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Roberto Posenato

Curriculum Vitae

Education

11/1992–10/1995 **PhD in Computational Maths and Operations Research**, *University of Milano-Statale*, Italy
Original title: Dottorato di Ricerca in Matematica computazionale e Ricerca Operativa. VIII edition, supported by a 3-year State Scholarship.

02/1991 **MSc in Computer Science (highest honours)**, *University of Milano-Statale*, Italy
Original title: Laurea in Scienze dell'Informazione.

Continuing Professional Development and Certifications

07/2026 **Training Programme "Generative Artificial Intelligence and University Teaching"**, *University of Verona*, Italy
Bestr Open Badge digital credential awarded upon completion of the programme and passing the final assessment.

2026 **Cybersecurity and University Governance: Strategies, Regulations and Innovation in Light of the NIS-2 Directive**, *Cyber 4.0 and CODAU*, Italy
Certificate of participation in the seminar series, 6 hours.

2021 **Specific Learning Disorders and University: Training Course for University Teachers**, *Italian Dyslexia Association*, Italy
Four-hour online course held between November and December 2021; the provider is accredited by the Italian Ministry of Education for school-staff training.

Academic Qualifications

06/02/2023 **Full Professor Qualification in ING 09/H1 scientific field (Computer Science Engineering)**, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy
National Scientific Qualification

28/03/2018 **Associate Professor Qualification in INF 01/B1 scientific field (Computer Science)**, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy
National Scientific Qualification

04/04/2017 **Associate Professor Qualification in ING 09/H1 scientific field (Computer Science Engineering)**, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy
National Scientific Qualification

Italian	mother tongue
English	fluent
Spanish	fluent

Professional Experience

Since 01/02/2026 — **Associate Professor, GSD 09/IINF-05, SSD IINF-05/A (Information Processing Systems)**, *University of Verona*, Italy

3 active courses (Temporal Reasoning, Algorithms for Bioinformatics, Programming Laboratory II); supervision of undergraduate and graduate theses; Rector's Delegate for the Transition to Digital Intelligence from 01/10/2025 to 30/09/2027.

01/10/2019–31/01/2026 — **Associate Professor, SSD INF/01, subsequently INFO/01-A (Computer Science)**, *University of Verona*, Italy

Up to 3 simultaneous courses (Web Applications, Algorithms for Bioinformatics, Programming Laboratory II); thesis supervision; research on temporal constraint networks.

03/2018–03/2023 — **Chief Executive Officer**, *MedBrains s.r.l.*, Italy

University spin-off developing web-based systems for collecting, analysing, and disseminating medical and pharmaceutical data, including automatic recognition of medical and ICD terminology in unstructured texts using multilingual dictionaries.

03/2018–03/2025 — **Founding member**, *MedBrains s.r.l.*, Italy

University spin-off. Under the European ECRAID-Base project (Grant Agreement 965313), MedBrains developed software modules for EPI-Net and maintained its website.

01/11/2000–30/09/2019 — **Permanent Assistant Professor in Computer Science, sector K05B, subsequently INF/01**, *University of Verona*, Italy

1–2 courses per year (Computational Complexity, Advanced Algorithms, Database Lab., Software Engineering); thesis supervision; research on temporal constraint networks, temporal business processes, and biomedical applications.

01/2002–06/2011 — **Senior Consultant and Researcher**, *University of Verona*, Italy

Project "WebIntegrato"

15/05/1997–15/05/1999 — **Post-doctoral Fellowship**, *University of Verona*, Italy

Computer Science; activity carried out continuously and successfully; research project "Query Languages for the World Wide Web", scientific supervisor Prof. Letizia Tanca.

Previous Non-Academic Experience

01/10/1998–31/10/2000 — **Computer Labs Manager (permanent staff, VIII level)**, *University of Verona*, Italy

01/1996–12/1996 — **IT Consultant**, *University of Verona*, Italy

Faculty of Economics

Honours, Awards and Grants

11/2019 — **JOINT PROJECTS 2018 Grant**, *University of Verona & WINWINIT srl*, Italy

€12,000 grant for the project "Advanced solutions for digital marketplace".

07/2019 — **Industry Research Grant**, *RTC spa*, Italy

€30,125 research contract with RTC S.p.A.: "Formal modelling and optimization of production processes".

02/2019 — **GNCS Grant (Gruppo Nazionale per il Calcolo Scientifico)**, *Istituto Nazionale di Alta Matematica Francesco Severi*, Italy

€3,200 grant for the research project "Distributed Optimization for Large-scale Statistical Modeling".

11/2017 — **FFBAR Grant (Finanziamento delle attività base di ricerca)**, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy

Grant for supporting research activity.

11/2014 — **Professional Award**, *University of Verona*, Italy

For professional achievements during the 2010–2012 period.

09/2014 **IEEE Appreciation**, *IEEE International Conference on Healthcare Informatics 2014 (ICHI 2014)*, Italy
Local Arrangements Chair.

06/2014 **CooperInt Grant**, *University of Verona*, Italy
€3,500 grant for a research stay and the development of the collaboration at Vassar College (USA).

2004,'06,'09,'11–'14 **Teaching Award**, *University of Verona*, Italy

11/2004–11/2006 **Research Award**, *University of Verona*, Italy
For the successful application to PRIN 2004 grant, in addition to regular matching funds.

05/2005 **Möbius Multimedia Lugano International Award**, *Città di Lugano e RSI*, Lugano, Switzerland
As project architect and analyst of the best Italian university website, https://www.moebiuslugano.ch.

11/2004–11/2006 **PRIN Grant**, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy
Local Coordinator. Grant of "Programma di Ricerca scientifica di rilevante Interesse Nazionale" (PRIN) for the project "Supporto di granularità multiple e definite dall'utente nella gestione ed interrogazione di informazioni cliniche caratterizzate temporalmente", project #2004094558_003.

11/2003–11/2005 **PRIN Grant**, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy
Researcher. PRIN grant for "Web-based representation and querying of heterogeneous vector and raster geographic information with temporal aspects", project #2003018941_006, coordinated nationally by Elena Ferrari and locally by Alberto Belussi. Personal contribution: study and comparative evaluation of temporal data models.

10/1992–10/1993 **Research Fellowship**, *CNR*, Milan, Italy
Research Fellowship granted by the project "Progetto Finalizzato Sistemi Informatici e Calcolo Parallelo".

Research Activities

Bibliometric indicators

04/11/2026 h-index: 23, total citations: 1408 (Google Scholar)

Research Interests

Research focuses on **temporal constraint representation and reasoning**, with emphasis on the study, extension, and verification of temporal constraint networks (STN, STNU, CSTN, CSTNU) and their application to temporal business processes and workflows. Contributions span computational complexity theory, design of efficient algorithms, and development of open-source software tools.

- *Study of New Models for Temporal Constraint Networks.*
  In 1991, Dechter et al. proposed Simple Temporal Networks (STNs) for reasoning about quantitative temporal constraints: a graph in which nodes represent time points and weighted edges represent linear constraints on temporal distances. The model allows efficient algorithms both for consistency verification and for incremental execution (scheduling), generating significant interest and numerous extensions [36].
  Vidal and Fargier (1997) introduced STNs with Uncertainty (STNU), in which the endpoint of some actions has uncertain (*contingent*) duration, set by the environment during execution. Morris and Muscettola (2001) demonstrated that the controllability of such networks can be verified efficiently. Tsamardinos et al. (2003) proposed Conditional STNs (CSTN), in which only nodes associated with conditions observed during execution need to be executed.
  For CSTNs, we refined the model by extending conditions to constraints [51], proved

PSPACE-completeness of consistency [44], proposed semantics for managing observation delays with related algorithms [40, 43, 50, 48, 37], and analyzed extensions with non-linear constraints and Hyper Temporal Networks [11, 38, 54] and with decision nodes [45].
In 2012, we proposed Conditional Simple Temporal Networks with Uncertainty (CSTNU) [61], combining contingent constraints and CSTN conditions. We developed controllability algorithms based on constraint propagation [41, 53, 58], proved PSPACE-completeness and reducibility to reachability in a Timed Game Automaton [44, 12, 55], and extended the model with resources [9], partially shrinkable uncertainty [42, 8], parameterized networks [34], and agile controllability [25], with applications to medical transportation scheduling [31].
For STNUs, we addressed the *dispatchability* problem: finding a minimal equivalent network form for efficient real-time execution [32, 29, 27, 5, 33, 35, 2, 24], developed algorithms for identifying negative cycles in over-constrained networks [26], extended networks to probabilistic durations [28] and multi-agent settings [23]. Further contributions concern the optimal design of consistent STNs [56].
The theoretical contributions are complemented by CSTNU Tool, an open-source Java library for graphically building, verifying consistency/controllability, and benchmarking temporal constraint networks of type STN, STNU, CSTN and CSTNU, implementing all published algorithms [7].

- **Modeling and verification of temporal processes using constraint networks.**
  Applying the theoretical models developed (STNU, CSTN, CSTNU), we proposed an advanced conceptual model for expressing temporal constraints in **workflows and business processes**: deadlines, min/max action durations, delays between actions, temporal authorizations, and data dependencies [14, 59, 13]. Algorithms for verifying temporal controllability at both design-time and run-time were developed, also applied to modular and reusable processes [63, 57, 52, 49, 10, 4]. Subsequent extensions introduced management of decision tasks and events in temporal BPMN models [39], verification under access-controlled conditional uncertainty [47, 46, 9], and agile controllability in business processes [30]. The theoretical contributions are complemented by the TimeAwareBPMN-js web tool for interactive modeling and verification of BPMN processes with temporal constraints [6].

Further research interests include:

- Studies on computational complexity correlation between neural networks and Ising spin glasses [18] and computational complexity of neuronal fiber–tracking problem [15].
- Studies on how the most used page rank (Google original *pagerank*) can be biased [64].
- Studies on how to model and represent data in different languages (internationalization) in data-intensive web applications [66].
- Computational complexity characterization of a graphical query language for the WWW [68].
- Computational complexity characterization of some discrete optimization problems when approximate solutions are determined by some neural network computational models [19, 20, 86].
- Implementation of neural network models as circuits [16, 67, 70, 72] and their applications to real problems [17].

Other Research Activities

2022

Department of Excellence 2023–2027 proposal, *Department of Computer Science, University of Verona*, Italy

Working-group member; contributed to defining the research and innovation objective on cooperative AI, priority technologies, and application areas.

Participation in Funded Research Projects

10/2024–10/2025

Securing Decentralized Finance and Remote Healthcare Systems, *University of Verona*, Italy

Appointed for research activities, PNRR project "Security and Rights in the Cyberspace" (SERICS), Spoke 9, CUP B53C22003990006, funded by the European Union – NextGenerationEU; €8,000 funded personal contribution to the formal modelling of temporal requirements for remote healthcare systems. Appointment until 22/10/2025, for an indicative 250 hours, with 185 hours reported between 10/2024 and 05/2025.

2021–2022

Research fellowship AdR3685/20, *University of Verona*, Italy

Scientific supervisor of research fellow Mario Alberto Ocampo Pineda, PhD in Computer Science, for temporal modelling and verification of BPMN processes and the development of TimeAwareBPMN-js.

03/2020–12/2021

GNCS/INdAM 2020: "Automated Reasoning about Time in Medical and Business Applications", *INdAM*, Italy

Coordinator of a nine-researcher group; development of temporal-constraint-network reasoning tools and extension of the CSTNU model to richer representations of time. GNCS/INdAM funding: €2,000.

11/2019–11/2020

JOINT PROJECTS 2018, *University of Verona & WINWINIT srl*, Italy

Researcher in "VIPER MARKET – Advanced solutions for digital marketplace", coordinated by Alberto Belussi and funded for €12,000. Contributed to the design of a hybrid customer-engagement platform and supervised the research fellow's work in the relevant work packages; outcomes include a technical report and a partial experimental Liferay-based prototype.

25/07/2019–25/07/2020

Industry Research, *RTC spa*, Italy

Scientific lead of "Formal modelling and optimization of production processes" (€30,125): restructuring and porting of the Article information system, design and testing of logical replication between points of sale and the central database, and advanced training for RTC staff.

02/2019–02/2020

INdAM 2019, *INdAM*, Italy

Participating researcher in the project coordinated by Damiano Carra, studying distributed optimization methods for large-scale statistical models and their implementation on clusters of cooperating machines.

01/2005–12/2005

Accesso integrato a informazione spazio-temporale, *University of Verona*, Italy

Researcher, University Project, https://www.di.univr.it/?ent=progetto&id=1317

01/2004–12/2004

Rappresentazione e interrogazione di dati spazio-temporali, *University of Verona*, Italy

Researcher, University Project, https://www.di.univr.it/?ent=progetto&id=961

11/2004–11/2006

PRIN 2004, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy

Local Coordinator, Area 09 – Industrial and Information Engineering. University of Verona research unit in PRIN 2004 no. 2004094558_003; national project "Intelligent analysis of hemodialysis monitoring data for improving care processes", two-year duration and funding of €120,000. Local project "Supporto di granularità multiple e definite dall'utente nella gestione ed interrogazione di informazioni cliniche caratterizzate temporalmente". https://prin.miur.it/finanziati/2004/fin_09.html.

20/11/2003–14/12/2005

PRIN 2003, *Italian Ministry of Education, Universities and Research (MIUR)*, Italy

Researcher in PRIN 2003 no. 2003018941_006, with total funding of €210,000 and national coordination by Elena Ferrari. In the Verona unit, led by Alberto Belussi, he contributed to the study and comparative evaluation of temporal data models for "Web-based representation and querying of heterogeneous vector and raster geographic information with temporal aspects". https://www.di.univr.it/?ent=progetto&id=745.

01/2002–01/2012 **University Project "WebIntegrato"**, *University of Verona*, Italy

Senior Consultant and Researcher. The project aimed to develop a web application framework and a set of web applications to support the distributed management and publication of official information at the University of Verona by faculty and administrative staff. Responsible for the design of the database supporting the official Faculty and Department websites, the JSP-based architecture of the dynamic websites, and the distributed content-management solution, delivered through a web application automatically generated from the XML logical database schema; trained and coordinated the University's development group throughout the project. The overall system won the 2005 Möbius Multimedia Award as the best Italian university website, https://www.moebiuslugano.ch. The methodology for representing data language translations was published as a full paper at the 4th International Conference on Web Engineering, München, 2004 [66].

University Consultancy and Digital Services

15/05/2009–30/06/2009 **Organizational and Technical Consultancy**, *Department of Medicine and Public Health, University of Verona*, Italy

Analysis, design, development, and deployment of a web-based credit-card payment service for external users; technical support during the first year of operation.

08/04/2014 **Credit-Card Payment Service**, *Department of Computer Science, University of Verona*, Italy

Personally conceived, designed, and fully implemented the credit-card payment software interface integrated with the Department's official website and the University's dbERW system.

Editorial Activities

International Conferences and Workshops

2026 Conference on Advanced Information Systems Engineering (CAiSE 2026), [22]

Workshops Co-chair and co-editor, with Irene Vanderfeesten, of the LNBIP proceedings, vol. 586. Coordination of the selection and organization of 8 workshops (67 submissions; 25 full papers and 8 short papers accepted).

2022 International Symposium on Temporal Representation and Reasoning (TIME 2022), https://doi.org/10.4230/LIPIcs.TIME.2022

Program Committee Co-chair and co-editor, with Alexander Artikis and Stefano Tonetta, of the LIPIcs proceedings, vol. 247

2014 IEEE International Conference on Healthcare Informatics 2014 (ICHI 2014), https://ieeexplore.ieee.org/xpl/conhome/7051630/proceeding

Local Arrangements Chair

2014 21st International Symposium on Temporal Representation and Reasoning (TIME 2014), https://doi.ieeecomputersociety.org/10.1109/TIME.2014.5

Organization Co-Chair

2012 International Workshop on Artificial Intelligence and NetMedicine (NETMED)

Program Committee Co-chair

Member for the following Organizing/Program Committees

Since 2024 European Conference on Artificial Intelligence (ECAI)

Program Committee member

Since 2021 AAAI Conference on Artificial Intelligence (AAAI)

Program Committee member

Since 2021 International Symposium on Temporal Representation and Reasoning (TIME)

Program Committee member

2017 Artificial Intelligence International Conference (A2IC)

Program Committee member

2017 International Symposium on Temporal Representation and Reasoning (TIME 2017)
Program Committee member

Since 2017 International Conference on Agents and Artificial Intelligence (ICAART)
Program Committee member

2009 Conference on Artificial Intelligence in Medicine (AIME)
Program Committee member

Reviewer for the following

2011 International Conference on Artificial Intelligence in Medicine (AIME)

2009 Annual European Symposium on Algorithms (ESA)

2008 International Conference on Frontier of Computer Science and Technology

2001–2003 Symposium on Theoretical Aspects of Computer Science (STACS)

1993–1995 Workshop on Neural Networks (WIRN)

Journals

Member of the following Journal Editorial Boards

Since 2023 Information
Associate Editor; at least 20 editorial decisions on manuscripts during 2023–09/2026.

2022–2023 Information and Computation
Guest Editor Special Issue “Temporal Representation and Reasoning”
https://www.sciencedirect.com/journal/information-and-computation/special-issue/109S9FDW5TZ

2022–2024 Information Systems
Guest Editor Special Issue “Temporal Representation and Reasoning in data-intensive systems” [3]
https://www.sciencedirect.com/journal/information-systems/special-issue/10DQKT5RJJR

Reviewer

2023 Knowledge-Based Systems

Since 2023 ACM Transactions on Algorithms

Since 2022 Journal of Applied Non-Classical Logics

Since 2021 IEEE Transactions on Industrial Informatics

Since 2019 Journal of Artificial Intelligence Research

Since 2018 Information Sciences

Since 2017 Mathematical Reviews

2016–2022 International Journal of Automation and Computing IJAC
http://www.ijac.net/EN/column/column114.shtml

Since 2013 Transactions on Intelligent Systems and Technology (TIST)

Since 2010 Transactions on Autonomous and Adaptive Systems (TAAS)

2007–2008 IEEE Transactions on Neural Networks (TNN)

2000 Journal of Complexity

Talks

Talks at International Events

I presented the following papers at international conferences/workshops: [26, 27, 28, 30, 39, 43, 40, 56, 60, 62, 64, 65, 66, 69, 70, 72].

Talks at National Events

I presented the following papers at national conferences/workshops: [67, 71, 73, 74].

Invited Talks

09/2021 **Simple Temporal Networks: A Practical Foundation for Temporal Representation and Reasoning**, *28th International Symposium on Temporal Representation and Reasoning (TIME 2021) [36]*, Alpen-Adria University, Klagenfurt, Austria

07/2015 **Dealing with Temporal Business Processes: from Medical Applications to Checking Dynamic Controllability**, *TEWI-Kolloquium at Information and Communication Systems Group*, Alpen-Adria University, Klagenfurt, Austria

04/2015 **Simple Temporal Constraint Networks with Partially Shrinkable Uncertainty**, *Seminar for Artificial Intelligence and Knowledge Engineering Group*, Murcia University, Spain

11/2013 **Temporal Constraint Networks and Temporal Process Management: Some Recent Research Results**, *DBIS Seminar*, Ulm University, Germany

Visits

15/10/2025–17/10/2025 **Information and Communication Systems Group–University of Alpen-Adria**, *Klagenfurt*, Austria
Research mission for collaboration on analysis models for temporal constraint networks

04/2018 **Information and Communication Systems Group–University of Alpen-Adria**, *Klagenfurt*, Austria
Visiting researcher

12/2016 **Escuela de Ingeniería Informática–University of Las Palmas de Gran Canaria**, *Las Palmas de Gran Canaria*, Spain
Visiting Researcher

07/2015 **Information and Communication Systems Group–University of Alpen-Adria**, *Klagenfurt*, Austria
Visiting Researcher

04/2015 **Artificial Intelligence and Knowledge Engineering Group–University of Murcia**, *Murcia*, Spain
Visiting Researcher

02/2015–03/2015 **Institute of Databases and Information Systems–University of Ulm**, *Ulm*, Germany
Visiting researcher from 09/02/2015 to 13/03/2015, conducting applied research on temporal constraint networks.

12/2014 **College of Engineering–Northeastern University**, *Boston, MA*, USA
Visiting Researcher

10/2014–01/2015 **Department of Computer Science–Vassar College**, *Poughkeepsie, NY*, USA
Visiting Researcher

11/2013 **Institute of Databases and Information Systems–Ulm University**, *Ulm*, Germany
Visiting Researcher

09/2012 **Department of Computer Science–Vassar College**, *Poughkeepsie, NY*, USA
Visiting Researcher

07/2005 **Department of Computer Science–Queen Mary, University of London**, *London*, UK
Visiting Researcher

International Collaborations

Since 2025 **Thierry Vidal, Frédéric Maris, Gauthier Picard**, *LAAS-CNRS / ENSEEIHT, Toulouse*, France
Study of weak controllability in interdependent multi-agent temporal networks and centralized and distributed approaches to restoring it.

Since 2015 **Johann Eder**, *Information and Communication Systems Group, University of Klagenfurt*, Austria
Formal models and verification algorithms for temporal networks with uncertainty, including parameterized CSTNUs and agile controllability, implemented in CSTNU Tool.

2013–2019 **Andreas Lanz and Manfred Reichert**, *Institute of Databases and Information Systems, Ulm University*, Germany
Collaboration on modelling and managing temporal constraints in business processes, design-time and run-time controllability-checking algorithms, and integration into information systems.

Since 2012 **Luke Hunsberger**, *Department of Computer Science, Vassar College*, Poughkeepsie, NY, USA
Design and implementation in CSTNU Tool of algorithms for consistency, dynamic controllability, dispatchable forms, and temporal networks with probabilistic durations.

Teaching

Summary of Graduate & Undergraduate courses taught at University of Verona

A.Y. 2026/2027 **AI Literacy for UNIVR Students**, *University of Verona*, Italy
Proposer and coordinator of this 3-CFU, 20-hour blended university-wide course, approved for the 2026/2027 academic year and starting on 06/11/2026; assigned to teach the first lesson. Open to students in every Bachelor's, Master's, and single-cycle Master's degree programme, it provides a shared foundation in the critical and responsible use of artificial intelligence, covering conceptual foundations, ethical and regulatory aspects, and practical applications of AI in studying, writing, research, and assessment, without requiring prior computing knowledge.

Since 2025 **Temporal Reasoning**, *Master's Degree in Artificial Intelligence*
One-semester course.

Since 2020 **Algorithms for Bioinformatics**, *Laurea in Bioinformatica*
Two-semester course.

Since 2020 **Programming Laboratory II**, *Laurea in Bioinformatica*
Two-semester course.

2020–2025 **Web Applications**, *Laurea Magistrale in Ingegneria e Scienze Informatiche*
One-semester course.

2016–2018 **Ingegneria del Software**, *Laurea in Informatica*
One-semester course.

2015–2019 **Laboratorio di Basi di Dati**, *Laurea in Informatica e Laurea in Bioinformatica*
Two courses. One-semester course.

2009 **Complessità Computazionale**, *Laurea magistrale in Ingegneria e Scienze informatiche*
Core course. One-semester course.

2011–2013 **Complessità Computazionale**, *Laurea magistrale in Ingegneria e Scienze informatiche*
Core course. One-semester course.

2009 **Algoritmi Avanzati**, *Laurea magistrale in Ingegneria e Scienze informatiche*
Core course. One-semester course.

2007–2008 **Laboratorio di Algoritmi e Strutture Dati**, *Laurea in Informatica*
One-semester course.

2006–2008 **Algoritmi Avanzati**, *Laurea specialistica in Informatica*
One-semester course.

2002 **Complessità Computazionale**, *Laurea specialistica in Informatica*
One-semester course.

2004–2005 **Complessità Computazionale**, *Laurea specialistica in Informatica*
One-semester course.

2003 **Complessità Computazionale**, *Laurea specialistica in Informatica*
One-semester course, 40 hours.

2001 **Complessità Computazionale**, *Laurea specialistica in Informatica*
One-semester course.

2000–2001 **Laboratorio di Algoritmi e Strutture Dati**, *Laurea in Informatica*
One-semester course.

1996 **Laboratorio di Algoritmi e Strutture Dati**, *Laurea in Informatica*
24 hours. One-semester course.

1993 **Introduction to Logical-Digital Circuits**, *Information Processing Systems I*
Cycle of seminars at the Faculty of Mathematical, Physical and Natural Sciences; teaching hours not specified.

1995 **Circuiti Logici e Digitali**, *Laurea in Informatica*
15 hours.

Summary of Master & PhD courses taught at University of Verona

2019 **Temporal Constraint Networks**, *Dottorato in Informatica*
20 hours.

2018 **Constraint Networks**, *Dottorato in Informatica*
20 hours.

2006 **Network Operating Systems**, *Master in Progettazione e gestione di sistemi di rete*
16 hours of frontal teaching.

2005 **Network Operating Systems**, *Master in Progettazione e gestione di sistemi di rete*
24 hours of teaching activities.

2004 **Network Operating Systems**, *Master in Progettazione e gestione di sistemi di rete*
16 hours of frontal teaching.

2004 **Complessità computazionale e approssimazione**, *Dottorato in Informatica*
20 hours of frontal teaching, 24/11/2004–30/03/2005.

2001 **Progettazione e Realizzazione d'Ipertesti per Siti Web**, *Master in Tecnologie e formazione in rete*
60 hours.

Summary of courses taught at other institutions

2018 **Introduction to PostgreSQL and to Optimization of Queries**, *Escuela de Ingeniería Informática–University of Las Palmas de Gran Canaria*, Las Palmas de Gran Canaria, Spain
Erasmus+ Staff Mobility for Teaching intensive course, 10/12/2018–14/12/2018, 8 hours..

2018 **Time in Information Systems (with Applications in Medicine)**, *Faculty of Technical Sciences–University of Alpen-Adria*, Klagenfurt, Austria
Intensive doctoral course on temporal reasoning in information systems, delivered in two parts (23/04/2018–28/04/2018 and 11/06/2018–16/06/2018), 48 contact hours in total..

2016 **Introduction to the Analysis of Query Planning in PostgreSQL**, *Escuela de Ingeniería Informática–University of Las Palmas de Gran Canaria*, Las Palmas de Gran Canaria, Spain
Erasmus+ Staff Mobility for Teaching intensive course, 12/12/2016–16/12/2016, 10 hours..

1996 **Parallel Computational Models**, *ITIS G. Marconi*, Verona, Italy
Refresher course for high-school teachers, 16 hours.

1994 **Computational Models**, *ITIS G. Marconi*, Verona, Italy
Refresher course for high school teachers, 8 hours.

1991 **Neural Networks**, *ITIS G. Marconi*, Verona, Italy
Refresher course for high school teachers, 8 hours.

Advising

At University of Verona

2017/2018–2025/2026 Second reader for 21 bachelor's and master's theses on topics consistent with IINF-05/A

2002/2003–2025/2026 Supervisor of 19 bachelor's and master's theses on topics consistent with IINF-05/A

Titles of selected supervised theses:
- "Progettazione e sviluppo di un sistema di dialogo aperto per informazioni sanitarie basato su Retrieval-Augmented Generation" (Antonio Panfili).
- "Studio e confronto delle tecnologie Java Swing e JavaFX per lo sviluppo di applicazioni standalone" (Elia Brentarolli).
- "Analisi criticità nell'applicazione Web 'Gestione Utenti Postgres' e implementazioni di azioni correttive" (Federico Grigolini).
- "Analisi di framework per la gestione della persistenza in applicazioni enterprise" (Mattia Dal Degan).
- "Tecniche di mirroring per sistemi di basi di dati relazionali" (Marion Kasslatter).
- "Studio e sviluppo di applicazioni web per la gestione di basi di dati mediante generatori automatici" (Adriano Gugole).

2016–2018 **Francesca Zerbato**

2012–2014 **Alberto Sabaini**

2011–2013 **Emad Samuel Malki Ebeid**

Member of graduation examination committees at University of Verona

18/07/2007–27/03/2025 **Full member of 13 bachelor's and master's degree examination committees**

Annual PhD progress evaluation committees at University of Verona

2016–2018 **Annual progress evaluation and admission to the final examination, Francesca Zerbato, XXXI cycle**

2012 **Evaluation of the PhD thesis proposal, Alberto Sabaini, XXVII cycle**

2011–2013 **Annual progress evaluation and admission to the final defense, Emad Samuel Malki Ebeid, XXVI cycle**

Doctoral or PhD thesis defense committees at other universities

06/06/2017–08/06/2017 **Andreas Lanz**, *Institute of Databases and Information Systems at Ulm University*, Ulm, Germany

Academic Service and Third Mission

Governance, Management and Committee Roles at University of Verona

21/10/2026 **Institutional greeting and invited contribution on artificial intelligence**, *11th Symposium on the Role of Real World Evidence in Supporting Pharmaceutical Policies (21–22/10/2026)*, University of Verona, Verona, Italy
Invited as Rector's Delegate for the Transition to Digital Intelligence.

12/02/2026 **Institutional Greeting**, *Seminar "Artificial Intelligence between Efficiency and Humanity" and presentation of the CODICE Observatory*, University of Verona, Verona, Italy
Institutional greeting as the Rector's Delegate for the Transition to Digital Intelligence.

09/02/2026 **Participation in the roundtable "Artificial Intelligence in the Pharmaceutical Sector: Challenges and Opportunities"**, *Opening of the 16th Master's Programme in Pharmacovigilance, Pharmacoepidemiology, Pharmacoeconomics and Real World Evidence*, University of Verona, Verona, Italy
Participation as Rector's Delegate for the Transition to Digital Intelligence.

16/12/2025–present **University Representative at CINECA Consortium**, *CINECA Consortium*
Permanent representation of the University of Verona in the Assembly and activities of the CINECA Consortium, under the Rector's delegation of 16/12/2025, valid until further notice; coordination of HPC and supercomputing services for research and academic institutions.

2025–present **President of the University AI Team**, *University AI Team*
The Team is a University body, established by the Academic Senate on 28/10/2025, for the adoption of artificial intelligence systems. It guides the responsible and innovative adoption of AI, supporting strategic governance, regulatory compliance, the protection of rights, and solution quality. https://www.univr.it/it/ateneo/team-ai

21/10/2025–present **University Institutional Contact for the 'Veneto Community for Scientific Computing (CONVECS)' project**
Since 21/10/2025, performs representation and communication functions among the participating institutions. https://www.convecs.it/

08/10/2025–11/10/2025 **Institutional contribution to the CRUI conference "Artificial Intelligence at University: Teaching, Guidance and Teacher Training"**, *University of Verona*, Cosenza, Italy

01/10/2025–30/09/2027 **Rector's Delegate for the Transition to Digital Intelligence**
Appointed by Rector's decree of 01/10/2025; appointment renewed until 30/09/2027. Strategic coordination of University digital services, the HPC centre, the adoption of artificial intelligence in institutional processes, the development of digital skills, and partnerships for digital innovation.

2024 **Member of the Selection Committee for Admission to the PhD Programme in Computer Science, XL cycle (a.y. 2024/2025)**

Since 09/2023 **Departmental Coordinator for IT Services**

14/07/2023–02/03/2026 **Member of the Commission for the Evaluation of Teaching Assignments in the fields of Computer Science; nine procedures**

Since 04/2023 **Member of the Quality Assurance (AQ) Committee of the Master's Degree Program in Artificial Intelligence (LMAI)**

2021 **Member of the Research Fellow Activity Evaluation Committee**, *University of Verona*
Evaluation for renewal of research fellowship AdR3426/19.

09/2018–12/2019 **Scientific Supervisor for the Computer Science Component**, *Project "Impresa 4.0 e Digital Transformation per le MPMI di Verona"*, University of Verona e Camera di Commercio I.A.A. di Verona, Italy
Training, accompaniment and mentoring programme for Verona's SMEs, with total project funding of 950,000 €, supporting digital-transformation paths through workshops, process analysis and projects carried out by Digital Ambassadors.

Since 2015 **Departmental Coordinator of the Erasmus+ Inter-institutional Agreement**, *University of Verona–Universidad de Las Palmas de Gran Canaria*
Agreement for the international mobility of students and teaching staff in the fields of Information and Communication Technology, subsequently tacitly renewed and still in force.

Since 01/2012 **Computer Science PhD Committee Member**, Formal membership in cycles XXVIII, XXIX, XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV, XXXVI, XXXVII, XXXVIII, XXXIX, XL, XLI, and XLII (a.y. 2012/2013–2026/2027).

2011–2014 **Academic Disciplinary Board Member**
Academic term 2011–2014; appointed by Rector's Decree of 19/04/2012.

2010–2013 **Member of the Academic Senate Standing Teaching Committee**
Academic term 2010–2013; appointed by Rector's Decree of 15/10/2010.

2009 **Research Fellowship Selection Committee Member**, *University of Verona*
Research fellowship AdR1284/09, SSD INF/01.

2008 **Server Acceptance Testing Manager**
Acceptance testing of two servers acquired by the Faculty of Mathematical, Physical and Natural Sciences..

2007–2013 **Academic Senate Member**
Representative of the researchers of the Faculty of Mathematical, Physical and Natural Sciences for the academic terms 2007–2010 and 2010–2013; appointed by Rector's Decrees of 28/09/2007 and 30/09/2010.

11/2006–10/2009 **University Standing Budget Committee Member**
Elected by the members of the Academic Senate.

2006 **Hiring Committee Member**
for one IT officer (D1 permanent staff category) position.

2006 **Audio-video Systems Acceptance Tester**, *Faculty of Mathematical, Physical and Natural Sciences*

04/11/2004–10/2012 **Spin-Off Committee Member**, *Department of Computer Science*
Appointed by the Department Board on 04/11/2004.

11/2004–10/2010 **Assistant Professors' Representative**, *Faculty of Mathematical, Physical and Natural Sciences*
Elected by the Assistant Professors in Science and Engineering.

01/2004–12/2007 **Scientific Committee Member**, *Master in "Progettazione e gestione di sistemi di rete"*

01/2002–06/2011 **Senior Consultant and Researcher**, *Project "WebIntegrato"*, University of Verona , Italy

2002 **Chair of a Selection Committee**
for two fixed-term C1 positions in the technical, technical-scientific and data-processing area.

2001 **Hiring Committee Member**
for one IT officer (D1 permanent staff category) position.

2000–2001 **Chair of a Tender Evaluation Committee**
for a 200 000€ procurement of computer equipment for the Computer Science Department labs.

1998–2000 **Chair of a University Committee**
for the design of the new university intranet network (200 000€ project budget).

Service at Other Institutions and Public Engagement

Public Engagement

2000–2023 **Speaker for the Computer Science Department**
Speaker at 23 university orientation meetings with students from ITIS G. Marconi (Verona).

2023 **Speaker for the Computer Science Department**
University orientation meeting with approximately 300 final-year students from IISS COPERNICO-PASOLI (Verona).

2018 **Lecturer**, *GoTo Science: "Dai Beatles ai vincoli temporali attraverso Bob Dylan"*, Verona
Lecturer at a GoTo Science meeting for spreading scientific culture to non-academic people.

Committees and Roles at Other Institutions

2009 **Elected Hiring Committee Member**, *Free University of Bolzano*
for one Assistant Professor position in Computer Science.

2006 **Elected Hiring Committee Member**, *University of Milano-Statale*
for one Assistant Professor position in Computer Science.

2001 **Elected Hiring Committee Member**, *University of Milano-Statale*
for one Assistant Professor position in Computer Science.

10/1991–09/1992 **Required Military Service**, Pesaro, Italy

Publications

Refereed Journals

[1] Franziska S. Hollauf, Roberto Posenato, Carlo Combi, and Johann Eder, "Modeling Oracles in Simple Temporal Networks with Uncertainty," *Information and Computation*, vol. 307, article no. 105382, Nov. 2025. doi:10.1016/j.ic.2025.105382.

[2] Luke Hunsberger and Roberto Posenato, "Recent Algorithmic Advances in Simple Temporal Networks with Uncertainty: from Faster Controllability Checking to Faster Execution," *Information and Computation*, vol. 307, article no. 105356, Nov. 2025. doi:10.1016/j.ic.2025.105356.

[3] Alexander Artikis, Roberto Posenato, and Stefano Tonetta, "Temporal representation and reasoning in data-intensive systems," *Information Systems*, vol. 122, article no. 102350, May 2024. doi:10.1016/j.is.2024.102350.

[4] Roberto Posenato and Carlo Combi, "Flexible temporal constraint management in modularized processes," *Information Systems*, vol. 118, article no. 102257, 2023. doi:10.1016/j.is.2023.102257.

[5] Luke Hunsberger and Roberto Posenato, "A Faster Algorithm for Converting Simple Temporal Networks with Uncertainty into Dispatchable Form," *Information and Computation*, vol. 293, no. 105063, pp. 1–21, 2023. doi:10.1016/j.ic.2023.105063.

[6] Mario Ocampo-Pineda, Roberto Posenato, and Francesca Zerbato, "TimeAwareBPMN-js: An editor and temporal verification tool for Time-Aware BPMN processes," *SoftwareX*, vol. 17, article no. 100939, Jan. 2022. doi:10.1016/j.softx.2021.100939.

[7] Roberto Posenato, "CSTNU Tool: A Java library for checking temporal networks," *SoftwareX*, vol. 17, article no. 100905, 2022. doi:10.1016/j.softx.2021.100905.

[8] Roberto Posenato and Carlo Combi, "Adding flexibility to uncertainty: Flexible Simple Temporal Networks with Uncertainty (FTNU)," *Information Sciences*, vol. 584, pp. 784–807, Jan. 2022. doi:10.1016/j.ins.2021.10.008.

[9] Carlo Combi, Roberto Posenato, Luca Viganò, and Matteo Zavatteri, "Conditional Simple Temporal Networks with Uncertainty and Resources," *J Artif Intell Res*, vol. 64, pp. 931–985, Apr. 2019. doi:10.1613/jair.1.11453.

[10] Roberto Posenato, Andreas Lanz, Carlo Combi, and Manfred Reichert, "Managing time-awareness in modularized processes," *Software & Systems Modeling*, vol. 18, pp. 1135–1154, Apr. 2019. doi:10.1007/s10270-017-0643-4.

[11] Carlo Comin, Roberto Posenato, and Romeo Rizzi, "Hyper temporal networks," *Constraints*, vol. 22, pp. 152–190, Apr. 2017. doi:10.1007/s10601-016-9243-0.

[12] Alessandro Cimatti, Luke Hunsberger, Andrea Micheli, Roberto Posenato, and Marco Roveri, "Dynamic controllability via Timed Game Automata," *Acta Informatica*, vol. 53, pp. 681–722, Oct. 2016. doi:10.1007/s00236-016-0257-2.

[13] Carlo Combi, Mauro Gambini, Sara Migliorini, and Roberto Posenato, "Representing Business Processes Through a Temporal Data-Centric Workflow Modeling Language: An Application to the Management of Clinical Pathways," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 44, pp. 1182–1203, Sept. 2014. doi:10.1109/TSMC.2014.2300055.

[14] Carlo Combi, Matteo Gozzi, Roberto Posenato, and Giuseppe Pozzi, "Conceptual modeling of flexible temporal workflows," *ACM Transactions on Autonomous and Adaptive Systems*, vol. 7, pp. 1–29, July 2012. ISBN: 1556-4665. doi:10.1145/2240166.2240169.

[15] Alessandro Daducci, Antonio Marigonda, Giandomenico Orlandi, and Roberto Posenato, "Neuronal fiber tracking via optimal mass transportation," *Communications on Pure and Applied Analysis*, vol. 11, no. 5, pp. 2157–2177, 2012. doi:10.3934/cpaa.2012.11.2157.

[16] Giuliano Grossi, Massimo Marchi, and Roberto Posenato, "Solving maximum independent set by asynchronous distributed hopfield-type neural networks," *RAIRO - Theoretical Informatics and Applications*, vol. 40, pp. 371–388, Apr. 2006. doi:10.1051/ita:2006012.

[17] Paola Campadelli, Roberto Posenato, and Raimondo Schettini, "An algorithm for the selection of high-contrast color sets," *Color Research & Application*, vol. 24, no. 2, pp. 132–138, 1999. doi:10.1002/(SICI)1520-6378(199904)24:2<132::AID-COL8>3.0.CO;2-B.

[18] Roberto Posenato and Massimo Santini, "A new lower bound on approximability of the ground state problem for tridimensional Ising spin glasses," *Information Processing Letters*, vol. 68, pp. 167–171, Nov. 1998. doi:10.1016/S0020-0190(98)00157-4.

[19] Maria A Alberti, Alberto Bertoni, Paola Campadelli, Giuliano Grossi, and Roberto Posenato, "A neural algorithm for MAX-2SAT: Performance analysis and circuit implementation," *Neural Networks*, vol. 10, pp. 555–560, Apr. 1997. doi:10.1016/s0893-6080(96)00065-2.

[20] Alberto Bertoni, Paola Campadelli, Cristina Gangai, and Roberto Posenato, "Approximability of the ground state problem for certain Ising spin glasses," *Journal of Complexity*, vol. 13, pp. 326–339, Sept. 1997. doi:10.1006/jcom.1997.0449.

Conferences and Workshops with referees and published proceedings

[21] Ajdin Sumic, Gauthier Picard, Roberto Posenato, Thierry Vidal, Carlo Combi, and Frédéric Maris, "Centralized and distributed approaches for restoring the weak controllability of multi-agent interdependent stnus," in *Proceedings of the Thirty-Fifth International Joint Conference on Artificial Intelligence, IJCAI-26*, pp. 374–382, International Joint Conferences on Artificial Intelligence Organization, Aug. 2026. Main Track. doi:10.24963/ijcai.2026/43.

[22] Roberto Posenato and Irene Vanderfeesten, eds., *Advanced Information Systems Engineering Workshops: CAiSE 2026 Workshops, Verona, Italy, June 8–12, 2026, Proceedings*, vol. 586 of

Lecture Notes in Business Information Processing. Springer, June 2026. doi:10.1007/978-3-032-28160-9.

[23] Ajdin Sumic, Thierry Vidal, Gauthier Picard, Frédéric Maris, Roberto Posenato, and Carlo Combi, "Centralized and Distributed approaches for restoring the Weak Controllability of Multi-Agent Interdependent STNUs (extended abstract)," in *Proceedings of the 25th International Conference on Autonomous Agents and Multiagent Systems*, (Paphos, Cyprus), International Foundation for Autonomous Agents and Multiagent Systems, May 2026. doi:10.65109/FQWT7513.

[24] Luke Hunsberger and Roberto Posenato, "A Better Algorithm for Converting an STNU into Minimal Dispatchable Form," in *Proceedings of the 32nd International Symposium on Temporal Representation and Reasoning (TIME 2025)*, vol. 355 of *LIPIcs*, (London), pp. 1–15, Dagstuhl Publishing, 2025. doi:10.4230/LIPIcs.TIME.2025.11.

[25] Johann Eder, Roberto Posenato, Carlo Combi, Marco Franceschetti, and Franziska S. Hollauf, "Agile Controllability of Simple Temporal Networks with Uncertainty and Oracles," in *31st International Symposium on Temporal Representation and Reasoning (TIME 2024)*, vol. 318 of *LIPIcs*, pp. 4:1–4:16, 2024. doi:10.4230/LIPIcs.TIME.2024.4.

[26] Luke Hunsberger and Roberto Posenato, "A Faster Algorithm for Finding Negative Cycles in Simple Temporal Networks with Uncertainty," in *31st International Symposium on Temporal Representation and Reasoning (TIME 2024)*, vol. 318 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 9:1–9:15, 2024. doi:10.4230/LIPIcs.TIME.2024.9.

[27] Luke Hunsberger and Roberto Posenato, "Faster Algorithm for Converting an STNU into Minimal Dispatchable Form," in *31st International Symposium on Temporal Representation and Reasoning (TIME 2024)*, vol. 318 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 11:1–11:14, 2024. doi:10.4230/LIPIcs.TIME.2024.11.

[28] Luke Hunsberger and Roberto Posenato, "Robust Execution of Probabilistic STNs," in *31st International Symposium on Temporal Representation and Reasoning (TIME 2024)*, vol. 318 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 12:1–12:19, 2024. doi:10.4230/LIPIcs.TIME.2024.12.

[29] Luke Hunsberger and Roberto Posenato, "Converting Simple Temporal Networks with Uncertainty into Minimal Equivalent Dispatchable Form," in *Proceedings of the Thirty-Fourth International Conference on Automated Planning and Scheduling (ICAPS 2024)*, vol. 34, pp. 290–300, 2024. doi:10.1609/icaps.v34i1.31487.

[30] Roberto Posenato, Marco Franceschetti, Carlo Combi, and Johann Eder, "Introducing Agile Controllability in Temporal Business Processes," in *Enterprise, Business-Process and Information Systems Modeling*, vol. 511 of *Lecture Notes in Business Information Processing (LNBIP)*, pp. 87–99, Springer, 2024. doi:10.1007/978-3-031-61007-3_8.

[31] Giovanni Alberto Beltrame, Carlo Combi, Alessandro Farinelli, Roberto Posenato, and Giuseppe Pozzi, "Ride-Sharing in Medical Transportations: Dealing with Temporal Requirements," in *Workshop Proceedings of the EDBT/ICDT 2024 Joint Conference*, vol. 3651, CEUR-WS, 2024. URL: https://ceur-ws.org/Vol-3651/HeDAI-1.pdf.

[32] Luke Hunsberger and Roberto Posenato, "Foundations of Dispatchability for Simple Temporal Networks with Uncertainty," in *16th International Conference on Agents and Artificial Intelligence (ICAART 2024)*, vol. 2, pp. 253–263, SCITEPRESS, Feb. 2024. doi:10.5220/0012360000003636.

[33] Luke Hunsberger and Roberto Posenato, "Converting Simple Temporal Networks with Uncertainty into Dispatchable Form - Faster," in *30th International Symposium on Temporal Representation and Reasoning (TIME 2023)* (Alexander Artikis, Florian Bruse, and Luke Hunsberger, eds.), vol. 278 of *Leibniz International Proceedings in Informatics (LIPIcs)*, (Dagstuhl, Germany), pp. 20:1–20:3, Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Sept. 2023. doi:10.4230/LIPIcs.TIME.2023.20.

[34] Marco Franceschetti, Roberto Posenato, Carlo Combi, and Johann Eder, "Dynamic Controllability of Parameterized CSTNUs," in *37th ACM/SIGAPP Symposium on Applied Computing (SAC '23)*, June 2023. doi:10.1145/3555776.3577618.

[35] Luke Hunsberger and Roberto Posenato, "Speeding up the RUL$^-$ Dynamic-Controllability-Checking Algorithm for Simple Temporal Networks with Uncertainty," in *36th AAAI Conference on Artificial Intelligence (AAAI-22)*, vol. 36, pp. 9776–9785, AAAI Press, 2022. doi:10.1609/aaai.v36i9.21213.

[36] Luke Hunsberger and Roberto Posenato, "Simple Temporal Networks: A Practical Foundation for Temporal Representation and Reasoning," in *28th International Symposium on Temporal Representation and Reasoning (TIME 2021)*, vol. 206 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 1:1–1:5, Schloss Dagstuhl, 2021. doi:10.4230/LIPIcs.TIME.2021.1.

[37] Luke Hunsberger and Roberto Posenato, "Faster Dynamic-Consistency Checking for Conditional Simple Temporal Networks," in *Proceedings of the International Conference on Automated Planning and Scheduling*, vol. 30, pp. 152–160, June 2020. doi:10.1609/icaps.v30i1.6656.

[38] Luke Hunsberger and Roberto Posenato, "Propagating Piecewise-Linear Weights in Temporal Networks," in *Proceedings of the 29th International Conference on Automated Planning and Scheduling, ICAPS 2019*, vol. 29, pp. 223–231, AAAI Press, 2019. doi:10.1609/icaps.v29i1.3480.

[39] Roberto Posenato, Francesca Zerbato, and Carlo Combi, "Managing Decision Tasks and Events in Time-Aware Business Process Models," in *Business Process Management - 16th International Conference (BPM 2018)* (Mathias Weske, Marco Montali, Ingo Weber, and Jan vom Brocke, eds.), vol. 11080 of *Lecture Notes in Computer Science (LNCS)*, pp. 102–118, Springer, 2018. doi:10.1007/978-3-319-98648-7_7.

[40] Luke Hunsberger and Roberto Posenato, "Reducing epsilon-DC Checking for Conditional Simple Temporal Networks to DC Checking," in *25th International Symposium on Temporal Representation and Reasoning (TIME 2018)* (Natasha Alechina, Kjetil Nørvåg, and Wojciech Penczek, eds.), vol. 120 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 15:1–15:15, Schloss Dagstuhl, 2018. doi:10.4230/LIPIcs.TIME.2018.15.

[41] Luke Hunsberger and Roberto Posenato, "Sound-and-Complete Algorithms for Checking the Dynamic Controllability of Conditional Simple Temporal Networks with Uncertainty," in *25th International Symposium on Temporal Representation and Reasoning (TIME 2018)* (Natasha Alechina, Kjetil Nørvåg, and Wojciech Penczek, eds.), vol. 120 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 14:1–14:17, Schloss Dagstuhl, 2018. doi:10.4230/LIPIcs.TIME.2018.14.

[42] Carlo Combi and Roberto Posenato, "Extending Conditional Simple Temporal Networks with Partially Shrinkable Uncertainty," in *25th International Symposium on Temporal Representation and Reasoning (TIME 2018)* (Natasha Alechina, Kjetil Nørvåg, and Wojciech

Penczek, eds.), vol. 120 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 9:1–9:15, Schloss Dagstuhl, 2018. doi:10.4230/LIPIcs.TIME.2018.9.

[43] Luke Hunsberger and Roberto Posenato, "Simpler and Faster Algorithm for Checking the Dynamic Consistency of Conditional Simple Temporal Networks," in *Proceedings of the 27th International Joint Conference on Artificial Intelligence, IJCAI-18*, pp. 1324–1330, International Joint Conferences on Artificial Intelligence Organization, July 2018. doi:10.24963/ijcai.2018/184.

[44] Massimo Cairo, Luke Hunsberger, Roberto Posenato, and Romeo Rizzi, "A Streamlined Model of Conditional Simple Temporal Networks - Semantics and Equivalence Results," in *24th International Symposium on Temporal Representation and Reasoning (TIME 2017)* (Sven Schewe, Thomas Schneider, and Jef Wijsen, eds.), vol. 90 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 10:1–10:19, Schloss Dagstuhl, 2017. doi:10.4230/LIPIcs.TIME.2017.10.

[45] Massimo Cairo, Carlo Combi, Carlo Comin, Luke Hunsberger, Roberto Posenato, Romeo Rizzi, and Matteo Zavatteri, "Incorporating Decision Nodes into Conditional Simple Temporal Networks," in *24th International Symposium on Temporal Representation and Reasoning (TIME 2017)* (Sven Schewe, Thomas Schneider, and Jef Wijsen, eds.), vol. 90 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pp. 9:1–9:18, Schloss Dagstuhl, 2017. doi:10.4230/LIPIcs.TIME.2017.9.

[46] Matteo Zavatteri, Carlo Combi, Roberto Posenato, and Luca Viganò, "Weak, Strong and Dynamic Controllability of Access-Controlled Workflows Under Conditional Uncertainty," in *Business Process Management - 15th International Conference (BPM 2017)* (Josep Carmona, Gregor Engels, and Akhil Kumar, eds.), vol. 10445 of *Lecture Notes in Computer Science (LNCS)*, pp. 235–251, Springer, 2017. doi:10.1007/978-3-319-65000-5_14.

[47] Carlo Combi, Roberto Posenato, Luca Viganò, and Matteo Zavatteri, "Access Controlled Temporal Networks," in *Proceedings of the 9th International Conference on Agents and Artificial Intelligence (ICAART 2017)* (J. van den Herik, A. P. Rocha, and J. Filipe, eds.), vol. 2, pp. 118–131, SCITEPRESS, Feb. 2017. doi:10.5220/0006185701180131.

[48] Luke Hunsberger and Roberto Posenato, "A New Approach to Checking the Dynamic Consistency of Conditional Simple Temporal Networks," in *Proceedings of the 22nd International Conference on Principles and Practice of Constraint Programming, CP 2016*, pp. 268–286, 2016. doi:10.1007/978-3-319-44953-1_18.

[49] Andreas Lanz, Roberto Posenato, Carlo Combi, and Manfred Reichert, "Controlling Time-Awareness in Modularized Processes," in *Enterprise, Business-Process and Information Systems Modeling. BPMDS 2016, EMMSAD 2016*, vol. 248 of *Lecture Notes in Business Information Processing*, pp. 157–172, Springer, 2016. doi:10.1007/978-3-319-39429-9_11.

[50] Luke Hunsberger and Roberto Posenato, "Checking the Dynamic Consistency of Conditional Temporal Networks with Bounded Reaction Times," in *Proceedings of the 26th International Conference on Automated Planning and Scheduling, ICAPS 2016*, pp. 175–183, 2016. URL: http://www.aaai.org/ocs/index.php/ICAPS/ICAPS16/paper/view/13108.

[51] Luke Hunsberger, Roberto Posenato, and Carlo Combi, "A Sound-and-Complete Propagation-based Algorithm for Checking the Dynamic Consistency of Conditional Simple Temporal Networks," in *22nd International Symposium on Temporal Representation and Reasoning (TIME 2015)* (Fabio Grandi, Martin Lange, and Alessio Lomuscio, eds.), pp. 4–18, IEEE CPS, Sept. 2015. doi:10.1109/TIME.2015.26.

[52] Andreas Lanz, Roberto Posenato, Carlo Combi, and Manfred Reichert, "Simple Temporal Networks with Partially Shrinkable Uncertainty," in *Proceedings of the 6th International Conference on Agents and Artificial Intelligence (ICAART 2015)*, vol. 2, pp. 370–381, 2015. doi:10.5220/0005200903700381.

[53] Carlo Combi, Luke Hunsberger, and Roberto Posenato, "An Algorithm for Checking the Dynamic Controllability of a Conditional Simple Temporal Network with Uncertainty - Revisited," in *Agents and Artificial Intelligence - 5th International Conference, ICAART 2013. Revised Selected Papers*, vol. 449 of *Communications in Computer and Information Science (CCIS)*, pp. 314–331, Springer, 2014. doi:10.1007/978-3-662-44440-5_19.

[54] Carlo Comin, Roberto Posenato, and Romeo Rizzi, "A Tractable Generalization of Simple Temporal Networks and its relation to Mean Payoff Games," in *21st International Symposium on Temporal Representation and Reasoning (TIME 2014)* (Andrea Cesta, Carlo Combi, and Francois Laroussinie, eds.), pp. 7–16, IEEE CPS, Sept. 2014. doi:10.1109/TIME.2014.13.

[55] Alessandro Cimatti, Luke Hunsberger, Andrea Micheli, Roberto Posenato, and Marco Roveri, "Sound and Complete Algorithms for Checking the Dynamic Controllability of Temporal Networks with Uncertainty, Disjunction and Observation," in *21st International Symposium on Temporal Representation and Reasoning (TIME 2014)* (Andrea Cesta, Carlo Combi, and Francois Laroussinie, eds.), pp. 27–36, IEEE CPS, Sept. 2014. doi:10.1109/TIME.2014.21.

[56] Romeo Rizzi and Roberto Posenato, "Optimal Design of Consistent Simple Temporal Networks," in *TIME 2013 - 20th International Symposium on Temporal Representation and Reasoning* (César Sánchez, Kristen Brent Venable, and Esteban Zimányi, eds.), pp. 19–25, IEEE CPS, 2013. doi:10.1109/TIME.2013.12.

[57] Andreas Lanz, Roberto Posenato, Carlo Combi, and Manfred Reichert, "Controllability of time-aware processes at run time," in *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, vol. 8185 of *Lecture Notes in Computer Science (LNCS)*, pp. 39–56, 2013. doi:10.1007/978-3-642-41030-7_4.

[58] Carlo Combi, Luke Hunsberger, and Roberto Posenato, "An algorithm for checking the dynamic controllability of a conditional Simple Temporal Network with Uncertainty," in *ICAART 2013 - Proceedings of the 5th International Conference on Agents and Artificial Intelligence*, vol. 2, pp. 144–156, 2013. doi:10.5220/0004256101440156.

[59] Carlo Combi, Mauro Gambini, Sara Migliorini, and Roberto Posenato, "Modelling temporal, data-centric medical processes," in *Proceedings of the 2nd ACM SIGHIT symposium on International health informatics - IHI '12*, article no. 141, 2012. doi:10.1145/2110363.2110382.

[60] Carlo Combi and Roberto Posenato, "On the complexity of temporal controllabilities for workflow schemata," in *Proceedings of the ACM Symposium on Applied Computing (SAC 2012)*, pp. 60–66, 2012. doi:10.1145/2245276.2245292.

[61] Luke Hunsberger, Roberto Posenato, and Carlo Combi, "The Dynamic Controllability of Conditional STNs with Uncertainty," in *PlanEx 2012: "Planning and Plan Execution for Real-World Systems: Principles and Practices (PlanEx)" @ ICAPS 2012*, (Atibaia), pp. 21–29, June 2012. URL: http://arxiv.org/abs/1212.2005.

[62] Carlo Combi and Roberto Posenato, "Towards Temporal Controllabilities for Workflow Schemata," in *TIME 2010: International Symposium on Temporal Representation and Reasoning. Proceedings*, pp. 129–136, IEEE CPS, Sept. 2010. doi:10.1109/TIME.2010.17.

[63] Carlo Combi and Roberto Posenato, "Controllability in temporal conceptual workflow schemata," in *Business Process Management, 7th International Conference, BPM 2009*, vol. 5701 of *Lecture Notes in Computer Science (LNCS)*, pp. 64–79, Springer, 2009. doi:10.1007/978-3-642-03848-8_6.

[64] Paolo Boldi, Roberto Posenato, Massimo Santini, and Sebastiano Vigna, "Traps and pitfalls of topic-biased PageRank," in *WAW 2006: Algorithms and Models for the Web-Graph*, vol. 4936 of *Lecture Notes in Computer Science (LNCS)*, 2008. doi:10.1007/978-3-540-78808-9_10.

[65] Alberto Bertoni, Paola Campadelli, and Roberto Posenato, "Analysis of a genetic model with finite populations," in *Advances in natural computation* (Lipo Wang, Ke Chen, and Yew Soon Ong, eds.), vol. 3612 of *Lecture Notes in Computer Science (LNCS)*, pp. 235–244, Springer, 2005. doi:10.1007/11539902_28.

[66] Alberto Belussi and Roberto Posenato, "A framework for the internationalization of data-intensive web applications," in *Web engineering. ICWE 2004* (Nora Koch, Piero Fraternali, and Martin Wirsing, eds.), vol. 3140 of *Lecture Notes in Computer Science (LNCS)*, pp. 478–482, Springer, 2004. doi:10.1007/978-3-540-27834-4_58.

[67] Giuliano Grossi and Roberto Posenato, "A distributed algorithm for max independent set problem based on hopfield networks," in *Neural nets* (Maria Marinaro and Roberto Tagliaferri, eds.), vol. 2486 of *Lecture Notes in Computer Science (LNCS)*, pp. 64–74, Springer, 2002. doi:10.1007/3-540-45808-5_6.

[68] Sara Comai, Ernesto Damiani, Roberto Posenato, and Letizia Tanca, "A schema-based approach to modeling and querying WWW data," in *Flexible query answering systems. FQAS 1998* (Troels Andreasen, Henning Christiansen, and Henrik Legind Larsen, eds.), vol. 1495 of *Lecture Notes in Computer Science (LNCS)*, pp. 110–125, Springer, 1998. doi:10.1007/BFb0055995.

[69] Alberto Bertoni, Paola Campadelli, and Roberto Posenato, "An upper bound for the maximum cut mean value," in *Graph-theoretic concepts in computer science* (Rolf H. Möhring, ed.), vol. 1335 of *Lecture Notes in Computer Science (LNCS)*, pp. 78–84, Springer, 1997. doi:10.1007/BFb0024489.

[70] Maria A Alberti, Alberto Bertoni, Paola Campadelli, Giuliano Grossi, and Roberto Posenato, "A neural circuit for the maximum 2-satisfiability problem," in *Proceedings Euromicro Workshop on Parallel and Distributed Processing*, IEEE CPS, 1995. doi:10.1109/empdp.1995.389192.

[71] Alberto Bertoni, Paola Campadelli, Roberto Posenato, and Massimo Santini, "Approximability of GROUND STATE Problem on Tridimensional Ising Spin Glasses (extended abstract)," in *Proceedings of the 5th Italian Conference on Theoretical Computer Science (ICTCS 95)* (Alfredo De Santis, ed.), (EATCS), pp. 492–496, World Scientific Publishing Co., 1995. doi:10.1142/9789814531184.

[72] Giuliano Grossi, Roberto Posenato, Marco Costa, Davide Palmisano, and Eros Pasero, "Fast prototyping for hardware neural networks," in *Proceedings of the 5th International Conference on Artificial Neural Networks (ICANN 95)*, pp. 411–416, European Neural Network Society, 1995.

[73] Alberto Bertoni, Paola Campadelli, and Roberto Posenato, "Polynomial Time Approximation of Min-Energy in Hopfield Networks," in *Neural Nets WIRN VIETRI-95* (Maria Marinaro and Roberto Tagliaferri, eds.), pp. 165–170, World Scientific Publishing Co., 1995. doi:10.1142/9789814531337.

[74] Maria A Alberti, Paolo Marelli, and Roberto Posenato, "A Neural Algorithm for the Maximum Satisfiability Problem," in *Neural Nets Wirn Vietri-93* (E R Caianello, ed.), pp. 173–179, World Scientific Publishing Co., May 1993. doi:10.1142/9789814534604.

[75] Alberto Bertoni, Paola Campadelli, Anna Morpurgo, and Roberto Posenato, "An Algorithm for Learning from Positive Examples Classes of Linearly Separable Boolean Functions," in *PARALLEL ARCHITECTURES AND NEURAL NETWORKS* (E R Caianello, ed.), pp. 11–19, World Scientific Publishing Co., Jan. 1991. doi:10.1142/9789814538480.

Technical Reports

[76] Luke Hunsberger and Roberto Posenato, "Canonical Form of Nested Diamond Structures," Technical Report 111/2025, Dipartimento di Informatica - Università degli Studi di Verona, May 2025. URL: https://iris.univr.it/handle/11562/1163111.

[77] Roberto Posenato, Marco Franceschetti, Carlo Combi, and Johann Eder, "Some results and challenges Extending Dynamic Controllability to Agile Controllability in Simple Temporal Networks with Uncertainties," Technical Report 1/2023, Dipartimento di Informatica - Università degli Studi di Verona, 2023. URL: https://iris.univr.it/handle/11562/1116013.

[78] Luke Hunsberger and Roberto Posenato, "A note on speeding up DC-checking for STNUs," Tech. Rep. RR 109/2021, Department of Computer Science, University of Verona, July 2021. URL: https://iris.univr.it/handle/11562/1045707.

[79] Luke Hunsberger and Roberto Posenato, "Dynamic-Consistency Checking for Conditional Simple Temporal Networks: Strengthening the Theoretical Foundations and Presenting a Faster Algorithm," Tech. Rep. 103, Computer Science Department-University of Verona, Feb. 2018. URL: http://hdl.handle.net/11562/973404.

[80] Luke Hunsberger and Roberto Posenato, "Reducing Dynamic-Consistency (DC) Checking for Conditional Simple Temporal Networks (CSTNs) with Bounded Reaction Times to Standard DC Checking for CSTNs," Tech. Rep. 104, Computer Science Department-University of Verona, Feb. 2018. URL: http://hdl.handle.net/11562/973408.

[81] Luke Hunsberger and Roberto Posenato, "Dynamic Controllability Checking for Conditional Simple Temporal Networks with Uncertainty: New Sound-and-Complete Algorithms based on Constraint Propagation," Tech. Rep. 105, Computer Science Department-University of Verona, Feb. 2018. URL: http://hdl.handle.net/11562/977720.

[82] Andreas Lanz, Roberto Posenato, Carlo Combi, and Manfred Reichert, "Controlling Time-Awareness in Modularized Processes (extended Version)," Technical Report UIB-2015-01, Ulm University, Mar. 2015. URL: http://dbis.eprints.uni-ulm.de/1133/.

[83] Andreas Lanz, Roberto Posenato, Carlo Combi, and Manfred Reichert, "Simple Temporal Networks with Partially Shrinkable Uncertainty (extended Version)," Tech. Rep. UIB-2014-05, Ulm University, Faculty of Engineering and Computer Science, Dec. 2014. URL: http://dbis.eprints.uni-ulm.de/1124/.

[84] Alberto Belussi and Roberto Posenato, "Internationalizing Data-Intensive Web Applications," Technical Report DI 16, Dipartimento di Informatica - Università degli Studi di Verona, Apr. 2004.

[85] Alberto Bertoni, Paola Campadelli, Roberto Posenato, and Massimo Santini, "Approximability of the Ground State Problem for Tridimensional Ising Spin Glasses," Technical Report

RI-DSI 217-98, Dipartimento di Scienze dell'Informazione-Università degli Studi di Milano, 1998.

Theses

[86] Roberto Posenato, *Ottimizzazione approssimata di funzioni quadratiche nell'ambito delle reti neurali e dei vetri di spin*. phdthesis, Università degli Studi di Milano, Feb. 1996. Advisors: Alberto Bertoni, and Paola Campadelli.

[87] Roberto Posenato, "Apprendimento di neuroni binari a soglia mediante esempi positivi," mathesis, Università degli Studi di Milano, Feb. 1991. Advisors: Alberto Bertoni, and Paola Campadelli.

Software

Since 2022

TimeAwareBPMN-js Tool, *https://gitlab.com/univr.di/TimeAwareBPMN/-/wikis/home*

Free and open-source web application for creating and editing BPMN models with temporal constraints and verifying temporal properties through plug-ins, including dynamic controllability. I conceived the tool, defined its temporal model, designed its verification algorithms, and supervised software development. The article [6] presents the tool; further works refer directly to the software without citing that article..

Since 2012

CSTNU Tool, *https://profs.scienze.univr.it/~posenato/software/cstnu/*

Free and open-source Java library and graphical editor, entirely conceived, developed, and maintained by Roberto Posenato, for representing, generating, and checking temporal constraint networks (STN, STNU, CSTN, CSTNU, and FTNU), including consistency and dynamic-controllability algorithms. It is a reference tool for the temporal constraint networks community; it is used, among others, by I. Hedea for dynamic-controllability checks in manufacturing scheduling for digital factories (2025). The article [7] presents the tool; further works refer directly to the software without citing that article..

2015

HyTN Tool, *http://profs.scienze.univr.it/~posenato/software/hytn*

Software suite for (i) checking the consistency of HyTN(s) using different algorithms, and (ii) running benchmark experiments. The checking algorithms are described in [11] .

Verona, November 4, 2026 Roberto Posenato