

# Curriculum Vitae of Pietro Sala Ph.D.



UNIVERSITÀ  
di VERONA

Dipartimento  
di **INFORMATICA**

Temporary Assistant Professor



[Department of Computer Science, University of Verona](#)

Office: Room 1.72

Ca' Vignal 2

strada le Grazie 15

I - 37134 Verona - VR - Italy

e-mail: [pietro.sala@univr.it](mailto:pietro.sala@univr.it)

phone: ++39 045 802 7045

fax: ++39 045 802 7068

OFFICE HOURS: Friday, from 5:00 PM to 7:00 PM,

## Education

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- March 2010 Ph.D, in Computer Science by the [Department of Mathematics and Computer Science](#) of the [University of Udine](#) title of the thesis: "Decidability of Interval Temporal Logic" supervisor: prof. [Angelo Montanari](#), the thesis won the 2010 best italian Ph.D. Thesis in Theoretical Computer Science awarded by the EATCS (see [Awards](#) section).
- July 2006 Master Degree in Computer Science by the [University of Udine](#) title of the thesis: "Una Procedura di Decisione Ottimale per la Propositional Neighbourhood Logic" (in Italian). (grade: 110 cum laude)
- December 2003 Bachelor Degree in Computer Science by the [University of Udine](#) title of the thesis: "Metodi a Tableaux per Logiche Temporalì ad Intervalli" (in Italian). (grade: 110 cum laude)

## Short Bio

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Pietro Sala was born in 1981. In 2003 he received the Bachelor Degree in Computer Science by the University of Udine. In 2006 he received the Master Degree in Computer Science by the University of Udine. In 2010 he received the Ph.D. in Computer Science by the department of Computer Science of the University of Udine under the supervision of prof. [Angelo Montanari](#). From March 2010 to February 2012 he was Post-Doc fellow at the [Department of Computer Science](#) of the [University of Verona](#) under the supervision of prof. [Carlo Combi](#). From March 2012 to February 2013 he was Post-Doc fellow at the [Department of Diagnostics and Public Health](#) of the [University of Verona](#) under the supervision of prof. [Ugo Moretti](#). From March 2013 to June 2016 he was Post-Doc fellow at the [Department of Computer Science](#) of the [University of Verona](#) under the supervision of prof. [Carlo Combi](#). Since July 2016 he is Temporary Assistant Professor at the [Department of Computer Science](#) of the [University of Verona](#). On 7 August 2018 he attained the [National Academic Qualification as Associate Professor in Computer Science \(01/B1\)](#). On 19 April 2019 he attained the [National Academic Qualification as Associate Professor in Mathematical Logic \(01/A1\)](#).

## Research Interests

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Main research interests may be organized into three strongly related macro arguments.

### Temporal Logics

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This research interest focuses on the study of decidability of the model checking, satisfiability problems and synthesis problems for temporal logics. The main topics of study are the following:

- undecidability/decidability of the satisfiability problem of interval-based temporal logics;
- undecidability/decidability of the satisfiability problem of extensions of two-variable fragment of First-Order logic;
- computational complexity of the satisfiability problem for interval-based temporal logics;
- interval-based model-checking of Kripke structures;
- novel models for interval-based model-checking;
- undecidability/decidability of the synthesis problem for interval-based logics.

### Temporal Data-Mining and its application to Biomedical domains

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This research interest focuses on the study and implementation of algorithms for extracting temporal information from large quantities of data borrowed from the biomedical domains. The study is both methodological and practical. On one side it studies the best way of representing concise and significative information about the evolution of data in temporal databases. Then it evaluates the computational complexity of extracting such knowledge and proposes a efficient algorithms for performing such operations. Finally, a prototype is developed and information are extracted from data provided by real world biomedical applications. In order to prove the usefulness of such approach a constant validation by domain experts (e.g., physicians, pharmacologists and psychiatrists in this case) is performed. The main topics of study are the following:

- representation of complex temporal information by introducing new kinds of temporal dependencies (e.g., evolutionary, trend-based, interval-based and event-based);

- complexity analysis of temporal data-mining algorithm;
- design and implementation of efficient temporal data mining algorithms;
- extraction and representation of information extracted from large real-world biomedical databases;
- validation of extracted information with domain experts in the biomedical domain.

## Modelling and checking temporal properties in Business Processes

This research interest focuses on modelling and verifying temporal properties on processes represented as Business process Modelling and Notation (BPMN). Using BPMN powerful and intuitive notation we are able to best represent real-world scenarios in various time critical domains such as Emergency Medicine. In such domains the efficient interaction among resources is mandatory and thus time plays a crucial role. On one hand the study aims to introduce constructs in BPMN that express complex temporal constraints between the execution of tasks. On the other hand the study focuses on verifying temporal constraints on BPMN process via formal methods (e.g., temporal logics, model checking and automata).

- representation of complex temporal constraints in BPMN;
- verifying temporal properties on BPMN diagrams using formal methods such as automata, modal and classical logics and model checking techniques and tools ;
- optimization of resources-availability and outcome in time critical processes represented as BPMN diagrams;
- automated synthesis of strategies for the controllability of processes with resources expressed in BPMN notation;
- synthesis of controllable systems (represented as BPMN diagrams) starting from a set of temporal constraints over executions and resources allocation;
- user behaviour prediction in business processes.

## Publications

Additional information about Pietro Sala's publications may be found in [DBLP](#), [Google Scholar](#) and [Scopus](#) as well as in other sites of this kind.

### Peer - reviewed papers in International Conferences

[c44] Nicola Gigante, Dario Della Monica, Angelo Montanari, Pietro Sala. **A Novel Automata-theoretic Approach to Timeline-based Planning**. KR 2018. 541-550

[c43] Carlo Combi, Pietro Sala, Francesca Zerbatò. **A Logical Formalization of Time-Critical Processes with Resources**. BPM (Forum) 2018. 20-36.

[c42] Laura Bozzelli, Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Satisfiability and Model Checking for the Logic of Sub-Intervals under the Homogeneity Assumption**.ICALP 2017. 120:1-120:14

[c41] Carlo Combi, Matteo Mantovani, Pietro Sala. **Discovering Quantitative Temporal Functional Dependencies on Clinical Data**. ICHI 2017. 248-257

[c40] Dario Della Monica, Nicola Gigante, Angelo Montanari, Pietro Sala, Guido Sciavicco. **Bounded Timed Propositional Temporal Logic with Past Captures Timeline-based Planning with Bounded Constraints**.IJCAI 2017. 1008-1014

[c39] Carlo Combi, Pietro Sala, Francesca Zerbatò. **Driving time-dependent paths in clinical BPMN processes**. SAC 2017. 743-750

[c38] Dario Della Monica, Angelo Montanari, Pietro Sala. **Beyond  $\omega$ -BS-regular Languages:  $\omega$ -T-regular Expressions and Counter-Check Automata**. GandALF 2017. 223-237

[c37] Laura Bozzelli, Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Interval Temporal Logic Model Checking: The Border Between Good and Bad HS Fragments**.IJCAR 2016. 389-405

[c36] Laura Bozzelli, Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Interval vs. Point Temporal Logic Model Checking. an Expressiveness Comparison**. FSTTCS 2016: 26:1-26:14

[c35] Dario Della Monica, Angelo Montanari, Aniello

### Peer - reviewed papers in International Journals

[j16] Davide Bresolin, Dario Della Monica, Angelo Montanari, Pietro Sala, Guido Sciavicco. **Decidability and Complexity of the Fragments of the Modal Logic of Allen's Relations over the Rationals Information and Computation**. (accepted)

[j15] Laura Bozzelli, Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Interval vs. Point Temporal Logic Model Checking: An Expressiveness Comparison** ACM Transactions on Computational Logic. (in press, [available online](#))

[j14] Emilio Muñoz-Velasco, Mercedes Pelegrín, Pietro Sala, Guido Sciavicco, Ionel Eduard Stan. **On Coarser Interval Temporal Logics Artificial Intelligence**. (in press, [available online](#))

[j13] Laura Bozzelli, Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Which Fragments of the Interval Temporal Logic HS are Tractable in Model Checking?** Theor. Comput. Sci. (in press, [available online](#))

[j12] Laura Bozzelli, Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Model Checking for Fragments of the Interval Temporal Logic HS at the Low Levels of the Polynomial Time Hierarchy**. Information and Computation. 262(Part): 241-264 (2018)

[j11] Carlo Combi, Pietro Sala. **Mining approximate interval-based temporal dependencies**. Acta Inf. 53(6-8). 547-585 (2016)

[j10] Angelo Montanari, Marco Pazzaglia, Pietro Sala. **Metric propositional neighborhood logic with an equivalence relation**. Acta Inf. 53(6-8). 621-648 (2016)

[j9] Angelo Montanari, Marco Pazzaglia, Pietro Sala. **Adding one or more equivalence relations to the interval temporal logic**. Theor. Comput. Sci. 629. 116-134 (2016)

[j8] Carlo Combi, Matteo Mantovani, Alberto Sabaini, Pietro Sala, Francesco Amaddeo, Ugo Moretti, Giuseppe Pozzi. **Mining approximate temporal functional dependencies with pure temporal grouping in clinical databases**. Comp. in Bio. and Med. 62. 306-324 (2015)

[j7] Angelo Montanari, Gabriele Puppis, Pietro Sala. **A decidable weakening of Compass Logic based on cone-shaped cardinal directions**. Logical Methods in Computer Science 11(4) (2015)

[j6] Carlo Combi, Pietro Sala. **Interval-based temporal functional dependencies: specification and verification**. Ann. Math. Artif. Intell. 71(1-3). 85-130 (2014)

Murano, Pietro Sala. **Prompt Interval Temporal Logic**. JELIA 2016. 207-222

[c34] Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Model Checking Well-Behaved Fragments of HS: The (Almost) Final Picture**. KR 2016. 473-483

[c33] Laura Bozzelli, Alberto Molinari, Angelo Montanari, Adriano Peron, Pietro Sala. **Model Checking the Logic of Allen's Relations Meets and Started-by is PNP-Complete**. GandALF 2016. 76-90

[c32] Emilio Muñoz-Velasco, Mercedes Pelegrin-García, Pietro Sala, Guido Sciavicco. **On Coarser Interval Temporal Logics and their Satisfiability Problem**. CAEPIA 2015. 105-115

[c31] Pietro Sala, Carlo Combi, Matteo Cuccato, Andrea Galvani, Alberto Sabaini. **A Framework for Mining Evolution Rules and Its Application to the Clinical Domain**. ICHI 2015. 293-302

[c30] Davide Bresolin, Dario Della Monica, Angelo Montanari, Pietro Sala, Guido Sciavicco. **On the Complexity of Fragments of the Modal Logic of Allen's Relations over Dense Structures**. LATA 2015. 511-523

[c29] Carlo Combi, Romeo Rizzi, Pietro Sala. **The Price of Evolution in Temporal Databases**. TIME 2015. 47-58

[c28] Angelo Montanari, Gabriele Puppis, Pietro Sala. **Decidability of the Interval Temporal Logic  $\mathcal{S}\{A\bar{A}B\bar{B}\}$  over the Rationals**. MFCS (1) 2014. 451-463

[c27] Angelo Montanari, Marco Pazzaglia, Pietro Sala. **Metric Propositional Neighborhood Logic with an Equivalence Relation**. TIME 2014. 49-58

[c26] Pietro Sala. **Approximate Interval-Based Temporal Dependencies: The Complexity Landscape**. TIME 2014. 69-78

[c25] Angelo Montanari, Pietro Sala. **Interval-based Synthesis**. GandALF 2014. 102-115

[c24] Carlo Combi, Paolo Parise, Pietro Sala, Giuseppe Pozzi. **Mining Approximate Temporal Functional Dependencies Based on Pure Temporal Grouping**. ICDM Workshops 2013. 258-265

[c23] Angelo Montanari, Pietro Sala. **Interval Logics and  $\omega$ -Regular Languages**. LATA 2013. 431-443

[c22] Angelo Montanari, Pietro Sala. **Adding an Equivalence Relation to the Interval Logic ABB: Complexity and Expressiveness**. LICS 2013. 193-202

[c21] Dario Della Monica, Angelo Montanari, Pietro Sala. **The Importance of the Past in Interval Temporal Logics: The Case of Propositional Neighborhood Logic**. Logic Programs, Norms and Action 2012. 79-102

[c20] Davide Bresolin, Dario Della Monica, Angelo Montanari, Pietro Sala, Guido Sciavicco. **Interval Temporal Logics over Finite Linear Orders: the Complete Picture**. ECAI 2012. 199-204

[c19] Angelo Montanari, Pietro Sala. **An Optimal Tableau System for the Logic of Temporal**

[j5] Davide Bresolin, Dario Della Monica, Angelo Montanari, Pietro Sala, Guido Sciavicco. **Interval temporal logics over strongly discrete linear orders: Expressiveness and complexity**. Theor. Comput. Sci. 560. 269-291 (2014)

[j4] Davide Bresolin, Angelo Montanari, Pietro Sala, Guido Sciavicco. **Optimal decision procedures for MPNL over finite structures, the natural numbers, and the integers**. Theor. Comput. Sci. 493. 98-115 (2013)

[j3] Davide Bresolin, Pietro Sala, Guido Sciavicco. **On Begins, Meets and before**. Int. J. Found. Comput. Sci. 23(3). 559-583 (2012)

[j2] Davide Bresolin, Valentin Goranko, Angelo Montanari, Pietro Sala. **Tableaux for Logics of Subinterval Structures over Dense Orderings**. J. Log. Comput. 20(1). 133-166 (2010)

[j1] Valentin Goranko, Angelo Montanari, Pietro Sala, Guido Sciavicco. **A general tableau method for propositional interval temporal logics: Theory and implementation**. J. Applied Logic 4(3). 305-330 (2006)

[c15] Davide Bresolin, Angelo Montanari, Pietro Sala, Guido Sciavicco. **Optimal Tableau Systems for Propositional Neighborhood Logic over All, Dense, and Discrete Linear Orders**. TABLEAUX 2011. 73-87

[c14] Carlo Combi, Pietro Sala. **Temporal Functional Dependencies Based on Interval Relations**. TIME 2011. 23-30

[c13] Davide Bresolin, Angelo Montanari, Pietro Sala, Guido Sciavicco. **An Optimal Decision Procedure for MPNL over the Integers**. GandALF 2011. 192-206

[c12] Angelo Montanari, Gabriele Puppis, Pietro Sala. **Maximal Decidable Fragments of Halpern and Shoham's Modal Logic of Intervals**. ICALP (2) 2010. 345-356

[c11] Angelo Montanari, Gabriele Puppis, Pietro Sala, Guido Sciavicco. **Decidability of the Interval Temporal Logic ABB over the Natural Numbers**. STACS 2010. 597-608

[c10] Angelo Montanari, Ian Pratt-Hartmann, Pietro Sala. **Decidability of the Logics of the Reflexive Sub-interval and Super-interval Relations over Finite Linear Orders**. TIME 2010. 27-34

[c9] Davide Bresolin, Pietro Sala, Dario Della Monica, Angelo Montanari, Guido Sciavicco. **A Decidable Spatial Generalization of Metric Interval Temporal Logic**. TIME 2010. 95-102

[c8] Davide Bresolin, Pietro Sala, Guido Sciavicco. **Begin, After, and Later: a Maximal Decidable Interval Temporal Logic**. GandALF 2010. 72-88

[c7] Davide Bresolin, Valentin Goranko, Angelo Montanari, Pietro Sala. **Complete and Terminating Tableau for the Logic of Proper Subinterval Structures Over Dense Orderings**. Electr. Notes Theor. Comput. Sci. 231. 131-151 (2009)

[c6] Angelo Montanari, Gabriele Puppis, Pietro Sala. **A Decidable Spatial Logic with Cone-Shaped Cardinal Directions**. CSL 2009. 394-408

[c5] Davide Bresolin, Angelo Montanari, Pietro Sala, Guido Sciavicco. **A Tableau-Based System for Spatial Reasoning about Directional Relations**. TABLEAUX 2009. 123-137

[c4] Davide Bresolin, Angelo Montanari, Pietro Sala, Guido Sciavicco. **Optimal Tableaux for Right Propositional Neighborhood Logic over Linear Orders**. JELIA 2008. 62-75

[c3] Davide Bresolin, Angelo Montanari, Pietro Sala. **An optimal tableau for Right Propositional Neighborhood Logic over Trees**. TIME 2008. 110-117

[c2] Davide Bresolin, Angelo Montanari, Pietro Sala. **An Optimal Tableau-Based Decision Algorithm for Propositional Neighborhood Logic**. STACS 2007. 549-560

*Neighborhood over the Reals. TIME 2012. 39-46*

[c18]  *Davide Bresolin, Dario Della Monica, Angelo Montanari, Pietro Sala, Guido Sciavicco. Interval Temporal Logics over Strongly Discrete Linear Orders: the Complete Picture. GandALF 2012. 155-168*

[c17]  *Davide Bresolin, Angelo Montanari, Pietro Sala, Guido Sciavicco. What's Decidable about Halpern and Shoham's Interval Logic? The Maximal Fragment ABBL. LICS 2011. 387-396*

[c16]  *Carlo Combi, Angelo Montanari, Pietro Sala. A Uniform Framework for Temporal Functional Dependencies with Multiple Granularities. SSTD 2011. 404-421*

[c1]  *Davide Bresolin, Valentin Goranko, Angelo Montanari, Pietro Sala. Tableau Systems for Logics of Subinterval Structures over Dense Orderings. TABLEAUX 2007. 73-89*

## Professional Activities

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Other professional activities are listed below.

### Teaching

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Teaching activities ordered by academic year:

- **a.a. 2017/2018** Biomedical Decision Support Systems. Master Degree in Biomedical Informatics, [Department of Computer Science](#) of the [University of Verona](#). Tenured professors: Dr. Pietro Sala Ph.D.
- **a.a. 2016/2017** Interval-based synthesis (invited lecture at the [The 1st Summer School on formal methods for Cyber-Physical Systems.](#)). [Ph.D. in Computer Science](#), [Department of Computer Science](#) of the [University of Verona](#). Lecturer: Dr. Pietro Sala Ph.D.
- **a.a. 2016/2017** Logic, Automata and Games at the edge of Decidability (Ph.D Course). [Ph.D. in Computer Science](#), [Department of Computer Science](#) of the [University of Verona](#). Lecturer: Dr. Pietro Sala Ph.D.
- **a.a. 2016/2017** Biomedical Decision Support Systems. Master Degree in Biomedical Informatics, [Department of Computer Science](#) of the [University of Verona](#). Tenured professors: Dr. Pietro Sala Ph.D.
- **a.a. 2014/2015** Database (Laboratory). Bachelor Degree in Bioinformatics, [Department of Computer Science](#) of the [University of Verona](#). Tenured professors: [prof. Carlo Combi](#)
- **a.a. 2013/2014** Software Engineering. Bachelor Degree in Computer Science, [Department of Computer Science](#) of the [University of Verona](#). Tenured professors: Dr. Pietro Sala Ph.D. and [Dr. Marco Volpe Ph.D.](#)
- **a.a. 2011/2012** Languages and Algorithms for Bioinformatics. Master Degree in Biotechnologies, [Department of Biotechnology](#) of the [University of Verona](#). Tenured professors: Dr. Pietro Sala Ph.D. and [Dr. Alberto Castellini Ph.D.](#)
- **a.a. 2010/2011** Artificial Intelligence 2. Master Degree in Computer Science, [Department of Mathematics and Computer Science](#) of the [University of Trieste](#). Tenured professor: Dr. Pietro Sala Ph.D.
- **a.a. 2009/2010** Computer Systems Architecture (Exercises). Bachelor Degree in Computer Science, [Department of Mathematics and Computer Science](#) of the [University of Udine](#). Tenured professor: [prof. Pietro Di Gianantonio](#).
- **a.a. 2008/2009** Computer Systems Architecture (Laboratory). Bachelor Degree in Computer Science, [Department of Mathematics and Computer Science](#) of the [University of Udine](#). Tenured professor: [prof. Pietro Di Gianantonio](#).
- **a.a. 2007/2008** Computer Systems Architecture (Laboratory). Bachelor Degree in Computer Science, [Department of Mathematics and Computer Science](#) of the [University of Udine](#). Tenured professor: [prof. Pietro Di Gianantonio](#).

### Students

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List of the co-supervised master theses in Computer Science :

- **Matteo Cuccato** "A Framework for Extracting Approximate Temporal Functional Dependencies : Architecture and Application in the Clinical Domain" Master Thesis in Computer Science, [Department of Computer Science](#) of the [University of Verona](#), 2015. Supervisor: [prof. Carlo Combi](#).
- **Marco Pazzaglia** "Metric Propositional Neighborhood Logic with an Equivalence Relation" Master Thesis in Computer Science, [Department of Mathematics and Computer Science](#) of the [University of Udine](#), 2014. Supervisor: [Angelo Montanari](#).
- **Andrea Galvani** "Mining Algorithms for Approximate Temporal Functional Dependencies: Pure temporally evolving ATFDs applied to healthcare data" Master Thesis in Computer Science, [Department of Computer Science](#) of the [University of Verona](#), 2014. Supervisor: [prof. Carlo Combi](#).
- **Marco Pagliarini** "Algorithms for Mining Interval-Based Temporal Functional Dependencies - The Case of Relation During -" Master Thesis in Computer Science, [Department of Computer Science](#) of the [University of Verona](#), 2014. Supervisor: [prof. Carlo Combi](#).
- **Matteo Mantovani** "Temporal Data Mining Techniques: Discovering approximate temporal functional dependencies based on sliding windows in healthcare data warehouses" Master Thesis in Computer Science, [Department of Computer Science](#) of the [University of Verona](#), 2013. Supervisor: [prof. Carlo Combi](#).
- **Marco Baciga** "Design and Implementation of a Data Mart to support the analysis of drug expenditure within the healthcare Veneto regional system" Master Thesis in Computer Science, [Department of Computer Science](#) of the [University of Verona](#), 2013. Supervisor: [prof. Carlo Combi](#).
- **Paolo Parise** "Dipendenze Funzionali Temporali Approssimate basate su Grouping Temporali: Modellazione, derivazione e prime valutazioni su dati psichiatrici" Master Thesis in Computer Science, [Department of Computer Science](#) of the [University of Verona](#), 2011. Supervisor: [prof. Carlo Combi](#).
- **Tommaso D'Odorico** "Modal Logics for Spatial Reasoning" Master Thesis in Computer Science, [Department of Mathematics and Computer Science](#) of the [University of Udine](#), 2009. Supervisor: [Angelo Montanari](#).



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## Committees

Member of the following committees:

- IJCAI 2019 **Program Committee Member** of [The 28th International Joint Conference on Artificial Intelligence](#).
- CILC 2019 **Program Committee Member** of [The 34th Italian Conference on Computational Logic](#).
- GandALF 2019 **Program Committee Member** of [The 10th International Symposium on Games, Automata, Logics, and Formal Verification](#).
- CILC 2018 **Program Committee Member** of [The 33rd Italian Conference on Computational Logic](#).
- GandALF 2018 **Program Committee Member** of [The 9th International Symposium on Games, Automata, Logics, and Formal Verification](#).
- ACM BCB 2017 **Program Committee Member** of [The 8th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics](#).
- CPS 2017 **Organizing Committee Member** of [The 1st Summer School on formal methods for Cyber-Physical Systems](#).
- CILC 2016 **Program Committee Member** of [The 31st Italian Conference on Computational Logic](#).
- ICHI 2014 **Organizing Committee Member** of [The 2nd IEEE International Conference on Healthcare Informatics](#).
- GandALF 2014 **Organizing Committee Member** of [The 5th International Symposium on Games, Automata, Logics and Formal Verification](#).
- TIME 2014 **Organizing Committee Member** of [The 21st International Symposium on Temporal Representation and Reasoning](#).
- CILC 2014 **Program Committee Member** of [The 29th Italian Conference on Computational Logic](#).
- GandALF 2013 **Organizing Committee Chair** of [The 4th International Symposium on Games, Automata, Logics and Formal Verification](#).
- GAMES 2009 **Organizing Committee Member** of [The Annual Workshop of the ESF Networking Programme on Games for Design and Verification](#).

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## Academic Councils

Member of the following committees:

- Since 23 March 2018 **Member of the Council for the Ph.D. in Computer Science** of the **Ph.D. Schools (University of Verona)**.
- Since 1 July 2016 **Member of the Teaching Council for the Computer Science Degrees** of the **Department of Computer Science (University of Verona)**.
- Since 1 July 2016 **Member of the Council of the Department of Computer Science (University of Verona)**.

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## Invited Relations

Invited relations so far:

- **ECAI 2014: 21st European Conference on Artificial Intelligence** August 18, 2014. Title of the invited tutorial: "Temporal Representation and Reasoning in Interval Temporal Logics".
- **ICTCS 2010: 12th Italian Conference on Theoretical Computer Science** September 16, 2010. Title of the invited talk: "Decidability of Interval Temporal logic".
- **SAKT 2010: colloquium on logic for temporal databases** December 18, 2010. Title of the invited talk: "Temporal Functional Dependencies".

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## Projects

Principal investigator of the joint-project granted by the University of Verona in 2018 entitled:

"**Tecniche di Data Mining e Model Checking per predire il comportamento dei clienti in sistemi CRM process-driven**" in collaboration with [CRMVillage](#).

Member of the following National/International research projects:

- **ESF-GAMES** from 2008 to 2012 member of the international project: [Games for Design and Verification \(GAMES\)](#) supported by the [European Science Foundation](#).
- **GNCS 2019** member of the national project: **Formal Methods for combined verification techniques** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).
- **GNCS 2018** member of the national project: **Formal Methods for Synthesis and Verification of Discrete and Hybrid Systems** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).
- **GNCS 2017** member of the national project: **High performing computational models for biomedical information extraction and integration** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).
- **GNCS 2016** member of the national project: **Logica, Automi e Giochi per Sistemi Auto-adattivi** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).
- **GNCS 2015** member of the national project: **Algoritmica per il model checking e la sintesi di sistemi safety-critical** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).
- **GNCS 2014** member of the national project: **Automi, giochi e logiche temporali per la verifica e la sintesi di controllori in sistemi safety-critical** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).
- **GNCS 2013** member of the national project: **Logiche di gioco estese** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).
- **GNCS 2010** member of the national project: **Logiche, automi e giochi per la verifica formale di sistemi complessi** supported by the [Gruppo Nazionale per il Calcolo Scientifico \(GNCS\)](#).

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## Review Activity

Reviews for the following international journals and conferences:

- [Science of Computer Programming \(SCICO\)](#) ▪ [PPDP 2016](#) ▪ [LICS 2015](#) ▪ [HSCC 2015](#) ▪ [GandALF 2013](#) ▪ [TIME 2013](#) ▪ [Journal of Healthcare Informatics Research \(JHIR\)](#) ▪ [Journal Of Logic And Computation \(JLC\)](#) ▪ [Journal of Applied Logic \(JAL\)](#) ▪ [Annals of Mathematics and Artificial Intelligence \(AMAI\)](#) ▪ [Mobile Information Systems \(MIS\)](#) ▪ [ACM BCB 2017](#) ▪ [IJCAI 2018](#) ▪ [CiE 2018](#) ▪ [Distributed and Parallel Databases \(DAPD\)](#) ▪ [Journal of Biomedical Informatics \(JBI\)](#) ▪ [CONCUR 2018](#)

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## Spin-off

Involved in the following companies:

- **2018** founding member and member of the board of directors as scientific advisor of the innovative startup [MedBrains s.r.l.](#)

## **Awards**

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Recipient of the following award:

- **2010** [Best Italian PhD Thesis in Theoretical Computer Science](#) given by the [Italian Chapter of the European Association for Theoretical Computer Science](#).