

Anna Bernasconi

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Scholar Pages [Google Scholar](#), [Scopus Profile](#), [Web of Science](#)

Summary

Anna Bernasconi is a Tenure-Track Researcher (RTT) 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

- **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 June 2034.
- Author/Co-author of 36 international journal papers, of which **26 articles in Q1 journals** based on [WoS](#) and [Scimago](#), including NatComm, NAR (2), SciData, GigaScience, Bioinformatics (2), Briefings in Bioinformatics (2), Information Processing & Management. Author/Co-author of **> 40 conferences/workshops publications**, including 4 in **A++/A+** venues (SIGMOD, ICDE and PKDD-ECML) and 10 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** (16 talks, including CAiSE'2024, RDA Plenary meeting VP22, ITADATA'2022, DALs@ECML'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.
- **Founder and Chair** of three workshops on conceptual models ([CMLS](#)), web applications ([WALS](#)), and information systems ([iSAILS](#)) for life sciences/AI (at the ER, ICWE, and CAiSE conferences).
- **Lecturer** of the Doctoral course on [Data Management and Analysis for Computational Biology](#) (a.y. 2022-2023), 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 3 PostDocs, 6 Ph.D. students and 21 M.Sc. students at Politecnico di Milano (two at UPV).
- **Co-founder** of LegisRatio S.r.l., 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

- May 2024 - present **Tenured-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**, Quantyca 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

- 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

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

Awards and Recognitions

- 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 (https://www.itadata.it/2023/award_winners)
- 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 (<https://www.weizmann.ac.il/feinberg/about/dimitris-n-chorafas-prize/about-foundation-and-prize>)
- 2021 **Springer award**, for the PhD thesis, granted by PhD Board of professors, Politecnico di Milano

Leadership and Participation in Funded Research Projects

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|------------------------|---|------------------------------|
| Sep 2025 -
Feb 2029 | EU4Health Programme (EU4H) Action Grant “BEACON: Building European Alliances for Coordinated Oncology Network”, to be started , Role: Task Leader | <i>Politecnico di Milano</i> |
| Dec 2023 -
Nov 2025 | MUR PRIN PNRR 2022 project “SENSIBLE: Small-data Early warNing System for viral pathogens In puBLic hEalth”, project n. P2022CNN2J , Research Units: Politecnico di Milano and Università degli Studi di Milano; Funding PoliMi Unit: 186K Euros (Total: 240K Euros); Role: <u>Principal Investigator</u> | <i>Politecnico di Milano</i> |
| Dec 2023 -
May 2027 | Horizon Europe Framework Programme (HORIZON) project “BETTER: Better rEal-world healTh-daTa distributEd analytics Research platform”, grant agreement n. 101136262, Funding PoliMi Unit: 639K Euros (total 3.5M Euros); Role: <u>Proposal co-editor and Task 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> |
| Sep 2023 -
Aug 2024 | Next Generation Internet (NGI) Search, 2nd open call, project “TETHYS: Topics Evolution That You See”, agreement n. SEARCH OC2_18, Funding: 150K Euros ; Role: <u>Principal Investigator</u> | <i>Politecnico di Milano</i> |
| Jan 2023 -
Dec 2025 | 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 ; Role: <u>Task Leader</u> – 4.4.2: “Graph-based ML for Network Medicine” | <i>Politecnico di Milano</i> |
| Jul 2020 -
Dec 2020 | EIT Digital “DATA against COVID-19” program, Innovation Activity ‘VirusSurf’ n. 20663, Funding: 172K Euros ; Role: <u>Task Leader</u> – “User experience and interfaces” | <i>Politecnico di Milano</i> |
| Nov 2016 -
Aug 2021 | Data-Driven Genomic Computing, ERC Advanced Investigator Grant n. 693174, Funding: 2.5M Euros ; Role: <u>Work Package Leader</u> – WP4: Integrated access to large data sources | <i>Politecnico di Milano</i> |

Research Collaborations

- 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 - ongoing **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 knowledge graphs
- Sep 2023 - ongoing **Co-Chair of the FAIRification of Genomic Annotations RDA Working Group**
(<https://www.rd-alliance.org/groups/fairification-genomic-annotations-wg>), Topic: Standardization of Genomic Annotations and FAIRification of related (meta)data and processing pipelines
- Sep 2023 - ongoing **Chiara Leonardi (Independent Systemic Design Researcher),** Topic: Complex systems dynamics represented with Causal Loop Diagrams
- Mar 2022 - ongoing **Dr. Luigi Bellomarini and Davide Magnanini (Banca d’Italia),** Topic: Graph-based reactive systems
- Jun 2021 - **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
- 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
- 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
- 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 (<https://www.covid19hg.org/>),** 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
- 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
- Jun 2019 - Sep 2019 **Group of Prof. Mario Cannataro, Università Magna Graecia,** Topic: integrative applications of GenoMetric Query Language using private and public datasets

Technology transfer

START-UPS AND SPIN-OFFS

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 explorable graphs.

OPEN SOURCE TOOLS

Contribution to several tools (all registered under the ELIXIR Italian node PoliMi, see bio.tools, related to corresponding journal publications). These aim to facilitate the work of cancer genomics researchers, clinicians, geneticists, virologists, phylogeneticists, epidemiologists, pathogenists, and immunologists.

OpenGDC (<http://www.bioinformatics.deib.polimi.it/opengdc>). Extraction and integration tool for cancer genomics data.

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-GECCO/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.

EpiSurf (<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 tool for comparing mutation distributions of selected viral populations.

VirusClust (<http://gmql.eu/virusclust>). Data analysis tool to perform temporal and spatial comparison of mutational patterns of SARS-CoV-2 sequences.

VariantHunter (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.

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

Outreach Scientific Activities

ORGANIZATION OF EVENTS

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

ORGANIZING COMMITTEE SERVICE

Workshop co-Chair of the 44th International Conference on Conceptual Modeling (ER 2025), Poitiers, France, October 2025

Publicity Chair of the 43rd International Conference on Conceptual Modeling (ER 2024), Pittsburgh, Portugal, 28-31 October 2024

Publicity Chair of the 42nd International Conference on Conceptual Modeling (ER 2023), Lisbon, Portugal, 17-20 October 2023

Program Chair of the 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** for the 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

- 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

Verified editor records (on Web of Science, query date 23/04/2025)	54
Verified reviews (on Web of Science, query date 23/04/2025)	126

EDITORIAL BOARD MEMBERSHIPS

Editorial Review Board Member of Journal of Data and Information Quality (ISSN: 1936-1955, Publisher: ACM) – since April 2024 (<https://dl.acm.org/journal/jdiq/reviewers-board>)

Editorial Board Member of BMC Bioinformatics (ISSN 1471-2105, Publisher: Springer Nature) – since May 2022 (<https://bmcbioinformatics.biomedcentral.com/about/editorial-board>)

Academic Editor of Plos ONE (ISSN 1932-6203, Publisher: Public Library of Science) – since Feb 2023 (<https://journals.plos.org/plosone/static/editorial-board>)

Associate Editor of Bioinformatics and Biology Insights (ISSN 1177-9322, Publisher: Sage Journals, Libertas Academica) – since June 2024 (<https://journals.sagepub.com/editorial-board/BBI>)

Editorial Board Member of Scientific Data (ISSN 2052-4463, Publisher: Springer Nature) – since Mar 2025 (<https://www.nature.com/sdata/editorial-board#eb>)

GUEST EDITORIAL SERVICE

(ongoing): **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. (<https://dl.acm.org/journal/jdiq/special-issues>)

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. (<https://www.biomedcentral.com/collections/bdmbd>)

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.

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.

Guest Associate Editor for Research Topic “Identification of phenotypically important genomic variants” on Frontiers in Bioinformatics (ISSN: 2673-7647, Publisher: Frontiers Media S.A.). Topic editors: Heron, E., Bernasconi, A., Valle, G. (<https://www.frontiersin.org/research-topics/39186/>)

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. (https://www.mdpi.com/journal/biotech/special_issues/Bioinformatics_Present_Future_Biotechnology)

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. (<https://bmcbioinformatics.biomedcentral.com/articles/supplements/volume-23-supplement-11>, <https://bmcmidinformedecismak.biomedcentral.com/articles/supplements/volume-22-supplement-4>)

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. (<https://bmcbioinformatics.biomedcentral.com/articles/supplements/volume-23-supplement-6>, <https://bmcmidinformedecismak.biomedcentral.com/articles/supplements/volume-22-supplement-6>)

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. (<https://bmcbioinformatics.biomedcentral.com/articles/supplements/volume-22-supplement-13>)

VOLUME EDITORIAL SERVICE

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. <https://link.springer.com/book/10.1007/978-3-031-75599-6>

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. <https://link.springer.com/book/10.1007/978-3-031-25380-5>

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.

REVIEWER BOARD MEMBERSHIPS

Review Editor of Frontiers in Artificial Intelligence (ISSN 2624-8212, Publisher: Frontiers Media S.A.) – Medicine and Public Health – since February 2023 (<https://www.frontiersin.org/journals/artificial-intelligence/editors>)

Review Editor of Frontiers in Bioinformatics (ISSN 2673-7647, Publisher: Frontiers Media S.A.) – Integrative Bioinformatics – since June 2022 (<https://www.frontiersin.org/journals/bioinformatics/editors>)

Review Editor of Frontiers in Microbiology (EISSN: 1664-302X, Publisher: Frontiers Media S.A.) – Virology – since June 2022 (<https://www.frontiersin.org/journals/microbiology/editors>)

Reviewer Board Member of Big Data and Cognitive Computing Journal (ISSN 2504-2289, Publisher: MDPI) – since April 2022 (https://www.mdpi.com/journal/BDCC/submission_reviewers)

Review Editor of Frontiers in Systems Biology (EISSN: 2674-0702, Publisher: Frontiers Media S.A.) – Multiscale Mechanistic Modeling – since June 2021 (<https://www.frontiersin.org/journals/systems-biology/editors>)

REVIEWER SERVICE FOR INTERNATIONAL JOURNALS

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 (EISSN: 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

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

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-O5, SSD IINF-O5/A , since 2022

PUBLIC INTERVIEWS

Interview for Frontiere blog , Sept 10, 2024: <https://tinyurl.com/interview-ab-frontiere>

Interview for the BETTER project , Oct 3, 2024: <https://youtu.be/y8ww-7Li9do>

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: <https://youtu.be/wkLebyoQz54>

Interview for 24+ , Dec 21, 2020: <https://tinyurl.com/interview-ab-sole24>

INVITED TALKS

Dec 2024	Speaker , <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	Panel Speaker , <i>AI Ink: Should we let generative technology transform academic writing?</i> . Panel discussion at the CAiSE 2024 conference	Limassol, Cyprus
May 2024	Lightning Talk , <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	Lightning Talk , <i>Building an Integrated Repository for Genomic Data</i> . For the Research Data Alliance collaborative meeting on FAIRification of Genomic Tracks (https://tinyurl.com/FAIRificationGenomicTracks)	(online)
Sep 2022	Seminar , <i>Data-driven SARS-CoV-2 understanding and hunting</i> . At Information Sciences Institute - University of Southern California (https://www.isi.edu/events/2966/data-driven-sars-cov-2-understanding-and-hunting/)	(online)
Sep 2022	Talk , <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	Seminar , <i>Data analysis for unveiling the SARS-CoV-2 evolution</i> . At the First International Workshop on Data Analysis for Life Science (DALs@ECML-PKDD2022)	(online)
Jul 2022	Seminar , <i>Data-bases-driven research on viral genomes and SARS-CoV-2</i> . At Universidade Eduardo Mondlane, Maputo, Mozambique (https://ict4dev.uem.mz/index.php/ict4dev-talks/)	(online)
Jan 2022	Seminar , <i>Data-driven SARS-CoV-2 understanding and hunting (searching for the new Omicron)</i> . At Politecnico di Milano and Universitat Politècnica de València (https://youtu.be/VHgb1Dz00ho)	(online)
Nov 2021	Invited talk , <i>Modeling, integrating, and searching processed genomic datasets</i> . At “Integrating Diverse Datasets Webinar Series” by Front Line Genomics	(online)
Mar 2019	Invited talk , <i>Metadata Integration Framework for Genomic Datasets</i> . At “Challenges in Data-Driven Genomic Computing” Workshop	Como, Villa del Grumello
Feb 2019	Seminar , <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	Seminar , <i>Meta-awareness: towards an agreement on experimental metadata</i> . At “Genomic Computing & Data Science Meetings”, Politecnico di Milano.	Milan, Italy
Jul 2017	Seminar , <i>Metadata Management for Genomics</i> . At ETH (with Stefano Ceri and Pietro Pinoli)	Zurich, Switzerland
Jul 2017	Seminar , <i>Metadata Management for Genomics</i> . At IBM Research Lab (with Stefano Ceri and Pietro Pinoli)	Zurich, Switzerland
Jan 2017	Seminar , <i>Metadata Modeling for Genomics</i> . Seminar at IEO-IIT research institute	Milan, Italy

CONFERENCE AND WORKSHOP TALKS

SIGMOD 2024	ACM SIGMOD/PODS Int. Conference on Management of Data, June 9-14, 2024, Talk (Industrial Track): <i>PG-Triggers: Triggers for Property Graphs</i>	Santiago, Chile
CAiSE 2024	36th Int. Conference on Advanced Information Systems Engineering, June 3-7, 2024, Talk (Research Project Exhibition): <i>SENSIBLE: implementing data-driven early warning systems for future viral epidemics</i>	Limassol, Cyprus
CAiSE 2024	36th Int. Conference on Advanced Information Systems Engineering, June 3-7, 2024, Talk (Research Project Exhibition): <i>TETYS: towards the next-generation open-source Web topic explorer</i>	Limassol, Cyprus
ICDE 2024	40th IEEE Int. Conference on Data Engineering, May 13-17, 2024, Talk (Future Technology Track): <i>Reactive Knowledge Management</i>	Utrecht, Netherlands
SWAT4HCLS 2024	15th Int. Conference on Semantic Web Applications and Tools for Health Care and Life Sciences, February 26-29, 2024, Poster presentation: <i>Achieving data FAIRification in a distributed analytics research platform for rare diseases</i>	Leiden, Netherlands
ER 2023	42nd Int. Conference on Conceptual Modeling, November 6-9, 2023, Talk (Journal-first track): <i>CoV2K model, a comprehensive representation of SARS-CoV-2 knowledge and data interplay</i>	Lisbon, Portugal
IEEE SOSE 2023	Int. Congress on Intelligent and Service-Oriented Systems Engineering, July 17-20, 2023, Talk: <i>The opportunity of data-driven services for viral genomic surveillance</i> (invited paper)	Athens, Greece
CAiSE 2023	35th Int. Conference on Advanced Information Systems Engineering, June 12-16, 2023, Talk: <i>Ontological representation of FAIR principles: A blueprint for FAIRer data sources</i>	Zaragoza, Spain
ER 2022	41st Int. Conference on Conceptual Modeling, October 17-20, 2022, Talk: <i>A comprehensive approach for the conceptual modeling of genomic data</i>	online
SWAT4HCLS 2022	13th Int. Conference on Semantic Web Applications and Tools for Health Care and Life Sciences, January 11-12, 2022, Poster presentation: <i>A unique approach to SARS-CoV-2 data and knowledge ingestion, integration and querying</i>	online
ICC 2021	30th Int. Cartographic e on, December 14-18, 2021, Talk: <i>Geo-Online Explanatory Data Visualization Tools as Crisis Management and Communication Instruments</i>	online
ER 2021	40th Int. Conference on Conceptual Modeling, October 18-21, 2021, Talk: <i>Ontological Unpacking as Explanation: The Case of the Viral Conceptual Model</i>	online
REFSQ 2021	27th Int. Working Conference on Requirement Engineering: Foundation for Software Quality, April 12-15, 2021, Poster presentation: <i>Extreme Requirements Elicitation: Lessons Learnt from the COVID-19 Case Study</i>	online
ER 2020	39th Int. Conference on Conceptual Modeling, November 3-6, 2020, Talk: <i>Empowering Virus Sequence Research Through Conceptual Modeling</i>	online
EmpER 2019	2nd Int. Workshop on Empirical Methods in Conceptual Modeling, November 4-7, 2019, Talk: <i>Exploiting conceptual modeling for searching genomic meta-data: A quantitative and qualitative empirical study</i>	Salvador (BR)
ER 2019	38th Int. Conference on Conceptual Modeling, November 4-7, 2019, Talk: <i>From a conceptual model to a knowledge graph for genomic datasets</i>	Salvador (BR)
SWAT4HCLS 2018	11th Int. Conference on Semantic Web Applications and Tools for Healthcare and Life Sciences, December 3-6, 2018, Talk: <i>Ontology-driven metadata enrichment for genomic datasets</i>	Antwerp (BE)
DTMbio 2018	12th Int. Workshop on Data and Text Mining in Biomedical Informatics, October 22-26, 2018, Talk: <i>Using metadata for locating genomic datasets on a global scale</i>	Torino (IT)
ER 2017	36th Int. Conference on Conceptual Modeling, November 6-9, 2017, Talk: <i>Conceptual modeling for genomics: building an integrated repository of open data</i>	Valencia (ES)

TUTORIALS

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

ONLINE DEMONSTRATIONS

During the COVID-19 pandemic period **May 2020 - Apr 2021**, I 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

2023-present	Member of the Public Selection Committee for Research Fellowships (Assegni di Ricerca); “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
2023-present	Member of the Public Selection Committee for Research Support Activities (Attività di Supporto alla Ricerca); “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	Member of the Doctoral Committee of PhD candidate Erika Ferrandi, “Research of regional variants/evolution of human pathogens and commensals with comparative genomics approaches”	Università degli Studi di Milano
2023-present	Member of the Scientific Committee of the Honours Programme, Computer Science and Engineering Track (Data, web, and society)	Politecnico di Milano
2022-present	Member of the Interuniversity Teaching Board for the Master “Bioinformatics for Computational Genomics”, Professor	Politecnico di Milano and University of Milan

RECURRING TEACHING ACTIVITIES

2024/25	Basi di Dati, 5 CFU (Bachelor Degree, Engineering of Computing Systems), Lecturer	Politecnico di Milano
2022/23 – 2023/24	Programming, 6 CFU (Master Degree, Bioinformatics for Computational Genomics), Lecturer	Politecnico di Milano
2021/22 – 2023/24	Basi di Dati, 5 CFU (Bachelor Degree, Engineering of Computing Systems), Teaching Assistant	Politecnico di Milano
2021/22 – 2023/24	Data Bases, 6 CFU (Master Degree, Bioinformatics for Computational Genomics), Teaching Assistant	Politecnico di Milano

2016/17 – 2017/18, 2021/22	Informatica A, 10 CFU (Bachelor Degree, Mathematical Engineering) , Teaching Assistant	<i>Politecnico di Milano</i>
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NON-RECURRING TEACHING ACTIVITIES

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

POST-DOC CO-SUPERVISION

Feb 2024 - Jan 2026	Tommaso Alfonsi , “Viral genomics warning systems for public healthcare”	<i>Politecnico di Milano</i>
Apr 2024 - July 2025	Nelly Barret , “Data FAIRification for distributed analytics healthcare platforms”	<i>Politecnico di Milano</i>
Feb 2024 - Jan 2025	Boris Bikbov , “Methodologies for data interoperability for distributed analytics healthcare platforms”	<i>Politecnico di Milano</i>

PHD CO-SUPERVISION

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

May 2022 - Apr 2025	Andrea Colombo , “Legal text analysis driven by NLP and graph-based techniques ”	<i>Politecnico di Milano</i>
Nov 2023 - Oct 2026	Francesco Cambria , “Reactive Knowledge Management”	<i>Politecnico di Milano</i>
Feb 2023 - Jan 2026	Francesco Invernici , “Knowledge management techniques for exploring data corpora on biomedical research”	<i>Politecnico di Milano</i>
Nov 2020 - Jan 2024	Tommaso Alfonsi , “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	Ruba Al Khalaf , “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	Alberto S. García , “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 Politècnica de València</i>

MASTER THESIS SUPERVISION

2025-present	Guido Baldessari , Supervisor of Master thesis “Organizzazione sistematica e accesso interattivo alle normative ministeriali”	<i>Politecnico di Milano</i>
2025-present	Yavuz Samet Topcuoglu , Supervisor of Master thesis “Design of a recombination detection pipeline and application to multiple viral populations”	<i>Politecnico di Milano</i>
2025-present	Soroush Ahrari , Supervisor of Master thesis “Construction of an easy and intuitive platform to the Italian legislation”	<i>Politecnico di Milano</i>
2025-present	Jana Penic , Supervisor of Master thesis “Pipeline for the identification and visualization of SARS-CoV2 yoyo mutations”	<i>Politecnico di Milano</i>
2025-present	Filippo Galetti , Supervisor of Master thesis “Construction of the Swiss Legislative Knowledge Graph”	<i>Politecnico di Milano</i>
2024-present	Flaminia Telese , Supervisor of Master thesis “Topic modeling pipeline for italian legislative text comparison”	<i>Politecnico di Milano</i>
Apr 2025	Emma Fanfoni , 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	Amirhossein Samavi , 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	Francesca Curati , 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	Laura Daniela Maftai , Supervisor of Master thesis “A data-driven approach for storing and analyzing Causal Loop Diagrams”	<i>Politecnico di Milano</i>
Dec 2024	Luca Cassenti , Supervisor of Master thesis “AviFluHunt: a database and tool for flexible querying over avian influenza sequence data”	<i>Politecnico di Milano</i>
Oct 2024	Jelena Jakimov , Supervisor of Master thesis “LLM-based topic modeling pipeline for big text datasets of scientific literature”	<i>Politecnico di Milano</i>
Oct 2024	Ana Drmic , Supervisor of Master thesis “A fine-grained FAIRness assessment workflow for genomic data sources”	<i>Politecnico di Milano</i>

MASTER THESIS CO-SUPERVISION

2022-2023	Alessia Gagliardi , Co-supervisor (with Prof. Stefano Ceri) of Master thesis “Simulation of COVID-19-related graph-based reactive knowledge bases”	<i>Politecnico di Milano</i>
2021-2022	Francesco Invernici , 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	Luca Minotti , 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	Federico Comolli , 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	Tommaso Alfonsi , 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	Giuseppe Cannizzaro , 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	Andrea Colombo , Co-supervisor (with Prof. Stefano Ceri) of Master thesis “Ontology-driven metadata enrichment for genomic datasets”	<i>Politecnico di Milano</i>
2017-2018	Federico Gatti , 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

2024	Mireia Costa , PhD Student, thesis “From Unpacking to Operationalization: A Conceptual Modelling-based Journey into Variant Interpretation”	Universitat Politecnica de Valencia
2022	Alberto S. García , PhD Student, thesis “Understanding the Code of Life: Holistic Conceptual Modeling of the Genome”	Universitat Politecnica de Valencia
2021	Giuseppe Garcia Serna , Post-Master degree project “CoVEffect: SARS-CoV-2 mutations’ effects extraction from literature”	Politecnico di Milano
2022	Lorenzo Battiston , Bachelor degree project “Visualization of SARS-CoV-2 of sequencing statistics over a world map”	Politecnico di Milano
2020	Elisabetta Fedele , Bachelor degree project “Visualization techniques for SARS-CoV-2 data”	Politecnico di Milano
2019	Silvia Ferraris , Bachelor degree project “Integration of ENCODE gene/transcript quantification data with GENCODE annotations”	Politecnico di Milano

Anna Bernasconi – Publications

BIBLIOMETRICS

Refereed international journals	36
Editorial articles, Consortium papers, and National journal articles	4
Refereed international conferences	26
Refereed international workshops, posters, or national conferences	14
Refereed international books and book chapters	11

	H-index	Publications	Citations
Web of Science ¹	14	81	1,015
Scopus ²	15	90	1,207
Google Scholar ³	18	105	1,850

¹ <https://www.webofscience.com/wos/author/rid/AAF-2594-2019>, on 23/04/2025,

² <https://www.scopus.com/authid/detail.uri?authorId=57195587336>, on 23/04/2025,

³ <https://scholar.google.com/citations?user=rCnL9L4AAAAJ>, on 23/04/2025,

INTERNATIONAL JOURNALS

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

- [J36] Colombo, A., **Bernasconi, A.**, Ceri, S. An LLM-assisted End-to-End Pipeline to Build a High-Quality Knowledge Graph of the Italian Legislation. Information Processing & Management, 62(4), 104082. <https://doi.org/10.1016/j.ipm.2025.104082> WoS JIF 2023: 7.4, WoS Rank: Q2, Scopus Citescore: 17.0, 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. <https://doi.org/10.1016/j.datak.2024.102370> WoS JIF 2023: 2.7, WoS Rank: Q2, Scopus Citescore: 5.0, 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. <https://doi.org/10.3389/fmed.2024.1473874> WoS JIF 2023: 3.1, WoS Rank: Q1, Scopus Citescore: 5.1, 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. <https://doi.org/10.1371/journal.pone.0307873> WoS JIF 2023: 2.9, WoS Rank: Q1, Scopus Citescore: 6.2, 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. <https://doi.org/10.1016/j.eswa.2024.124028>. WoS JIF 2023: 7.5, WoS Rank: Q1, Scopus Citescore: 13.8, Scimago Rank: Q1
- [J31] Invernici, F., **Bernasconi, A.***, & Ceri, S. Searching COVID-19 Clinical Research Using Graph Queries: Algorithm Development and Validation. (2024) Journal of Medical Internet Research 26, e52655. <https://doi.org/10.2196/52655>. WoS JIF 2023: 5.8, WoS Rank: Q1, Scopus Citescore: 14.4, Scimago Rank: Q1

- [J30] Alfonsi, T., **Bernasconi, A.***, Chiara, M., & Ceri, S. (2024) Data-driven recombination detection in viral genomes. *Nature Communications* 15, 3313. <https://doi.org/10.1038/s41467-024-47464-5>. WoS JIF 2023: 14.7, WoS Rank: Q1, Scopus Citescore: 24.9, 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. <https://doi.org/10.1016/j.datak.2023.102201>. WoS JIF 2023: 2.7, WoS Rank: Q2, Scopus Citescore: 5.0, Scimago Rank: Q2
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WORKSHOP PAPERS, POSTERS, AND ABSTRACTS

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BOOKS AND CHAPTERS

- [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. <https://doi.org/10.1016/B978-0-323-95502-7.00003-8>
- [B10] **Bernasconi, A.** (2025) Data-Driven Methods for Viral Variants' Identification. In: Ranganathan, S., Cannataro, M., Khan, A. M. (ed.) Encyclopedia of Bioinformatics and Computational Biology, 2nd Edition, vol. 2, pp. 768–777. US: Elsevier. <https://doi.org/10.1016/B978-0-323-95502-7.00087-7>
- [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. <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. <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. <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. <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. 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. 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. <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. <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. <https://doi.org/10.1016/B978-0-12-809633-8.20399-3>

NON-PEER REVIEWED POSTS

- [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)

UNDER REVIEW _____ Manuscripts submitted to Conferences with -C, to Journals are indicated with -J (for these, when A.B. is the corresponding author, * is used after her name).

- [U-J] Barret, N., **Bernasconi, A.**, Bikbov, B., Pinoli, P. I-ETL: interoperability-aware health (meta)data pipeline to enable federated analyses. Submitted to BMC Medical Informatics and Decision Making.
- [U-J] Invernici, F., Curati, F., Jakimov, J., Samavi, A., **Bernasconi, A.*** Capturing research literature attitude towards Sustainable Development Goals: an LLM-based topic modeling approach. Submitted to the Journal of Big Data.
- [U-J] Alfonsi, T., Chiara, M., **Bernasconi, A.*** A codon usage-based approach for the stratification of Influenza A. Submitted to the Computational and Structural Biotechnology Journal.
- [U-J] Cambria, F., Invernici, F., **Bernasconi, A.**, Ceri, S. MINE GRAPH RULE: A New Cypher-like Operator for Mining Association Rules on Property Graphs. Submitted to the VLDB Journal.
- [U-J] Cambria, F., Invernici, F., **Bernasconi, A.**, Ceri, S. How good are Property Graph Databases in Data Science Algorithms, really? Submitted to ACM Computing Surveys.
- [U-J] Alfonsi, T., **Bernasconi, A.***, Chiara, M., Ceri, S. Multi-scale early spillover warnings for influenza A viruses. Submitted to Nature.
- [U-J] Colombo, A., **Bernasconi, A.**, Ceri, S., Bellomarini, L., Guiso, L., Michelacci, C. Integrating Large Language Models with Knowledge Graphs for Enhanced Legislative Recommendation Systems. Submitted to Artificial Intelligence & Law

Skills & Background Knowledge _____

LANGUAGE SKILLS _____

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 “Giovanni Battista Martini”, Bologna, Italy. This is equivalent to a second-level degree in LM 45 (Musicologia e beni musicali).

Autorizzazioni _____

Autorizzo al trattamento dati ai sensi del GDPR 2016/679 del 27 aprile 2016 (Regolamento Europeo relativo alla protezione delle persone fisiche per quanto riguarda il trattamento dei dati personali).

Autorizzo la pubblicazione del Curriculum Vitae sul sito istituzionale del Politecnico di Milano (sez. Amministrazione Trasparente) in ottemperanza al D. Lgs n. 33 del 14 marzo 2013 (e s.m.i.).