

aLessandro mOsca: Curriculum Vitae

Personal information

ALESSANDRO MOSCA
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Education

- **JAN 2006**: PhD in computer science. Milano-Bicocca University (Italy).
 - **JUN 2002**: Master's degree. Computer Science Department - Milano-Bicocca University (Italy) ▪ *Master Universitario in Informatica per Umanisti (MIU)*.
 - **MAY 2001**: Master's degree in philosophy. University of Milano, Faculty of Humanities, Philosophy Department (Italy).
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Present appointment

Researcher with a fixed-term contract in the area of Knowledge Representation and Reasoning at the [Laboratory for applied ontology](#) (LOA) of the [Institute of cognitive sciences and technologies](#) (ISTC - Italian National Research Council). I am also an external member of the [KRDB Research Centre](#) and of the [Smart Data Factory](#) at the [Faculty of Engineering](#) of the Free University of Bolzano (Italy).

Areas of expertise and research interests

Knowledge Representation and Reasoning, Data Access and Integration, Description and Modal Logics, Formal Ontology, Conceptual Modelling, Digital humanities, Open Data for public policies.

My research activity includes the study of theoretical foundations and the design of applications in the areas of knowledge representation and reasoning, applied ontology and conceptual modelling. I'm also interested in the theoretical and methodological aspects behind the creation of knowledge-driven systems and ontology-based data management solutions (also known as Virtual Knowledge Graphs). Ontology and knowledge engineering, multi-format data integration and access, efficient ontology-based query answering, formal semantics of conceptual modelling languages, temporal and multidimensional data representation, SPARQL querying support systems, and data exploration techniques for non-technical users are among the topics I work on. The idea of using the principles and technologies of formal knowledge representation to allow the cross-domain interchange of meanings is surely one of the most relevant driving engines of my research activity.

Professional experience in research and technology transfer projects (partial, over the past 5 years)

- 2024**: *Co-Investigator*. "Automated end-to-end data life cycle management for FAIR data integration, processing and re-use" ([CYCLOPS](#)). HORIZON-CL4-2023-DATA-01; Grant agreement ID: 101135513.
- 2023**: *Principal Investigator*. "Conceptual modelling for IKI's knowledge management (CONIKI)" research project, funded by OneOffTech (Berlin, Germany).
- 2021-2023**: *Principal Investigator*. "[CRISP](#) - Climate Risk Planning & Managing Tool for Development Programmes in the Agriculture & Food Sector" research project, funded by GIZ (German Development Cooperation), done in collaboration with the EURAC Research Institute for Earth Observation and the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)
- 2021-2022**: *Co-Investigator*. "Mapping Patterns for Ontology-based Data Access (MP4OBDA)". Principal Investigator: Davide Lanti - KRDB Research Centre, Faculty of Computer Science, Free University of Bozen-Bolzano, Bolzano, Italy.
- 2019-2022**: *Co-Investigator*. "[INODE](#) - Intelligent Open Data Exploration" (H2020-EU.1.4.1.3. - Grant agreement ID 863410).
- 2020-2022**: *Co-Investigator*. "[MENS](#) - Medieval Explorations in Neuro-Science (1050–1450): Ontology-Based Keyword Spotting in Manuscript Scans" ("4th call for Research" of the Autonomous Province of Bozen/Bolzano, Italy).
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Memberships (partial)

- Co-chair of the [International Workshop on Semantic Technologies for Data Management](#) (ST4DM), co-located with the *14th International Conference On Formal Ontology In Information Systems* (FOIS 2024), 15-19 July 2024 (Enschede, Netherlands).

- Member of the Program Committee of the [16th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management](#) (KEOD), held in conjunction with ICINCO 2024, WEBIST 2024 and CoopIS 2024, 17 - 19 November, 2024 (Porto, Portugal).
- Member of the Program Committee of the [24th International Conference on Knowledge Engineering and Knowledge Management](#), Amsterdam, Netherlands - November 26-28, 2024.
- Member of the Editorial Board of [Applied Ontology](#), IOS Press.
- Member of the Program Committee of the *International Semantic Web Conference (ISWC)*, (2022, 2023, 2024, 2025).
- Member of the Program Committee of the *Symposium on Open Data and Knowledge for a Post-Pandemic Era (ODAK 2022)*, 2022.
- Co-chair and Proceedings editor of the *International Joint Workshop on "Semantic Web and Ontology Design for Cultural Heritage (SWODCH 2021)"*, (2021 - today).
- Chair of the "Open Data for Business" event, co-located with BOSK 2020, September 2020, Bolzano, Italy.
- Chair of the *2nd International Workshop on Data meets Applied Ontologies in Open Science and Innovation (DAO-SI)*, co-located with the 2019 edition of the Joint Ontology Workshops - Episode V: The Styrian Autumn of Ontology (JOWO), Graz (Austria).
- Member of the Program Committee of the *International Conference on Knowledge Engineering and Knowledge Management (EKAW)* (2018, 2020, 2022, 2024)

Journal publications (selected)

Calvanese, D., Gal, A., Lanti, D., Montali, M., Mosca, A., & Shraga, R. (2023).

Conceptually grounded mapping patterns for Virtual Knowledge Graphs. *Data & Knowledge Engineering*, 145, 102157.

Gu, Z., Corcoglioniti, F., Lanti, D., Mosca, A., Xiao, G., Xiong, J., Calvanese, D. (2022). A systematic overview of data federation systems. *Semantic Web*, vol. Pre-press, no. Pre-press, pp. 1-59.

Amer-Yahia, S., Koutrika, G., Braschler, M., Calvanese, D., Lanti, D., Lücke-Tieke, H., Mosca, A., Mendes de Farias, T., Papadopoulos, D., Patil, Y., Rull, G., Smith, E., Skoutas, D., Subramanian, S., & Stockinger, K. (2022). INODE: Building an End-to-End Data Exploration System in Practice. *ACM SIGMOD Record*, 50(4), 23–29. <https://doi.org/10.1145/3516431.3516436>.

Calvanese, D., Lanti, D., De Farias, T. M., Mosca, A. and Xiao, G. (2021). Accessing scientific data through knowledge graphs with Ontop. *Patterns*, 2(10), 100346.

Calvanese, D., Liuzzo, P., Mosca, A., Remesal, J., Rezk, M., and Rull, G., Ontology-based data integration in EPNet: Production and distribution of food during the Roman Empire, *Engineering Application of Artificial Intelligence (EAAI)*, DOI: 10.1016/j.engappai.2016.01.005.

Mosca, A., Palmonari, M., and Sartori, F., An upper-level functional ontology to support Knowledge Management in SMEs-based e-Manufacturing. *The Knowledge Engineering Review (KER)*, Cambridge University Press (Forthcoming September 2009).

Colombo, G., Mosca, A., and Sartori, F., Towards the design of intelligent CAD systems: an ontological approach. Special issue on Ontology and Epistemology of Systems and Software Engineering, *Advanced Engineering Informatics Journal (AEI)*, Elsevier, Vol. 21-2, pp. 153-168, 2007.

A comprehensive list of my publications can be found at: [DBLP](#)

(<https://dblp.org/pid/90/626.html>), [Google Scholar](#)

(https://scholar.google.com/citations?user=xFEI_RcAAAAJ&hl=en), orcid.org/0000-0003-2323-3344 (<https://orcid.org/0000-0003-2323-3344>).