Curriculum Vitae
Maria Paola Bonacina

Dipartimento di Informatica – Università degli Studi di Verona
Strada Le Grazie 15, I-37134 Verona, Italy, EU
mariapaola.bonacina@univr.it – Tel.: +39 045/802.7046
https://mariapaola.github.io/
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Higher Education

- Ph.D., Computer Science, State University of New York at Stony Brook, Stony Brook, New York, USA (8/1989–12/1992) (Supported as Research and Teaching Assistant with tuition waiver, and by a Fellowship (6/1991–6/1993) for alumni or alumnæ of the Università degli Studi di Milano).

- Dottorato di Ricerca, Informatica, Università degli Studi di Milano, Milano, Italy (11/1986–1/1991) (Supported by a four-year State Scholarship).

- Laurea (summa cum laude), Scienze dell'Informazione, Università degli Studi di Milano, Milano, Italy (11/1982–7/1986).

Further Professional Preparation   EU post-doctoral fellowship *Human Capital and Mobility*, INRIA-Lorraine & CRIN, Nancy, France, 3–6/1993 (renounced to join the University of Iowa).

Professional History

- Professor, Computer Science, Università degli Studi di Verona, Verona, Italy, since 10/2002.

- Associate Professor, Computer Science, The University of Iowa, Iowa City, Iowa, USA, 8/1998–9/2002 (Dean Scholar, Class of 2000–2002).

- Assistant Professor, Computer Science, The University of Iowa, Iowa City, Iowa, USA, 8/1993–7/1998 (General Electric Foundation Faculty Fellow, 10/1993–8/1994).

Research Interests   Artificial intelligence and computational logic: automated reasoning, theorem proving, model building, satisfiability modulo theories and assignments, interpolation of proofs, decision procedures for satisfiability, strategy analysis, distributed deduction, rewriting.

Awards and Grants (PI: Principal Investigator, Co-PI: Co-Principal Investigator)

- Amazon Research Award Fall 2022, *Advances in conflict-driven satisfiability modulo theories and assignments*, $20,000 (**PI**) 3/2023–2/2024.

- Congedo per esclusiva attività di ricerca scientifica (leave for sabbatical year) 2021–2022.

- Congedo per motivi di studio (leave of absence to study abroad) 1–5/2021[1].

- Ricerca di Base[2] Award, *SGGS theorem proving: algorithms and implementation*, €42.701,73 (**PI**) 4/2017–9/2019.

- CooperInt[3] Award (for a visit at The University of Manchester) €1.875, 3–4/2017.

- Congedo per esclusiva attività di ricerca scientifica (leave for sabbatical year) 2015–2016.

- PRIN,[4] *Integrating automated reasoning in model checking: towards push-button formal verification of large-scale and infinite-state systems – Design and integration of proof engines for program analysis* (2007-9E5KM8) €142.857 (**Co-PI**) 9/2008–9/2010.

- Research Award, €4.500, 2008–2010; and Teaching Award, €3.600, 2009–2010.

- PRIN, *Synthesis of deduction-based decision procedures with applications to the automatic formal analysis of software – Synthesis of satisfiability procedures from theorem proving strategies* (2003-097383) €121.500 (**PI**) 11/2003–11/2005.

- Career Development Award (sabbatical year: renounced to join the Università degli Studi di Verona).

- Dean Scholar Award, College of Liberal Arts and Sciences, $10,000, 2000–2002.

- NSF[5] Faculty Early Career Development Award (**CAREER**), *Distributed deduction with contraction and foundation of strategy analysis* (CCR-97-01508) $210,000 (**PI**) 9/1997–8/2002.

- NSF CISE[6] Research Instrumentation Grant, *Instrumentation for research in search technology* (EIA-97-29807) $167,920 (**Co-PI**) 2/1998–1/2000.

- NSF Research Initiation Award (**RIA**), *Strategies for contraction-based distributed automated deduction* (CCR-94-08667) $79,407 (**PI**) 9/1994–8/1997.

- Research Assignment 9–12/1996.

- NSF CISE Research Instrumentation Grant, *Experimental parallel and distributed computing research at the University of Iowa* (CDA-93-20427) $240,000 (**Co-Investigator**) 3/1994–8/1995.

- General Electric Foundation and Old Gold Fellowships, *Parallel search in distributed automated deduction*, $28,000, (**PI**) 10/1993–8/1994.

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[1]Awarded to attend programs at the Simons Institute for the Theory of Computing (University of California at Berkeley, Berkeley, California, USA).

[2]University-wide bi-annual program of the Università degli Studi di Verona to fund basic research.

[3]University-wide annual program of the Università degli Studi di Verona to foster international cooperations.

[4]Programma di Ricerca scientifica di rilevante Interesse Nazionale, Ministero Istruzione Università Ricerca, Italy.

[5]National Science Foundation, USA.

[6]Directorate for Computer and Information Science and Engineering.

Program Committees of International Conferences, Symposia, and Workshops

- *International Joint Conference on Automated Reasoning* (**IJCAR**): 2026, 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006, 2004 (also for the Doctoral Program); and *Conference on Automated Deduction* (**CADE**): 2025, 2023, 2021, 2019, 2017, 2013 (**Chair**), 2011, 2009, 2007, 2002.

- *ACM/IEEE Symposium on Logic in Computer Science* (**LICS**): 2026, 2016.

- *Workshop on Satisfiability Modulo Theories* (**SMT**): 2025, 2022, 2021, 2018, 2011.

- *Symposium on Principles and Practice of Declarative Programming* (**PPDP**): 2023, 2019.

- *Symposium on Fundamentals of Software Engineering* (**FSEN**): 2023, 2013.

- *Workshop on Interpolation: from Proofs to Applications* (**iPRA**): 2022.

- *Workshop on Parallel and Distributed Automated Reasoning* (**PDAR**): 2022, 2021.

- *International Joint Conference on Artificial Intelligence* (**IJCAI**): 2021.

- *Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements* (**ARCADE**): 2021, 2019, 2017.

- *Conference on Formal Structures for Computation and Deduction* (**FSCD**): 2020.

- *Conference on Automated Reasoning with Analytic Tableaux and Related Methods* (**TABLEAUX**): 2019, 2017.

- *Conference on Types for Proofs and Programs* (**TYPES**): 2018.

- *Workshop on User Interfaces for Theorem Provers* (**UITP**): 2018.

- *EACSL Conference on Computer Science Logic* (**CSL**): 2017, 2015.

- *Workshop on Automated Formal Methods* (**AFM**): 2017.

- *Conference on Logic for Programming, Artificial Intelligence, and Reasoning* (**LPAR**): 2015, 2007.

- *Workshop on Automated Deduction: Decidability Complexity Tractability* (**ADDCT**): 2014, 2013, 2009, 2007; and *Workshop on Complexity Expressibility and Decidability in Automated Reasoning* (**CEDAR**): 2008.

- *Workshop on Synthesis, Verification, and Analysis of Rich Models* (**SVARM**): 2013 (**Co-Chair**), 2012 (joint with **VERIFY** (*Verification Workshop*)), 2011 (**Co-Chair**), 2010.

- *Workshop on Strategies in Rewriting Proving and Programming* (**IWS**): 2012 (**Co-Chair**), 2010; and *Workshop on Strategies in Automated Deduction* (**STRATEGIES**): 2006, 2004 (**Co-Chair**), 2001 (**Co-Chair**).

- *Workshop on First-Order Theorem Proving* (**FTP**): 2011, 2009, 2003, 2000, 1998, 1997 (**Co-Chair**).

- *Symposium on Parallel Symbolic Computation* (**PASCO**): 1994.

- *Indian Conference on Logic and its Applications* (**ICLA**): 2017; and *German Annual Conference on Artificial Intelligence* (**KI**): 2009.

Other International Committees

- CADE Skolem Award[7] Committee: 2025, 2021 (**Chair**). Responsibilities: assigning the award for four past conferences, if Chair also committee selection.

- Herbrand Award[8] Committee: 2024 (**Chair**). Responsibility: assigning the award.

- *Dagstuhl Seminar on Deduction*, Organizing Committee: *The Next Generation of Deduction Systems: from Composition to Compositionality* (23471) 11/2023, and *Integrated Deduction* (21371) 9/2021. Responsibilities: writing proposal, selecting participants, editing report.

- **President**, CADE Board of Trustees: 9/2013–10/2016, and 12/2009–12/2010 (**elected**). Achievements: institution of the Skolem award, the Best Paper award, and the Summer School on SAT/SMT/AR. Responsibilities: chairing business meetings and Herbrand award committees; representing CADE in the LICS and FLoC (Federated Logic Conference) Organizing Committees.

- CADE **Trustee**: 8/2013–10/2016 (**elected**), 2/2012–6/2013 (ex officio as *Program Committee Chair*), 10/2004–12/2010 (**elected** for two consecutive terms), and 8/1999–5/2004 (ex officio as Secretary). Responsibilities: selection of Program Committee Chair and conference site, and assignment of the Herbrand award.

- IJCAR Steering Committee: 9/2013–10/2016, and 12/2009–12/2010 as representative of CADE (**Chair** 12/2009–12/2010); and 2000–2004 as representative of FTP (**Chair** 2002–2004). Achievements: foundation of IJCAR which replaced FTP and merges at least CADE, TABLEAUX, and FroCoS. Responsibilities: selection of Program Committee Chair and conference site, and (as Chair) representing IJCAR in the FLoC Organizing Committee.

- **Director**, Association for Automated Reasoning (AAR) 4/2008–12/2010 (**elected** by the CADE trustees as one of two CADE representatives in a board of five directors).

- IJCAR Organizing Committee: 2006 (*Workshop Chair*), and 2004 (*Publicity Chair*).

- CADE Secretary, 8/1999–5/2004 and AAR Secretary, 9/1997–5/2004.

- FTP Steering Committee, 1997–2003 (**Chair** 1999–2003).

- ISSAC-PASCO (*Federated Symposia on Symbolic and Algebraic Computation and Parallel Symbolic Computation*) Organizing Committee, 1997 (*Registration Chair*).

- RTA (*Conference on Rewriting Techniques and Applications*) Organizing Committee, 1991.

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[7]The Thoralf Skolem award rewards a paper for passing the test of time by being most influential in the field.
[8]The Jacques Herbrand award is a career award, the most prestigious in the field.

Activity as Reviewer (in addition to Program Committees)

- **Journals**: *Journal of Automated Reasoning, ACM Transactions on Computational Logic, Journal of Logic and Computation, Journal of Symbolic Computation, Information and Computation, Theoretical Computer Science, Journal on Satisfiability, Boolean Modeling and Computation, Journal of Pure and Applied Algebra, Communications of the ACM, AI Communications, Mathematics in Computer Science, Science of Computer Programming, Information Processing Letters, IEEE Transactions on Computer-Aided Design, Annals of Mathematics and Artificial Intelligence, IEEE Intelligent Systems, Journal of Automated Software Engineering, Wiley Interdisciplinary Reviews-Cognitive Science, Reports in Mathematical Logic, Journal of Zhejiang University.*

- **Books**: *Description Logic, Theory Combination, and All That*, Lecture Notes in Artificial Intelligence 11560, Springer, 2019; *Martin Davis on Computability, Computational Logic, and Mathematical Foundations*, Outstanding Contributions to Logic 10, Springer, 2016; *Fields of Logic and Computation II: Essays Dedicated to Yuri Gurevich*, Lecture Notes in Computer Science 9300, Springer, 2015; *Algebra, Meaning and Computation: Essays Dedicated to Joseph Goguen*, Lecture Notes in Computer Science 4060, Springer, 2006.

- **International conferences, symposia, workshops (selected)**: CADE, TABLEAUX, FroCoS (*Symposium on Frontiers of Combination of Systems*), PPDP, CSL, LICS, STACS (*Symposium on Theoretical Aspects of Computer Science*), FM (*Symposium on Formal Methods*), TACAS (*Conference on Tools and Algorithms for the Construction and Analysis of Systems*), AAAI (*Conference of the American Association for Artificial Intelligence*), RTA, PRICAI (*Pacific Rim International Conference on Artificial Intelligence*), DISCO (*Symposium on the Design and Implementation of Systems for Symbolic Computation*), APLAS (*Asian Symposium on Programming Languages and Systems*), LFMTP (*Workshop on Logical Frameworks and Meta-Languages: Theory and Practice*), FSEN, KI.

- **Funding agencies (selected)**:
    - Austrian Science Fund (FWF); US-Israel Binational Science Foundation; Ministero dell'Istruzione Università e Ricerca (MIUR).
    - EU Commission, Research Executive Agency: Horizon 2020: Information and Communication Technology: *Tools and Methods for Software Development*; 7th Framework Program: Information and Communication Technology: Strategic Objectives *Software Engineering, Services and Cloud Computing*; *Cloud Computing, Internet of Services and Advanced Software Engineering*; and *Internet of Services, Software and Virtualisation*; 6th Framework Program: *Research Infrastructures* action, mid-term project review; Information Society Technology: Strategic Objectives *Software and Services*; and *Open Platforms for Software and Services*.
    - In the US: NSF, International Program; US Civilian Research and Development Foundation for the Independent States of the Former Soviet Union, Moldovan-US Bilateral Grants Program; Idaho State Board of Education, Specific Research Grant Program; US Dept. of Defense, Experimental Program for Stimulating Competitive Research.

Membership   *Association for Automated Reasoning* 1988– , *IFIP Working Group 1.6 on Term Rewriting* 1998– , *ACM Special Interest Group in Logic and Computation* 2016– , *Association for Symbolic Logic* 1996–2005, *European Association for Theoretical Computer Science* 1987–2004.

Selected visits   (Short visits are omitted and appear in the talks section)

- SRI International, Menlo Park, California, USA: Computer Science Laboratory: *International Fellow* 10/2021–9/2022 and 9/2015–9/2016 (sabbatical years), and *Observer* 3–5/2019, 5–6/2017; Artificial Intelligence Center: 10/1996 (during the Research Assignment).

- Institute of Software, State Key Laboratory for Computer Science, Chinese Academy of Sciences, Beijing, PR China, 4/2018 and 6/2011.

- Isaac Newton Institute for the Mathematical Sciences, University of Cambridge, Cambridge, England, UK, *Program Visitor*, *Big Proof* (BPR), 7/2017.

- School of Computer Science, The University of Manchester, Manchester, England, UK, *Visiting Professor* 3–4/2017.

- Microsoft Research, Redmond, Washington, USA, *Gratis Visitor* 4/2016, 6/2013, and *Visiting Research Scholar* 5–6/2008.

- Institut für Informatik, Universität Koblenz-Landau, Koblenz, Germany, 9/2014 and 6/1999.

- Department of Mathematical Sciences, Tsinghua University, Beijing, PR China, 5/2007.

- Dipartimento di Informatica, Sistemistica e Telecomunicazioni, Università degli Studi di Genova, Genova, Italy, 6–7/2001.

- Dipartimento di Informatica e Sistemistica, Università degli Studi di Roma "La Sapienza", Roma, Italy, 5–6/2000.

- Fakultät Informatik, Technische Universität Dresden, Dresden, Germany, *Guest Professor*, International Graduate Program in Computational Logic, 5/1999.

- Mathematics and Computer Science Division, Argonne National Laboratory, Argonne, Illinois, USA, 6/1998 and 1–2/1993.

- Department of Computer Science, National Taiwan University, Taipei, Taiwan ROC, 3/1989.

- Laboratoire de Recherche en Informatique, Université de Paris XI, Orsay, France, 9–12/1988.

Citizenship and Languages   Italian; Italian (mother tongue), English (fluent), French (fluent).

Publications

Books

1. Maria Paola Bonacina. Conflict-Driven Procedures for Automated Reasoning. **In preparation**.

Articles in refereed journals

2. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. CDSAT for predicate-sharing theories: arrays, maps, and vectors with abstract domain. **Submitted**, 45 pages.

3. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Christophe Vauthier. The QSMA algorithm for quantifiers in SMT. *Journal of Automated Reasoning*, 69(2):13, 40 pages, June **2025**; DOI: 10.1007/s10817-025-09727-8.

4. Maria Paola Bonacina and Sarah Winkler. Semantically-guided goal-sensitive reasoning: decision procedures and the Koala prover. *Journal of Automated Reasoning*, 67(1):6, 42 pages, March **2023**; DOI: 10.1007/s10817-022-09656-w.

5. Maria Paola Bonacina. Set of support, demodulation, paramodulation: a historical perspective. *Journal of Automated Reasoning*, 66(4):463–497, November **2022**; DOI: 10.1007/s10817-022-09628-0.

6. Michael Beeson, Maria Paola Bonacina, Michael Kinyon, and Geoff Sutcliffe. Larry Wos – Visions of automated reasoning. *Journal of Automated Reasoning*, 66(4):439–461, November **2022**; DOI: 10.1007/s10817-022-09620-8.

7. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. Conflict-driven satisfiability for theory combination: lemmas, modules, and proofs. *Journal of Automated Reasoning*, 66(1):43–91, February **2022**; DOI: 10.1007/s10817-021-09606-y.

8. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. Conflict-driven satisfiability for theory combination: transition system and completeness. *Journal of Automated Reasoning*, 64(3):579–609, March **2020**; DOI: 10.1007/s10817-018-09510-y.

9. Maria Paola Bonacina and David A. Plaisted. Semantically-guided goal-sensitive reasoning: inference system and completeness. *Journal of Automated Reasoning*, 59(2):165–218, August **2017**; DOI: 10.1007/s10817-016-9384-2.

10. Maria Paola Bonacina and David A. Plaisted. Semantically-guided goal-sensitive reasoning: model representation. *Journal of Automated Reasoning*, 56(2):113–141, February **2016**; DOI: 10.1007/s10817-015-9334-4.

11. Maria Paola Bonacina and Moa Johansson. Interpolation systems for ground proofs in automated deduction: a survey. *Journal of Automated Reasoning*, 54(4):353–390, April **2015**; DOI: 10.1007/s10817-015-9325-5.

12. Maria Paola Bonacina and Moa Johansson. On interpolation in automated theorem proving. *Journal of Automated Reasoning*, 54(1):69–97, January **2015**; DOI:10.1007/s10817-014-9314-0.

13. Maria Paola Bonacina, Christopher A. Lynch, and Leonardo de Moura. On deciding satisfiability by theorem proving with speculative inferences. *Journal of Automated Reasoning*, 47(2):161–189, August **2011**; DOI: 10.1007/s10817-010-9213-y.

14. Maria Paola Bonacina and Mnacho Echenim. Theory decision by decomposition. *Journal of Symbolic Computation*, 45(2):229–260, February **2010**; DOI: 10.1016/j.jsc.2008.10.008.

15. Alessandro Armando, Maria Paola Bonacina, Silvio Ranise, and Stephan Schulz. New results on rewrite-based satisfiability procedures. *ACM Transactions on Computational Logic*, 10(1):129–179, January **2009**; DOI: 10.1145/1459010.1459014.

16. Maria Paola Bonacina and Mnacho Echenim. On variable-inactivity and polynomial $\mathcal{T}$-satisfiability procedures. *Journal of Logic and Computation*, 18(1):77–96, February **2008**; DOI: 10.1093/logcom/exm055.

17. Maria Paola Bonacina and Nachum Dershowitz. Abstract canonical inference. *ACM Transactions on Computational Logic*, 8(1):180–208, January **2007**; DOI: 10.1145/1182613.1182619.

18. Maria Paola Bonacina. Towards a unified model of search in theorem proving: subgoal-reduction strategies. *Journal of Symbolic Computation*, 39(2):209–255, February **2005**; DOI: 10.1016/j.jsc.2004.11.001.

19. Maria Paola Bonacina. A taxonomy of parallel strategies for deduction. *Annals of Mathematics and Artificial Intelligence*, 29(1,2,3&4):223–257, **2000**; DOI: 10.1023/A:1018932114059.

20. Maria Paola Bonacina. A model and a first analysis of distributed-search contraction-based strategies. *Annals of Mathematics and Artificial Intelligence*, 27(1,2,3&4):149–199, December **1999**; DOI: 10.1023/A:1018919214722.

21. Maria Paola Bonacina and Jieh Hsiang. On the modelling of search in theorem proving – Towards a theory of strategy analysis. *Information and Computation*, 147:171–208, December **1998**; DOI: 10.1006/inco.1998.2739.

22. Maria Paola Bonacina and Jieh Hsiang. On semantic resolution with lemmaizing and contraction and a formal treatment of caching. *New Generation Computing*, 16(2):163–200, February **1998**; DOI: 10.1007/BF03037315.

23. Maria Paola Bonacina. On the reconstruction of proofs in distributed theorem proving: a modified Clause-Diffusion method. *Journal of Symbolic Computation*, 21(4,5&6):507–522, April–June **1996**; DOI: 10.1006/jsco.1996.0028.

24. Hantao Zhang, Maria Paola Bonacina, and Jieh Hsiang. PSATO: a distributed propositional prover and its application to quasigroup problems. *Journal of Symbolic Computation*, 21(4,5&6):543–560, April–June **1996**; DOI: 10.1006/jsco.1996.0030.

25. Maria Paola Bonacina and Jieh Hsiang. A category-theoretic treatment of automated theorem proving. *Journal of Information Science and Engineering*, 12(1):101–125, March **1996**.

26. Maria Paola Bonacina and Jieh Hsiang. The Clause-Diffusion methodology for distributed deduction. *Fundamenta Informaticae*, 24(1&2):177–207, September **1995**; DOI: 10.3233/FI-1995-24128.

27. Maria Paola Bonacina and Jieh Hsiang. Towards a foundation of completion procedures as semidecision procedures. *Theoretical Computer Science*, 146:199–242, July **1995**; DOI: 10.1016/0304-3975(94)00187-N.

28. Maria Paola Bonacina and Jieh Hsiang. Distributed deduction by Clause-Diffusion: distributed contraction and the Aquarius prover. *Journal of Symbolic Computation*, 19(1,2&3):245–267, January–March **1995**; DOI: 10.1006/jsco.1995.1014.

29. Maria Paola Bonacina and Jieh Hsiang. On subsumption in distributed derivations. *Journal of Automated Reasoning*, 12(2):225–240, June **1994**; DOI: 10.1007/BF00881888.

30. Maria Paola Bonacina and Jieh Hsiang. Parallelization of deduction strategies: an analytical study. *Journal of Automated Reasoning*, 13(1):1–33, February **1994**; DOI:10.1007/BF00881910.

31. Maria Paola Bonacina and Jieh Hsiang. On rewrite programs: semantics and relationship with Prolog. *The Journal of Logic Programming*, 14(1&2):155–180, October **1992**; DOI: 10.1016/0743-1066(92)90050-D.

Papers at events with referees and published proceedings

32. Maria Paola Bonacina. The CDSAT method for satisfiability modulo theories and assignments: an exposition. In Arnold Beckmann, Isabel Oitavem, and Florin Manea (Eds.) *Proceedings of the 21st International Conference on Computability in Europe: Crossroads of Computability and Logic – Insights, Inspirations, and Innovations* (**CiE**), Lisbon, Portugal, EU, July 2025. Springer, Lecture Notes in Computer Science 15764, 1–16, July **2025**; DOI: 10.1007/978-3-031-95908-0_1 (**invited**).

33. Maria Paola Bonacina. Reasoning about quantifiers in SMT: the QSMA algorithm. In Alexander Nadel and Kristin Yvonne Rozier (Eds.) *Proceedings of the 23rd International Conference on Formal Methods in Computer-Aided Design* (**FMCAD**), Ames, Iowa, USA, October 2023. TU Wien Academic Press, 1–1, **2023**; DOI: 10.34727/2023/isbn.978-3-85448-060-0_1 (**invited**). (Abstract of [34])

34. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Christophe Vauthier. QSMA: a new algorithm for quantified satisfiability modulo theory and assignment. In Brigitte Pientka and Cesare Tinelli (Eds.) *Proceedings of the 29th International Conference on Automated Deduction* (**CADE**), Rome, Italy, EU, July 2023. Springer, Lecture Notes in Artificial Intelligence 14132, 78–95, **2023**; DOI: 10.1007/978-3-031-38499-8_5.

35. Maria Paola Bonacina and Sarah Winkler. On SGGS and Horn clauses. In Boris Konev, Claudia Schon, and Alexander Steen (Eds.) *Proceedings of the 8th Workshop on Practical Aspects of Automated Reasoning* (**PAAR**), satellite of the 11th IJCAR, 8th FLoC, Haifa, Israel, August 2022. CEUR Workshop Proceedings 3201, 1–20, **2022**.

36. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. CDSAT for nondisjoint theories with shared predicates: arrays with abstract length. In Antti Hyvärinen and David Déharbe (Eds.) *Proceedings of the 20th International Workshop on Satisfiability Modulo Theories* (**SMT**), satellite of the 11th IJCAR, 8th FLoC, Haifa, Israel, August 2022. CEUR Workshop Proceedings 3185, 18–37, **2022**.

37. Maria Paola Bonacina. Proof generation in CDSAT. In Chantal Keller and Mathias Fleury (Eds.) *Proceedings of the 7th International Workshop on Proof eXchange for Theorem Proving* (**PxTP**), satellite of the 28th CADE, Pittsburgh, Pennsylvania, USA, July 2021. Open Publishing Association, Electronic Proceedings in Theoretical Computer Science 336:1–4, July **2021**; DOI: 10.4204/EPTCS.336.1 (**invited**). (Abstract of an early version of [7])

38. Maria Paola Bonacina and Sarah Winkler. SGGS decision procedures. In Nicolas Peltier and Viorica Sofronie-Stokkermans (Eds.) *Proceedings of the 10th International Joint Conference on Automated Reasoning* (**IJCAR**), Paris, France, EU, July 2020. Springer, Lecture Notes in Artificial Intelligence 12166, 356–374, **2020**; DOI: 10.1007/978-3-030-51074-9_20.

39. Maria Paola Bonacina. Conflict-driven reasoning in unions of theories. In Andreas Herzing and Andrei Popescu (Eds.) *Proceedings of the 12th International Symposium on Frontiers of Combining Systems* (**FroCoS**), London, England, UK, September 2019. Springer, Lecture Notes in Artificial Intelligence 11715, xi–xiii, **2019** (**invited**). (Abstract of [8]).

40. Maria Paola Bonacina. On conflict-driven reasoning. In Natarajan Shankar and Bruno Dutertre (Eds.) *Proceedings of the 6th Automated Formal Methods Workshop* (**AFM**) satellite of the 9th NASA FM Symposium (NFM), Menlo Park, California, USA, May 2017. EasyChair Kalpa Publications in Computing 5, 31–49, April **2018**; DOI: 10.29007/spwm.

41. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. Proofs in conflict-driven theory combination.[9] In June Andronick and Amy Felty (Eds.) *Proceedings of the 7th ACM International Conference on Certified Programs and Proofs* (**CPP**), Los Angeles, California, USA, January 2018. ACM Press, 186–200, **2018**; DOI: 10.1145/3167096.

42. Maria Paola Bonacina. Automated reasoning for explainable artificial intelligence. In Giles Reger and Dmitriy Traytel (Eds.), *Proceedings of the 1st Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements* (**ARCADE**) satellite of the 26th CADE, Gothenburg, Sweden, EU, August 2017. EasyChair EPiC Series in Computing 51, 24–28, November **2017**; DOI: 10.29007/4b7h.

43. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. Satisfiability modulo theories and assignments. In Leonardo de Moura (Ed.) *Proceedings of the 26th*

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[9]Also presented as presentation-only paper at the *16th International Workshop on Satisfiability Modulo Theories* (**SMT**) satellite of the 9th IJCAR, 7th FLoC, Oxford, England, UK, July 2018.

International Conference on Automated Deduction (**CADE**), Gothenburg, Sweden, EU, August 2017. Springer, Lecture Notes in Artificial Intelligence 10395, 42–59, **2017**; DOI: 10.1007/978-3-319-63046-5_4.

44. Maria Paola Bonacina and David A. Plaisted. SGGS theorem proving: an exposition. In Stephan Schulz, Leonardo De Moura, and Boris Konev (Eds.), *Proceedings of the 4th Workshop on Practical Aspects of Automated Reasoning* (**PAAR**) satellite of the 7th IJCAR, 6th FLoC, Vienna, Austria, EU, July 2014. EasyChair EPiC Series in Computing 31, 25–38, July **2015**; DOI: 10.29007/m2vf.

45. Maria Paola Bonacina. On model-based reasoning: recent trends and current developments (Abstract). In Domenico Cantone and Marianna Nicolosi Asmundo (Eds.) *Proceedings of the 28th Italian Conference on Computational Logic* (**CILC**), Catania, Italy, EU, September 2013. CEUR Workshop Proceedings 1068, 9–9, **2013** (**invited**).

46. Maria Paola Bonacina and Moa Johansson. On interpolation in decision procedures. In Kai Brünnler and George Metcalfe (Eds.) *Proceedings of the 20th International Conference on Automated Reasoning with Analytic Tableaux and Related Methods* (**TABLEAUX**), Bern, Switzerland, July 2011. Springer, Lecture Notes in Artificial Intelligence 6793, 1–16, **2011**; DOI: 10.1007/978-3-642-22119-4_1 (**invited**).

47. Maria Paola Bonacina. On theorem proving for program checking – Historical perspective and recent developments. In Maribel Fernandez (Ed.) *Proceedings of the 12th International ACM Symposium on Principles and Practice of Declarative Programming* (**PPDP**), Schloss Hagenberg, Linz, Austria, EU, July 2010. ACM Press, 1–11, **2010**; DOI:10.1145/1836089.1836090 (**invited**).

48. Maria Paola Bonacina, Christopher A. Lynch, and Leonardo de Moura. On deciding satisfiability by DPLL($\Gamma+\mathcal{T}$) and unsound theorem proving. In Renate Schmidt (Ed.) *Proceedings of the 22nd International Conference on Automated Deduction* (**CADE**), Montréal, Canada, August 2009. Springer, Lecture Notes in Artificial Intelligence 5663, 35–50, **2009**; DOI: 10.1007/978-3-642-02959-2_3.

49. Maria Paola Bonacina and Nachum Dershowitz. Canonical inference for implicational systems. In Alessandro Armando, Peter Baumgartner, and Gilles Dowek (Eds.) *Proceedings of the 4th International Joint Conference on Automated Reasoning* (**IJCAR**), Sydney, Australia, August 2008. Springer, Lecture Notes in Artificial Intelligence 5195, 380–395, **2008**; DOI: 10.1007/978-3-540-71070-7_33.

50. Maria Paola Bonacina and Mnacho Echenim. $\mathcal{T}$-decision by decomposition. In Frank Pfenning (Ed.) *Proceedings of the 21st International Conference on Automated Deduction* (**CADE**), Bremen, Germany, EU, July 2007. Springer, Lecture Notes in Artificial Intelligence 4603, 199–214, **2007**; DOI: 10.1007/978-3-540-73595-3_14.

51. Maria Paola Bonacina and Mnacho Echenim. Rewrite-based decision procedures. In Myla Archer, Thierry Boy de la Tour, and César Muñoz (Eds.) *Proceedings of the 6th Workshop*

on Strategies in Automated Deduction (**STRATEGIES**) satellite of the 3rd IJCAR, 4th FLoC, Seattle, Washington, USA, August 2006. Elsevier, Electronic Notes in Theoretical Computer Science, 174(11):27–45, July **2007**; DOI: 10.1016/j.entcs.2006.11.042.

52. Maria Paola Bonacina and Mnacho Echenim. Rewrite-based satisfiability procedures for recursive data structures. In Byron Cook and Roberto Sebastiani (Eds.) *Proceedings of the 4th Workshop on Pragmatics of Decision Procedures in Automated Reasoning* (**PDPAR**)[10] satellite of the 3rd IJCAR, 4th FLoC, Seattle, Washington, USA, August 2006. Elsevier, Electronic Notes in Theoretical Computer Science, 174(8):55–70, June **2007**; DOI: 10.1016/j.entcs.2006.11.039.

53. Maria Paola Bonacina, Silvio Ghilardi, Enrica Nicolini, Silvio Ranise, and Daniele Zucchelli. Decidability and undecidability results for Nelson-Oppen and rewrite-based decision procedures. In Ulrich Furbach and Natarajan Shankar (Eds.) *Proceedings of the 3rd International Joint Conference on Automated Reasoning* (**IJCAR**), 4th FLoC, Seattle, Washington, USA, August 2006. Springer, Lecture Notes in Artificial Intelligence 4130, 513–527, **2006**; DOI: 10.1007/11814771_42.

54. Alessandro Armando, Maria Paola Bonacina, Silvio Ranise, and Stephan Schulz. On a rewriting approach to satisfiability procedures: extension, combination of theories and an experimental appraisal. In Bernhard Gramlich (Ed.) *Proceedings of the 5th International Workshop on Frontiers of Combining Systems* (**FroCoS**), Vienna, Austria, EU, September 2005. Springer, Lecture Notes in Artificial Intelligence 3717, 65–80, **2005**; DOI: 10.1007/11559306_4.

55. Maria Paola Bonacina. Combination of distributed search and multi-search in Peers-mcd.d. In Rajeev Goré, Alexander Leitsch, and Tobias Nipkow (Eds.) *Proceedings of the 1st International Joint Conference on Automated Reasoning* (**IJCAR**), Siena, Italy, EU, June 2001. Springer, Lecture Notes in Artificial Intelligence 2083, 448–452, **2001**; DOI: 10.1007/3-540-45744-5_37.

56. Maria Paola Bonacina. Analysis of distributed-search contraction-based strategies. In Jürgen Dix, Luis Fariñas del Cerro, and Ulrich Furbach (Eds.) *Proceedings of the 6th European Workshop on Logics in Artificial Intelligence* (**JELIA**), Schloss Dagstuhl, Germany, EU, October 1998. Springer, Lecture Notes in Artificial Intelligence 1489, 107–121, **1998**; DOI: 10.1007/3-540-49545-2_8.

57. Maria Paola Bonacina. Experiments with subdivision of search in distributed theorem proving. In Markus Hitz and Erich Kaltofen (Eds.) *Proceedings of the 2nd International Symposium on Parallel Symbolic Computation* (**PASCO**), Wailea, Maui, Hawaii, USA, July 1997. ACM Press, 88–100, **1997**; DOI: 10.1145/266670.266696.

58. Maria Paola Bonacina. The Clause-Diffusion theorem prover Peers-mcd. In William W. McCune (Ed.) *Proceedings of the 14th International Conference on Automated Deduction*

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[10]Later renamed *Workshop on Satisfiability Modulo Theories* (**SMT**).

(**CADE**), Townsville, Queensland, Australia, July 1997. Springer, Lecture Notes in Artificial Intelligence 1249, 53–56, **1997**; DOI: 10.1007/3-540-63104-6_6.

59. Maria Paola Bonacina and Jieh Hsiang. On the representation of dynamic search spaces in theorem proving. In Chu-Sing Yang (Ed.) *Proceedings of the International Conference on Artificial Intelligence*, *International Computer Symposium*, 85–94, published by the National Sun-Yat Sen University, Kaohshiung, Taiwan, ROC, December **1996**.

60. Maria Paola Bonacina and Jieh Hsiang. On semantic resolution with lemmaizing and contraction. In Norman Foo and Randy Goebel (Eds.) *Proceedings of the 4th Pacific Rim International Conference on Artificial Intelligence* (**PRICAI**), Cairns, Queensland, Australia, August 1996. Springer, Lecture Notes in Artificial Intelligence 1114, 372–386, **1996**; DOI: 10.1007/3-540-61532-6_32.

61. Maria Paola Bonacina. On the reconstruction of proofs in distributed theorem proving with contraction: a modified Clause-Diffusion method. In Hoon Hong (Ed.) *Proceedings of the 1st International Symposium on Parallel Symbolic Computation* (**PASCO**), Schloss Hagenberg, Linz, Austria, EU, September 1994. World Scientific, Lecture Notes Series on Computing 5, 22–33, **1994**.

62. Hantao Zhang and Maria Paola Bonacina. Cumulating search in a distributed computing environment: a case study in parallel satisfiability. In Hoon Hong (Ed.) *Proceedings of the 1st International Symposium on Parallel Symbolic Computation* (**PASCO**), Schloss Hagenberg, Linz, Austria, EU, September 1994. World Scientific, Lecture Notes Series on Computing 5, 422–431, **1994**.

63. Maria Paola Bonacina and William W. McCune. Distributed theorem proving by *Peers*. In Alan Bundy (Ed.) *Proceedings of the 12th International Conference on Automated Deduction* (**CADE**), Nancy, France, EU, June 1994. Springer, Lecture Notes in Artificial Intelligence 814, 841–845, **1994**; DOI: 10.1007/3-540-58156-1_72.

64. Maria Paola Bonacina and Jieh Hsiang. Distributed deduction by Clause-Diffusion: the Aquarius prover. In Alfonso Miola (Ed.) *Proceedings of the 3rd International Symposium on Design and Implementation of Symbolic Computation Systems* (**DISCO**), Gmunden, Austria, EU, September 1993. Springer, Lecture Notes in Computer Science 722, 272–287, **1993**; DOI: 10.1007/BFb0013183.

65. Maria Paola Bonacina and Jieh Hsiang. On fairness in distributed automated deduction. In Patrice Enjalbert, Alain Finkel, and Klaus W. Wagner (Eds.) *Proceedings of the 10th Annual Symposium on Theoretical Aspects of Computer Science* (**STACS**), Würzburg, Germany, EU, February 1993. Springer, Lecture Notes in Computer Science 665, 141–152, **1993**; DOI: 10.1007/3-540-56503-5_17.

66. Maria Paola Bonacina and Jieh Hsiang. High performance simplification-based automated deduction. In *Transactions of the 9th US Army Conference on Applied Mathematics and Computing*, Minneapolis, Minnesota, USA, June 1991. Published as Army Research Office Report 92-1, 321–335, **1992**.

67. Maria Paola Bonacina and Jieh Hsiang. A system for distributed simplification-based theorem proving (Project summary). In Bertrand Fronhöfer and Graham Wrightson (Eds.) *Proceedings of the 1st International Workshop on Parallelization in Inference Systems*, Schloss Dagstuhl, Germany, EU, December 1990. Springer, Lecture Notes in Artificial Intelligence 590, 370–370, **1992**; DOI: 10.1007/3-540-55425-4_18.

68. Maria Paola Bonacina and Jieh Hsiang. On fairness of completion-based theorem proving strategies. In Ronald V. Book (Ed.) *Proceedings of the 4th International Conference on Rewriting Techniques and Applications* (**RTA**), Como, Italy, EU, April 1991. Springer, Lecture Notes in Computer Science 488, 348–360, **1991**; DOI: 10.1007/3-540-53904-2_109.

69. Maria Paola Bonacina and Jieh Hsiang. Completion procedures as semidecision procedures. In Stephan Kaplan and Mitsuhiro Okada (Eds.) *Proceedings of the 2nd International Workshop on Conditional and Typed Term Rewriting Systems* (**CTRS**), Montréal, Canada, June 1990. Springer, Lecture Notes in Computer Science 516, 206–232, **1991**; DOI: 10.1007/3-540-54317-1_92 (**invited**).

70. Siva Anantharaman and Maria Paola Bonacina. An application of automated equational reasoning to many-valued logic.[11] In Stephan Kaplan and Mitsuhiro Okada (Eds.) *Proceedings of the 2nd International Workshop on Conditional and Typed Term Rewriting Systems* (**CTRS**), Montréal, Canada, June 1990. Springer, Lecture Notes in Computer Science 516, 156–161, **1991**; DOI: 10.1007/3-540-54317-1_88.

71. Maria Paola Bonacina and Jieh Hsiang. Operational and denotational semantics of rewrite programs. In Saumya Debray and Manuel Hermenegildo (Eds.) *Proceedings of the North American Conference on Logic Programming* (**NACLP**)[12], Austin, Texas, USA, October 1990. MIT Press, Logic Programming Series, 449–464, **1990**.

72. Maria Paola Bonacina and Giancarlo Sanna. KBlab: an equational theorem prover for the Macintosh. In Nachum Dershowitz (Ed.) *Proceedings of the 3rd International Conference on Rewriting Techniques and Applications* (**RTA**), Chapel Hill, North Carolina, USA, April 1989. Springer, Lecture Notes in Computer Science 355, 548–550, **1989**; DOI: 10.1007/3-540-51081-8_135.

Invited papers in refereed or edited collections

73. Maria Paola Bonacina, Pascal Fontaine, Christophe Ringeissen, and Cesare Tinelli. Theory combination: beyond equality sharing. In Carsten Lutz et al. (Eds.) *Description Logic, Theory Combination, and All That.* Springer, Lecture Notes in Computer Science 11560, 57–89, June **2019**; DOI: 10.1007/978-3-030-22102-7_3.

74. Maria Paola Bonacina. Parallel theorem proving. In Youssef Hamadi and Lakhdar Sais (Eds.) *Handbook of Parallel Constraint Reasoning.* Springer, Chapter 6, 179–235, May **2018**; DOI: 10.1007/978-3-319-63516-3_6.

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[11]Presented at the workshop with the title: An application of the theorem prover SBR3 to many-valued logic.

[12]Formerly *Symposium on Logic Programming*, later renamed *International Symposium on Logic Programming*.

75. Maria Paola Bonacina, Ulrich Furbach, and Viorica Sofronie-Stokkermans. On first-order model-based reasoning. In Narciso Martí-Oliet, Peter Olveczky, and Carolyn Talcott (Eds.) *Logic, Rewriting, and Concurrency: Essays Dedicated to José Meseguer* and Festschrift Symposium, Urbana Champaign, Illinois, USA, September 2015. Springer, Lecture Notes in Computer Science 9200, 181–204, **2015**; DOI: 10.1007/978-3-319-23165-5_8.

76. Maria Paola Bonacina and Nachum Dershowitz. Canonical ground Horn theories. In Andrei Voronkov and Christoph Weidenbach (Eds.) *Programming Logics: Essays in Memory of Harald Ganzinger.* Springer, Lecture Notes in Computer Science 7797, 35–71, March **2013**; DOI: 10.1007/978-3-642-37651-1_3.

77. Maria Paola Bonacina. A taxonomy of theorem-proving strategies. In Manuela Veloso and Michael Wooldridge (Eds.) *Artificial Intelligence Today – Recent Trends and Developments.* Springer, Lecture Notes in Artificial Intelligence 1600, 43–84, August **1999**; DOI: 10.1007/3-540-48317-9_3.

Papers at workshops with referees without published proceedings

78. Maria Paola Bonacina and Giulio Mazzi. The *Eos* SMT/SMA-solver: a preliminary report (Extended Abstract). In Natasha Sharygina and Joe Hendrix (Eds.), *Proceedings of the 17th International Workshop on Satisfiability Modulo Theories* (**SMT**) satellite of the 22nd SAT Conference, 1–10, Lisbon, Portugal, EU, July **2019**.

79. Maria Paola Bonacina and David A. Plaisted. Constraint manipulation in SGGS. In Temur Kutsia and Christophe Ringeissen (Eds.), *Proceedings of the 28th Workshop on Unification* (**UNIF**) satellite of the 7th IJCAR, 6th FLoC, Vienna, Austria, EU, July 2014. Technical Report 14-06, Research Institute for Symbolic Computation, Johannes Kepler Universität, Linz, 47–54, **2014**.

80. Maria Paola Bonacina and Moa Johansson. Towards interpolation in an SMT solver with integrated superposition. In Shuvendu Lahiri and Sanjit A. Seshia (Eds.), *Proceedings of the 9th International Workshop on Satisfiability Modulo Theories* (**SMT**) satellite of the 23rd Computer Aided Verification (CAV) Conference, Snowbird, Utah, USA, July 2011. Technical Report UCB/EECS-2011-80, Department of Electrical Engineering and Computer Sciences, University of California at Berkeley, 9–18, **2011**.

81. Alessandro Armando, Maria Paola Bonacina, Silvio Ranise, and Stephan Schulz. Big proof engines as little proof engines: new results on rewrite-based satisfiability procedures. In *Proceedings of the 3rd Workshop on Pragmatics of Decision Procedures in Automated Reasoning* (**PDPAR**)[13] satellite of the 17th CAV, 33–41, Edinburgh, Scotland, UK, July **2005**. (Extended abstract of [54])

82. Stephan Schulz and Maria Paola Bonacina. On handling distinct objects in the superposition calculus. In *Proceedings of the 5th International Workshop on the Implementation of Logics* (**IWIL**) satellite of the 11th LPAR, 66–77, Montevideo, Uruguay, March **2005**.

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[13]Later renamed *Workshop on Satisfiability Modulo Theories* (**SMT**).

83. Alessandro Armando, Maria Paola Bonacina, Silvio Ranise, Michaël Rusinowitch, and Aditya Kumar Sehgal. High-performance deduction for verification: a case study in the theory of arrays. In Serge Autexier and Heiko Mantel (Eds.) *Proceedings of the 2nd Workshop on Verification* (**VERIFY**) satellite of the 18th CADE, 3rd FLoC, Copenhagen, Denmark, EU, July 2002. Technical Report 07/2002, DIKU, Københavns Universitet, 103–112, **2002**.

84. Maria Paola Bonacina. Ten years of parallel theorem proving: a perspective. In Bernhard Gramlich, Hélène Kirchner, and Frank Pfenning (Eds.) *Proceedings of the 3rd International Workshop on Strategies in Automated Deduction* (**STRATEGIES**) satellite of the 16th CADE, 2nd FLoC, 3–15, Trento, Italy, EU, July **1999** (**invited**). (Early version of part of [19])

85. Maria Paola Bonacina. Mechanical proofs of the Levi commutator problem. In Peter Baumgartner, Ulrich Furbach, Michael Kohlhase, William W. McCune, Wolfgang Reif, Mark E. Stickel, and Tomàs Uribe (Eds.) *Proceedings of the Workshop on Problem Solving Methodologies with Automated Deduction* satellite of the 15th CADE, 1–10, Lindau, Germany, EU, July **1998**.

86. Maria Paola Bonacina. On the representation of parallel search in theorem proving. In *Proceedings of the 1st International Workshop on First-order Theorem Proving* (**FTP**), Schloss Hagenberg, Linz, Austria, EU, October 1997. Technical Report 97-50, Research Institute for Symbolic Computation, Johannes Kepler Universität, Linz, 22–28, **1997**. (Extended abstract of an early version of [56])

Invited papers in refereed or edited collections at the national level

87. Maria Paola Bonacina. Deduzione automatica. In Hykel Hosni, Gabriele Lolli, and Carlo Toffalori (Eds.) *Le Direzioni della Ricerca Logica in Italia – Volume 2*. ETS Edizioni, Analitica, Chapter 3, 77–139, June **2018**. (Extended version of [40])

88. Maria Paola Bonacina and Alberto Martelli. Automated reasoning. In Luigia Carlucci Aiello et al. (Eds.) *Special issue on Artificial Intelligence 50th Anniversary 1956–2006*, *Intelligenza Artificiale*, 3(1–2):14–20, June **2006**.

Other papers

89. Maria Paola Bonacina and David A. Plaisted. Semantically-guided goal-sensitive theorem proving. *Meeting of the IFIP Working Group on Term Rewriting* (**WG 1.6**) satellite of the 25th RTA, 6th FLoC, Vienna, Austria, EU, July **2014**. (Abstract of an early version of [9])

90. Maria Paola Bonacina. Two-stage interpolation systems. In Laura Kovàcs and Georg Weissenbacher (Eds.) *Proceedings of the 1st International Workshop on Interpolation: from Proofs to Applications* (**iPRA**) satellite of the 25th CAV, Saint Petersburg, Russia, July 2013. Technical Report, Technische Universität Wien, **2013**. (Abstract of an early version of [12])

91. Maria Paola Bonacina and Mnacho Echenim. Decision procedures for variable-inactive theories and two polynomial $\mathcal{T}$-satisfiability procedures (Position paper). In Silvio Ghilardi, Ulrike Sattler, Viorica Sofronie-Stokkermans, and Ashish Tiwari (Eds.) *Proceedings of the 1st Workshop on Automated Deduction: Decidability, Complexity, Tractability* (**ADDCT**) satellite of the 21st CADE, 65–67, Bremen, Germany, EU, July **2007**.

92. Maria Paola Bonacina. Theorem proving strategies: a search-oriented taxonomy (Position paper). In Ricardo Caferra and Gernot Salzer (Eds.) *Proceedings of the 2nd International Workshop on First-order Theorem Proving* (**FTP**), Schloss Wilhelminenberg, Vienna, Austria, EU, November 1998. Technical Report E1852-GS-981, Technische Universität Wien, 256–259, **1998**.

93. Maria Paola Bonacina. Strategy analysis: from sequential to parallel strategies (Position paper). In Bernhard Gramlich and Frank Pfenning (Eds.) *Proceedings of the 2nd Workshop on Strategies in Automated Deduction* (**STRATEGIES**) satellite of the 15th CADE, 19–21, Lindau, Germany, EU, July **1998**.

94. Maria Paola Bonacina. Machine-independent evaluation of theorem-proving strategies (Position paper). In Bernhard Gramlich and Hélène Kirchner (Eds.) *Proceedings of the 1st Workshop on Strategies in Automated Deduction* (**STRATEGIES**) satellite of the 14th CADE, 37–39, Townsville, Queensland, Australia, July **1997**.

95. Maria Paola Bonacina and Jieh Hsiang. On the notion of complexity of search in theorem proving. *Logic Colloquium*, San Sebastiàn, Spain, EU, July 1996. *Bulletin3 of Symbolic Logic*, 3(2):253–254, June **1997**. (Abstract of an early version of [21])

96. Maria Paola Bonacina. A note on the analysis of theorem-proving strategies. *Newsletter of the Association for Automated Reasoning*, 36:2–8, April **1997**.

97. Maria Paola Bonacina. Future directions of automated deduction: Strategy analysis for theorem proving (Position paper). In Don W. Loveland and Deepak Kapur (Eds.) *NSF Workshop on Future Directions of Automated Deduction*, Chicago, Illinois, USA, April **1996**.

98. Maria Paola Bonacina. Future directions of automated deduction: Distributed automated deduction (Position paper). In Don W. Loveland and Deepak Kapur (Eds.) *NSF Workshop on Future Directions of Automated Deduction*, Chicago, Illinois, USA, April **1996**.

99. Maria Paola Bonacina and Jieh Hsiang. Incompleteness of the RUE/NRF inference systems. *Newsletter of the Association for Automated Reasoning*, 20:9–12, May **1992**.

100. Maria Paola Bonacina. Problems in Lukasiewicz logic. *Newsletter of the Association for Automated Reasoning*, 18:5–12, June **1991**.

101. Maria Paola Bonacina and Jieh Hsiang. A category theory approach to completion-based theorem proving strategies. *International Conference on Category Theory* (**CT**), Montréal, Canada, June **1991**. (Abstract of an early version of [25])

102. Fabio Baj, Maria Paola Bonacina, Massimo Bruschi, and Antonella Zanzi. Another term rewriting based proof of the 'non-obvious' theorem. *Newsletter of the Association for Automated Reasoning*, 13:4–8, September **1989**.

103. Maria Paola Bonacina. Petri nets for knowledge representation. *Petri Nets Newsletter*, 27:28–36, August **1987**.

Technical reports   (Technical reports subsumed by published or submitted articles are omitted)

104. Maria Paola Bonacina and Mnacho Echenim. Generic theorem proving for decision procedures. Research Report No. 41/2006, Dipartimento di Informatica, Università degli Studi di Verona, August 2007 (revised March **2007**), 1–46. (Full version of [51, 52])

105. Maria Paola Bonacina, Silvio Ghilardi, Enrica Nicolini, Silvio Ranise, and Daniele Zucchelli. Decidability and undecidability results for Nelson-Oppen and rewrite-based decision procedures. Internal Report No. 308-06, Dipartimento di Scienze dell'Informazione, Università degli Studi di Milano, May **2006**, 1–20. (Full version of [53])

106. Maria Paola Bonacina. A note on the analysis of theorem-proving strategies. Technical Report, Department of Computer Science, The University of Iowa, May **1996**, 1–12. (Full version of [96])

107. Siva Anantharaman, Nirina Andrianarivelo, Maria Paola Bonacina, and Jieh Hsiang. SBR3: a refutational prover for equational theorems. Technical Report, Department of Computer Science, State University of New York at Stony Brook, May **1990**, 1–6. (Part of this report appeared in revised form in [70])

108. Siva Anantharaman and Maria Paola Bonacina. Automated proofs in Lukasiewicz logic. Technical Report, Department of Computer Science, State University of New York at Stony Brook and Rapport de Recherche No. 89-11, LIFO, Departement d'Informatique, Université d'Orléans, November **1989**, 1–14. (Full version of parts of [70] and [100])

Theses

109. Maria Paola Bonacina. Distributed automated deduction. Ph.D. Thesis, Department of Computer Science, State University of New York at Stony Brook, December **1992**.

110. Maria Paola Bonacina. Sulla dimostrazione di teoremi per completamento. Tesi di Dottorato di Ricerca, Dipartimento di Scienze dell'Informazione, Università degli Studi di Milano, December **1990**. (Available in English with title On completion theorem proving, as Technical Report, Department of Computer Science, State University of New York at Stony Brook, December **1990**.)

111. Maria Paola Bonacina. L'algoritmo di Knuth-Bendix. Tesi di Laurea, Dipartimento di Scienze dell'Informazione, Università degli Studi di Milano, July **1986**.

Edited Publications

1. Maria Paola Bonacina, Pascal Fontaine, Cláudia Nalon, Claudia Schon (Editors), and Martin Desharnais (Editorial Assistant). *The Next Generation of Deduction Systems: From Composition to Compositionality – Report from Dagstuhl Seminar 23471.* Dagstuhl Publishing, *Dagstuhl Reports* 13(11):130–150, April **2024**; DOI: 10.4230/DagRep.13.11.130.

2. Maria Paola Bonacina (Lead Guest Editor). *Six Decades of Automated Reasoning: Papers in Memory of Larry Wos.* Springer, *Journal of Automated Reasoning*, 66(4):437–584, November **2022**; DOI of the foreword: 10.1007/s10817-022-09637-z.

3. Maria Paola Bonacina, Philipp Rümmer, and Renate A. Schmidt (Editors). *Integrated Deduction – Report from Dagstuhl Seminar 21371.* Dagstuhl Publishing, *Dagstuhl Reports* 11(8):35–51, February **2022**; DOI: 10.4230/DagRep.11.8.35.

4. Maria Paola Bonacina (Editor). *Proceedings of the Twenty-Fourth International Conference on Automated Deduction* (**CADE**). Springer, Lecture Notes in Artificial Intelligence 7898, XVI 466 p., June **2013**; DOI: 10.1007/978-3-642-38574-2 (ISBN: 978-3-642-38573-5).

5. Maria Paola Bonacina and Mark E. Stickel (Editors). *Automated Reasoning and Mathematics: Essays in Memory of William W. McCune.* Springer, Lecture Notes in Artificial Intelligence 7788, XX 259 p., March **2013**; DOI: 10.1007/978-3-642-36675-8 (ISBN: 978-3-642-36674-1).

6. Maria Paola Bonacina and Maribel Fernández (Editors). *Notes of the Second International Workshop on Strategies in Rewriting Proving and Programming* (**IWS**), *Sixth International Joint Conference on Automated Reasoning* (**IJCAR**), Manchester, England, UK, July **2012**.

7. Maria Paola Bonacina and Thierry Boy de la Tour (Editors). *Fifth Workshop on Strategies in Automated Deduction: Selected Papers.* Elsevier, *Electronic Notes in Theoretical Computer Science* 125(2):1–164, March **2005**; DOI of the preface: 10.1016/j.entcs.2005.02.001.

8. Maria Paola Bonacina and Bernhard Gramlich (Editors). *Fourth Workshop on Strategies in Automated Deduction: Selected Papers.* Elsevier, *Electronic Notes in Theoretical Computer Science* 58(2):117–208, October **2001**; DOI of the preface: 10.1016/S1571-0661(05)80580-8.

9. Maria Paola Bonacina and Ulrich Furbach (Guest Editors). *Advances in First-Order Theorem Proving.* Academic Press, *Journal of Symbolic Computation* 29(2):117–118, February **2000**.

10. Maria Paola Bonacina and Ulrich Furbach (Editors). *Notes of the First International Workshop on First-order Theorem Proving* (**FTP**), Schloss Hagenberg, Linz, Austria, EU, October 1997. Technical Report 97-50, Research Institute for Symbolic Computation, Johannes Kepler Universität, Linz, **1997**.

Software

- Peers-mcd (1995–2001) parallel Modified Clause-Diffusion theorem prover for (associative-commutative) equational theories built on top of the EQP prover: Peers-mcd.d (2000–2001), described in paper [55]; Peers-mcd.c (1999–2000) described in paper [19]; Peers-mcd.b (1996–1999) described in papers [85, 57, 58]; Peers-mcd.a (1995–1996) described in paper [23].

- Peers (1993–1995) parallel Clause-Diffusion theorem prover for (associative-commutative) equational theories built on top of the Otter Parts Store, described in paper [63].

- Aquarius (1992–1993) parallel Clause-Diffusion theorem prover for first-order logic with equality built on top of Otter, described in papers [28, 64, 67] and thesis [109].

- KBlab (1986–1989) theorem prover for equational theories based on unfailing Knuth-Bendix completion, described in paper [72] and thesis [111].

Talks

I gave 33 technical talks at international events presenting papers [35, 36, 41, 42, 40, 75, 44, 89, 90, 48, 49, 54, 81, 55, 92, 56, 85, 93, 86, 57, 58, 94, 60, 95, 61, 62, 63, 64, 65, 101, 68, 71, 72].

Invited talks at international conferences, symposia, and workshops

34. The CDSAT paradigm for theory combination in SMT. Invited tutorial at the *21st International Conference on Computability in Europe: Crossroads of Computability and Logic – Insights, Inspirations, and Innovations* (**CiE**), Lisbon, Portugal, EU, July **2025** (Presenting paper [32]).

35. Reasoning about quantifiers in SMT: the QSMA algorithm. Keynote talk at the *23rd International Conference on Formal Methods in Computer-Aided Design* (**FMCAD**), Ames, Iowa, USA, October **2023** (Presenting abstract [33] of paper [34]).

36. Proof generation in CDSAT. Keynote speech at the *7th International Workshop on Proof eXchange for Theorem Proving* (**PxTP**) satellite of the 28th CADE, Pittsburgh, Pennsylvania, USA, July **2021** (Presenting abstract [37] of an early version of paper [7]).

37. Conflict-driven reasoning in unions of theories. Keynote speech at the *12th International Symposium on Frontiers of Combining Systems* (**FroCoS**), London, England, UK, September **2019** (Presenting abstract [39] of paper [8]).

38. From parallel theorem proving to parallel SAT-solving and back. Invited talk at the *1st International Workshop on Parallel Constraint Reasoning* (**PCR**) satellite of the 26th CADE, Gothenburg, Sweden, EU, August **2017** (Presenting part of paper [74]).

39. On interpolation in decision procedures. Invited talk at the *20th International Conference on Automated Reasoning with Analytic Tableaux and Related Methods* (**TABLEAUX**) and *8th International Workshop on First-order Theorem Proving* (**FTP**), Bern, Switzerland, July **2011** (Presenting paper [46]).

40. On theorem proving for program checking – Historical perspective and recent developments. Invited talk at the *12th International ACM Symposium on Principles and Practice of Declarative Programming* (**PPDP**), Schloss Hagenberg, Linz, Austria, EU, July **2010** (Presenting paper [47]).

41. Ten years of parallel theorem proving: a perspective. Invited talk at the *3rd Workshop on Strategies in Automated Deduction* (**STRATEGIES**) satellite of the 16th CADE, 2nd FLoC, Trento, Italy, EU, July **1999** (Presenting paper [84]).

42. Parallelization of deduction strategies. Contributed tutorial at the *12th International Conference on Automated Deduction* (**CADE**), Nancy, France, EU, June **1994**.

Invited talks at other events

43. Conflict-driven first-order decision procedures. *Satisfiability: Theory, Practice, and Beyond* Program, *Workshop on Theoretical Foundations of SAT/SMT Solving*, Simons Institute for the Theory of Computing, University of California at Berkeley, Berkeley, California, USA, March **2021** (Presenting paper [38]).

44. Conflict-driven satisfiability modulo assignments. *Theoretical Foundations of Computer Systems* Program, *TFCS Seminar*, Simons Institute for the Theory of Computing, University of California at Berkeley, Berkeley, California, USA, March **2021**.

45. SGGS: conflict-driven first-order reasoning. *1st European Workshop on Higher Order Automated Reasoning* (**Matryoshka**), Amsterdam, The Netherlands, EU, June **2018**.

46. CDSAT: conflict-driven theory combination. *26th Meeting of the Associazione Italiana di Logica e sue Applicazioni* (**AILA**), Padova, Italy, EU, September **2017** (Presenting part of paper [87]).

47. CDSAT: conflict-driven theory combination. *Big Proof Program*, (**BPR**), Isaac Newton Institute for the Mathematical Sciences, Cambridge, England, UK, July **2017** (Presenting paper [43]).

48. Conflict-driven reasoning. *24th UK Automated Reasoning Workshop* (**ARW**), Bristol, England, UK, April **2017** (Presenting an early version of [43]).

49. SGGS: CDCL from propositional to first-order logic. *Workshop on Theoretical Foundations of SAT Solving*, The Fields Institute for Research in the Mathematical Sciences, Toronto, Ontario, Canada, August **2016**.

50. On model-based reasoning: recent trends and current developments. *28th Italian Conference on Computational Logic* (**CILC**), Catania, Italy, EU, September **2013** (Presenting abstract [45]).

51. DPLL($\Gamma+\mathcal{T}$): a new style of reasoning (I part). Speculative inferences for decision procedures (II part). *Workshop on Automated Deduction and its Application to Mathematics* (**ADAM**), Albuquerque, New Mexico, USA, June **2013**.

52. Interpolation for resolution and superposition. *Logic: Between Semantics and Proof Theory, A Workshop in Honor of Arnon Avron*, Tel Aviv, Israel, November **2012**.

53. Towards an interpolating DPLL($\Gamma+\mathcal{T}$). *Z3 Special Interest Group Meeting*, Microsoft Research, Cambridge, England, UK, November **2011**.

54. Experiments and open issues on decision procedures, theorem proving and software analysis. *3rd KeY Symposium*, Königswinter, Germany, EU, June **2004**.

55. A classical topic revisited: models of search in deduction. *Trento-Genova Symposium*, Levanto, Italy, EU, June **2001**.

56. On the representation and analysis of distributed search in theorem proving. *Trento-Genova Symposium*, Trento, Italy, EU, June **2000**.

57. On the modelling of search in theorem proving: towards a theory of strategy analysis. *MidWest Theory Day*, Chicago, Illinois, USA, December **1996**.

Contributed talks at international symposia, meetings, and seminars

58. Nondisjoint CDSAT: arrays, maps, and vectors with abstract domain. Workshop on Automated Reasoning and Proof Logging, Final Symposium of the COST[14] Action CA20111 *European Research Network on Formal Proofs* (EuroProofNet), Paris, France, EU, September **2025**.

59. The QSMA algorithm. *Seminar 23471 on The Next Generation of Deduction Systems: from Composition to Compositionality*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, November **2023**.

60. Semantically-guided goal-sensitive reasoning: theorem proving and decision procedures. *Seminar 21371 on Integrated Deduction*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, September **2021**.

61. SGGS decision procedures for fragments of first-order logic. *Seminar 21361 on Extending the Synergies between SAT and Description Logics*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, September **2021**.

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[14]COoperation in the field of Scientific and Technical research.

62. Proof reconstruction in conflict-driven satisfiability. *Seminar 19371 on Deduction Beyond Satisfiability*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, September **2019**.

63. Interpolation for resolution and superposition. Meeting of the COST Action IC0901[15] *Rich-model toolkit: an infrastructure for reliable computer systems*, satellite of the 8th HVC, Haifa, Israel, November **2012**.

64. Abstract canonical inference: on fairness in theorem proving. Meeting of the COST Action IC0901 *Rich-model toolkit: an infrastructure for reliable computer systems*, held as joint *4th Workshop on System Verification by Automated Reasoning Methods* (**SVARM**) and *7th Workshop on Verification* (**VERIFY**), satellite of the 6th IJCAR, Manchester, England, UK, June-July **2012**.

65. Interpolation for resolution, superposition, and DPLL($\Gamma+\mathcal{T}$). Meeting of the COST Action IC0901 *Rich-model toolkit: an infrastructure for reliable computer systems*, held as joint *3rd Workshop on System Verification by Automated Reasoning Methods* (**SVARM**) and *Workshop on Automation in Proof Assistants* (**AIPA**), satellite of ETAPS, Tallinn, Estonia, EU, March-April **2012**.

66. Towards interpolation in an SMT solver with integrated superposition. Meeting of the COST Action IC0901 *Rich-model toolkit: an infrastructure for reliable computer systems*, Torino, Italy, EU, October **2011**.

67. Rewriting for Satisfiability Modulo Theories. Meeting of the *IFIP Working Group 1.6 on Term Rewriting*, satellite of the 21st RTA, 5th FLoC, Edinburgh, Scotland, UK, July **2010**.

68. Decision procedures with unsound inferences for software verification. *Seminar 09411 on Interaction versus Automation: the Two Faces of Deduction*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, October **2009**.

69. High-performance deduction for verification: synthetic benchmarks in the theory of arrays. *Seminar 03171 on Deduction and Infinite Model Checking*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, April **2003**.

70. Deciding satisfiability problems by rewrite-based deduction: experiments in the theory of arrays. Meeting of the *IFIP Working Group 1.6 on Term Rewriting*, satellite of the 13th RTA, 3rd FLoC, Copenhagen, Denmark, EU, July **2002**.

71. Models of the search space in theorem proving: from forward to backward reasoning. *Seminar 01101 on Deduction*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, March **2001**.

72. Research activities related to term rewriting at the University of Iowa. Meeting of the *IFIP Working Group 1.6 on Term Rewriting*, satellite of the 10th RTA, 2nd FLoC, Trento, Italy, EU, July **1999**.

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[15]For this Action (10/2009–10/2013) I was **Chair** of the Work Group on *Decision procedures for rich model language fragments*.

73. Semantic resolution, lemmaizing and contraction. *Seminar 9512 on Deduction*, Leibniz Zentrum für Informatik, Schloss Dagstuhl, Germany, EU, March **1995**.

Colloquia (selected talks given at research sites upon invitation or during visits)

74. The CDSAT paradigm for theory combination in SMT. Centre d'Intégration Nano-INNOV, CEA List, Technology Research Division, CEA, Paris, France, EU, October **2025**.

75. The CDSAT paradigm for SMT: extension to nondisjoint theories. Department of Computer Science, *The University of Manchester*, Manchester, England, UK, March **2023**.

76. CDSAT for nondisjoint theories with shared predicates. Department of Computer Science, *Yale University*, New Haven, Connecticut, USA, August **2022**.

77. CDSAT for nondisjoint theories with shared predicates: arrays with abstract length. Formal Topics Series, Computer Science Laboratory, *SRI International*, Menlo Park, California, USA, July **2022**.

78. Conflict-driven reasoning: a one-day tutorial. LORIA, Nancy, France, EU, February **2019**.

79. CDSAT: conflict-driven satisfiability modulo theories and assignments. School of Computer Science and Software Engineering, *East China Normal University*, Shanghai, PR China, May **2018**.

80. CDSAT: conflict-driven satisfiability modulo theories and assignments. Institute of Software, *Chinese Academy of Sciences*, Beijing, PR China, April **2018**.

81. SGGS: conflict-driven first-order theorem proving. School of Computer Science, *The University of Manchester*, Manchester, England, UK, March **2017**.

82. Reasoning with speculative inferences. *Nuance Communications*, Sunnyvale, California, USA, September **2016**.

83. Interpolation systems for non-ground proofs. Formal Topics Series, Computer Science Laboratory, *SRI International*, Menlo Park, California, USA, August **2016**.

84. Interpolation systems for ground proofs. Formal Topics Series, Computer Science Laboratory, *SRI International*, Menlo Park, California, USA, August **2016**.

85. SGGS: A CDCL-like first-order theorem-proving method. *Microsoft Research*, Redmond, Washington, USA, April **2016**.

86. The theorem-proving method DPLL($\Gamma + \mathcal{T}$). Formal Topics Series, Computer Science Laboratory, *SRI International*, Menlo Park, California, USA, February-March **2016**.

87. SGGS: A CDCL-like first-order theorem-proving method. Formal Topics Series, Computer Science Laboratory, *SRI International*, Menlo Park, California, USA, December **2015**.

88. SGGS: Model-based first-order theorem proving. Fachbereich Informatik, *Universität Koblenz-Landau*, Koblenz, Germany, EU, September **2014**.

89. SGGS: Model-based first-order theorem proving. *Max-Planck-Institut für Informatik*, Saarbrücken, Germany, EU, June **2014**.

90. On fairness in theorem proving. *Microsoft Research*, Redmond, Washington, USA, June **2013**.

91. The theorem-proving method DPLL($\Gamma + \mathcal{T}$). Department of Computer Science, *University of Illinois at Urbana-Champaign*, Urbana, Illinois, USA, June **2013**.

92. Abstract canonical inference: on fairness in theorem proving. Department of Informatics, *King's College*, London, England, UK, July **2012**.

93. DPLL($\Gamma + \mathcal{T}$): a new style of reasoning for program checking. Institute of Software, *Chinese Academy of Sciences*, Beijing, PR China, June **2011**.

94. Decision procedures with unsound theorem proving for software verification. Dipartimento di Ingegneria e Scienza dell'Informazione, *Università degli Studi di Trento*, Trento, Italy, EU, September **2009**.

95. Decision procedures with unsound theorem proving for software verification. Laboratory for Automated Reasoning and Analysis, *Ecole Polytechnique Fédérale de Lausanne*, Lausanne, Switzerland, April **2009**.

96. Decision procedures with unsound theorem proving for software verification. Department of Computer Science, *ETH Zurich*, Zurich, Switzerland, April **2009**.

97. Rewrite-based decision procedures. *Microsoft Research*, Redmond, Washington, USA, May **2008**.

98. Rewrite-based satisfiability procedures. *Microsoft Research*, Redmond, Washington, USA, May **2008**.

99. General theorem proving for satisfiability modulo theories: an overview. *Microsoft Research*, Redmond, Washington, USA, May **2008**.

100. Automated reasoning for verification: recent results and current challenges. Department of Mathematical Sciences, *Tsinghua University*, Beijing, PR China, May **2007**.

101. Big proof engines as little proof engines: new results on rewrite-based satisfiability procedures. Department of Computer Science, *Chalmers University of Technology*, Göteborg, Sweden, EU, May **2006**.

102. "A First Order Extension of Stålmarck's Method" by Magnus Björk: the big picture. Opponent's talk, Department of Computer Science, *Chalmers University of Technology*, Göteborg, Sweden, EU, May **2006**.

103. Big proof engines as little proof engines: modularity and experiments with rewrite-based *T*-sat procedures. Dipartimento di Scienze Fisiche, Sezione di Informatica, *Università degli Studi di Napoli "Federico II,"* Napoli, Italy, EU, June **2005**.

104. Experiments with E as a decision procedure for the theory of arrays. Dipartimento di Informatica, Sistemistica e Telecomunicazioni, *Università degli Studi di Genova*, Genova, Italy, EU, July **2004**.

105. Deciding satisfiability problems by general-purpose deduction: experiments in the theory of arrays. Institut d'Informatique et Mathématiques Appliquées de Grenoble (IMAG), *Institut National Polytechnique de Grenoble* (INPG), Grenoble, France, EU, November **2002**.

106. Automated reasoning in artificial intelligence: recent results in strategy analysis. Dipartimento di Informatica, *Università degli Studi di Verona*, Verona, Italy, EU, February **2002**.

107. Distributed reasoning by Clause-Diffusion: the Peers-mcd.d prover. Facoltà di Informatica, *Libera Università degli Studi di Bolzano*, Bolzano, Italy, EU, March **2001**.

108. On the representation and analysis of distributed search in theorem proving. Dipartimento di Informatica, *Università degli Studi di Pisa*, Pisa, Italy, EU, June **2000**.

109. On the representation and analysis of distributed search in theorem proving. Dipartimento Scientifico e Tecnologico, *Università degli Studi di Verona*, Verona, Italy, EU, June **2000**.

110. On the representation and analysis of distributed search in theorem proving. Dipartimento di Matematica e Informatica, *Università degli Studi de L'Aquila*, L'Aquila, Italy, EU, May **2000**.

111. On the representation and analysis of distributed search in theorem proving. Dipartimento di Informatica e Sistemistica, *Università degli Studi di Roma "La Sapienza,"* Roma, Italy, EU, May **2000**.

112. Theorem proving strategies: a search-oriented taxonomy. Dipartimento di Informatica e Sistemistica, *Università degli Studi di Roma "La Sapienza,"* Roma, Italy, EU, May **2000**.

113. Modelling search and evaluating strategies in theorem proving. Institut für Softwaretechnologie, *Technische Universität Graz*, Graz, Austria, EU, May **2000**.

114. Theorem proving strategies: a search-oriented taxonomy. Department of Computer and Information Science, *University of Oregon*, Eugene, Oregon, USA, April **2000**.

115. Analysis of search-space reduction by contraction in ordering-based theorem proving. Dipartimento di Informatica, *Università degli Studi di Torino*, Torino, Italy, EU, January **2000**.

116. Considerations on the control of parallel deduction. *INRIA-Lorraine*, Nancy, France, EU, September **1999**.

117. Topics in distributed deduction and strategy analysis. Institut für Informatik, *Universität Koblenz-Landau*, Koblenz, Germany, EU, June **1999**.

118. Distributed theorem proving by Clause-Diffusion: the Peers-mcd prover. Fakultät Informatik, *Technische Universität Dresden*, Dresden, Germany, EU, June **1999**.

119. Distributed contraction-based strategies: model and analysis. *INRIA-Lorraine*, Nancy, France, EU, October **1998**.

120. Subdivision of search in theorem proving: heuristics and experiments. Department of Industrial Engineering, *The University of Iowa*, Iowa City, Iowa, USA, April **1998**.

121. On the modelling of search in theorem proving: towards a theory of strategy analysis. Artificial Intelligence Center, *SRI International*, Menlo Park, California, USA, October **1996**.

122. On search in theorem proving: towards a theory of strategy analysis. Department of Computer Science, *Iowa State University*, Ames, Iowa, USA, October **1995**.

123. On rewrite programs: semantics and relationship with Prolog. Department of Computer Science, *University of Idaho*, Moscow, Idaho, USA, May **1993**.

124. On rewrite programs: semantics and relationship with Prolog. Department of Mathematics, Graduate Center, *City University of New York*, New York, New York, USA, May **1993**.

125. Parallel deduction: the Clause-Diffusion method. Department of Computer Science, *The University of Iowa*, Iowa City, Iowa, USA, May **1993**.

126. Parallel deduction: the Clause-Diffusion method. Department of Computer Science, *University of Colorado at Denver*, Denver, Colorado, USA, April **1993**.

127. Distributed automated deduction: an introduction to the Clause-Diffusion methodology. INRIA-Lorraine, Nancy, France, EU, April **1993**.

128. On rewrite programs: semantics and relationship with Prolog. Department of Computer Science, *Portland State University*, Portland, Oregon, USA, April **1992**.

129. A category theory approach to completion-based theorem proving strategies. Dipartimento di Scienze dell'Informazione, *Università degli Studi di Milano*, Milano, Italy, EU, June **1991**.

Panels at international events

- Women in Computability Workshop, *21st International Conference on Computability in Europe* (**CiE**), Lisbon, Portugal, EU, July **2025**.

- SMT: Past, Present and Future. *20th International Workshop on Satisfiability Modulo Theories* (**SMT**), satellite of the 11th IJCAR, 8th FLoC, Haifa, Israel, August **2022**.

- Future directions for Big Proof. *Big Proof Program*, (**BPR**), Isaac Newton Institute for the Mathematical Sciences, Cambridge, England, UK, July **2017**.

- Current trends and open problems at the frontiers of automated reasoning (**Co-chair**). *3rd International Workshop on First-order Theorem Proving* (**FTP**), St. Andrews, Scotland, UK, July **2000**.

- Concepts, logics and research methodologies in automated deduction (**Co-chair**). *2nd International Workshop on First-order Theorem Proving* (**FTP**), Schloss Wilhelminenberg, Vienna, Austria, EU, November **1998**.

Teaching, Lecturing, and Outreach Activities

At the Università degli Studi di Verona   Three or two courses per year. Courses taught at the graduate level: *Automated Reasoning* (*Ragionamento automatico*), *Verifica automatica dei programmi* (*Automated Program Verification*), *Planning* (*Pianificazione*), *Fondamenti di linguaggi di programmazione e specifica* (*Programming and Specification Language Foundations*), *Special Topics in Artificial Intelligence*, *Intelligenza artificiale* (*Artificial Intelligence*), *Deduzione automatica* (*Automated Deduction*); and at the undergraduate level: *Logica* (*Logic*), *Algoritmi per bioinformatica* (*Algorithms for Bioinformatics*), *Linguaggi di programmazione* (*Programming Language Concepts*), *Programmazione* (*Introduction to Programming*).

At international schools, programs, or other universities

- Invited talk: *Resolution, unification, and subsumption: fundamental concepts in theorem proving*, 12th Summer School on Formal Techniques, Menlo College, Atherton, California, USA, 2023.

- Invited talk: *Set of support, demodulation, and paramodulation: fundamental concepts in theorem proving*, 11th Summer School on Formal Techniques, Menlo College, Atherton, California, USA, 2022.

- Lecture: *Parallel automated reasoning*, 3rd International Summer School on Satisfiability, Satisfiability Modulo Theories, and Automated Reasoning, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal, EU, 2019.

- Invited talk: *Overview of automated reasoning and ordering-based strategies*, 9th Summer School on Formal Techniques, Menlo College, Atherton, California, USA, 2019.

- Invited talk: *On interpolation in theorem proving*, 7th Summer School on Formal Techniques, Menlo College, Atherton, California, USA, 2017.

- Lecture: *Introduction to automated reasoning*, 1st International Summer School on Satisfiability, Satisfiability Modulo Theories, and Automated Reasoning, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal, EU, 2016.

- Invited talk: *Ordering-based strategies for theorem proving*, 6th Summer School on Formal Techniques, Menlo College, Atherton, California, USA, 2016.

- Lecture: *Topics in model-based reasoning: Towards integration of proving and solving*, advanced seminar in Artificial Intelligence and Robotics, Università degli Studi di Roma "La Sapienza", Roma, Italy, EU, 2014.

- Course: *Teoria della dimostrazione: Metodi del ragionamento automatico*, Scuola Italiana di Logica, Associazione Italiana di Logica e sue Applicazioni (AILA) e Università degli Studi di Milano, Gargnano del Garda, Italy, EU, 2005.

- Course: *Theorem proving strategies*, International Master Program in Computational Logic, Technische Universität Dresden, Dresden, Germany, EU, 1999.

Outreach Lectures *Creatività o intelligenza artificiale? Tutte e due!*, 2026; *World Logic Day: Logica, linguaggio e intelligenza artificiale*, 2026; *Intelligenza artificiale: distinguere scienza e pubblicità*, 2025; *Intelligenza artificiale: l'avventura è appena iniziata*, 2025; *Il ragionamento astratto*, 2010.

At The University of Iowa Three courses per year, reduced to two in the years of the CAREER Award and in the first year, and to one in the year of the Research Assignment. Courses taught at the undergraduate level: *22C:054 Programming Language Concepts*; and at the graduate level: *22C:123 Programming Language Foundations*, *22C:145 Artificial Intelligence*, *22C:245 Advanced Artificial Intelligence*, and *22C:295 Seminar in Artificial Intelligence*.

Advising

At the Università degli Studi di Verona Graduate level: five MS theses (tesi di Laurea Magistrale) and one individual programming project; undergraduate level: twelve BS theses (tesi di Laurea) and two individual programming projects.

At The University of Iowa Graduate level: four MS theses, two MS projects, and one PhD Comprehensive Exam (Artificial Intelligence); undergraduate level: two BS Honors theses and one individual programming project.

Doctorate/PhD defense committees at the following universities Université Paris-Saclay, France, EU, 2025 (rapporteuse); The University of Manchester, Manchester, England, UK, 2023 (external examiner); Vrije Universiteit Amsterdam, Amsterdam, The Netherlands, EU, 2021 (assessor for the cum laude distinction); Max-Planck-Institut für Informatik, Saarbrücken, Germany, EU, 2014; The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, 2012 (external reader); Université de Grenoble, Grenoble, France, EU, 2010 (rapporteuse); Università degli Studi di Trento, Trento, Italy, EU, 2008 (chair); Chalmers University of

Technology, Göteborg, Sweden, EU, 2006 (opponent); Institut National Polytechnique de Grenoble, Grenoble, France, EU, 2006 (rapporteuse); Università degli Studi di Genova, Genova, Italy, EU, 2002; Institut National Polytechnique de Grenoble, Grenoble, France, EU, 2001 (rapporteuse); Università degli Studi di Roma "La Sapienza," Roma, Italy, EU, 1999; Université "Henri Poincaré," Nancy, France, EU, 1999.

Service

At the Università degli Studi di Verona (selected items)

Department: Chair, Hiring Committees for: 1 Professor position, 1 Associate Professor position 2019, 1 Assistant Professor position 2008; Hiring Committees for 1 Associate Professor position 2014; PhD Admission Committee 2006; Chair, Computer Science Colloquia 2003.

College: Executive Associate Dean 2009–2012; Executive Committee 2003–2012; Chair, College Committee (**elected**) 2006–2009; Director of Computer Science Studies (**elected**) 2003–2006.

University and Beyond: Academic Senate (**elected**) 2012–2015; CINI[16] 2012–2014; Statute revision committee 2011; Court-appointed Technical Consultant, Trento, 2009; Dean of Graduate School (**elected**) 2007–2009; Chair, Research Evaluation Committee (**elected**) 2004–2008.

At The University of Iowa

Department: Graduate Admissions Committee 2002; Faculty Hiring Committee (**elected**): AY's 2000/01, 1999/2000, 1998/99, 1997/98, 1995/96; Advisory Committee 1998–2000; Library Committee: 1997–2000, and AY's 1995/96, 1993/94; Hiring Committee for an Administrative Assistant position: 1999, 1998; Chair, Computer Science Colloquia 1997–1998; Research Committee 1994–1995.

College: Faculty Assembly, College of Liberal Arts and Sciences, AY 2001/02 (**elected**); Review Committee of the Department of Linguistics 2002; Panel *Getting established at Iowa*, Orientation for new faculty, College of Liberal Arts 1996.

University: Ida Cordelia Beam Distinguished Visiting Professorship, Selection Committee, 2000; Goldwater Scholarship, Honors Program, Faculty Nomination Committee: 1995, 1994.

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[16]Comitato Interuniversitario Nazionale per l'Informatica.