Evgeny Sherkhonov,  
Data Science with Vadalog: Bridging Machine Learning and Reasoning. CoRR abs/1807.08712 (2018)
- Luigi Bellomarini, Georg Gottlob, Andreas Pieris, Emanuel Sallinger:  
Swift Logic for Big Data and Knowledge Graphs. IJCAI 2017
- Paolo Atzeni, Luigi Bellomarini, Eleonora Laurenza, Marco Lippi:  
SAMIZDATA: a scale-independent data management system for time series. CAiSE 2016
- Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti:  
EXLEngine: executable schema mappings for statistical data processing. EDBT 2013: 672-682

Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Giorgio Gianforme  
A runtime approach to model-independent schema and data translation. EDBT 2009: 275-286

Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Marco De Leonardis  
Executable schema mappings for statistical data processing. Distributed and Parallel Databases 2017

Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Fabrizio Celli, Giorgio Gianforme  
A runtime approach to model-generic translation of schema and data. Inf. Syst. 2012 37(3): 269-287

Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Giorgio Gianforme  
MISM: A platform for model-independent solutions to model management problems. J. Data Semantics 2009: 133-161

Luigi Bellomarini, Paolo Atzeni, Marco De Leonardis, Fabio Sorà  
Handling high-dimensional data in statistical compilation: a relational approach. SEBD 2015: 72-79

Luigi Bellomarini, Paolo Atzeni, Luca Cabibbo  
Data integration with many heterogeneous sources and dynamic target schemas. AMW 2015

Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Giorgio Gianforme  
A runtime approach to model-independent schema and data translation. SEBD 2009: 245-252

Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Giorgio Gianforme  
A platform for model-independent solutions to model management problems. SEBD 2008: 310-317

Paolo Atzeni, Luigi Bellomarini, Francesca Bugiotti, Giorgio Gianforme  
From schema and model translation to a model management system. BNCOD 2008: 227-240

**Dati personali** Il sottoscritto consapevole che – ai sensi dell’art. 76 del D.P.R. 445/2000 – le dichiarazioni mendaci, la falsità negli atti e l’uso di atti falsi sono puniti ai sensi del codice penale e delle leggi speciali, dichiara che le informazioni rispondono a verità. Il sottoscritto dichiara di aver preso visione dell’informativa sul trattamento dei dati personali pubblicata all’indirizzo: <http://www.uniroma3.it/privacy/>

Roma, 07/09/2023 Firmato da LUIGI BELLOMARINI