

# Anna Bernasconi

Department of Electronics, Information, and Bioengineering  
Politecnico di Milano



**Address** via Giuseppe Ponzio 34/5, 20133 Milan, Italy  
**Phone/E-Mail** (+39) 02 23993494 – [anna.bernasconi@polimi.it](mailto:anna.bernasconi@polimi.it)  
**Web Page** <http://annabernasconi.faculty.polimi.it>  
**ORCID** 0000-0001-8016-5750  
**Scholar Pages** [Google Scholar](#), [Scopus Profile](#), [Web of Science](#)

## Summary

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Anna Bernasconi is an Assistant Professor (Ricercatore Tenure-Track) with the Dipartimento di Elettronica, Informazione e Bioingegneria, the [Data Science Lab](#), and the [Bioinformatics Lab](#) at Politecnico di Milano. She received her Ph.D. in Information Technology from Politecnico di Milano in February 2021, with a thesis on genomic data integration that won three prizes and was published in Springer's LNBI. She was a visiting researcher at Universitat Politècnica de València, Jan-Jun 2022. Her research interests lie at the intersection of Bioinformatics, Databases, and Data Science Methods, focusing on building open-source tools and services.

## Highlights

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- **Senior assistant professor** at [DEIB](#), Politecnico di Milano, since May 2024.
- **National scientific qualification** as Italian associate professor (sectors 09/H1 and 01/B1), until 2035.
- Author/Co-author of 43 international journal papers, of which **33 articles in Q1 journals** based on [WoS](#) and [Scimago](#), including SciAdv, NatComm, NAR (2), SciData, GigaScience, Bioinformatics (2), Briefings in Bioinformatics (2), Information Processing & Management, Journal of Big Data, and Expert Systems with Applications. Author/Co-author of **> 40 conferences/ workshops publications**, including 4 in **A++/A+** venues (SIGMOD, ICDE and PKDD-ECML) and 11 in A venues (according to GII-GRIN-SCIE).
- Recipient of **three PhD thesis awards**: [CAiSE PhD Award 2023](#), 35th Int. Conf. on Advanced Information Systems Engineering; [Award for the Best Ph.D. Thesis on Big Data & Data Science 2022](#) – CINI Lab on Big Data; and [N. Chorafas Foundation 2021 Prize](#) from Weizmann Institute of Science and Feinberg Graduate School.
- Participation in 7 competitive research projects, funded by public institutions (2 National level, 5 European level), as **PI** (2), **WP-leader** (1), or **Task-leader** (4); **Co-chair** of Research Data Alliance FGA Working Group.
- **Invited speaker** (17 talks, including MMNGS'2025, CAiSE'2024, RDA Plenary meeting VP22, DALs@ECML'2022, ITADATA'2022, UEM, USC, UPV, EPFL, ETH, and IBM Zurich; 2 tutorials on “Conceptual models and databases for searching the genome” at the ER 2021 and the EDBT 2022; 19 conference paper presentations.
- **Academic editor** for [Plos One](#), [Scientific Data](#), [BMC Bioinformatics](#) (organizer of 9 Supplements/Special issues); **Editorial Review Board Member** for ACM Journal of Data and Information Quality and PVLDB Volume 18; **PC Member** for CAiSE, RCIS, CIKM, ER, Demo Track SIGMOD/PODS.
- **Chair roles**: PC Chair (ER2026); Workshops Chair (ER2025); Forum Chair (RCIS2026). **Founder** of workshops on conceptual models ([CMLS@ER](#)), web applications ([WALS@ICWE](#)), and inf. sys. ([iSAILS@CAiSE](#)) for life sciences.
- **Lecturer** of the Doctoral courses “[Data Management and Analysis for Computational Biology](#)” (a.y. 2022-2023) and “[Data Science for Bioinformatics and Healthcare](#)” (a.y. 2025-2026); the course “[Databases](#)” (since a.y. 2024-2025, in the Computer Engineering Bachelor Degree), and the course “[Programming](#)” (since a.y. 2022-2023, in the Master on Bioinformatics for Computational Genomics).
- (Co-)Supervisor of 4 PostDocs, 6 Ph.D. students and 22 M.Sc. students at Politecnico di Milano (two at UPV).
- **Co-founder** of LegisRatio S.r.l. (in 2025), an innovative start-up in the LegalTech domain, accredited spin-off of Politecnico di Milano, supporting companies in navigating the legislative system

## Academic and Industry Positions

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- May 2024 - present **Tenure Track Researcher (RTT)**, Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria
- Oct 2022 - Apr 2024 **Research Fellow – RTDA with 0.4 PO (university-funded units)**, Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria
- Nov 2020 - Sep 2022 **Post Doctoral Researcher (Assegnista di Ricerca)**, Politecnico di Milano, Topic: Evolution of genomic data and metadata repositories for supporting novel research applications
- Jan 2022 - Jun 2022 **Post Doctoral Visiting Researcher**, Universitat Politècnica de València, Topic: Conceptual modeling and data management for genomics
- Apr 2021 - Dec 2021 **Post Doctoral Visiting Researcher (remote status)**, Universitat Politècnica de València, Topic: Conceptual modeling and ontologies for representing the genome
- Mar 2016 - Oct 2016 **Graduate Research Assistant**, Politecnico di Milano, Topic: Input and output data standardization for the GenoMetric Query Language
- Nov 2014 - Feb 2016 **Junior Business Intelligence Consultant and Data Warehouse Architect**, Quanyca S.R.L., Monza, Italy, Topic: ETL/integration processes and web application development
- Nov 2013 - Dec 2013 **Undergraduate Research Assistant**, University of Illinois at Chicago, Topic: Self-certifying compilers design

## National Scientific Qualification

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- Dec 2023 - 2035 **Abilitazione Scientifica Nazionale, Settore: 01/B1**, Informatica, Associate Professor (Seconda Fascia)
- Jun 2023 - 2035 **Abilitazione Scientifica Nazionale, Settore: 09/H1**, Sistemi di elaborazione delle informazioni, Associate Professor (Seconda Fascia)

## Education

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- Politecnico di Milano** *Milan, Italy*  
**PHD IN INFORMATION TECHNOLOGY (CUM LAUDE)** *Nov 2016 - Oct 2020*
- Advisor: Prof. Stefano Ceri, Co-advisor: Prof. Alessandro Campi
  - Thesis title: Model, Integrate, Search... Repeat: a Sound Approach to Building Integrated Repositories of Genomic Data
  - Awards: Dimitris N. Chorafas Foundation, CINI Lab on Big Data, CAiSE PhD Award
- University of Illinois at Chicago** *Chicago, Illinois, USA*  
**MS IN COMPUTER SCIENCE** *Mar 2013 - Dec 2015*
- Advisor: Prof. Lenore D. Zuck
  - Mark: 3.85/4.00
- Politecnico di Milano** *Milan, Italy*  
**MS IN COMPUTER ENGINEERING** *Sep 2012 - July 2015*
- Advisor: Prof. Carlo Ghezzi, Co-advisors: Prof. Paola Spoletini, Dr. Claudio Menghi
  - Thesis title: Building Deductive Proofs of LTL Properties for Iteratively Refined Systems
  - Mark: 110/110
- Politecnico di Milano** *Milan, Italy*  
**BS IN MATHEMATICAL ENGINEERING** *Sep 2009 - Sep 2012*
- Advisor: Prof. Alessandro Campi
  - Mark: 100/110
  - Extra: 9 months Erasmus Program at Universidad Autonoma de Madrid, Spain

## Leadership and Participation in Funded Research Projects

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Sep 2023 - ongoing	<b>Co-Chair of the FAIRification of Genomic Annotations RDA Working Group (<a href="#">link</a>)</b> , Topic: Standardization of Genomic Annotations and FAIRification of related (meta)data	<i>Research Data Alliance</i>
Sep 2025 - Feb 2029	<b>EU4Health Programme (EU4H) Action Grant “UNICA: Unified Network for International Cancer Advancement”, grant agr. n.101218966, Funding PoliMi Unit: 602K Euros</b> (total 4M Euros); Role: <u>Task Leader</u>	<i>Politecnico di Milano</i>
Dec 2023 - May 2027	<b>Horizon Europe Framework Programme (HORIZON) project “BETTER: Better rEal-world healTh-daTa distributEd analytics Research platform”, grant agr. n.101136262, Funding PoliMi Unit: 639K Euros</b> (total 9.8M Euros); Role: <u>Proposal co-editor and Tasks Leader</u> – 4.3: “Design and develop a unified schema repository for medical centres data and metadata integration” and 4.4: “FAIRification of medical centres datasets”	<i>Politecnico di Milano</i>
Dec 2023 - Nov 2025	<b>MUR PRIN PNRR 2022 project “SENSIBLE: Small-data Early warNing System for viral pathogens In puBLic hEalth”, project n. P2022CNN2J</b> , Research Units: Politecnico di Milano and Università degli Studi di Milano; <b>Funding PoliMi Unit: 186K Euros</b> (Total: 240K Euros); Role: <u>Principal Investigator</u>	<i>Politecnico di Milano</i>
Sep 2023 - Aug 2024	<b>Next Generation Internet (NGI) Search, 2nd open call, project “TETHYS: Topics Evolution That You See”, agr. n.SEARCH OC2_18, Funding: 150K Euros</b> ; Role: <u>Principal Investigator</u>	<i>Politecnico di Milano</i>
Jan 2023 - Dec 2025	<b>NextGenerationEU program project “FAIR: Future Artificial Intelligence Research”, within the PNRR-PE-AI scheme (M4C2, Investment 1.3, Line on Artificial Intelligence), Funding: 4.9M Euros</b> ; Role: <u>Task Leader</u> – 4.4.2: “Graph-based ML for Network Medicine”	<i>Politecnico di Milano</i>
Jul 2020 - Dec 2020	<b>EIT Digital “DATA against COVID-19” program, Innovation Activity ‘Virusurf’ n. 20663, Funding: 172K Euros</b> ; Role: <u>Task Leader</u> – “User experience and interfaces”	<i>Politecnico di Milano</i>
Nov 2016 - Aug 2021	<b>Data-Driven Genomic Computing, ERC Advanced Investigator Grant n. 693174, Funding: 2.5M Euros</b> ; Role: <u>Work Package Leader</u> – WP4: Integrated access to large data sources	<i>Politecnico di Milano</i>

## Awards and Recognitions

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- 2026 **Top-3 champion on Italian selection**, for the 4th edition of the Frontiers Planet Prize. Paper “Lightweight multiscale early warning system for influenza A spillovers” published on Science Advances
- 2025 **DEIB Young Researchers’ Best Publications Award 2025**, for the publication “An LLM-assisted ETL pipeline to build a high-quality knowledge graph of the Italian legislation” on Information Processing & Management, co-authored with the PhD student A. Colombo
- 2024 **Award from the Italian Chamber of Deputies, XIX Legislature**, for the LegisLab application, in the context of the “Manifestazione di interesse per la raccolta di proposte per l’utilizzo dell’intelligenza artificiale generativa per la Camera dei deputati”, Team: A. Colombo, **A. Bernasconi**, et al.
- 2023 **CAiSE PhD Award 2023, 35th International Conference on Advanced Information Systems Engineering**, granted to an outstanding Ph.D. thesis in the field of Information Systems Engineering, co-sponsored by the CAiSE Steering Committee and Springer (see [published monograph](#))
- 2022 **‘Runner Up Paper’ Award, 41st International Conference on Conceptual Modeling, ER 2022**, recognizing high-quality research work with future potential impact on conceptual modeling practices, granted by the ER 2022 Program Committee Chairs – the paper was invited for a Journal extension in DKE

- 2022 **Award for the Best Ph.D. Thesis on Big Data & Data Science 2022**, granted by CINI Lab on Big Data to excellent PhD theses based on originality and potential impact on the Big Data e Data Science community ([link](#))
- 2021 **Chorafas Award 2021**, granted by the Dimitris N. Chorafas Foundation (Weizman Institute of Science and Feinberg Graduate School) in recognition of results obtained during the research activity pursued during my PhD – the foundation awards prizes in engineering/medicine/natural sciences where results can have a significant impact on future research and practical applications ([link](#))

## Research Collaborations

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- Jul 2025 - ongoing **Prof. Angela Bonifati's group (Lyon 1 University)**, Topic: Triggers for property graphs and GQL
- Jul 2024 - ongoing **Prof. Luigi Guiso and Prof. Claudio Michelacci (Einaudi Institute for Economics and Finance, Italy)**, Topic: Building legislative text recommendation systems
- Mar 2024 - Sep 2025 **Group of Prof. Elena Baralis (with Prof. Luca Cagliero), in the context of "Alta Scuola Politecnica" project**, Topic: Building conceptual maps for Large Language Models
- Feb 2024 - ongoing **Dr. Daniele Focosi (North-Western Tuscany Blood Bank, Pisa University Hospital), Fabrizio Maggi, and Cesare Gruber (INMI "L. Spallanzani" IRCCS)**, Topic: SARS-CoV-2 convergent evolution
- Dec 2023 - Dec 2024 **Dr. Alice Fusaro and Dr. Isabella Monne (Istituto Zooprofilattico Sperimentale delle Venezie, IZSVe)**, Topic: Avian Influenza molecular markers with potential biological impact
- Sep 2022 - Jun 2023 **Prof. Giancarlo Guizzardi and Prof. Luiz Olavo Bonino da Silva Santos (University of Twente and Leiden University Medical Center)**, Topic: Ontologies for scientific datasets FAIRification
- Mar 2022 - May 2025 **Dr. Luigi Bellomarini and Davide Magnanini (Banca d'Italia)**, Topic: Graph-based reactive systems
- Feb 2022 - Dec 2022 **Dr. Andrea Giacomelli, Dr. Valeria Micheli, and Prof. Giuliano Rizzardini (Azienda Ospedaliera Polo Universitario L. Sacco)**, Topic: SARS-CoV-2 viremia, variants, and COVID-19 mortality
- Jun 2021 - ongoing **Prof. Matteo Chiara (Università degli Studi di Milano), Erika Ferrandi (Consiglio Nazionale delle Ricerche, Bari), Ilaria Capua (Johns Hopkins University), Shay Fleishon (Israel Central Virology Laboratory)**, Topic: Bioinformatic Methods for studying the evolution of SARS-CoV-2 and other viruses
- Mar 2021 - Nov 2023 **Group of Professor Oscar Pastor (with Prof. Giancarlo Guizzardi and Prof. Veda Storey), Universitat Politècnica de València - Research Center on Software Production Methods**, Topic: Conceptual modeling for biological and genomic information systems
- Apr 2020 - Jul 2021 **The COVID-19 Host Genetics Initiative ([link](#))**, Topic: Design of clinical/phenotype COVID-19 dictionary for structuring data collection
- Apr 2020 - Dec 2022 **Prof. Silvia Grandi, University of Bologna - Dipartimento di Scienze Statistiche "Paolo Fortunati"**, Topic: Geospatial data perspective of clinical and genomic information on COVID-19
- Jun 2019 - Sep 2019 **Group of Prof. Mario Cannataro, Università Magna Graecia**, Topic: integrative applications of GenoMetric Query Language using private and public datasets
- Jan 2019 - Nov 2020 **Dr. Claudio Menghi (with Prof. Paola Spoletini and Dr. Alessandro Maria Rizzi), University of Luxembourg – Centre for Security Reliability and Trust**, Topic: Formal verification for partial models
- Sep 2017 - Mar 2020 **Group of Prof. Emanuel Weitschek, Italian National Research Council – Institute of Systems Analysis and Computer Science**, Topic: metadata integration on cancer data from Genomic Data Commons

## Technology transfer

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### START-UPS AND SPIN-OFFS

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February 2025 **Co-founder of LegisRatio S.r.l.**, Innovative start-up in the LegalTech domain, *accredited spin-off of Politecnico di Milano*. We will support companies with navigating the legislative system: we combine light AI agents with structured, rich, and smart data modeled as easy-to-explore graphs.

### OPEN SOURCE TOOLS FOR LIFE SCIENCES

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Contribution to tools (registered under the ELIXIR Italian node PoliMi, see [bio.tools](https://bio.tools)) to facilitate the work of clinicians, geneticists, virologists, phylogeneticists, epidemiologists, pathogenists, and immunologists.

**OpenGDC** (<http://www.bioinformatics.deib.polimi.it/opengdc>). Cancer genomics data extraction / integration.

**GenoSurf** (<http://gmql.eu/genosurf>). Multi-ontology semantic search system that provides access to a consolidated collection of human genome datasets for bioinformatic tertiary analysis.

**GeMI** (<http://gmql.eu/gemi>). Interactive interface to annotate genomic samples exploiting a deep-learning-based prediction model, whose impact is to accelerate unstructured genomic metadata extraction into structured formats.

**VarSum** (<http://gmql.eu/popstudy>). API that returns summary statistics on user-defined populations and their variants, using the genomic data repository maintained in the group.

**META-BASE** (<https://github.com/DEIB-GECO/Metadata-Manager>). Tool that integrates and enriches heterogeneous biological and clinical data sources, exploiting several configurations to build a repository.

**VirusSurf** (<http://gmql.eu/virusurf>). Search system for public viral sequences described by their metadata and exhibiting nucleotide and amino acid mutational patterns.

**EpiVirusSurf** (<http://gmql.eu/epivirusurf>). Search system for evaluating the impact of viral mutational patterns on epitopes, i.e., areas of the virus recognized by the human immune system.

**VirusViz** (<http://gmql.eu/virusviz>). Visualization for comparing mutation distributions of selected viral populations.

**VirusClust** (<http://gmql.eu/virusclust>). Temporal/spatial comparison of mutational patterns, SARS-CoV-2 sequences.

**VariantHunter** ([http://gmql.eu/variant\\_hunter](http://gmql.eu/variant_hunter)). Tool for fast detection of emerging SARS-CoV-2 (sub)variants.

**CoV2K API** (<http://gmql.eu/cov2k/api>). Knowledge base of SARS-CoV-2 sequence mutations, variants, and effects.

**CoVEffect** (<http://gmql.eu/coveffect>). Interactive web interface for deep learning-assisted curation of data annotation on the effects of SARS-CoV-2 mutations and variants.

**CORToViz** (<http://gmql.eu/cortoviz>). Visualizer for trending topics extracted from the CORD-19 dataset on COVID-19-related research abstracts.

**GRAPH-SEARCH** (<http://gmql.eu/graph-search>). Explorer of COVID-19-related literature using graph-based queries with shortest paths and sophisticated ranking.

### OPEN SOURCE TOOLS FOR SPECIFIC DOMAINS

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Contribution to tools that aim to facilitate search of data and information in other applied domains.

**TETYS** (<http://gmql.eu/tetys>). Explorer of Sustainability Development Goals-related literature using a topic modeling pipeline and user-centered interfaces.

**CLD-Explorer** (<http://gmql.eu/cld-explorer>). Tool for Causal Loop Diagrams exploration and analytics.

**LLMap** (<https://geco.deib.polimi.it/LLMap-demo/>). Proof-of-concept of conceptual-modeling-driven exploration of LLM information.

**MLegis** (<https://mlegis.eu/>). Information system engineered to model, manage, and analyze legislative corpora through a property graph.

## Outreach Scientific Activities

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### ORGANIZATION OF EVENTS

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Mar 2026	<b>Second International Workshop on Transforming Graph Data (TGD 2026), co-located with EDBT 2026 conference, Co-organizer</b>	<i>Tampere, Finland</i>
Oct 2025	<b>Sixth International Workshop on Conceptual Modeling for Life Sciences (CMLS 2025), co-located with ER 2025 conference, Co-organizer</b>	<i>Poitiers, France</i>
Jun 2025	<b>First International Workshop on Information Systems and AI for Life Sciences (iSAILS 2025), co-located with CAiSE 2025 conference, Chair and co-organizer</b>	<i>Vienna, Austria</i>
Oct 2024	<b>Fifth International Workshop on Conceptual Modeling for Life Sciences (CMLS 2024), co-located with ER 2024 conference, Co-organizer</b>	<i>Pittsburgh, US</i>
Sept 2024	<b>The first girls@CSE event, held at Department of Electronics, Information, and Bioengineering, Politecnico di Milano, Co-organizer</b>	<i>Milan, Italy</i>
Jun 2024	<b>Third International Workshop on Web Applications for Life Sciences (WALS 2024), co-located with ICWE 2024 conference, Co-organizer</b>	<i>Tampere, Finland / online</i>
Nov 2023	<b>Fourth International Workshop on Conceptual Modeling for Life Sciences (CMLS 2023), co-located with ER 2023 conference, Chair and co-organizer</b>	<i>Lisbon, Portugal</i>
Jun 2023	<b>Second International Workshop on Web Applications for Life Sciences (WALS 2023), co-located with ICWE 2023 conference, Co-organizer</b>	<i>Alicante, Spain</i>
Oct 2022	<b>Third International Workshop on Conceptual Modeling for Life Sciences (CMLS 2022), co-located with ER 2022 conference, Chair and Co-organizer</b>	<i>(online)</i>
Jul 2022	<b>First International Workshop on Web Applications for Life Sciences (WALS 2022), co-located with ICWE 2022 conference, Chair and Co-organizer</b>	<i>Bari, Italy</i>
Oct 2021	<b>Second International Workshop on Conceptual Modeling for Life Sciences (CMLS 2021), co-located with ER 2021 conference, Co-organizer</b>	<i>(online)</i>
Nov 2020	<b>First International Workshop on Conceptual Modeling for Life Sciences (CMLS 2020), co-located with ER 2020 conference, Chair and Co-organizer</b>	<i>(online)</i>
Feb 2020	<b>Politecnico di Milano Genomic Computing Group “gong-like presentations”, Co-organizer</b>	<i>Milano, Italy</i>
Mar 2019	<b>“Challenges in Data-Driven Genomic Computing” Workshop, Member of organization team (for the Advanced ERC Project 693174 “GeCo”)</b>	<i>Como, Italy</i>

### ORGANIZING COMMITTEE SERVICE

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**Program co-Chair**, 45th International Conference on Conceptual Modeling (ER 2026), St. John’s, NL, Canada, October 2026

**Proceedings co-Chair**, 27th International Conference on Advanced Information Systems Engineering (CAiSE 2026), Verona, Italy, June 2026

**Forum co-Chair**, 20th International Conference on Research Challenges in Information Science (RCIS 2026), Toulouse, France, May 2026

**Workshops co-Chair**, 44th International Conference on Conceptual Modeling (ER 2025), Poitiers, France, October 2025

- Publicity Chair**, 43rd International Conference on Conceptual Modeling (ER 2024), Pittsburgh, US, 28-31 October 2024
- Publicity Chair**, 42nd International Conference on Conceptual Modeling (ER 2023), Lisbon, Portugal, 17-20 October 2023
- Program Chair**, 9th IEEE International Conference on Big Data Computing Service and Machine Learning Applications (IEEE BigDataService 2023), Athens, Greece, 17-20 July 2023
- Special Track Chair** (Big Data and Analytics for Healthcare) and **Publication Chair**, 8th IEEE International Conference on Big Data Computing Service and Machine Learning Applications (IEEE BigDataService 2022), San Francisco Bay Area, USA, 15-18 August 2022

## SCIENTIFIC PROGRAM COMMITTEE SERVICE

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- Program Committee Member** for 37th International Conference on Advanced Information Systems Engineering (**CAISE** 2026), Verona, Italy, June 8-12, 2026
- Program Committee Member** in the ER Posters & Demos Session of the 44th International Conference on Conceptual Modeling (**ER** 2025), Poitiers, France, 20-23 October, 2025
- Program Committee Member** in the ER Forum of the 44th International Conference on Conceptual Modeling (**ER** 2025), Poitiers, France, 20-23 October, 2025
- Program Committee Member** in the Main Track of the 43rd International Conference on Conceptual Modeling (**ER** 2025), Poitiers, France, 20-23 October, 2025
- Program Committee Member** of the 20th International Conference on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB 2025), Milan, Italy, 10-12 September, 2025
- Demonstration track reviewer** for ACM **SIGMOD/PODS** International Conference on Management of Data, Berlin, Germany, 22-27 June, 2025
- Program Committee Member** for 36th International Conference on Advanced Information Systems Engineering (**CAISE** 2025), Vienna, Austria, June 16-20, 2025
- Program Committee Member** for the 19th Research Challenges in Information Science (**RCIS** 2025), Seville, Spain, May 20-23, 2025
- Program Committee Member** in the ER Forum of the 43rd International Conference on Conceptual Modeling (**ER** 2024), Pittsburgh, USA, 28-31 October 2024
- Program Committee Member** in the Main Track of the 43rd International Conference on Conceptual Modeling (**ER** 2024), Pittsburgh, USA, 28-31 October 2024
- Program Committee Member** in the Full Papers Program Committee of the 33rd ACM International Conference on Information and Knowledge Management (**CIKM** 2024), Boise, Idaho, 21-25 October 2024
- Review Board Member** for PVLDB Volume 18, for the period of April 2024 through March 2025. The accepted papers from this volume will be presented at **VLDB** 2025, to be held in London, UK.
- Program Committee Member** for 36th International Conference on Advanced Information Systems Engineering (**CAISE** 2024), Limassol, Cyprus, June 3-7, 2024
- Demonstration track reviewer** for ACM **SIGMOD/PODS** International Conference on Management of Data, Santiago, Chile, 9-15 June, 2024
- Program Committee Member** of the Foundations of Network Analysis Workshop at IEEE International Conference on Bioinformatics and Biomedicine (**BIBM** 2023), Istanbul, Turkey, 5-8 December 2023
- Program Committee Member** of the 6th International Workshop on Empirical Methods in Conceptual Modeling (**EmpER** 2023), at the International Conference on Conceptual Modeling, Lisbon, Portugal, 6-9 November 2023
- Program Committee Member** of the 15th International Conference on Knowledge Discovery and Information Retrieval (**KDIR** 2023, part of IC3K), Rome, Italy, 13-15 November 2023
- Program Committee Member** of the 15th International Conference on Knowledge Engineering and Ontology Development (**KEOD** 2023, part of IC3K), Rome, Italy, 13-15 November 2023
- Program Committee Member** in the ER Forum of the 42th International Conference on Conceptual Modeling (**ER** 2023), Lisbon, Portugal, 6-9 November 2023
- Program Committee Member** in the Main Track of the 42th International Conference on Conceptual Modeling (**ER** 2023), Lisbon, Portugal, 6-9 November 2023
- Program Committee Member** of the 18th International Conference on Computational Intelligence Methods for Bioinformatics and Biostatistics (**CIBB** 2023), Padua, Italy, 6-8 September 2023

**Program Committee Member** of the 1st High-Throughput Data Processing and Knowledge Mining in Bioinformatics (**HiDa**) at the 27th European Conference on Advances in Databases and Information Systems (ADBIS 2023), Barcelona, Spain, 4-7 September 2023

**Program Committee Member** of the 10th International Work-Conference on Bioinformatics and Biomedical Engineering (**IWWBIO** 2023), Gran Canaria, Spain, 12-14 July 2023

**Program Committee Member** of the Network and Pathway Analysis in Health Informatics (**NPAHI**) at the 11th IEEE International Conference on Healthcare Informatics (IEEE ICHI 2023), Houston, Texas, USA, 26-29 June 2023

**Program Committee Member** of the Research Project Exhibition (RPE) at the 35th International Conference on Advanced Information Systems Engineering (CAiSE 2023), Zaragoza, Spain, 12-16 June 2023

**Program Committee Member** of the Foundation of Network Analysis Workshop at IEEE International Conference on Bioinformatics and Biomedicine (**BIBM** 2022), Las Vegas, NV, USA, 6-8 December 2022

**Program Committee Member** of the 1st International Workshop on Data Analysis for Life Science (**DALS** 2022) at the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2022), Grenoble, France, 19-23 September 2022

**Program Committee Member** of the 9th International Work-Conference on Bioinformatics and Biomedical Engineering (**IWBIO** 2022), Gran Canaria, Spain, 27-30 June 2022

**Program Committee Member** of the 17th International Conference on Computational Intelligence Methods for Bioinformatics and Biostatistics (**CIBB** 2021), online, 15-17 November 2021

## BIBLIOMETRICS

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Verified editor records (on Web of Science, query date 07/04/2026) ..... 68

Verified reviews (on Web of Science, query date 07/04/2026) ..... 133

## EDITORIAL BOARD MEMBERSHIPS

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**Editorial Board**, BMC Bioinformatics (ISSN 1471-2105, Publisher: Springer Nature) – since May 2022 ([link](#))

**Academic Editor**, Plos ONE (ISSN 1932-6203, Publisher: Public Library of Science) – since Feb 2023 ([link](#))

**Editorial Review Board**, Journal of Data and Information Quality (ISSN: 1936-1955, Publisher: ACM) – since Apr 2024 ([link](#))

**Associate Editor**, Bioinformatics and Biology Insights (ISSN 1177-9322, Publisher: Sage Journals, Libertas Academica) – since June 2024 ([link](#))

**Editorial Board**, Scientific Data (ISSN 2052-4463, Publisher: Springer Nature) – since Mar 2025 ([link](#))

## GUEST EDITORIAL SERVICE

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**Guest Editor** for the Journal of Data and Information Quality (ISSN: 1936-1955, Publisher: ACM), Special Issue on “Data quality dimensions in Data FAIRification design and processes”. Guest editors: Bernasconi, A., Cirillo, S., García S., A., Harmouch, H. ([link](#))

**Guest Editor** for BMC Bioinformatics (ISSN: 1471-2105, Publisher: Springer Nature), Collection “Big data management in biological domains”. Guest editors: Bernasconi, A., Ferraro Petrillo, U., Rombo, S.E. ([link](#))

**Guest Editor** for the Journal Future Generation Computer Systems (ISSN: 0167-739X, Publisher: Elsevier), for the Special Issue “Special Issue on Big Data Computing Service and Machine Learning Applications”. Guest editors: Potika, K., Eirinaki, M., Vitali, M., Bernasconi, A., Fujioka, H. ([link](#))

**Supplement Editor** for BMC Medical Informatics and Decision Making (ISSN: 1472-6947, Publisher: Springer Nature), for the Supplement “Selected articles from the 3rd International Workshop on Conceptual Modeling for Life Sciences (CMLS 2022)”. Guest editors: Bernasconi, A. et al. ([link](#))

**Guest Associate Editor** for Research Topic “Identification of phenotypically important genomic variants” on Frontiers in Bioinformatics (ISSN: 2673-7647, Publisher: Frontiers Media S.A.). Editors: Heron, E., Bernasconi, A., Valle, G. ([link](#))

**Guest Editor** for the BioTech Journal (EISSN 2673-6284, Publisher: MDPI), Special Issue “Bioinformatics: Present and Future challenges”. Guest editors: Pinoli, P. and Bernasconi, A. ([link](#))

**Supplement Editor** for the Journals: BMC Bioinformatics (ISSN: 1471-2105, Publisher: Springer Nature) and BMC Medical Informatics and Decision Making (ISSN: 1472-6947, Publisher: Springer Nature), for the joint Supplement “Selected articles on Conceptual Modeling for Life Sciences (CMLS 2021 workshop and ER 2021 conference)”. Guest editors: Bernasconi, A., Canakoglu, A., Chicco, D., Pinoli, P., and Reyes Román, J.F. ([link-1](#), [link-2](#))

**Supplement Editor** for the Journals BMC Bioinformatics Journal (ISSN: 1471-2105, Publisher: Springer Nature) and BMC Medical Informatics and Decision Making (ISSN: 1472-6947, Publisher: Springer Nature), for the Supplement “Selected articles from the 17th International Conference on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB 2021)”. Guest editors: Chicco, D., Bernasconi, A. et al. ([link-1](#), [link-2](#))

**Supplement Editor** for the Journal BMC Bioinformatics (ISSN: 1471-2105, Publisher: Springer Nature), for the Supplement “Selected articles from the 1st International Workshop on Conceptual Modeling for Life Sciences (CMLS 2020)”. Guest editors: Bernasconi, A., Canakoglu, A., Chicco, D., Leon Palacio, A., and Reyes Román, J.F. ([link](#))

## VOLUME EDITORIAL SERVICE

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**Volume Editor** for “Advances in Conceptual Modeling – ER 2025 Workshops, FCM, CMLS, LLM4Modeling, OntoCom, and QUAMES, Poitiers, France, October 20–23, 2025, Proceedings”. Conference Proceedings Book in Lecture Notes in Computer Science (LNCS, volume 16190). Volume editors: Claudenir M. Fonseca, Anna Bernasconi, Sergio de Cesare, Ladjel Bellatreche, Oscar Pastor ([link](#))

**Volume Editor** for “Advances in Conceptual Modeling – ER 2024 Workshops, AISA, CMLS, EmpER, QUAMES, JUSMOD, LLM4Modeling, Pittsburgh, PA, USA, October 28–31, 2024, Proceedings”. Conference Proceedings Book in Lecture Notes in Computer Science (LNCS, volume 14932). Volume editors: Saeki, M., Wong, L., Araujo, J., Ayora, C., Bernasconi, A. et al. ([link](#))

**Volume Editor** for “Current Trends in Web Engineering - ICWE 2022 International Workshops, BECS, SWEET and WALs, Bari, Italy, July 5–8, 2022, Revised Selected Papers”. Conference Proceedings Book in Springer Communications in Computer and Information Science (CCIS, volume 1668). Volume editors: Agapito, G., Bernasconi, A. et al. ([link](#))

**Volume Editor** for “Computational Intelligence Methods for Bioinformatics and Biostatistics”, 17th International Meeting, CIBB 2021, Virtual Event, November 15–17, 2021, Revised Selected Papers. Conference Proceedings Book in Springer Lecture Notes in Bioinformatics (LNBI, LNCS volume 13483). Volume editors: Chicco, D., Bernasconi, A. et al. ([link](#))

## REVIEWER BOARD MEMBERSHIPS

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**Community Reviewer** of Frontiers in Artificial Intelligence (ISSN 2624-8212, Publisher: Frontiers Media S.A.) – Medicine and Public Health – since February 2023 ([link](#))

**Community Reviewer** of Frontiers in Bioinformatics (ISSN 2673-7647, Publisher: Frontiers Media S.A.) – Integrative Bioinformatics – since June 2022 ([link](#))

**Review Editor** of Frontiers in Microbiology (E-ISSN: 1664-302X, Publisher: Frontiers Media S.A.) – Virology – since June 2022 ([link](#))

**Reviewer Board Member** of Big Data and Cognitive Computing Journal (ISSN 2504-2289, Publisher: MDPI) – since April 2022 ([link](#))

**Review Editor** of Frontiers in Systems Biology (E-ISSN: 2674-0702, Publisher: Frontiers Media S.A.) – Multiscale Mechanistic Modeling – since June 2021 ([link](#))

## REVIEWER SERVICE FOR INTERNATIONAL JOURNALS

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**Advances and Applications in Bioinformatics and Chemistry** – Dove Press (ISSN: 1178-6949); **Applied Clinical Informatics Journal** – Thieme Medical Publishers (ISSN: 1869-0327); **Applied System Innovation** – MDPI (ISSN: 2571-5577); **Briefings in Bioinformatics** – Oxford University Press (ISSN: 1477-4054); **F1000Research** – Taylor & Francis (ISSN: 2046-1402); **Frontiers in Bioinformatics** – Frontiers Media S.A. (E-ISSN: 2673-7647); **Frontiers in Medicine** – Frontiers Media S.A. (E-ISSN: 2296-858X); **Frontiers in Microbiology** – Frontiers Media S.A. (E-ISSN: 1664-302X); **Frontiers in Plant Science** – Frontiers Media S.A. (E-ISSN: 1664-462X); **Frontiers in Public Health** – Frontiers Media S.A. (E-ISSN: 2296-2565); **Frontiers in Systems Biology** – Frontiers Media S.A. (E-ISSN: 2674-0702); **Genomics, Proteomics & Bioinformatics** – Elsevier (ISSN: 2210-3244); **GigaScience** – Oxford University Press (ISSN: 2047-217X); **Health Informatics Journal** – SAGE (ISSN: 17412811); **Information** – MDPI (ISSN 2078-2489); **International Journal of Electrical and Computer Engineering** – Institute of Adv. Engineering and Science (ISSN: 2088-8708); **International Journal of Human-Computer Interaction** – Taylor & Francis (ISSN: 10447318); **International Journal of Medical Informatics** – Elsevier (ISSN: 1386-5056); **JMIR Formative Research** – JMIR Publications Inc. (ISSN: 2561-326X); **Journal of Data and Information Quality** – ACM (ISSN: 1936-1955); **Machine Learning** – Springer Nature (E-ISSN 1573-0565); **mSystems** – American Society for Microbiology (ISSN: 2379-5077); **NAR Genomics and Bioinformatics** – Oxford University Press (ISSN: 2631-9268); **npj Digital Medicine** – Springer Nature (ISSN: 2398-6352); **Scientific Data** – Springer Nature (E-ISSN: 20524463); **Soft Computing** – Springer Nature (ISSN: 14327643); **The Innovation** – Cell Press (ISSN: 2666-6758); **Transactions in Urban Data, Science, and Technology** – Sage publishing (ISSN: 2754-1231); **Virus Evolution** – Oxford University Press (ISSN: 2057-1577)

## REVIEWER SERVICE FOR FUNDING PROGRAMMES

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**Reviewer** for the Research Infrastructure - National consortia (RI programme) by the Dutch Research Council (NWO) in 2024

**Reviewer** for the UK Research and Innovation (UKRI), Medical Research Council in 2024

## MEMBERSHIPS

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IEEE Membership , 2020–2023

IEEE Women in Engineering Membership , 2020–2023

ACM Professional Membership 2022–2024

ELIXIR-IIB (Italian Bioinformatics Infrastructure) Joint Research Unit Participant , since 2023

Membership to GRUPPO DI INGEGNERIA INFORMATICA - GSD 09/IINF-05, SSD IINF-05/A , since 2022

## MEDIA/PRESS COVERAGE INTERVIEWS

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Magazine Article “ConvMut: An Italian Software Platform to Predict SARS-CoV-2 Evolution Through Convergent Mutations”  
Jan, 2026: [IE Perspectives - The Informatics Europe Magazine](#)

FluWarning press release , Oct 14, 2025: [Il Fatto Quotidiano](#), [ERSAF](#), [Rai TG Leonardo](#) (Video)

ConvMut press release , Oct 14, 2025: [LeScienze](#), [AGI](#), [Sole24Ore](#), [QuotidianoSanità](#), [Sky TG24](#), [Tiscali](#), [Rai TG Leonardo](#) (Video)

Mention from Politecnico di Milano Rector for the International Day of Women and Girls in Science , Feb 11, 2025: [link](#)

Interview for Tg Salute Italtpress , Dec 20, 2024: [link](#) (Video)

Interview for the BETTER project , Oct 3, 2024: [link](#) (Video)

Interview for Frontiere blog , Sept 10, 2024: [link](#)

LegisLab press release , Sept 3, 2024: [Polimi](#), [Open](#), [Sole24Ore](#), [ilMessaggero](#), [Parliament](#)

RecombinHunt Press Release , July 2, 2024: [Sole24Ore](#), [Polimi](#)

Interview for CSC — IT Center for Science Ltd, administered by the Finnish Ministry of Education and Culture: “*Building a metadata model for COVID-19*” , Sept 14, 2023: [link](#) (Video)

Interview on ViruSurf/VirusViz , Dec 21, 2020: [24+](#)

VirusSurf press release , Nov 23, 2020: [LeScienze](#)

## INVITED TALKS

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Sep 2025	<b>Speaker</b> , <i>Statistical Learning for Viral Genomics: Building early warning systems for (avian) Influenza A virus spillovers</i> . Scientific seminar given as part of the FAIR - Future Artificial Intelligence Research extended partnership (with Tommaso Alfonsi and Stefano Ceri)	Milan, Italy
May 2025	<b>Speaker</b> , <i>SARS-CoV-2 genome data analysis resists!</i> Presentation at the 2025 Milan Meeting on Next Generation Sequencing (MMNGS 2025) at the University of Milan-Bicocca	Milan, Italy
Dec 2024	<b>Speaker</b> , <i>The Horizon Europe BETTER project: brief remarks on a success story</i> . Presentation at the Shift-Hub open innovation Workshop, with Dr Bregonzio, M. and Dr. Gronke, A.	(online)
Jun 2024	<b>Panel Speaker</b> , <i>AI Ink: Should we let generative technology transform academic writing?</i> . Panel discussion at the CAISE 2024 conference	Limassol, Cyprus
May 2024	<b>Lightning Talk</b> , <i>Building Integrated and FAIR Repositories for Genomic Data</i> . For the Research Data Alliance 22nd Plenary meeting (VP22), Working Group: FAIRification of Genomic Annotations – metadata harmonisation at scale	(online)
Oct 2023	<b>Lightning Talk</b> , <i>Building an Integrated Repository for Genomic Data</i> . For the Research Data Alliance collaborative meeting on FAIRification of Genomic Tracks ( <a href="#">link</a> )	(online)
Sep 2022	<b>Seminar</b> , <i>Data-driven SARS-CoV-2 understanding and hunting</i> . At Information Sciences Institute - University of Southern California ( <a href="#">link</a> )	(online)
Sep 2022	<b>Talk</b> , <i>Model, Integrate, Search... Repeat: a Sound Approach to Building Integrated Repositories of Genomic Data</i> . At the 1st Italian Conference on Big Data and Data Science (ITADATA2022)	Milan, Italy

Sep 2022	<b>Seminar</b> , <i>Data analysis for unveiling the SARS-CoV-2 evolution</i> . At the First International Workshop on Data Analysis for Life Science (DALSA@ECML-PKDD2022)	(online)
Jul 2022	<b>Seminar</b> , <i>Data-bases-driven research on viral genomes and SARS-CoV-2</i> . At Universidade Eduardo Mondlane, Maputo, Mozambique ( <a href="#">link</a> )	(online)
Jan 2022	<b>Seminar</b> , <i>Data-driven SARS-CoV-2 understanding and hunting (searching for the new Omicron)</i> . At Politecnico di Milano and Universitat Politècnica de València ( <a href="#">link</a> )	(online)
Nov 2021	<b>Invited talk</b> , <i>Modeling, integrating, and searching processed genomic datasets</i> . At “Integrating Diverse Datasets Webinar Series” by Front Line Genomics	(online)
Mar 2019	<b>Invited talk</b> , <i>Metadata Integration Framework for Genomic Datasets</i> . At “Challenges in Data-Driven Genomic Computing” Workshop	Como, Villa del Grumello
Feb 2019	<b>Seminar</b> , <i>Data-Driven Genomic Computing: Making Sense of the Signals from the Genome through systematic application design and open data repository</i> . At EPFL	Lausanne, Switzerland
Jan 2019	<b>Seminar</b> , <i>Meta-awareness: towards an agreement on experimental metadata</i> . At “Genomic Computing & Data Science Meetings”, Politecnico di Milano.	Milan, Italy
Jul 2017	<b>Seminar</b> , <i>Metadata Management for Genomics</i> . At ETH (with Stefano Ceri and Pietro Pinoli)	Zurich, Switzerland
Jul 2017	<b>Seminar</b> , <i>Metadata Management for Genomics</i> . At IBM Research Lab (with Stefano Ceri and Pietro Pinoli)	Zurich, Switzerland
Jan 2017	<b>Seminar</b> , <i>Metadata Modeling for Genomics</i> . Seminar at IEO-IIT research institute	Milan, Italy

## CONFERENCE AND WORKSHOP TALKS

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CAiSE 2026	<b>38th Int. Conference on Advanced Information Systems Engineering, June 8-12, 2026</b> , Talk (Forum): <i>MLegis: Demonstrating a Property Graph-Based Information System for Legislative Analytics</i>	Verona, Italy
SIGMOD 2024	<b>ACM SIGMOD/PODS Int. Conference on Management of Data, June 9-14, 2024</b> , Talk (Industrial Track): <i>PG-Triggers: Triggers for Property Graphs</i>	Santiago, Chile
CAiSE 2024	<b>36th Int. Conference on Advanced Information Systems Engineering, June 3-7, 2024</b> , Talk (Research Project Exhibition): <i>SENSIBLE: implementing data-driven early warning systems for future viral epidemics</i>	Limassol, Cyprus
CAiSE 2024	<b>36th Int. Conference on Advanced Information Systems Engineering, June 3-7, 2024</b> , Talk (Research Project Exhibition): <i>TETYS: towards the next-generation open-source Web topic explorer</i>	Limassol, Cyprus
ICDE 2024	<b>40th IEEE Int. Conference on Data Engineering, May 13-17, 2024</b> , Talk (Future Technology Track): <i>Reactive Knowledge Management</i>	Utrecht, Netherlands
SWAT4HCLS 2024	<b>15th Int. Conference on Semantic Web Applications and Tools for Health Care and Life Sciences, February 26-29, 2024</b> , Poster presentation: <i>Achieving data FAIRification in a distributed analytics research platform for rare diseases</i>	Leiden, Netherlands
ER 2023	<b>42nd Int. Conference on Conceptual Modeling, November 6-9, 2023</b> , Talk (Journal-first track): <i>CoV2K model, a comprehensive representation of SARS-CoV-2 knowledge and data interplay</i>	Lisbon, Portugal
IEEE SOSE 2023	<b>Int. Congress on Intelligent and Service-Oriented Systems Engineering, July 17-20, 2023</b> , Talk: <i>The opportunity of data-driven services for viral genomic surveillance</i> (invited paper)	Athens, Greece
CAiSE 2023	<b>35th Int. Conference on Advanced Information Systems Engineering, June 12-16, 2023</b> , Talk: <i>Ontological representation of FAIR principles: A blueprint for FAIRer data sources</i>	Zaragoza, Spain
ER 2022	<b>41st Int. Conference on Conceptual Modeling, October 17-20, 2022</b> , Talk: <i>A comprehensive approach for the conceptual modeling of genomic data</i>	online

SWAT4HCLS 2022	<b>13th Int. Conference on Semantic Web Applications and Tools for Health Care and Life Sciences, January 11-12, 2022</b> , Poster presentation: <i>A unique approach to SARS-CoV-2 data and knowledge ingestion, integration and querying</i>	online
ICC 2021	<b>30th Int. Cartographic e on, December 14-18, 2021</b> , Talk: <i>Geo-Online Explanatory Data Visualization Tools as Crisis Management and Communication Instruments</i>	online
ER 2021	<b>40th Int. Conference on Conceptual Modeling, October 18-21, 2021</b> , Talk: <i>Ontological Unpacking as Explanation: The Case of the Viral Conceptual Model</i>	online
REFSQ 2021	<b>27th Int. Working Conference on Requirement Engineering: Foundation for Software Quality, April 12-15, 2021</b> , Poster presentation: <i>Extreme Requirements Elicitation: Lessons Learnt from the COVID-19 Case Study</i>	online
ER 2020	<b>39th Int. Conference on Conceptual Modeling, November 3-6, 2020</b> , Talk: <i>Empowering Virus Sequence Research Through Conceptual Modeling</i>	online
EmpER 2019	<b>2nd Int. Workshop on Empirical Methods in Conceptual Modeling, November 4-7, 2019</b> , Talk: <i>Exploiting conceptual modeling for searching genomic meta-data: A quantitative and qualitative empirical study</i>	Salvador (BR)
ER 2019	<b>38th Int. Conference on Conceptual Modeling, November 4-7, 2019</b> , Talk: <i>From a conceptual model to a knowledge graph for genomic datasets</i>	Salvador (BR)
SWAT4HCLS 2018	<b>11th Int. Conference on Semantic Web Applications and Tools for Healthcare and Life Sciences, December 3-6, 2018</b> , Talk: <i>Ontology-driven metadata enrichment for genomic datasets</i>	Antwerp (BE)
DTMbio 2018	<b>12th Int. Workshop on Data and Text Mining in Biomedical Informatics, October 22-26, 2018</b> , Talk: <i>Using metadata for locating genomic datasets on a global scale</i>	Torino (IT)
ER 2017	<b>36th Int. Conference on Conceptual Modeling, November 6-9, 2017</b> , Talk: <i>Conceptual modeling for genomics: building an integrated repository of open data</i>	Valencia (ES)

## TUTORIALS

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EDBT 2022	<b>25th International Conference on Extending Database Technology, March 29-April 1, 2022</b> , Tutorial topic: <i>Conceptual models and databases for searching the genome</i> (with Pietro Pinoli)	online
ER 2021	<b>40th International Conference on Conceptual Modeling, October 18-21, 2021</b> , Tutorial topic: <i>Conceptual models for searching the genome</i> (with Pietro Pinoli)	online

## ONLINE DEMONSTRATIONS

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During the COVID-19 pandemic period **May 2020 - Apr 2021**, Anna Bernasconi gave several introductions to the Viral Conceptual Model and demonstrations of ViruSurf, VirusViz, VirusLab, and EpiSurf tools, used for data-driven knowledge discovery based on viral sequences data. The presentations were conducted online, due to the pandemic traveling restrictions.

**Auditors:** Ilaria Capua (One Health Center of Excellence, University of Florida, US); Luca Ferretti (Oxford Big Data Institute, UK); Shay Fleishon (Central Virology Laboratory – Israel Ministry of Health, IL); Alice Fusaro and Stefania Leopardi (Istituto Zooprofilattico Sperimentale delle Venezie, IT); Alba Grifoni (La Jolla Institute, US); Susanna Lamers (BioInfoExperts, US); Alessio Lorusso (Istituto Zooprofilattico Sperimentale dell’Abruzzo e del Molise); Wolfgang Nejdl (Leibniz Universität Hannover); Graziano Pesole, Matteo Chiara, and Federico Zambelli (Università di Bari and Università degli Studi di Milano, IT); Francesca Mari and Alessandra Renieri (Università di Siena); Brittany Rife Magalis, Carla Mavian, and Marco Salemi (University of Florida, US); Anna Sandionigi (Università degli Studi di Milano-Bicocca); Stephen Tsui (The Chinese University of Hong Kong, HK); Limsoon Wong (National University of Singapore, SGP).

## INSTITUTIONAL RESPONSIBILITIES

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2023-present	<b>Member of the Public Selection Committee for Research Fellowships (Assegni di Ricerca)</b> ; “Using Property Graphs for developing intelligent warning systems”; “Data-driven early warning system for viruses in public health”; “Design and development of a FAIR data lake for medical data”; “Network and content-based analysis of online information manipulation”; “Analysis of online information manipulation with agents”.	Politecnico di Milano
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2023-present	<b>Member of the Public Selection Committee for Research Support Activities (Attività di Supporto alla Ricerca);</b> “Analisi di dati reali da partner clinici del progetto H2020 Better”; “Estensione dell’applicazione ReactKG per gestire computazioni reattive su grafi di dominio specializzati”; “Estensione delle funzionalità di strumento monitoraggio di sequenze virali influenza”; “Un’architettura di topic modeling per l’analisi di trend di argomenti trattati in documenti scientifici”; “Sviluppo framework end-to-end per elaborazione testo, estrazione argomenti ed esplorazione risultati”.	Politecnico di Milano
2025-present	<b>Member of the Doctoral Committee of PhD candidate Erika Ferrandi,</b> “Research of regional variants/evolution of human pathogens and commensals with comparative genomics approaches”	Università degli Studi di Milano
2023-present	<b>Member of the Scientific Committee of the Honours Programme,</b> Computer Science and Engineering Track (Data, web, and society)	Politecnico di Milano
2022-present	<b>Member of the Interuniversity Teaching Board for the Master “Bioinformatics for Computational Genomics”,</b> Professor	Politecnico di Milano and University of Milan

## RECURRING TEACHING ACTIVITIES

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2024/25	<b>Basi di Dati, 5 CFU (Bachelor Degree, Engineering of Computing Systems),</b> Lecturer	Politecnico di Milano
2022/23 – 2023/24	<b>Programming, 6 CFU (Master Degree, Bioinformatics for Computational Genomics),</b> Lecturer	Politecnico di Milano
2021/22 – 2023/24	<b>Basi di Dati, 5 CFU (Bachelor Degree, Engineering of Computing Systems),</b> Teaching Assistant	Politecnico di Milano
2021/22 – 2023/24	<b>Data Bases, 6 CFU (Master Degree, Bioinformatics for Computational Genomics),</b> Teaching Assistant	Politecnico di Milano
2016/17 – 2017/18, 2021/22	<b>Informatica A, 10 CFU (Bachelor Degree, Mathematical Engineering),</b> Teaching Assistant	Politecnico di Milano

## NON-RECURRING TEACHING ACTIVITIES

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Jan 2023	<b>Data Management and Analysis for Computational Biology,</b> Professor – Ph.D. School of Information Technology (2 CFUs)	Politecnico di Milano
Jun 2022	<b>Ontological Unpacking: a Conceptual Model of the Human Genome,</b> Guest Lecturer for an intensive course of the Master ‘Systèmes d’Information et de Connaissance’ – The University Paris 1 Pantheon-Sorbonne (5 hours)	Universitat Politècnica de València
Apr 2022	<b>UML and OntoUML modeling languages and ontological unpacking applications to the genomics domain,</b> Guest Lecturer in Bachelor/Master courses of Engineering of Computing Systems (10 hours)	Universitat Politècnica de València

## POST-DOC CO-SUPERVISION

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May 2025 - ongoing	<b>Andrea Colombo,</b> “Using Property Graphs for developing intelligent warning systems”	Politecnico di Milano
Feb 2024 - Oct 2025	<b>Tommaso Alfonsi,</b> “Viral genomics warning systems for public healthcare”	Politecnico di Milano
Apr 2024 - July 2025	<b>Nelly Barret,</b> “Data FAIRification for distributed analytics healthcare platforms”	Politecnico di Milano

Feb 2024 - Jan 2025	<b>Boris Bikbov</b> , “Methodologies for data interoperability for distributed analytics healthcare platforms”	<i>Politecnico di Milano</i>
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## PHD SUPERVISION

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In March 2025, Anna Bernasconi participated in the “Enhanced PhD Supervision” program of Politecnico di Milano, comprising modules on Mentorship, Well-being, Ethics, and Leadership.

Nov 2023 - Oct 2026	<b>Francesco Cambria</b> , “Reactive Knowledge Management”	<i>Politecnico di Milano</i>
Feb 2023 - July 2026	<b>Francesco Invernici</b> , “Knowledge management techniques for exploring data corpora on biomedical research”	<i>Politecnico di Milano</i>

## PHD CO-SUPERVISION

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May 2022 - Apr 2025	<b>Andrea Colombo</b> , “Knowledge Management with Graphs in Finance and Legislation”	<i>Politecnico di Milano</i>
Nov 2020 - Jan 2024	<b>Tommaso Alfonsi</b> , “Methods and Tools for Data Integration and Knowledge Discovery in Viral Genomics” – Graduated <i>cum Laude</i> , April 19th, 2024. Tommaso started his postdoc in our group in the PRIN PNRR 2022 SENSIBLE (Small-data Early warNing System for viral pathogens In puBLic hEalth) project. For his Doctoral dissertation, he was awarded the prestigious Dimitri N. Chorafas Foundation Award in 2024	<i>Politecnico di Milano</i>
Nov 2020 - Jan 2024	<b>Ruba Al Khalaf</b> , “Knowledge Modeling and Data Analysis Methods for Understanding The Viral Genome Evolution” – Graduated <i>cum Laude</i> , April 19th, 2024. Ruba started her postdoc in the Cancer Epigenetics group at Istituto Europeo di Oncologia, Milano, Italy	<i>Politecnico di Milano</i>
Nov 2018 - Dec 2022	<b>Alberto S. García</b> , “Understanding the Code of Life: Holistic Conceptual Modeling of the Genome” – Graduated <i>cum Laude</i> , December 2022. Alberto started his postdoc in the UPV VRAIN Group led by Professor Oscar Pastor	<i>Universitat Politecnica de Valencia</i>

## MASTER THESIS SUPERVISION

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2026- present	<b>Bashkim Jançe</b> , Supervisor of Master thesis “Analisi di Centralità e Metodologie LLM per il Dominio Legislativo”	<i>Politecnico di Milano</i>
2025- present	<b>Zheng Maria Yu</b> , Supervisor of Master thesis “Engineering a multi-topic modeling pipeline”	<i>Politecnico di Milano</i>
2025- present	<b>Riccardo Ebene</b> , Supervisor of Master thesis “Identification of implicit links in legislative graphs with Machine Learning techniques”	<i>Politecnico di Milano</i>
2025- present	<b>Stefano Alessandro Banfi</b> , Supervisor of Master thesis “Data science and topic modeling pipeline for pathogen genomic surveillance contributions”	<i>Politecnico di Milano</i>
2025- present	<b>Luca Genoni</b> , Supervisor of Master thesis “A Systematic Framework for Integrating and Interactively Accessing Ministerial Regulations”	<i>Politecnico di Milano</i>
2025- present	<b>Soroush Ahrari</b> , Supervisor of Master thesis “MLegis: designing and implementing a data analytics dashboard for Italian Legislation”	<i>Politecnico di Milano</i>
Dec 2025	<b>Guido Baldessari</b> , Supervisor of Master thesis “Integration of Italian and European Legislative Graphs for Cross-level Link Prediction”	<i>Politecnico di Milano</i>
Oct 2025	<b>Yavuz Samet Topcuoglu</b> , Supervisor of Master thesis “OpenRecombinHunt: Automatic detection of recombination from publicly available viral sequences”	<i>Politecnico di Milano</i>
Oct 2025	<b>Jana Penic</b> , Supervisor of Master thesis “Viral genomic surveillance using automatic monitoring pipelines”	<i>Politecnico di Milano</i>

Oct 2025	<b>Flaminia Telese</b> , Supervisor of Master thesis “Augmenting topic representations in the Italian legislation corpus”	<i>Politecnico di Milano</i>
Lug 2025	<b>Filippo Galetti</b> , Supervisor of Master thesis “Building a Graph Database of the Swiss Legislation for Storage, Exploration, and Analysis”	<i>Politecnico di Milano</i>
Apr 2025	<b>Emma Fanfoni</b> , Supervisor of Master thesis “ConvMut: a Web tool to analyze viral convergent mutations along phylogenies in SARS-CoV-2”	<i>Politecnico di Milano</i>
Apr 2025	<b>Amirhossein Samavi</b> , Supervisor of Master thesis “Design and implementation of a topic modeling-based dashboard with custom KPIs for data-driven research analytics”	<i>Politecnico di Milano</i>
Dec 2024	<b>Francesca Curati</b> , Supervisor of Master thesis “Tetys, an interactive platform for exploring the evolution of topics addressed by scientific research”	<i>Politecnico di Milano</i>
Dec 2024	<b>Laura Daniela Maftai</b> , Supervisor of Master thesis “A data-driven approach for storing and analyzing Causal Loop Diagrams”	<i>Politecnico di Milano</i>
Dec 2024	<b>Luca Cassenti</b> , Supervisor of Master thesis “AviFluHunt: a database and tool for flexible querying over avian influenza sequence data”	<i>Politecnico di Milano</i>
Oct 2024	<b>Jelena Jakimov</b> , Supervisor of Master thesis “LLM-based topic modeling pipeline for big text datasets of scientific literature”	<i>Politecnico di Milano</i>
Oct 2024	<b>Ana Drmic</b> , Supervisor of Master thesis “A fine-grained FAIRness assessment workflow for genomic data sources”	<i>Politecnico di Milano</i>

## MASTER THESIS CO-SUPERVISION

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2022-2023	<b>Alessia Gagliardi</b> , Co-supervisor (with Prof. Stefano Ceri) of Master thesis “Building reactive processing rules for knowledge graphs”	<i>Politecnico di Milano</i>
2021-2022	<b>Francesco Invernici</b> , Co-supervisor (with Prof. Stefano Ceri) of Master thesis “Exploring and searching the CORD-19 big data corpus for supporting COVID-19 research”	<i>Politecnico di Milano</i>
2021-2022	<b>Luca Minotti</b> , Co-supervisor (with Prof. Stefano Ceri) of Master thesis “Variant Hunter: a tool for fast detection emerging SARS-CoV-2 variants”	<i>Politecnico di Milano</i>
2020-2021	<b>Federico Comolli</b> , Co-supervisor (with Prof. Stefano Ceri) of Master thesis “Integration of genome-wide association studies into the GeCo repository”	<i>Politecnico di Milano</i>
2019-2020	<b>Tommaso Alfonsi</b> , Co-supervisor (with Prof. Marco Masseroli) of Master thesis “Integration of DNA variation data into a GDM repository and API development for identification of genomic populations”	<i>Politecnico di Milano</i>
2019-2020	<b>Giuseppe Cannizzaro</b> , Co-supervisor (with Prof. Mark J. Carman) of Master thesis “Automatic data integration for genomic metadata through sequence-to-sequence models”	<i>Politecnico di Milano</i>
2018-2019	<b>Andrea Colombo</b> , Co-supervisor (with Prof. Stefano Ceri) of Master thesis “Ontology-driven metadata enrichment for genomic datasets”	<i>Politecnico di Milano</i>
2017-2018	<b>Federico Gatti</b> , Co-supervisor (with Prof. Alessandro Campi) of Master thesis “Progettazione e realizzazione di una procedura di integrazione per dati genomici”	<i>Politecnico di Milano</i>

## OTHER SUPERVISION ACTIVITIES

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2026	<b>Diana Martinez Minguet</b> , Visiting PhD Student (Jan-Apr 2026), project “Knowledge Graphs and Conversational AI for Genetic Risk Prediction”	<i>Universitat Politècnica de València</i>
2024	<b>Mireia Costa</b> , PhD Student, thesis “From Unpacking to Operationalization: A Conceptual Modelling-based Journey into Variant Interpretation”	<i>Universitat Politècnica de València</i>

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|------|---|--|
| 2022 | <b>Alberto S. García</b> , PhD Student, thesis “Understanding the Code of Life: Holistic Conceptual Modeling of the Genome”           | <i>Universitat<br/>Politecnica de<br/>Valencia</i> |
| 2022 | <b>Erika Ferrandi</b> , Post-Master degree project “Testing of VariantHunter software”  | <i>Università<br/>degli Studi di<br/>Milano</i>    |
| 2021 | <b>Giuseppe Garcia Serna</b> , Post-Master degree project “CoVEffect: SARS-CoV-2 mutations’ effects extraction from literature”       | <i>Politecnico di<br/>Milano</i>                   |
| 2022 | <b>Lorenzo Battiston</b> , Bachelor degree project “Visualization of SARS-CoV-2 of sequencing statistics over a world map”            | <i>Politecnico di<br/>Milano</i>                   |
| 2020 | <b>Elisabetta Fedele</b> , Bachelor degree project “Visualization techniques for SARS-CoV-2 data”                                     | <i>Politecnico di<br/>Milano</i>                   |
| 2019 | <b>Silvia Ferraris</b> , Bachelor degree project “Integration of ENCODE gene/transcript quantification data with GENCODE annotations” | <i>Politecnico di<br/>Milano</i>                   |

# Publications

## BIBLIOMETRICS

Refereed international journals	46
Editorial articles, Consortium papers, and National journal articles	6
Refereed international conferences	33
Refereed international workshops, posters, or national conferences	14
Refereed international books and book chapters	11

	H-index	Publications	Citations
Web of Science <sup>1</sup>	14	70	1,123
Scopus <sup>2</sup>	16	110	1,442
Google Scholar <sup>3</sup>	21	112	2,273

<sup>1</sup> <https://www.webofscience.com/wos/author/rid/AAF-2594-2019>, on 07/04/2026,

<sup>2</sup> <https://www.scopus.com/authid/detail.uri?authorId=57195587336>, on 07/04/2026,

<sup>3</sup> <https://scholar.google.com/citations?user=rCnL9L4AAAAJ>, on 07/04/2026,

INTERNATIONAL JOURNALS \_\_\_\_\_ Publications, where A.B. is the corresponding author, are marked with \* after her name.

- [J46] Alfonsi, T., Topcuoglu S.Y., Chiara, M., **Bernasconi, A.\***. (2026) OpenRecombinHunt: Automatic detection of recombination in publicly available viral sequences. *Accepted for publication in the Journal of Molecular Biology*. WoS JIF 2024: 12.5, WoS Rank: Q1, Scopus Citescore: 10.1, Scimago Rank: Q1
- [J45] Cambria, F., Invernici, F., **Bernasconi, A.**, Ceri, S. (2026) Data Analytics Algorithms in Property Graph Databases: A Survey. *Computer Science Review*, 62, 100981. doi:[10.1016/j.cosrev.2026.100981](https://doi.org/10.1016/j.cosrev.2026.100981) WoS JIF 2024: 12.7, WoS Rank: Q1, Scopus Citescore: 38.4, Scimago Rank: Q1
- [J44] Pierri, F., **Bernasconi, A.**, Giobergia, F., Savelli, C., Baralis, E., Cagliero, L., Ceri, D. (2025) A conceptual map for exploring the landscape of Large Language Models. *IEEE Access*, 13, 190735-190744. doi:[10.1109/ACCESS.2025.3629334](https://doi.org/10.1109/ACCESS.2025.3629334). WoS JIF 2024: 3.6, WoS Rank: Q2, Scopus Citescore: 9.0, Scimago Rank: Q1
- [J43] Alfonsi, T., **Bernasconi, A.\***, Chiara, M., Ceri, S. (2025) Lightweight multi-scale early spillover warnings for influenza A viruses. *Science Advances*, 11, eadz7312. doi:[10.1126/sciadv.adz7312](https://doi.org/10.1126/sciadv.adz7312). WoS JIF 2024: 12.5, WoS Rank: Q1, Scopus Citescore: 19.4, Scimago Rank: Q1
- [J42] Barret, N., **Bernasconi, A.**, Bikbov, B., Pinoli, P. (2025) I-ETL: interoperability-aware health (meta)data pipeline to enable federated analyses. *BMC Medical Informatics and Decision Making*, 25, 375. doi:[10.1186/s12911-025-03188-0](https://doi.org/10.1186/s12911-025-03188-0). WoS JIF 2024: 3.8, WoS Rank: Q2, Scopus Citescore: 7.4, Scimago Rank: Q1
- [J41] Colombo, A., **Bernasconi, A.**, Bellomarini, L., Guiso, L., Michelacci, C., Ceri, S. (2025) LegisSearch: Navigating Legislation with Graphs and Large Language Models. *Artificial Intelligence & Law*. doi:[10.1007/s10506-025-09482-6](https://doi.org/10.1007/s10506-025-09482-6). WoS JIF 2024: 3.1, WoS Rank: Q1, Scopus Citescore: 10.7, Scimago Rank: Q1
- [J40] Alfonsi, T., Chiara, M., **Bernasconi, A.\*** (2025) A codon usage-based approach for the stratification of Influenza A. *Computational and Structural Biotechnology Journal*, 27, 2757-2771. doi:[10.1016/j.csbj.2025.06.030](https://doi.org/10.1016/j.csbj.2025.06.030). WoS JIF 2024: 4.1, WoS Rank: Q2, Scopus Citescore: 9.8, Scimago Rank: Q1
- [J39] Cambria, F., Invernici, F., **Bernasconi, A.**, Ceri, S. (2025) MINE GRAPH RULE: A New GQL Operator for Mining Association Rules in Property Graph Databases. *The VLDB Journal*, 34:54. doi:[10.1007/s00778-025-00934-8](https://doi.org/10.1007/s00778-025-00934-8). WoS JIF 2024: 3.8, WoS Rank: Q2, Scopus Citescore: 8.3, Scimago Rank: Q1
- [J38] Focosi, D., Alfonsi, T., **Bernasconi, A.** (2025) Is SARS-CoV-2 Spike Evolution Being Retargeted at the N-Terminal Domain? *Discovery Medicine*, 37(196), 801-807. doi:[10.24976/Descov.Med.202537196.70](https://doi.org/10.24976/Descov.Med.202537196.70). WoS JIF 2024: 2.1, WoS Rank: Q3, Scopus Citescore 2019: 5.4, Scimago Rank: Q1
- [J37] Invernici, F., Curati, F., Jakimov, J., Samavi, A., **Bernasconi, A.\*** (2025) Capturing research literature attitude towards Sustainable Development Goals: an LLM-based topic modeling approach. *Journal of Big Data*, 12, 139. doi:[10.1186/s40537-025-01189-4](https://doi.org/10.1186/s40537-025-01189-4). WoS JIF 2024: 6.4, WoS Rank: Q1, Scopus Citescore: 22.3, Scimago Rank: Q1
- [J36] Colombo, A., **Bernasconi, A.**, Ceri, S. (2025) An LLM-assisted End-to-End Pipeline to Build a High-Quality Knowledge Graph of the Italian Legislation. *Information Processing & Management*, 62(4), 104082. doi:[10.1016/j.ipm.2025.104082](https://doi.org/10.1016/j.ipm.2025.104082). WoS JIF 2024: 6.9, WoS Rank: Q1, Scopus Citescore: 18.6, Scimago Rank: Q1
- [J35] Costa, M., García S., A., Leon, A., **Bernasconi, A.**, & Pastor, O. (2024) VarClaMM: A reference meta-model to understand DNA variant classification. *Data & Knowledge Engineering*, 102370. doi:[10.1016/j.datak.2024.102370](https://doi.org/10.1016/j.datak.2024.102370). WoS JIF 2024: 2.6, WoS Rank: Q3, Scopus Citescore: 6.4, Scimago Rank: Q2

- [J34] Bregonzio, M., **Bernasconi, A.**, & Pinoli, P. (2024) Advancing Healthcare through Data: The BETTER Project's Vision for Distributed Analytics. *Frontiers in Medicine*, 11, 1473874. doi:[10.3389/fmed.2024.1473874](https://doi.org/10.3389/fmed.2024.1473874). WoS JIF 2024: 3.0, WoS Rank: Q1, Scopus Citescore: 8.2, Scimago Rank: Q1
- [J33] Al Khalaf, R., **Bernasconi, A.\***, & Pinoli, P. (2024) Impact of Omicron subvariants' mutations on B cell and T cell epitopes: A systematic data analysis. *PLOS ONE* 19(9), e0307873. doi:[10.1371/journal.pone.0307873](https://doi.org/10.1371/journal.pone.0307873). WoS JIF 2024: 2.6, WoS Rank: Q2, Scopus Citescore: 5.4, Scimago Rank: Q1
- [J32] Invernici, F., **Bernasconi, A.\***, & Ceri, S. Exploring the evolution of research topics during the COVID-19 pandemic. (2024) *Expert Systems with Applications* 252, 124028. doi:[10.1016/j.eswa.2024.124028](https://doi.org/10.1016/j.eswa.2024.124028). WoS JIF 2024: 7.5, WoS Rank: Q1, Scopus Citescore: 15.0, Scimago Rank: Q1
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- [J30] Alfonsi, T., **Bernasconi, A.\***, Chiara, M., & Ceri, S. (2024) Data-driven recombination detection in viral genomes. *Nature Communications* 15, 3313. doi:[10.1038/s41467-024-47464-5](https://doi.org/10.1038/s41467-024-47464-5). WoS JIF 2024: 15.7, WoS Rank: Q1, Scopus Citescore: 23.4, Scimago Rank: Q1
- [J29] **Bernasconi, A.\***, Garcia S., A., Ceri, S., & Pastor, O. (2023) PoliViews: A comprehensive and modular approach to the conceptual modeling of genomic data. *Data & Knowledge Engineering*, 102201. doi:[10.1016/j.datak.2023.102201](https://doi.org/10.1016/j.datak.2023.102201). WoS JIF 2024: 2.6, WoS Rank: Q3, Scopus Citescore: 6.4, Scimago Rank: Q2
- [J28] Pinoli, P., Canakoglu, Ceri, S., Chiara, M., Ferrandi, E., Minotti, L., & **Bernasconi, A.\*** (2023) VariantHunter: a method and tool for fast detection of emerging SARS-CoV-2 variants. *Database*, 2023, baad044. doi:[10.1093/database/baad044](https://doi.org/10.1093/database/baad044). WoS JIF 2024: 3.6, WoS Rank: Q1, Scopus Citescore: 6.0, Scimago Rank: Q1
- [J27] Garcia S., A., **Bernasconi, A.**, Guizzardi, G., Pastor, O., Storey, V.C. & Panach, I. (2023) Assessing the value of ontologically unpacking a conceptual model for human genomics. *Information Systems*, 118, 102242. doi:[10.1016/j.is.2023.102242](https://doi.org/10.1016/j.is.2023.102242). WoS JIF 2024: 3.4, WoS Rank: Q2, Scopus Citescore: 9.8, Scimago Rank: Q1
- [J26] Serna Garcia, G., Al Khalaf, R., Invernici, F., Ceri, S., & **Bernasconi, A.\*** (2023). CoVEffect: Interactive Deep Learning-based SARS-CoV-2 Mutations and Variants Effect Extraction. *GigaScience*, 12, giad036. doi:[10.1093/gigascience/giad036](https://doi.org/10.1093/gigascience/giad036). WoS JIF 2024: 3.9, WoS Rank: Q1, Scopus Citescore: 20.0, Scimago Rank: Q1
- [J25] Giacomelli, A., Righini, E., Micheli, V., Pinoli, P., **Bernasconi, A.**, Rizzo, A., Oreni, L., Ridolfo, A.L., Antinori, S., Ceri, S., & Rizzardini, G. (2023). SARS-CoV-2 viremia and COVID-19 mortality: an observational study. *PLOS ONE*, 18(4), e0281052. doi:[10.1371/journal.pone.0281052](https://doi.org/10.1371/journal.pone.0281052). WoS JIF 2024: 2.6, WoS Rank: Q2, Scopus Citescore: 5.4, Scimago Rank: Q1
- [J24] **Bernasconi, A.\***, Canakoglu, A., & Comolli, F. (2023). Processing Genome-Wide Association Studies within a repository of heterogeneous genomic datasets. *BMC Genomic Data*, 24, 13. doi:[10.1186/s12863-023-01111-y](https://doi.org/10.1186/s12863-023-01111-y). WoS JIF 2024: 2.5, WoS Rank: Q2, Scopus Citescore: 3.6, Scimago Rank: Q3
- [J23] **Bernasconi, A.\***, Guizzardi, G., Pastor, O., & Storey, V.C. (2022). Semantic interoperability: ontological unpacking of a viral conceptual model. *BMC Bioinformatics*, 23(Suppl 11), 491. doi:[10.1186/s12859-022-05022-0](https://doi.org/10.1186/s12859-022-05022-0). WoS JIF 2024: 3.3, WoS Rank: Q1, Scopus Citescore: 6.8, Scimago Rank: Q1
- [J22] Alfonsi, T., **Bernasconi, A.**, Canakoglu, A., & Masseroli, M. (2022). Genomic data integration and user-defined sample-set extraction for population variant analysis. *BMC Bioinformatics*, 23, 401. doi:[10.1186/s12859-022-04927-0](https://doi.org/10.1186/s12859-022-04927-0). WoS JIF 2024: 3.3, WoS Rank: Q1, Scopus Citescore: 6.8, Scimago Rank: Q1
- [J21] Al Khalaf, R., **Bernasconi, A.\***, Pinoli, P., Ceri, S. (2022). Analysis of co-occurring and mutually exclusive amino acid changes and detection of convergent and divergent evolution events in SARS-CoV-2. *Computational and Structural Biotechnology Journal*, 20, 4238-4250. doi:[10.1016/j.csbj.2022.07.051](https://doi.org/10.1016/j.csbj.2022.07.051). WoS JIF 2024: 4.1, WoS Rank: Q2, Scopus Citescore: 9.8, Scimago Rank: Q1
- [J20] Grandi, S., & **Bernasconi, A.** (2020) Risk perception, spatial data, legal response during COVID-19 pandemic: a conceptual model. *GeoProgress Journal*, 7(2), 2020, Geoprogess Editions ISSN 2384-9398. <https://www.geoprogess-edition.eu/geoprogess-journal-vol-7-issue-2-2020-2/>.
- [J19] Serna Garcia, G., Leone, M., **Bernasconi, A.\***, & Carman, M.J. (2022). GeMI: Interactive Interface for Transformer-based Genomic Metadata Integration. *Database*, 2022. doi:<http://doi.org/10.1093/database/baac036>. WoS JIF 2024: 3.6, WoS Rank: Q1, Scopus Citescore: 6.0, Scimago Rank: Q1
- [J18] Alfonsi, T., Al Khalaf, R., Ceri, S., & **Bernasconi, A.\*** (2022). CoV2K model, a comprehensive representation of SARS-CoV-2 knowledge and data interplay. *Scientific Data*, 9, 260. doi:[10.1038/s41597-022-01348-9](https://doi.org/10.1038/s41597-022-01348-9). WoS JIF 2024: 6.9, WoS Rank: Q1, Scopus Citescore: 8.4, Scimago Rank: Q1
- [J17] **Bernasconi, A.\***, & Ceri, S. (2022). Interoperability of COVID-19 clinical phenotype data with host and viral genetics data. *BioMed*, 2(1), 69-81. doi:[10.3390/biomed2010007](https://doi.org/10.3390/biomed2010007).

- [J16] Cilibrasi, L., Pinoli, P., **Bernasconi, A.**, Canakoglu, A., Chiara, M., & Ceri, S. (2022). ViruClust: direct comparison of SARS-CoV-2 genomes and genetic variants in space and time. *Bioinformatics*, 38(7), 1988–1994. doi:[10.1093/bioinformatics/btac030](https://doi.org/10.1093/bioinformatics/btac030). WoS JIF 2024: 5.4, WoS Rank: Q1, Scopus Citescore: 9.6, Scimago Rank: Q1
- [J15] Pinoli, P., **Bernasconi, A.\***, Sandionigi, A., & Ceri, S. (2021). VirusLab: a tool for customized SARS-CoV-2 data analysis. *BioTech*, 10(4), 27. doi:[10.3390/biotech10040027](https://doi.org/10.3390/biotech10040027). WoS JIF 2024: 3.1, WoS Rank: Q2, Scopus Citescore: 4.8, Scimago Rank: Q1
- [J14] **Bernasconi, A.\***, Mari, L., Casagrandi, R., & Ceri, S. (2021). Data-driven analysis of amino acid change dynamics timely reveals SARS-CoV-2 variant emergence. *Scientific Reports*, 11(1), 21068. doi:[10.1038/s41598-021-00496-z](https://doi.org/10.1038/s41598-021-00496-z). WoS JIF 2024: 3.9, WoS Rank: Q1, Scopus Citescore: 6.7, Scimago Rank: Q1
- [J13] **Bernasconi, A.\***, Cilibrasi, L., Al Khalaf, R., Alfonsi, T., Ceri, S., Pinoli, P., & Canakoglu, A. (2021). EpiSurf: metadata-driven search server for analyzing amino acid changes on epitopes of SARS-CoV-2 and other viral species. *Database*, 2021. doi:[10.1093/database/baab059](https://doi.org/10.1093/database/baab059). WoS JIF 2024: 3.6, WoS Rank: Q1, Scopus Citescore: 6.0, Scimago Rank: Q1
- [J12] Menghi, C., Rizzi, A.M., **Bernasconi, A.** & Spoletini, P. (2021). TORPEDO: Witnessing Model Correctness with Topological Proofs. *Formal Aspects of Computing*, 33(6), 1039-1066. doi:[10.1007/s00165-021-00564-1](https://doi.org/10.1007/s00165-021-00564-1). WoS JIF 2024: 1.4, WoS Rank: Q3, Scopus Citescore: 3.7, Scimago Rank: Q3
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- [J10] **Bernasconi, A.**, Gulino, A., Alfonsi, T., Canakoglu, A., Pinoli, P., Sandionigi, A., & Ceri, S. (2021). VirusViz: Comparative analysis and effective visualization of viral nucleotide and amino acid variants. *Nucleic Acids Research*, 49(15), e90. doi:[10.1093/nar/gkab478](https://doi.org/10.1093/nar/gkab478). WoS JIF 2024: 13.1, WoS Rank: Q1, Scopus Citescore: 31.7, Scimago Rank: Q1
- [J9] **Bernasconi, A.\*** (2021). Data quality-aware genomic data integration. *Computer Methods and Programs in Biomedicine Update*, 1, 100009. doi:[10.1016/j.cmpbup.2021.100009](https://doi.org/10.1016/j.cmpbup.2021.100009). Scopus Citescore: 9.8, Scimago Rank: Q1
- [J8] **Bernasconi, A.\***, & Grandi, S. (2021). A Conceptual Model for Geo-Online Exploratory Data Visualization: The Case of the COVID-19 Pandemic. *Information*, 12(2), 69. doi:[10.3390/info12020069](https://doi.org/10.3390/info12020069). WoS JIF 2024: 2.9, WoS Rank: Q2, Scopus Citescore 6.5, Scimago Rank: Q2
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- [J6] **Bernasconi, A.\***, Canakoglu, A., Masseroli, M., Pinoli, P., & Ceri, S. (2021). A review on viral data sources and search systems for perspective mitigation of COVID-19. *Briefings in Bioinformatics*, 22(2), 664-675. doi:[10.1093/bib/bbaa359](https://doi.org/10.1093/bib/bbaa359). WoS JIF 2024: 7.7, WoS Rank: Q1, Scopus Citescore: 15.8, Scimago Rank: Q1
- [J5] **Bernasconi, A.\***, Canakoglu, A., Masseroli, M., & Ceri, S. (2021). The road towards data integration in human genomics: players, steps and interactions. *Briefings in Bioinformatics*, 22(1), 30-44. doi:[10.1093/bib/bbaa080](https://doi.org/10.1093/bib/bbaa080). WoS JIF 2024: 7.7, WoS Rank: Q1, Scopus Citescore: 15.8, Scimago Rank: Q1
- [J4] Cappelli, E., Cumbo, F., **Bernasconi, A.**, Canakoglu, A., Ceri, S., Masseroli, M., & Weitschek, E. (2020). OpenGDC: Unifying, Modeling, Integrating Cancer Genomic Data and Clinical Metadata. *Applied Sciences*, 10(18), 6367. doi:[10.3390/app10186367](https://doi.org/10.3390/app10186367). WoS JIF 2024: 2.5, WoS Rank: Q2, Scopus Citescore: 5.5, Scimago Rank: Q2
- [J3] **Bernasconi, A.\***, Canakoglu, A., Masseroli, M., & Ceri, S. (2022). META-BASE: a Novel Architecture for Large-Scale Genomic Metadata Integration. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 19(1), 543-557. doi:[10.1109/TCBB.2020.2998954](https://doi.org/10.1109/TCBB.2020.2998954). WoS JIF 2024: 3.4, WoS Rank: Q1, Scopus Citescore: 9.7, Scimago Rank: Q2
- [J2] Canakoglu, A., **Bernasconi, A.**, Colombo, A., Masseroli, M., & Ceri, S. (2019). GenoSurf: metadata-driven semantic search system for integrated genomic datasets. *Database*, 2019. doi:[10.1093/database/baz132](https://doi.org/10.1093/database/baz132). WoS JIF 2024: 3.6, WoS Rank: Q1, Scopus Citescore: 6.0, Scimago Rank: Q1
- [J1] Masseroli, M., Canakoglu, A., Pinoli, P., Kaitoua, A., Gulino, A., Horlova, O., Nanni, L., **Bernasconi, A.**, Perna, S., Stamoulakatou, E., & Ceri, S. (2019). Processing of big heterogeneous genomic datasets for tertiary analysis of Next Generation Sequencing data. *Bioinformatics*, 35(5), 729-736. doi:[10.1093/bioinformatics/bty688](https://doi.org/10.1093/bioinformatics/bty688). WoS JIF 2024: 5.4, WoS Rank: Q1, Scopus Citescore: 9.6, Scimago Rank: Q1

## EDITORIAL ARTICLES, CONSORTIUM PUBLICATIONS, AND NATIONAL JOURNAL ARTICLES \_\_\_\_\_

- [Ed3] **Bernasconi, A.**, Cirillo, S., García S., A., & Harmouch, H. (2025). Editorial: Special Issue on Data quality dimensions in Data FAIRification design and processes. *Journal of Data and Information Quality*, 2025, 17(4), 20. doi:[10.1145/3778866](https://doi.org/10.1145/3778866)

- [Ed2] Potika, K., Eirinaki, M., Vitali, M., **Bernasconi, A.**, & Fujioka, H. (2025). Special Issue on Big Data Computing Service and Machine Learning Applications. *Future Generation Computer Systems*, 107836. doi:[10.1016/j.future.2025.107836](https://doi.org/10.1016/j.future.2025.107836)
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- [Co2] COVID-19 Host Genetics Initiative (2021). Mapping the human genetic architecture of COVID-19. *Nature* 600, 472–477 (2021). doi:[10.1038/s41586-021-03767-x](https://doi.org/10.1038/s41586-021-03767-x) [**Bernasconi, A.** was part of the “Project management group (Data dictionary)”]. IF 2022: 64.8, WoS Rank: Q1, Scopus Citescore: 83.4, Scimago Rank: Q1
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## WORKSHOP PAPERS, POSTERS, AND ABSTRACTS

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- [W11] **Bernasconi, A.** (Sept, 2022). A Sound and Repeatable Approach to Building Integrated Repositories of Genomic Data. In Proceedings of the 1st Italian Conference on Big Data and Data Science (ITADATA 2022). Milan, Italy, September 20-21, 2022. Vol. 3340, pp. 212-213. CEUR-WS.
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- [W9] Garcia S., A., **Bernasconi, A.**, Guizzardi, G., Pastor, O., Storey, V.C., & Mireia Costa. (2022, October). An Initial Empirical Assessment of an Ontological Model of the Human Genome. In: Guizzardi, R., Neumayr, B. (eds) Advances in Conceptual Modeling. ER 2022. Lecture Notes in Computer Science, vol 13650. Springer, Cham.
- [W8] **Bernasconi, A.**, Al Khalaf, R., Alfonsi, T., Canakoglu, A., Cilibrasi, L., Gulino, A., Pinoli, P., & Ceri, S. (January, 2022). A unique approach to SARS-CoV-2 data and knowledge ingestion, integration and querying. In 13th International Conference Semantic Web Applications and Tools for Life Sciences, SWAT4LS 2022.
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- [W6] **Bernasconi, A.**, Canakoglu, A., & Ceri, S. (2019, November). Exploiting conceptual modeling for searching genomic metadata: A quantitative and qualitative empirical study. In: Guizzardi G., Gailly F., Suzana Pitangueira Maciel R. (eds) Advances in Conceptual Modeling. ER 2019. Lecture Notes in Computer Science, vol 11787. Springer, Cham.  
doi:[10.1007/978-3-030-34146-6\\_8](https://doi.org/10.1007/978-3-030-34146-6_8)
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- [B11] **Bernasconi, A.**, & García S. (2025) Conceptual Modeling for Bioinformatics. In: Ranganathan, S., Cannataro, M., Khan, A. M. (ed.) Encyclopedia of Bioinformatics and Computational Biology, 2nd Edition, vol. 1, pp. 168–178. US: Elsevier. doi:[10.1016/B978-0-323-95502-7.00003-8](https://doi.org/10.1016/B978-0-323-95502-7.00003-8)
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- [B9] Al Khalaf, R. & **Bernasconi, A.** (2025) Transformer-based biomedical text extraction. In: Ranganathan, S., Cannataro, M., Khan, A. M. (ed.) Encyclopedia of Bioinformatics and Computational Biology, 2nd Edition, vol. 2, pp. 180–189. US: Elsevier. doi:[10.1016/B978-0-323-95502-7.00036-1](https://doi.org/10.1016/B978-0-323-95502-7.00036-1)
- [B8] Al Khalaf, R., **Bernasconi, A.**, & Masseroli, M. (2025) Biological and Medical Ontologies: Disease Ontology (DO). In: Ranganathan, S., Cannataro, M., Khan, A. M. (ed.) Encyclopedia of Bioinformatics and Computational Biology, 2nd Edition, vol. 2, pp. 410–421. US: Elsevier. doi:[10.1016/B978-0-323-95502-7.00038-5](https://doi.org/10.1016/B978-0-323-95502-7.00038-5)
- [B7] Al Khalaf, R., **Bernasconi, A.**, & Masseroli, M. (2025) Biological and Medical Ontologies: Human Phenotype Ontology (HPO). In: Ranganathan, S., Cannataro, M., Khan, A. M. (ed.) Encyclopedia of Bioinformatics and Computational Biology, 2nd Edition, vol. 2, pp. 422–431. US: Elsevier. doi:[10.1016/B978-0-323-95502-7.00063-4](https://doi.org/10.1016/B978-0-323-95502-7.00063-4)
- [B6] **Bernasconi, A.**. Model, Integrate, Search... Repeat: A Sound Approach to Building Integrated Repositories of Genomic Data. LNBIP Vol. 496. Springer Nature, 2022. doi:[10.1007/978-3-031-44907-9](https://doi.org/10.1007/978-3-031-44907-9)
- [B5] **Bernasconi, A.** (2022) Model, Integrate, Search... Repeat: a Sound Approach to Building Integrated Repositories of Genomic Data. In: Piroddi L. (eds) Special Topics in Information Technology. SpringerBriefs in Applied Sciences and Technology. Springer, Cham. doi:[10.1007/978-3-030-85918-3\\_8](https://doi.org/10.1007/978-3-030-85918-3_8)
- [B4] **Bernasconi A.**, Cascianelli S. (2022) Scenarios for the Integration of Microarray Gene Expression Profiles in COVID-19–Related Studies. In: Agapito G. (eds) Microarray Data Analysis. Methods in Molecular Biology, vol 2401. Humana, New York, NY. doi:[10.1007/978-1-0716-1839-4\\_13](https://doi.org/10.1007/978-1-0716-1839-4_13)
- [B3] **Bernasconi, A.**, & Masseroli, M. Biological and Medical Ontologies: Disease Ontology (DO). In Reference Module in Life Sciences, Encyclopedia of Bioinformatics and Computational Biology. Volume 1, 2019, Pages 838-847. doi:[10.1016/B978-0-12-809633-8.20397-X](https://doi.org/10.1016/B978-0-12-809633-8.20397-X)
- [B2] **Bernasconi, A.**, & Masseroli, M. Biological and Medical Ontologies: Human Phenotype Ontology (HPO). In Reference Module in Life Sciences, Encyclopedia of Bioinformatics and Computational Biology. Volume 1, 2019, Pages 848-857. doi:[10.1016/B978-0-12-809633-8.20398-1](https://doi.org/10.1016/B978-0-12-809633-8.20398-1)
- [B1] **Bernasconi, A.**, & Masseroli, M. Biological and Medical Ontologies: Systems Biology Ontology (SBO). In Reference Module in Life Sciences, Encyclopedia of Bioinformatics and Computational Biology. Volume 1, 2019, Pages 858-866. doi:[10.1016/B978-0-12-809633-8.20399-3](https://doi.org/10.1016/B978-0-12-809633-8.20399-3)

## NON-PEER REVIEWED POSTS

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- [P2] Chiara, M., Pinoli, P., Minotti, L., **Bernasconi, A.**, Canakoglu, A., Ferrandi, E., & Ceri, S. Using VariantHunter for detecting emerging SARS-CoV-2 variants. Posted May. 11th, 2022 on Virological.org – Discussion forum for analysis of virus genomes (2.2k views)
- [P1] **Bernasconi, A.**, Pinoli, P., Al Khalaf, R., Alfonsi, T., Canakoglu, A., Cilibrasi, L., & Ceri, S. Report on Omicron Spike mutations on epitopes and immunological/epidemiological/kinetics effects from literature. Posted Nov. 30th, 2021 on Virological.org – Discussion forum for analysis of virus genomes (19.1k views, 8 citations on Google Scholar)

## Skills & Background Knowledge

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## LANGUAGE SKILLS

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**Italian:** Native speaker

**English:** Proficient user (TOEFL 107/120 and C1 Advanced Certificate)

**Spanish:** Advanced user (C1)

## PROGRAMMING SKILLS \_\_\_\_\_

**Programming languages:** Python (proficient), C (proficient), C++ (basic), Java (advanced), Javascript (intermediate), Scala (intermediate)

**Data Management Languages/Formats:** SQL (PostgreSQL, MySQL, Vertica, Oracle), XML, Xquery, JSON, Cypher (Neo4J), yaml, owl, SPARQL

**Numerical computing and statistical software:** MATLAB (intermediate), R (basic), SPSS (basic), RapidMiner and WEKA (basic)

**Specification languages:** UML, OntoUML, Alloy, TRIO, KeyMaera

**Operating systems:** Windows (proficient), MacOS (proficient), GNU/Linux (intermediate)

**Typesetting:** Microsoft Word, LaTeX, Lyx, HTML

**Others:** SoapUI, Amazon WebServices, JIRA for software bugs tracking, SVN, Tortoise, GitHub for software versioning

## ADDITIONAL EDUCATION \_\_\_\_\_

February 2011. Clarinet conservatory diploma. Conservatorio di Musica “Giovan Battista Martini”, Bologna, Italy. This is equivalent to a second-level degree in LM 45 (Musicologia e beni musical).