

Riccardo Tommasini

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Education

Politecnico di Milano <i>PhD in Computer Science</i> ◦ Cum Laude	<i>Nov 2015 – Oct 2019</i>
Politecnico di Milano <i>Master Degree in Computer Science and Engineering</i>	<i>Sept 2012 – Sept 2015</i>
Politecnico di Milano <i>Bachelor Degree in Computer Science and Engineering</i>	<i>Sept 2009 – May 2015</i>

Experience

Maître des Conférences (Associate Professor) <i>Institut National des Sciences Appliquées de Lyon</i> ◦ LIRIS Lab: https://liris.cnrs.fr	<i>Villeurbanne, France</i> <i>Jan 2021 – present</i>
Visiting Professor <i>University of Tartu</i>	<i>Tartu, Estonia</i> <i>Sept 2023 – present</i>
Assistant Professor of Data Management <i>University of Tartu</i> ◦ Data System Group: https://bigdata.cs.ut.ee/ ◦ Acted as interim group head from April 2020 until February 2021	<i>Tartu, Estonia</i> <i>Jan 2019 – Dec 2020</i>
R&D Consultant/Trainer <i>Quantia Consulting s.r.l.</i> ◦ Development of technical documentation ◦ training material.	<i>Italy/Remote</i> <i>Jan 2019 – present</i>
Trainer Consultant <i>InfluxData</i> ◦ Preparation and recording of 40h of training videos of Influx University.	<i>US/Remote</i> <i>June 2019 – Oct 2022</i>
Trainer Consultant <i>Sympower B.V</i> ◦ CrashCourse on Apache Kafka (Half a Day)	<i>Tartu, Estonia</i> <i>Mar 2020 – Mar 2020</i>
Trainer Consultant <i>Ericsson</i> ◦ Full Training on Apache Kafka and Streaming Analytics	<i>Genoa, Italy</i> <i>Sept 2019 – Sept 2019</i>
R&D Consultant <i>Starcouter s.r.l.</i> ◦ Design and development of a semantic layer on top of Starcounter database.	<i>Sweden</i> <i>Jan 2018 – June 2018</i>
R&D Consultant <i>BES s.r.l.</i> ◦ Data integration for psychometrics data	<i>Milan, Italy</i> <i>Jan 2016 – Dec 2016</i>
Software Engineer Consultant <i>Golemcom</i>	<i>Milan, Italy</i> <i>Jan 2014 – Dec 2014</i>

- Development of a real-time data analytics platform for void data.

Languages

Italian: Native

English: Full Working Proficiency

French: Working Proficiency

Skills

Programming: Java, Python, C

Query Languages: SQL, Cypher, SPARQL, Datalog

Data Systems: Apache Kafka, Spark, Flink, Postgres, InfluxDB, Neo4J, Jena

Semantic Technologies: RDF, OWL, SHACL, Description Logics

Additional Software: Docker, Git

Projects

MemeAtlas - Mapping the Semantic of Internet Memes

France

Financed by CNRS, 10000 euros

POLIFLOW - Multimodel Streaming Data Management

France

Financed by ANR under JCJC project, 260.000 euros.

Workload-Driven Schema Optimization for Analytical Knowledge Graph

France

Financed by CNRS 9.000 euros.

Rebooting trust in the X-ROAD network

Tartu, Estonia

12-month project financed Nordic Institute for Interoperability Solutions, 30000 euros.

Towards Asynchronous yet Non-repudiable Communication in X-ROAD

Tartu, Estonia

Financed by the Nordic Institute for Interoperability Solutions, 10000 euro.

Awards

Best Paper Award Dolap 2024: Adaptive Handling of Out-of-order Streams in Conformance Checking

Best Paper Award DEBS 2023: I Will Survive: An Event-driven Conformance Checking Approach Over Process Streams

Best Paper Award ESWC 2021: RSP4J: An API for RDF Stream Processing

Springer PhD Thesis Award 2020: Velocity on the Web

Best Paper Award CAISE 2019: D2AI: Stream Analytics on User-Defined Event Intervals

Best Poster Award ISWC 2018: VoCaLS: Describing Streams on the Web

Events

International Conference on Web Engineering: Program Chair

1st Transforming Graph Data Workshop: Organiser

International Conference on Distributed and Event-based Systems: General Chair

Stream Reasoning Workshop: Organiser

Volunteering

International Semantic Web Conference: PC Member
Extended Semantic Web Conference: PC Member
International Conference of Data Engineering: PC Member
The Web Conf: PC Member (Semantic Web Track)
ACM SIGMOD: PC Member
VLDB Journal: Reviewer
Semantic Web Journal: Reviewer

Collaborations

Visiting Researcher *Berlin, Germany*
TU Berlin *2025*
Research stay focused on the role of integrity in streaming data systems

Official Trainer *Remote*
Influx Data *2019 – 2021*
Creation and Delivering of Flux Language Training

Visiting Researcher *Bolzano - Trento, Italy*
University of Trento, SKIL, and Free University of Bozen/Bolzano KRDB *2017*
Ontology-Based Data Access for Stream Processing Technologies (6-month collaboration)

PhD Visiting Researcher *Ghent, Belgium*
University of Ghent, IDLab *2016*
Ontology-Based Event Processing (4-month visit)

Affiliate Researcher *Dayton, Ohio, USA*
Wright State University, Kno.e.sis Center *2015*
Participation in kHealth Projects (8-month collaboration)

Publications

Evaluating Continuous Queries with Inconsistency Annotations Jan 2025
Samuele Langhi, Angela Bonifati, Riccardo Tommasini
Proc. VLDB Endow

Towards Hybrid Graphs: Unifying Property Graphs and Time Series Mar 2025
Mouna Ammar, Christopher Rost, Riccardo Tommasini, Shubhangi Agarwal, Angela Bonifati, Petra Selmer, Evgeny Kharlamov, Erhard Rahm
[10.48786/EDBT.2025.79](#) (Proceedings 28th International Conference on Extending Database Technology (EDBT))

Back to the Order: Partial orders in streaming conformance checking Jan 2025
Kristo Raun, Riccardo Tommasini, Ahmed Awad
[10.1016/J.IS.2025.102566](#) (Information Systems)

No Rule is Forever: Datalog Reasoning with Rule Amendments May 2025
Weiqin Xu, Riccardo Tommasini, Olivier Curé
[10.1109/ICDE65448.2025.00215](#) (2025 IEEE 41st International Conference on Data Engineering (ICDE))

A holistic view over ontologies for Streaming Linked Data Jan 2024
Pieter Bonte, Femke Ongenaë, Riccardo Tommasini

[10.3233/SW-243570](#) (Semantic Web)

GenACT: An Ontology-Based Temporal Web Data Generator

Oct 2024

Gunjan Singh, Udit Arora, Shashikant Kumar, Riccardo Tommasini, Pieter Bonte, Sumit Bhatia, Raghava Mutharaju

[10.1007/978-3-031-75872-0_17](#) (Lecture Notes in Computer Science (ER 2024))

Grounding Stream Reasoning Research

Jan 2024

Pieter Bonte, Jean-Paul Calbimonte, Daniel de Leng, Daniele Dell'Aglio, Emanuele Della Valle, Thomas Eiter, Federico Giannini, Fredrik Heintz, Konstantin Schekotihin, Danh Le Phuoc, Alessandra Mileo, Patrik Schneider, Riccardo Tommasini, Jacopo Urbani, Giacomo Ziffer

[10.4230/TGDK.2.1.2](#) (TGDK)

Adaptive Handling of Out-of-order Streams in Conformance Checking

Mar 2024

Kristo Raun, Riccardo Tommasini, Ahmed Awad

[ceur-ws.org/Vol-3653/paper1.pdf](#) (CEUR Workshop Proceedings (DOLAP 2024))

Seraph: Continuous Queries on Property Graph Streams

Mar 2024

Christopher Rost, Riccardo Tommasini, Angela Bonifati, Emanuele Della Valle, Erhard Rahm, Keith W. Hare, Stefan Plantikow, Petra Selmer, Hannes Voigt

[10.48786/EDBT.2024.21](#) (Proceedings 27th International Conference on Extending Database Technology (EDBT))

Towards Streaming Consistency Management

May 2024

Samuele Langhi, Angela Bonifati, Riccardo Tommasini

[10.1109/ICDE60146.2024.00462](#) (ICDE 2024)

An Overview of Continuous Querying in (Modern) Data Systems

June 2024

Angela Bonifati, Riccardo Tommasini

[10.1145/3626246.3654679](#) (SIGMOD/PODS 2024 Companion)

How Does Knowledge Evolve in Open Knowledge Graphs?

Jan 2023

Axel Polleres, Romana Pernisch, Angela Bonifati, Daniele Dell'Aglio, Daniil Dobriy, Stefania Dumbrava, Lorena Etcheverry, Nicolas Ferranti, Katja Hose, Ernesto Jiménez-Ruiz, Matteo Lissandrini, Ansgar Scherp, Riccardo Tommasini, Johannes Wachs

[10.4230/TGDK.1.1.11](#) (TGDK)

Streaming linked data: A survey on life cycle compliance

Jan 2023

Pieter Bonte, Riccardo Tommasini

[10.1016/J.WEBSEM.2023.100785](#) (J. Web Semant.)

I Will Survive: An Event-driven Conformance Checking Approach Over Process Streams

June 2023

Kristo Raun, Riccardo Tommasini, Ahmed Awad

[10.1145/3583678.3596887](#) (DEBS 2023)

IMKG: The Internet Meme Knowledge Graph

May 2023

Riccardo Tommasini, Filip Ilievski, Thilini Wijesiriwardene

[10.1007/978-3-031-33455-9_21](#) (Lecture Notes in Computer Science (ESWC 2023))

D2IA: User-defined interval analytics on distributed streams

Jan 2022

Ahmed Awad, Riccardo Tommasini, Samuele Langhi, Mahmoud Kamel, Emanuele Della Valle, Sherif Sakr

[10.1016/j.is.2020.101679](#) (Information Systems)

The future is big graphs: a community view on graph processing systems

Sept 2021

Sherif Sakr, Angela Bonifati, Hannes Voigt, Alexandru Iosup, Khaled Ammar, Renzo Angles, Walid G. Aref, Marcelo Arenas, Maciej Besta, Peter A. Boncz, Khuzaima Daudjee, Emanuele Della Valle, Stefania Dumbrava,

Olaf Hartig, Bernhard Haslhofer, Tim Hegeman, Jan Hidders, Katja Hose, Adriana Iamnitchi, Vasiliki Kalavri, Hugo Kapp, Wim Martens, M. Tamer Özsu, Eric Peukert, Stefan Plantikow, Mohamed Ragab, Matei Ripeanu, Semih Salihoglu, Christian Schulz, Petra Selmer, Juan F. Sequeda, Joshua Shinavier, Gábor Szárnyas, Riccardo Tommasini, Antonino Tumeo, Alexandru Uta, Ana Lucia Varbanescu, Hsiang-Yun Wu, Nikolay Yakovets, Da Yan, Eiko Yoneki

[10.1145/3434642](https://doi.org/10.1145/3434642) (Commun. ACM)

RSP4J: An API for RDF Stream Processing

June 2021

Riccardo Tommasini, Pieter Bonte, Femke Ongenae, Emanuele Della Valle

[10.1007/978-3-030-77385-4_34](https://doi.org/10.1007/978-3-030-77385-4_34) (Lecture Notes in Computer Science (ESWC 2021))

Extending Kafka Streams for Complex Event Recognition

Dec 2020

Samuele Langhi, Riccardo Tommasini, Emanuele Della Valle

[10.1109/BigData50022.2020.9378217](https://doi.org/10.1109/BigData50022.2020.9378217) (IEEE International Conference on Big Data)

Declarative Languages for Big Streaming Data

Mar 2020

Riccardo Tommasini, Sherif Sakr, Emanuele Della Valle, Hojjat Jafarpour

[10.5441/002/edbt.2020.84](https://doi.org/10.5441/002/edbt.2020.84) (Proceedings of the 23rd International Conference on Extending Database Technology (EDBT))

The Kaiju project: enabling event-driven observability

July 2020

Mario Scrocca, Riccardo Tommasini, Alessandro Margara, Emanuele Della Valle, Sherif Sakr

[10.1145/3401025.3401740](https://doi.org/10.1145/3401025.3401740) (DEBS 2020)

Stream Reasoning Agents: Blue Sky Ideas Track

May 2019

Riccardo Tommasini, Davide Calvaresi, Jean-Paul Calbimonte

dl.acm.org/citation.cfm?id=3331894 (AAMAS 2019)

D2IA: Stream Analytics on User-Defined Event Intervals

June 2019

Ahmed Awad, Riccardo Tommasini, Mahmoud Kamel, Emanuele Della Valle, Sherif Sakr

[10.1007/978-3-030-21290-2_22](https://doi.org/10.1007/978-3-030-21290-2_22) (CAiSE 2019)

C-Sprite: Efficient Hierarchical Reasoning for Rapid RDF Stream Processing

June 2019

Pieter Bonte, Riccardo Tommasini, Filip De Turck, Femke Ongenae, Emanuele Della Valle

[10.1145/3328905.3329502](https://doi.org/10.1145/3328905.3329502) (DEBS 2019)

An Outlook to Declarative Languages for Big Streaming Data

June 2019

Riccardo Tommasini, Sherif Sakr, Marco Balduini, Emanuele Della Valle

[10.1145/3328905.3332462](https://doi.org/10.1145/3328905.3332462) (DEBS 2019)

Streaming MASSIF: Cascading Reasoning for Efficient Processing of IoT Data Streams

Nov 2018

Pieter Bonte, Riccardo Tommasini, Emanuele Della Valle, Filip De Turck, Femke Ongenae

[10.3390/s18113832](https://doi.org/10.3390/s18113832) (Sensors)

VoCaLS: Describing Streams on the Web

Oct 2018

Riccardo Tommasini, Yehia Abo Sedira, Daniele Dell'Aglio, Marco Balduini, Muhammad Intizar Ali, Danh Le Phuoc, Emanuele Della Valle, Jean-Paul Calbimonte

ceur-ws.org/Vol-2180/paper-72.pdf (ISWC 2018 Posters & Demos)

VoCaLS: Vocabulary and Catalog of Linked Streams

Oct 2018

Riccardo Tommasini, Yehia Abo Sedira, Daniele Dell'Aglio, Marco Balduini, Muhammad Intizar Ali, Danh Le Phuoc, Emanuele Della Valle, Jean-Paul Calbimonte

[10.1007/978-3-030-00668-6_16](https://doi.org/10.1007/978-3-030-00668-6_16) (ISWC 2018, Part II)

Defining the execution semantics of stream processing engines

Jan 2017

Teaching

Foundations of Data Engineering

Taught lecture and lab sessions in the second year of the Master's program in Computer Science to about 30 students (48 working hours). Ongoing.

*INSA Lyon
2022-present*

Data Processing and Analytics

Delivered lecture and lab sessions in the second year of the Master's program in Data Science (11 working hours).

*University Claud Bernard
Lyon1
2022-2024*

Databases

Taught lecture and lab sessions in the third year of the Bachelor's program in Information Systems and Technologies to 23 students (20 working hours).

*INSA Lyon
2021-present*

Data Mining

Delivered lecture and lab sessions in the third year of the Bachelor's program in Information Systems and Technologies to 22 students (20 working hours).

*INSA Lyon
2021*

Data Mining

Lecture and lab teaching in the third year of the Bachelor's program in Computer Science with 25 students (20 working hours).

*ENS Lyon
2021-2025*

Web Data

Lab sessions for the third year of the Bachelor's program in Computer Science, 2 groups of 30 students (20 working hours).

*INSA Lyon
2022-2024*

Decision Support Databases

Taught lecture and lab sessions in the first year of the Master's program in Information Systems and Technologies to 2 groups of 30 students (10 working hours).

*INSA Lyon
2021*

Advanced Databases

Lecture and lab teaching in the second year of the Master's program in Data Science to 10 students (32 working hours).

*University of Tartu
2021*

Foundations of Data Engineering

Taught lecture and lab sessions in the first year of the Master's program in Data Science to 85 students (92 working hours).

*University of Tartu
2020-present (remote)*

Big Data

Lecture and lab sessions for the second year of the Master's program in Data Science, 20 students (48 working hours).

*University of Tartu
2020-present (remote)*