

## Curriculum Vitae Maria Paola Bonacina

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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) 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 4-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 and 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; decision procedures for satisfiability; reasoning for analysis, verification, synthesis of systems; strategy analysis; distributed deduction; rewriting.

### Awards and Grants

- **External**
  - COST<sup>1</sup>, European Concerted Research Action, *Rich-model toolkit: an infrastructure for reliable computer systems* (IC0901) (**Chair**, Work Group on *Decision procedures for rich model language fragments*) 10/2009–10/2013.

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<sup>1</sup>European COoperation in the field of Scientific and Technical research.

- MIUR<sup>2</sup>, PRIN<sup>3</sup>, *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-Principal Investigator**) 9/2008–9/2010.
- MIUR, 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 (**Principal Investigator**) 11/2003–11/2005.
- NSF<sup>4</sup> Faculty Early Career Development Award (**CAREER**), *Distributed deduction with contraction and foundation of strategy analysis* (CCR-97-01508) \$210,000 (**Principal Investigator**) 9/1997–8/2002.
- NSF CISE<sup>5</sup> Research Instrumentation Grant, *Instrumentation for research in search technology* (EIA-97-29807) \$167,920 (**Co-Principal Investigator**) 2/1998–1/2000.
- NSF Research Initiation Award (**RIA**), *Strategies for contraction-based distributed automated deduction* (CCR-94-08667) \$79,407 (**Principal Investigator**) 9/1994–8/1997.
- 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, (**Principal Investigator**) 10/1993–8/1994.

• **Internal** (all as **Principal Investigator**)

- At the Università degli Studi di Verona:
  - \* Ricerca di Base<sup>6</sup> 2017 Award, *SGGS Theorem Proving: Algorithms and Implementation*, €42.701,73, 4/2017–9/2019;
  - \* CooperInt<sup>7</sup> 2016 Award (to fund a visit at The University of Manchester) €1.875, 3–4/2017;
  - \* Teaching Award, €3.600, 4/2009–9/2010;
  - \* Research Award, €4.500, 9/2008–9/2010.
- At The University of Iowa:
  - \* Career Development Award (renounced upon resigning to join the Università degli Studi di Verona) 9–12/2002;
  - \* Dean Scholar Award, College of Liberal Arts and Sciences, \$10,000, Class of 2000–2002;
  - \* Research Assignment 9–12/1996.

<sup>2</sup>Ministero dell’Istruzione Università e Ricerca, Italy.

<sup>3</sup>Programma di Ricerca scientifica di rilevante Interesse Nazionale.

<sup>4</sup>National Science Foundation, USA.

<sup>5</sup>Directorate for Computer and Information Science and Engineering.

<sup>6</sup>Ricerca di Base is a university-wide bi-annual program of the Università degli Studi di Verona to fund basic research.

<sup>7</sup>CooperInt is a university-wide annual program of the Università degli Studi di Verona to foster international cooperations.

## Boards of International Associations

- **President**, *Conference on Automated Deduction (CADE Inc.)* 9/2013–10/2016 and 12/2009–12/2010 (**elected** by the CADE trustees). Achievements: institution of the *Thoralf Skolem* and *Best Paper* awards<sup>8</sup>; inception of the SAT/SMT/AR summer school; responsibilities: chairing board of trustees, business meetings, *Jacques Herbrand award* committees; representing CADE in the Steering Committee of the International Joint Conference on Automated Reasoning (IJCAR), and the Organizing Committees of the IEEE and ACM Symposium on Logic in Computer Science (LICS) and the Federated Logic Conference (FLoC).
- **Trustee**, *Conference on Automated Deduction (CADE Inc.)* 8/2013–10/2016 (**elected**) 2/2012–6/2013 (**ex officio** as **Program Chair**) 10/2004–12/2010 (**elected** for two consecutive terms) and 8/1999–5/2004 (**ex officio** as **Secretary**). Responsibilities: selection of Program Chair and conference site; assignment of the *Jacques Herbrand award* (the most prestigious in the field); leadership of the scientific community in automated reasoning.
- **Director**, *Association for Automated Reasoning (AAR Inc.)* 4/2008–12/2010 (**elected** by the CADE trustees as one of two CADE representatives in a board of five directors).
- **Secretary**, *Conference on Automated Deduction (CADE Inc.)* 8/1999–5/2004 and *Association for Automated Reasoning (AAR Inc.)* 9/1997–5/2004. Responsibilities included: handling electronic votes for trustee elections and bylaws amendments; supporting the *Jacques Herbrand award* and *Woody Bledsoe student travel award* procedures; managing database of members; co-editing the AAR Newsletter.

## Committees of International Conferences, Symposia, Workshops

- **Program Committees**
  - *Joint Conference on Automated Reasoning (IJCAR)*: 2018; 2016; 2014; 2012; 2010; 2008; 2006; and 2004.
  - *Conference on Types for Proofs and Programs (TYPES)*: 2018.
  - *Workshop on Satisfiability Modulo Theories (SMT)*: 2018; 2011.
  - *Workshop on User Interfaces for Theorem Provers (UITP)*: 2018.
  - *Conference on Automated Deduction (CADE)*: 2017; 2013 (**Chair**); 2011; 2009; 2007; and 2002.
  - *Conference on Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX)* 2017.
  - *EACSL Conference on Computer Science Logic (CSL)*: 2017; 2015.
  - *Workshop on Automated Formal Methods (AFM)* 2017.
  - *Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements (ARCADE)* 2017.

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<sup>8</sup>The Thoralf Skolem award rewards a paper for passing the test of time by being most influential in the field.

- *IEEE and ACM Symposium on Logic in Computer Science (LICS)* 2016.
- *Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR)*: 2015; and 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.
- *Symposium on Fundamentals of Software Engineering (FSEN)* 2013.
- *Workshop on Synthesis Verification and Analysis of Rich Models (SVARM)* of COST Action IC0901: 2013 (**Co-Chair**); 2012 (joint with the *Workshop on Verification (VERIFY)*); 2011 (**Co-Chair**); and 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**); and 2001 (**Co-Chair**).
- *Workshop on First-Order Theorem Proving (FTP)*: 2011; 2009; 2003; 2000; 1998; and 1997 (**Co-Chair**).
- *Symposium on Parallel Symbolic Computation (PASCO)* 1994.
- *Indian Conference on Logic and its Applications (ICLA)* 2017.
- *German Annual Conference on Artificial Intelligence (KI)* 2009.

- **Steering Committees**

- *Joint Conference on Automated Reasoning (IJCAR)* 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): played a leading role in starting the joint conference that replaced the *Workshop on First-Order Theorem Proving (FTP)* and merges the *Conference on Automated Deduction (CADE)*, the *Conference on Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX)*, and the *Symposium on Frontiers of Combination of Systems (FroCoS)*. Responsibilities included representing IJCAR in the Federated Logic Conference (FLoC) and leading the committee in selecting Program Co-Chairs and site.
- *Workshop on First-Order Theorem Proving (FTP)* 1997–2003 (**Chair** 1999–2003): was one of the founders; chair’s responsibilities included leading the committee in selecting Program Chair and site, and handling the committee elections by e-mail.

- **Organizing Committees:** *Joint Conference on Automated Reasoning (IJCAR)*: 2006 (**Workshop Chair**); 2004 (**Publicity Chair**); *Symposia on Symbolic and Algebraic Computation and Parallel Symbolic Computation (Federated ISSAC-PASCO)* 1997 (**Registration Chair**); *Conference on Rewriting Techniques and Applications (RTA)* 1991.

### Activity as Referee (in addition to Program Committees)

- **Journals:** *Journal of Automated Reasoning*; *Journal of Symbolic Computation*; *ACM Transactions on Computational Logic*; *Information and Computation*; *Journal of Logic and Computation*; *Theoretical Computer Science*; *Journal on Satisfiability, Boolean Modeling and*

*Computation; Journal of AI Communications; Science of Computer Programming; Mathematics in Computer Science; Information Processing Letters; IEEE Transactions on Computer-Aided Design; Annals of Mathematics and Artificial Intelligence; IEEE Intelligent Systems; Studia Logica; Journal of Automated Software Engineering; Wiley Interdisciplinary Reviews: Cognitive Science; Reports in Mathematical Logic; Journal of Zhejiang University.*

- **Books:** *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:** *Symposium on Formal Methods (FM)*; *Conference on Automated Deduction (CADE)*; *ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming (PPDP)*; *Conference on Rewriting Techniques and Applications (RTA)*; *Conference on Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX)*; *Symposium on Frontiers of Combination of Systems (FroCoS)*; *Symposium on Theoretical Aspects of Computer Science (STACS)*; *Conference on Computer Science Logic (CSL)*; *IEEE Symposium on Logic in Computer Science (LICS)*; *Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*; *Conference of the American Association for Artificial Intelligence (AAAI)*; *Pacific Rim International Conference on Artificial Intelligence (PRICAI)*; *Symposium on the Design and Implementation of Systems for Symbolic Computation (DISCO)*; *Asian Symposium on Programming Languages and Systems (APLAS)*; *Workshop on Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP)*; *Symposium on Fundamentals of Software Engineering (FSEN)*; *German Annual Conference on Artificial Intelligence (KI)*; *World Congress on Paraconsistency (WCP)*; *Dagstuhl Seminar No. 9301 Graph Transformations in Computer Science*; *Fifth Generation Computing Systems (FGCS)*; *European Conference in Parallel Processing (Euro-Par)*; *European Workshop on Application and Theory of Petri Nets*.
- **Funding agencies:**
  - Australian Research Council.
  - EU Commission, Research Executive Agency:
    - \* Horizon 2020: Information and Communication Technology: *Tools and Methods for Software Development*;
    - \* Seventh 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*;
    - \* Sixth Framework Program: *Research Infrastructures* action, mid-term project review; Information Society Technology: Strategic Objectives *Software and Services*; and *Open Platforms for Software and Services*.

- Ministero dell’Istruzione Università e Ricerca (MIUR).
- In the USA: 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 Department of Defense, Experimental Program for Stimulating Competitive Research (EPSCoR).

**Membership** *Association for Automated Reasoning (AAR)* since 1988; *IFIP Working Group on Term Rewriting (WG 1.6)* since 1998; *ACM Special Interest Group in Logic and Computation (SIGLOG)* since 2016; *Association for Symbolic Logic (ASL)* 1996–2005; *European Association for Theoretical Computer Science (EATCS)* 1987–2004.

**Selected visits** (More in the talks section)

- School of Computer Science and Software Engineering, East China Normal University, Shanghai, PR China, 4–5/2018.
- Institute of Software, State Key Laboratory for Computer Science, Chinese Academy of Sciences, Beijing, PR China, 4/2018, 6/2011.
- Isaac Newton Institute for the Mathematical Sciences, University of Cambridge, Cambridge, England, UK, *Program Visitor, Big Proof Program, (BPR)*, July 2017.
- Computer Science Laboratory, SRI International, Menlo Park, California, USA, *Observer* 5–6/2017, and *International Fellow* 9/2015–9/2016 (**sabbatical year**).
- 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.
- Max-Planck-Institut für Informatik, Saarbrücken, Germany, 6/2014.
- Department of Computer Science, University of Illinois at Urbana-Campaign, Urbana-Campaign, Illinois, USA, 6/2013.
- Department of Informatics, King’s College, London, England, UK, 7/2012.
- 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 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, 1–2/1993 and 6/1998.
- Artificial Intelligence Center, SRI International, Menlo Park, California, USA, 10/1996.
- 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.

## Other

- **Citizenship:** Italian
- **Languages:** Italian (mother tongue), English (fluent), French (fluent)

## Publications

### Articles in refereed journals

1. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. Conflict-driven satisfiability for theory combination: transition system and completeness. *Journal of Automated Reasoning*, 46 pages, **accepted pending revision**.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.

8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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**.
19. 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.
20. 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.



21. 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.
22. Maria Paola Bonacina and Jieh Hsiang. Parallelization of deduction strategies: an analytical study. *Journal of Automated Reasoning*, 13:1–33, August **1994**; DOI: 10.1007/BF00881910.
23. Maria Paola Bonacina and Jieh Hsiang. On subsumption in distributed derivations. *Journal of Automated Reasoning*, 12(2):225–240, April **1994**; DOI: 10.1007/BF00881888.
24. 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.

### Invited papers in refereed or edited collections

25. 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.
26. 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.
27. 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 Artificial Intelligence 7797, 35–71, March **2013**; DOI: 10.1007/978-3-642-37651-1\_3.
28. 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 conferences or workshops with referees and published proceedings

29. Maria Paola Bonacina. On conflict-driven reasoning. In Natarajan Shankar and Bruno Dutertre (Eds.) *Proceedings of the Sixth Automated Formal Methods Workshop (AFM)* satellite of the *Ninth NASA Formal Methods Symposium (NFM)*, Menlo Park, California, USA, May 2017. EasyChair Kalpa Publications in Computing 5, 31–49, April **2018**.
30. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. Proofs in

conflict-driven theory combination.<sup>9</sup> In June Andronick and Amy Felty (Eds.) *Proceedings of the Seventh ACM SIGPLAN International Conference on Certified Programs and Proofs (CPP)* satellite of the *Forty-Fifth ACM SIGPLAN Symposium on Principles of Programming Languages (POPL)*, Los Angeles, California, USA, January 2018. ACM Press, 186–200, **2018**; DOI: 10.1145/3167096.

31. Maria Paola Bonacina. Automated reasoning for explainable artificial intelligence. In Giles Regeer and Dmitriy Traytel (Eds.), *Proceedings of the First Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements (ARCADE)* satellite of the *Twenty-Sixth International Conference on Automated Deduction (CADE)*, Gothenburg, Sweden, EU, August 2017. EasyChair EPiC Series in Computing 51, 24–28, November **2017**; DOI: 10.29007/4b7h.
32. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. Satisfiability modulo theories and assignments. In Leonardo de Moura (Ed.) *Proceedings of the Twenty-Sixth 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.
33. Maria Paola Bonacina and David A. Plaisted. SGS theorem proving: an exposition. In Stephan Schulz, Leonardo De Moura, and Boris Konev (Eds.), *Proceedings of the Fourth Workshop on Practical Aspects in Automated Reasoning (PAAR)* satellite of the *Seventh International Joint Conference on Automated Reasoning (IJCAR)* held at the *Sixth Federated Logic Conference (FLoC)*, Vienna, Austria, EU, July 2014. EasyChair EPiC Series in Computing 31:25–38, July **2015**; DOI: 10.29007/m2vf.
34. Maria Paola Bonacina. On model-based reasoning: recent trends and current developments (Abstract). In Domenico Cantone and Marianna Nicolosi Asmundo (Eds.) *Proceedings of the Twenty-Eighth Italian Conference on Computational Logic (CILC)*, Catania, Italy, EU, September 2013. CEUR Workshop Proceedings 1068, 9–9, **2013 (invited)**.
35. Maria Paola Bonacina and Moa Johansson. On interpolation in decision procedures. In Kai Brännler and George Metcalfe (Eds.) *Proceedings of the Twentieth 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 (invited)**; DOI: 10.1007/978-3-642-22119-4\_1.
36. Maria Paola Bonacina. On theorem proving for program checking – Historical perspective and recent developments. In Maribel Fernandez (Ed.) *Proceedings of the Twelfth International ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming (PPDP)*, Schloss Hagenberg, Linz, Austria, EU, July 2010. ACM Press, 1–11, **2010 (invited)**; DOI: 10.1145/1836089.1836090.

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<sup>9</sup>Presented as presentation-only paper also at the *Sixteenth International Workshop on Satisfiability Modulo Theories (SMT)* satellite of the *Ninth International Joint Conference on Automated Reasoning (IJCAR)* held at the *Seventh Federated Logic Conference (FLoC)*, Oxford, England, UK, July 2018.

37. 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 Twenty-Second 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.
38. Maria Paola Bonacina and Nachum Dershowitz. Canonical inference for implicational systems. In Alessandro Armando, Peter Baumgartner, and Gilles Dowek (Eds.) *Proceedings of the Fourth 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.
39. Maria Paola Bonacina and Mnacho Echenim.  $\mathcal{T}$ -decision by decomposition. In Frank Pfenning (Ed.) *Proceedings of the Twenty-first 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.
40. 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 Sixth Workshop on Strategies in Automated Deduction (STRATEGIES)* satellite of the *Third International Joint Conference on Automated Reasoning (IJCAR)* held at the *Fourth Federated Logic Conference (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.
41. Maria Paola Bonacina and Mnacho Echenim. Rewrite-based satisfiability procedures for recursive data structures. In Byron Cook and Roberto Sebastiani (Eds.) *Proceedings of the Fourth Workshop on Pragmatics of Decision Procedures in Automated Reasoning (PDPAR)*<sup>10</sup> satellite of the *Third International Joint Conference on Automated Reasoning (IJCAR)* held at the *Fourth Federated Logic Conference (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.
42. 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 Third International Joint Conference on Automated Reasoning (IJCAR)*, Seattle, Washington, USA, August 2006. Springer, Lecture Notes in Artificial Intelligence 4130, 513–527, **2006**; DOI: 10.1007/11814771.42.
43. 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 Fifth 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.

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<sup>10</sup>Later renamed *Workshop on Satisfiability Modulo Theories (SMT)*.

44. 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 First 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.
45. Maria Paola Bonacina. Analysis of distributed-search contraction-based strategies. In Jürgen Dix, Luis Fariñas del Cerro, and Ulrich Furbach (Eds.) *Proceedings of the Sixth 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.
46. Maria Paola Bonacina. Experiments with subdivision of search in distributed theorem proving. In Markus Hitz and Erich Kaltofen (Eds.) *Proceedings of the Second International Symposium on Parallel Symbolic Computation (PASCO)*, Wailea, Maui, Hawaii, USA, July 1997. ACM Press, 88–100, **1997**; DOI: 10.1145/266670.266696.
47. Maria Paola Bonacina. The Clause-Diffusion theorem prover Peers-mcd. In William W. McCune (Ed.) *Proceedings of the Fourteenth International Conference on Automated Deduction (CADE)*, Townsville, Queensland, Australia, July 1997. Springer, Lecture Notes in Artificial Intelligence 1249, 53–56, **1997**; DOI: 10.1007/3-540-63104-6-6.
48. 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, Kaohsiung, Taiwan, ROC, December **1996**.
49. Maria Paola Bonacina and Jieh Hsiang. On semantic resolution with lemmaizing and contraction. In Norman Foo and Randy Goebel (Eds.) *Proceedings of the Fourth 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.
50. 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 First International Symposium on Parallel Symbolic Computation (PASCO)*, Schloss Hagenberg, Linz, Austria, EU, September 1994. World Scientific, Lecture Notes Series in Computing 5, 22–33, **1994**.
51. 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 First International Symposium on Parallel Symbolic Computation (PASCO)*, Schloss Hagenberg, Linz, Austria, EU, September 1994. World Scientific, Lecture Notes Series in Computing 5, 422–431, **1994**.
52. Maria Paola Bonacina and William W. McCune. Distributed theorem proving by *Peers*. In Alan Bundy (Ed.) *Proceedings of the Twelfth 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.

53. Maria Paola Bonacina and Jieh Hsiang. Distributed deduction by Clause-Diffusion: the Aquarius prover. In Alfonso Miola (Ed.) *Proceedings of the Third 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.
54. Maria Paola Bonacina and Jieh Hsiang. On fairness in distributed deduction. In Patrice Enjalbert, Alain Finkel, and Klaus W. Wagner (Eds.) *Proceedings of the Tenth 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.
55. Maria Paola Bonacina and Jieh Hsiang. High performance simplification-based automated deduction. In *Transactions of the Ninth US Army Conference on Applied Mathematics and Computing*, Minneapolis, Minnesota, USA, June 1991. Published as Army Research Office Report 92-1, 321–335, **1992**.
56. Maria Paola Bonacina and Jieh Hsiang. A system for distributed simplification-based theorem proving. In Bertrand Fronhöfer and Graham Wrightson (Eds.) *Proceedings of the First 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.
57. Maria Paola Bonacina and Jieh Hsiang. On fairness of completion-based theorem proving strategies. In Ronald V. Book (Ed.) *Proceedings of the Fourth 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.
58. Maria Paola Bonacina and Jieh Hsiang. Completion procedures as semidecision procedures. In Stephan Kaplan and Mitsuhiro Okada (Eds.) *Proceedings of the Second International Workshop on Conditional and Typed Term Rewriting Systems (CTRS)*, Montréal, Canada, June 1990. Springer, Lecture Notes in Computer Science 516, 206–232, **1991**, (**invited**); DOI: 10.1007/3-540-54317-1\_92.
59. Siva Anantharaman and Maria Paola Bonacina. An application of automated equational reasoning to many-valued logic.<sup>11</sup> In Stephan Kaplan and Mitsuhiro Okada (Eds.) *Proceedings of the Second 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.
60. Maria Paola Bonacina and Jieh Hsiang. Operational and denotational semantics of rewrite programs. In Saumya Debray and Manuel Hermenegildo (Eds.) *Proceedings of the North*

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<sup>11</sup>Presented at the workshop with the title: An application of the theorem prover SBR3 to many-valued logic.

*American Conference on Logic Programming (NACLP)*<sup>12</sup>, Austin, Texas, USA, October 1990. MIT Press, Logic Programming Series, 449–464, **1990**.

61. Maria Paola Bonacina and Giancarlo Sanna. KBlab: an equational theorem prover for the Macintosh. In Nachum Dershowitz (Ed.) *Proceedings of the Third 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.

## Papers at workshops with referees without published proceedings

62. Maria Paola Bonacina and David A. Plaisted. Constraint manipulation in SGGS. In Temur Kutsia and Christophe Ringeissen (Eds.), *Notes of the Twenty-Eighth Workshop on Unification (UNIF)* satellite of the *Seventh International Joint Conference on Automated Reasoning (IJCAR)* held at the *Sixth Federated Logic Conference (FLoC)*, Vienna, Austria, EU, July 2014. Technical Report 14-06, Research Institute for Symbolic Computation, Johannes Kepler Universität, Linz, 47–54, **2014**.
63. Maria Paola Bonacina and Moa Johansson. Towards interpolation in an SMT solver with integrated superposition. In Shuvendu Lahiri and Sanjit A. Seshia (Eds.), *Notes of the Ninth International Workshop on Satisfiability Modulo Theories (SMT)* satellite of the *Twenty-Third International Conference on Computer Aided Verification (CAV)*, 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**.
64. 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 *Notes of the Third Workshop on Pragmatics of Decision Procedures in Automated Reasoning (PDPAR)*<sup>13</sup> satellite of the *Seventeenth International Conference on Computer Aided Verification (CAV)*, 33–41, Edinburgh, Scotland, UK, July **2005** (Extended abstract of [43]).
65. Stephan Schulz and Maria Paola Bonacina. On handling distinct objects in the superposition calculus. In *Notes of the Fifth International Workshop on the Implementation of Logics (IWIL)* satellite of the *Eleventh International Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR)*, 66–77, Montevideo, Uruguay, March **2005**.
66. 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.) *Notes of the Second Workshop on Verification (VERIFY)* satellite of the *Eighteenth International Conference on Automated Deduction (CADE)* held at the *Third Federated Logic Conference (FLoC)*, Copenhagen, Denmark, EU, July 2002. Technical Report 07/2002, DIKU, Københavns Universitet, 103–112, **2002**.

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<sup>12</sup>Previously called *Symposium on Logic Programming* and later renamed *International Symposium on Logic Programming*.

<sup>13</sup>Later renamed *Workshop on Satisfiability Modulo Theories (SMT)*.

67. Maria Paola Bonacina. Ten years of parallel theorem proving: a perspective. In Bernhard Gramlich, Hélène Kirchner, and Frank Pfenning (Eds.) *Notes of the Third International Workshop on Strategies in Automated Deduction (STRATEGIES)* satellite of the *Sixteenth International Conference on Automated Deduction (CADE)* held at the *Second Federated Logic Conference (FLoC)*, 3–15, Trento, Italy, EU, July **1999** (invited) (Early version of part of [12]).
68. 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.) *Notes of the Workshop on Problem Solving Methodologies with Automated Deduction* satellite of the *Fifteenth International Conference on Automated Deduction (CADE)*, 1–10, Lindau, Germany, EU, July **1998**.
69. Maria Paola Bonacina. On the representation of parallel search in theorem proving. In *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, 22–28, **1997** (Extended abstract of an early version of [45]).

### Invited papers in refereed or edited collections at the national level

70. 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**.
71. 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

72. Maria Paola Bonacina and David A. Plaisted. Semantically-guided goal-sensitive theorem proving. In Jürgen Giesl (Ed.) *Notes of the Meeting of the IFIP Working Group on Term Rewriting (WG 1.6)* satellite of the joint *Twenty-Fifth International Conference on Rewriting Techniques and Applications (RTA)* and *Twelfth International Conference on Typed Lambda Calculi and Applications (TLCA)* held at the *Sixth Federated Logic Conference (FLoC)*, Vienna, Austria, EU, July **2014** (Abstract of an early version of [2, 3]).
73. Maria Paola Bonacina. Two-stage interpolation systems. In Laura Kovács and Georg Weissenbacher (Eds.) *Notes of the First International Workshop on Interpolation: from Proofs to Applications (IPrA)* satellite of the *Twenty-fifth International Conference on Computer Aided Verification (CAV)*, Saint Petersburg, Russia, July 2013. Technical Report, Technische Universität Wien, **2013** (Abstract of [5]).

74. 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.) *Notes of the First Workshop on Automated Deduction: Decidability, Complexity, Tractability (ADDCT)* satellite of the *Twenty-first International Conference on Automated Deduction (CADE)*, 65–67, Bremen, Germany, EU, July **2007**.
75. Maria Paola Bonacina. Theorem proving strategies: a search-oriented taxonomy (Position paper). In Ricardo Caferra and Gernot Salzer (Eds.) *Notes of the Second 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**.
76. Maria Paola Bonacina. Strategy analysis: from sequential to parallel strategies (Position paper). In Bernhard Gramlich and Frank Pfenning (Eds.) *Notes of the Second Workshop on Strategies in Automated Deduction (STRATEGIES)* satellite of the *Fifteenth International Conference on Automated Deduction (CADE)*, 19–21, Lindau, Germany, EU, July **1998**.
77. Maria Paola Bonacina. Machine-independent evaluation of theorem-proving strategies (Position paper). In Bernhard Gramlich and Hélène Kirchner (Eds.) *Notes of the First Workshop on Strategies in Automated Deduction (STRATEGIES)* satellite of the *Fourteenth International Conference on Automated Deduction (CADE)*, 37–39, Townsville, Queensland, Australia, July **1997**.
78. Maria Paola Bonacina and Jieh Hsiang. On the notion of complexity of search in theorem proving. *Logic Colloquium*, San Sebastián, Spain, EU, July 1996. *Bulletin of Symbolic Logic*, 3(2):253–254, June **1997** (Abstract of a preliminary version of [14]).
79. Maria Paola Bonacina. A note on the analysis of theorem-proving strategies. *Newsletter of the Association for Automated Reasoning*, 36:2–8, April **1997**.
80. Maria Paola Bonacina. Future directions of automated deduction: Strategy analysis for theorem proving. In Don W. Loveland and Deepak Kapur (Eds.) *NSF Workshop on Future Directions of Automated Deduction*, Chicago, Illinois, USA, April **1996**.
81. Maria Paola Bonacina. Future directions of automated deduction: Distributed automated deduction. In Don W. Loveland and Deepak Kapur (Eds.) *NSF Workshop on Future Directions of Automated Deduction*, Chicago, Illinois, USA, April **1996**.
82. 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**.
83. Maria Paola Bonacina. Problems in Lukasiewicz logic. *Newsletter of the Association for Automated Reasoning*, 18:5–12, June **1991**.
84. 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 a preliminary version of [18]).



85. 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**.
86. Maria Paola Bonacina. Petri nets for knowledge representation. *Petri Nets Newsletter*, 27:28–36, August **1987**.

## Technical reports

Technical reports wholly subsumed by published or submitted articles are omitted.

87. Maria Paola Bonacina, Stéphane Graham-Lengrand, and Natarajan Shankar. A model-constructing framework for theory combination. Research Report No. 99/2016, Dipartimento di Informatica, Università degli Studi di Verona, and Technical Report, SRI International and CNRS, November 2016 (revised December **2017**), 1–48 (Full version of [32] and of part of [30]).
88. 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 [40, 41]).
89. 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 [42]).
90. 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 [79]).
91. 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 [59]).
92. 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 [59] and [83]).

## Theses

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

94. 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**.)
95. 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

### Books

1. 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).
2. 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).

### Journal issues

3. 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), March **2005**.
4. 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), October **2001**.
5. Maria Paola Bonacina and Ulrich Furbach (Editors). *Advances in First-Order Theorem Proving*. Academic Press, *Journal of Symbolic Computation* 29(2), February **2000**.

### Other

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 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 [44]; Peers-mcd.c (1999–2000) described in paper [12]; Peers-mcd.b (1996–1999) described in papers [68, 46, 47]; Peers-mcd.a (1995–1996) described in paper [16].
- Peers (1993–1995) parallel Clause-Diffusion theorem prover for (associative-commutative) equational theories built on top of the Otter Parts Store, described in paper [52].
- Aquarius (1992–1993) parallel Clause-Diffusion theorem prover for first-order logic with equality built on top of Otter, described in papers [21, 53, 56] and thesis [93].
- KBlab (1986–1989) theorem prover for equational theories based on unfailing Knuth-Bendix completion, described in paper [61] and thesis [95].

## Talks

I gave 31 talks at international events presenting papers [30, 31, 29, 26, 33, 72, 73, 37, 38, 43, 64, 44, 75, 45, 68, 76, 69, 46, 47, 77, 49, 78, 50, 51, 52, 53, 54, 84, 57, 60, 61].

### Invited talks at conferences, symposia, workshops, schools

32. SGGS: conflict-driven first-order reasoning. *First European Workshop on Higher Order Automated Reasoning (Matryoshka)*, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands, EU, June **2018**.
33. CDSAT: conflict-driven theory combination. *Twenty-Sixth Meeting of the Associazione Italiana di Logica e sue Applicazioni, (AILA)*, Orto Botanico, Università degli Studi di Padova, Padova, Italy, EU, September **2017** (Presenting part of paper [70]).
34. From parallel theorem proving to parallel SAT-solving and back. *First Workshop on Parallel Constraint Reasoning (PCR)* satellite of the *Twenty-Sixth International Conference on Automated Deduction (CADE)*, Gothenburg, Sweden, EU, August **2017** (Presenting part of paper [25]).
35. On interpolation in theorem proving. *Seventh Summer School on Formal Techniques (SSFT)*, organized by SRI International at Menlo College, Atherton, California, USA, May **2017**.
36. Conflict-driven reasoning. *Twenty-Fourth UK Automated Reasoning Workshop (ARW)*, The University of Bristol, Bristol, England, UK, April **2017** (Presenting in part technical report [87]).
37. SGGS: CDCL from propositional to first-order logic. *Workshop on Theoretical Foundations of SAT Solving*, The Fields Institute for Research in the Mathematical Sciences, University of Toronto, Toronto, Ontario, Canada, August **2016**.

38. Introduction to automated reasoning. *Summer School on Satisfiability, Satisfiability Modulo Theories, and Automated Reasoning (SAT/SMT/AR* <sup>14</sup>), Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal, EU, June **2016**.
39. Ordering-based strategies for theorem proving. *Sixth Summer School on Formal Techniques (SSFT)*, organized by SRI International at Menlo College, Atherton, California, USA, May **2016**.
40. On model-based reasoning: recent trends and current developments. *Twenty-Eighth Italian Conference on Computational Logic (CILC)*, Catania, Italy, EU, September **2013** (Presenting abstract [34]).
41. 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)*, Department of Computer Science, The University of New Mexico, Albuquerque, New Mexico, USA, June **2013**.
42. Towards an interpolating DPLL( $\Gamma+\mathcal{T}$ ). *Z3 Special Interest Group Meeting*, Microsoft Research, Cambridge, England, UK, November **2011**.
43. On interpolation in decision procedures. *Twentieth International Conference on Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX)* and *Eighth International Workshop on First-order Theorem Proving (FTP)*, Bern, Switzerland, July **2011** (Presenting paper [35]).
44. On theorem proving for program checking – Historical perspective and recent developments. *Twelfth International ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming (PPDP)*, Schloss Hagenberg, Linz, Austria, EU, July **2010** (Presenting paper [36]).
45. Experiments and open issues on decision procedures, theorem proving and software analysis. *Third KeY Symposium*, Adam-Stegerwald-Haus, Königswinter, Germany, EU, June **2004**.
46. A classical topic revisited: models of search in deduction. *Trento-Genova Symposium*, Levanto, Italy, EU, June **2001**.
47. On the representation and analysis of distributed search in theorem proving. *Trento-Genova Symposium*, IRST, Istituto Trentino di Cultura, Trento, Italy, EU, June **2000**.
48. Ten years of parallel theorem proving: a perspective. *Third Workshop on Strategies in Automated Deduction (STRATEGIES)* satellite of the *Sixteenth International Conference on Automated Deduction (CADE)* held at the *Second Federated Logic Conference (FLoC)*, Trento, Italy, EU, July **1999** (Presenting paper [67]).

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<sup>14</sup>Sixth edition of the school, named SAT/SMT in the first five.

## Contributed talks at workshops, meetings, seminars (events without papers)

49. CDSAT: conflict-driven theory combination. *Big Proof Program, (BPR)*, Isaac Newton Institute for the Mathematical Sciences, University of Cambridge, Cambridge, England, UK, July **2017** (Presenting paper [32]).
50. Interpolation for resolution and superposition. Meeting of the *COST Action Rich-model toolkit: an infrastructure for reliable computer systems (IC0901)* satellite of the *Eighth Haifa Verification Conference*, Haifa, Israel, November **2012**.
51. Interpolation for resolution and superposition. *Logic: Between Semantics and Proof Theory, A Workshop in Honor of Prof. Arnon Avron's 60th Birthday*, School of Computer Science, Tel Aviv University, Tel Aviv, Israel, November **2012**.
52. Abstract canonical inference: on fairness in theorem proving. Meeting of the *COST Action Rich-model toolkit: an infrastructure for reliable computer systems (IC0901)* held as joint *Fourth Workshop on System Verification by Automated Reasoning Methods (SVARM)* and *Seventh Workshop on Verification (VERIFY)* satellite of the *Sixth International Joint Conference on Automated Reasoning (IJCAR)*, Manchester, England, UK, June-July **2012**.
53. Interpolation for resolution, superposition, and  $DPLL(\Gamma+\mathcal{T})$ . Meeting of the *COST Action Rich-model toolkit: an infrastructure for reliable computer systems (IC0901)* held as joint *Third Workshop on System Verification by Automated Reasoning Methods (SVARM)* and *Workshop on Automation in Proof Assistants (AIPA)* satellite of the *European Joint Conferences on Theory and Practice of Software (ETAPS)*, Tallinn, Estonia, EU, March-April **2012**.
54. Towards interpolation in an SMT solver with integrated superposition. Meeting of the *COST Action Rich-model toolkit: an infrastructure for reliable computer systems (IC0901)*, Torino, Italy, EU, October **2011**.
55. Rewriting for Satisfiability Modulo Theories. Meeting of the *IFIP Working Group on Term Rewriting (WG 1.6)* satellite of the *Twenty-First International Conference on Rewriting Techniques and Applications (RTA)* held at the *Fifth Federated Logic Conference (FLoC)*, Edinburgh, Scotland, UK, July **2010**.
56. Decision procedures with unsound inferences for software verification. *Dagstuhl Seminar 09411 on Interaction versus Automation: the Two Faces of Deduction*, International Conference and Research Center for Computer Science, Schloss Dagstuhl, Germany, EU, October **2009**.
57. High-performance deduction for verification: synthetic benchmarks in the theory of arrays. *Dagstuhl Seminar 03171 on Deduction and Infinite Model Checking*, International Conference and Research Center for Computer Science, Schloss Dagstuhl, Germany, EU, April **2003**.

58. Deciding satisfiability problems by rewrite-based deduction: experiments in the theory of arrays. Meeting of the *IFIP Working Group on Term Rewriting (WG 1.6)* satellite of the *Thirteenth International Conference on Rewriting Techniques and Applications (RTA)* held at the *Third Federated Logic Conference (FLoC)*, Copenhagen, Denmark, EU, July **2002**.
59. Models of the search space in theorem proving: from forward to backward reasoning. *Dagstuhl Seminar 01101 on Deduction*, International Conference and Research Center for Computer Science, Schloss Dagstuhl, Germany, EU, March **2001**.
60. Research activities related to term rewriting at the University of Iowa. Meeting of the *IFIP Working Group on Term Rewriting (WG 1.6)* satellite of the *Tenth International Conference on Rewriting Techniques and Applications (RTA)* held at the *Second Federated Logic Conference (FLoC)*, Trento, Italy, EU, July **1999**.
61. On the modelling of search in theorem proving: towards a theory of strategy analysis. *Mid-West Theory Day*, Department of Electrical Engineering and Computer Science, University of Illinois at Chicago, Chicago, Illinois, USA, December **1996**.
62. Semantic resolution, lemmaizing and contraction. *Dagstuhl Seminar 9512 on Deduction*, International Conference and Research Center for Computer Science, Schloss Dagstuhl, Germany, EU, March **1995**.

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

63. CDSAT: conflict-driven satisfiability modulo theories and assignments. School of Computer Science and Software Engineering, *East China Normal University*, Shanghai, PR China, May **2018**.
64. CDSAT: conflict-driven satisfiability modulo theories and assignments. Institute of Software, *Chinese Academy of Sciences*, Beijing, PR China, April **2018**.
65. SGGS: conflict-driven first-order theorem proving. *School of Computer Science, The University of Manchester*, Manchester, England, UK, March **2017**.
66. Reasoning with speculative inferences. *Nuance Communications*, Sunnyvale, California, USA, September **2016**.
67. Interpolation systems for non-ground proofs. *Formal Topics Series, Computer Science Laboratory, SRI International*, Menlo Park, California, USA, August **2016**.
68. Interpolation systems for ground proofs. *Formal Topics Series, Computer Science Laboratory, SRI International*, Menlo Park, California, USA, August **2016**.
69. SGGS: A CDCL-like first-order theorem-proving method. *Microsoft Research*, Redmond, Washington, USA, April **2016**.
70. The theorem-proving method  $DPLL(\Gamma+T)$ . *Formal Topics Series, Computer Science Laboratory, SRI International*, Menlo Park, California, USA, February-March **2016**.

71. SGGS: A CDCL-like first-order theorem-proving method. *Formal Topics Series, Computer Science Laboratory, SRI International*, Menlo Park, California, USA, December **2015**.
72. SGGS: Model-based first-order theorem proving. Fachbereich Informatik, *Universität Koblenz-Landau*, Koblenz, Germany, EU, September **2014**.
73. SGGS: Model-based first-order theorem proving. *Max-Planck-Institut für Informatik*, Saarbrücken, Germany, EU, June **2014**.
74. On fairness in theorem proving. *Microsoft Research*, Redmond, Washington, USA, June **2013**.
75. The theorem-proving method  $DPLL(\Gamma+\mathcal{T})$ . Department of Computer Science, *University of Illinois at Urbana-Champaign*, Urbana, Illinois, USA, June **2013**.
76. Abstract canonical inference: on fairness in theorem proving. Department of Informatics, *King's College*, London, England, UK, July **2012**.
77.  $DPLL(\Gamma+\mathcal{T})$ : a new style of reasoning for program checking. Institute of Software, *Chinese Academy of Sciences*, Beijing, PR China, June **2011**.
78. 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**.
79. Decision procedures with unsound theorem proving for software verification. Laboratory for Automated Reasoning and Analysis, *Ecole Polytechnique Fédérale de Lausanne*, Lausanne, Switzerland, April **2009**.
80. Decision procedures with unsound theorem proving for software verification. Department of Computer Science, *ETH Zurich*, Zurich, Switzerland, April **2009**.
81. Rewrite-based decision procedures. *Microsoft Research*, Redmond, Washington, USA, May **2008**.
82. Rewrite-based satisfiability procedures. *Microsoft Research*, Redmond, Washington, USA, May **2008**.
83. General theorem proving for satisfiability modulo theories: an overview. *Microsoft Research*, Redmond, Washington, USA, May **2008**.
84. Automated reasoning for verification: recent results and current challenges. Department of Mathematical Sciences, *Tsinghua University*, Beijing, PR China, May **2007**.
85. 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**.

86. “A First Order Extension of Stålmärck’s Method” by Magnus Björk: the big picture. Opponent’s talk, Department of Computer Science, *Chalmers University of Technology*, Göteborg, Sweden, EU, May **2006**.
87. 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**.
88. 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**.
89. 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**.
90. Automated reasoning in artificial intelligence: recent results in strategy analysis. Dipartimento di Informatica, *Università degli Studi di Verona*, Verona, Italy, EU, February **2002**.
91. Distributed reasoning by Clause-Diffusion: the Peers-mcd.d prover. Facoltà di Informatica, *Libera Università degli Studi di Bolzano*, Bolzano, Italy, EU, March **2001**.
92. Selected topics and recent results in automated reasoning. Facoltà di Economia, *Università degli Studi di Bergamo*, Bergamo, Italy, EU, July **2000**.
93. On the representation and analysis of distributed search in theorem proving. Dipartimento di Informatica, *Università degli Studi di Pisa*, Pisa, Italy, EU, June **2000**.
94. 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**.
95. 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**.
96. 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**.
97. Theorem proving strategies: a search-oriented taxonomy. Dipartimento di Informatica e Sistemistica, *Università degli Studi di Roma “La Sapienza,”* Roma, Italy, EU, May **2000**.
98. Modelling search and evaluating strategies in theorem proving. Institut für Softwaretechnologie, *Technische Universität Graz*, Graz, Austria, EU, May **2000**.
99. Theorem proving strategies: a search-oriented taxonomy. Department of Computer and Information Science, *University of Oregon*, Eugene, Oregon, USA, April **2000**.



100. 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**.
101. Considerations on the control of parallel deduction. *INRIA-Lorraine*, Nancy, France, EU, September **1999**.
102. Topics in distributed deduction and strategy analysis. Institut für Informatik, *Universität Koblenz-Landau*, Koblenz, Germany, EU, June **1999**.
103. Distributed theorem proving by Clause-Diffusion: the Peers-mcd prover. Fakultät Informatik, *Technische Universität Dresden*, Dresden, Germany, EU, June **1999**.
104. Distributed contraction-based strategies: model and analysis. *INRIA-Lorraine*, Nancy, France, EU, October **1998**.
105. Subdivision of search in theorem proving: heuristics and experiments. Department of Industrial Engineering, *The University of Iowa*, Iowa City, Iowa, USA, April **1998**.
106. 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**.
107. On search in theorem proving: towards a theory of strategy analysis. Department of Computer Science, *Iowa State University*, Ames, Iowa, USA, October **1995**.
108. On rewrite programs: semantics and relationship with Prolog. Department of Computer Science, *University of Idaho*, Moscow, Idaho, USA, May **1993**.
109. 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**.
110. Parallel deduction: the Clause-Diffusion method. Department of Computer Science, *The University of Iowa*, Iowa City, Iowa, USA, May **1993**.
111. Parallel deduction: the Clause-Diffusion method. Department of Computer Science, *University of Colorado at Denver*, Denver, Colorado, USA, April **1993**.
112. On rewrite programs: semantics and relationship with Prolog. Department of Computer Science, *Portland State University*, Portland, Oregon, USA, April **1992**.
113. 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**.

## Tutorials

114. Parallelization of deduction strategies. *Twelfth International Conference on Automated Deduction (CADE)*, Nancy, France, EU, June **1994**.

## Internal talks (in the home institution)

115. Decision procedures with unsound theorem proving for software verification. Dipartimento di Informatica, Università degli Studi di Verona, Verona, Italy, EU, May **2009**.
116. Big proof engines as little proof engines: new results on decision procedures for satisfiability modulo a theory. Dipartimento di Informatica, Università degli Studi di Verona, Verona, Italy, EU, September **2005**.
117. Experiments with subdivision of search: the Clause-Diffusion theorem prover Peers-mcd. Department of Computer Science, The University of Iowa, Iowa City, Iowa, USA, October **1997**.
118. On the modelling of search in theorem proving: towards a theory of strategy analysis. Department of Computer Science, The University of Iowa, Iowa City, Iowa, USA, April **1997**.
119. Distributed automated deduction: an introduction to the Clause-Diffusion methodology. INRIA-Lorraine, Nancy, France, EU, April **1993**.

## Panels

120. Donne e scienza tecnologia ingegneria matematica. Liceo Classico “Goffredo Mameli” e Liceo Internazionale Istituto Salvini, Roma, Italy, EU, November **2017**.
121. Future directions for Big Proof. *Big Proof Program*, (**BPR**), Isaac Newton Institute for the Mathematical Sciences, University of Cambridge, Cambridge, England, UK, July **2017**.
122. La mente, le idee, il genio. *Infinitamente – Fattore umano: cervello e coscienza*, Verona, Italy, EU, January **2010**.
123. Current trends and open problems at the frontiers of automated reasoning (**Co-chair**). *Third International Workshop on First-order Theorem Proving (FTP)*, St. Andrews, Scotland, UK, July **2000**.
124. Concepts, logics and research methodologies in automated deduction (**Co-chair**). *Second International Workshop on First-order Theorem Proving (FTP)*, Schloss Wilhelminenberg, Vienna, Austria, EU, November **1998**.

## Teaching

### At the Università degli Studi di Verona

Three courses per year, exceptionally reduced to two a few times. Courses taught:

- Undergraduate: *Logica (Logic)*, *Algoritmi per bioinformatica (Algorithms for Bioinformatics)*, *Linguaggi di programmazione (Programming Language Concepts)*, *Programmazione (Introduction to Programming)*;
- Graduate: *Ragionamento automatico (Automated Reasoning)*, *Special Topics in Artificial Intelligence*, *Verifica automatica di sistemi (Automated System Verification)*, *Intelligenza artificiale (Artificial Intelligence)*, *Deduzione automatica (Automated Deduction)*.

### At other universities

- 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, 3/2014.
- 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, Palazzo Feltrinelli, Gargnano del Garda, 8-9/2005.
- Course *Theorem proving strategies*, International Master Program in Computational Logic, Technische Universität Dresden, Dresden, 4 weeks, 5-6/1999.

### 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:

- Undergraduate: *22C:054 Programming Language Concepts*;
- Graduate: *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

#### Post-Doc's

Serdar Erbatur (PhD from the State University of New York at Albany, Albany, New York, USA), **4/2013** – **4/2014** (then at the Ludwig-Maximilians Universität München, Germany); Moa Johansson (PhD from the University of Edinburgh, Edinburgh, Scotland, UK), **10/2009** – **9/2011** (then at Chalmers University of Technology, Göteborg, Sweden); Mnacho Echenim (Doctorate from the Institut National Polytechnique de Grenoble, Grenoble, France), **1/2006** – **8/2007** (then at Université de Grenoble, Grenoble, France); Stephan Schulz (Doctorate from the Technische Universität München, München, Germany), **9/2004** – **3/2005** (then at DHBW Stuttgart, Germany).

## Graduate students

Master theses (Laurea Magistrale): Giulio Mazzi, *TBA*, **2018**; Luca Pasetto, *TBA*, **2018**; Pierluigi Calabria (Università degli Studi di Roma “La Sapienza”), *On interactive theorem proving with Coq*, **2017**; Nicola Zantedeschi, *Soddisfacibilità modulo la teoria dell’uguaglianza: integrazione di DPLL e chiusura di congruenza*, **2009**. Individual programming projects: Lorenzo Sambugar, *DPLL per formule in NNF*, **2009**.

## Undergraduate students

Graduation exams (Laurea) with thesis or project: Omar Dal Corso, *TBA*, **2018**; Diego Carlesso, *TBA*, **2018**; Alexandra Diana Gociu, *Il dimostratore Lean: elementi di base e logica proposizionale*, **2017**; Luca Zambarda, *Agenti intelligenti: un approccio alla strategia videoludica*, **2014**; Francesco Donato, *Studio di tecniche avanzate per la soddisfacibilità mediante il dimostratore Z3*, **2012**; Claudio Meneghello, *Implementazione di un risolutore di soddisfacibilità: algoritmo iterativo e ricorsivo a confronto*, **2010**; Ce Cao, *Il sistema Yices per soddisfacibilità modulo teorie: algoritmi ed esperimenti*, **2007**; Denis Mantovani, *Il problema della soddisfacibilità booleana e l’algoritmo di Davis-Putnam-Logemann-Loveland*, **2007**; Giovanni Castagnetti, *Studio di strategie di ricerca per la risoluzione di problemi in intelligenza artificiale*, **2007**; Alessandro Cazzola, *Esperienze con sistemi di verifica basati sul ragionamento automatico*, **2006**; Isabella Pezzini, *Alcuni metodi per procedure di decisione per teorie equazionali*, **2005**; Stefano Ferrari, *Procedure di decisione mediante ragionamento automatico equazionale: esperimenti in teoria degli array*, **2004**. Individual programming projects: Sara Costa, **2009**; Marco Zanetti, **2006**.

## Doctoral or PhD thesis defense committees at other universities

Arnaud Fietzke, Max-Planck-Institut für Informatik, Saarbrücken, Germany, **2014**; Hao Xu, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, **2012** (external reader); Vincent Aravantinos, Université de Grenoble, Grenoble, France, **2010** (**Rapporteur**); Roberto Bruttomesso, Università degli Studi di Trento, Trento, Italy, **2008** (**Chair**); Magnus Björk, Chalmers University of Technology, Göteborg, Sweden, **2006** (**Opponent**); Prakash Countcham, Institut National Polytechnique de Grenoble, Grenoble, France, **2006** (**Rapporteur**); Silvio Ranise, Università degli Studi di Genova, Genova, Italy, **2002**; Michael Dierkes, Institut National Polytechnique de Grenoble, Grenoble, France, **2001** (**Rapporteur**); Andrea Formisano, Università degli Studi di Roma “La Sapienza,” Roma, Italy, **1999**; Christelle Scharff, Université “Henri Poincaré” (Nancy 1), Nancy, France, **1999**.

## At The University of Iowa

**Graduate students** MS theses: Aditya Kumar Sehgal: *Decision of satisfiability by proof: a case study in the theory of arrays* (**2002**); George Edward Hagen: *Application of automated reasoning tools to planning problems* (**2001**); Javeed Chida: *A Modified Clause-Diffusion prover augmented with heuristic multi-search* (**2000**); David André Furcy: *Formal description of and*

*experimentation with Knuth-Bendix-based theorem proving in Otter (1997)*. MS projects: Jing Zhou: *Accessing a database through the World Wide Web (1996)*; Guifeng Jin: *An efficient cluster algorithm for tearing large networks and its implementation (1996)*. PhD Comprehensive Exams (Artificial Intelligence): Seonho Shin (2001).

**Undergraduate students** BS Honors theses: Tobias James Hagge: *A study of the definition and formalization of verifiable network filtering policies (2002)*; Krzysztof Cwalina: *Experimentation with Fuzzy Logic and Prolog (1996)*. Individual programming projects: Jason Renk (2001).

## Service / Amministrazione

### All'Università degli Studi di Verona (selected items)

**Per il Dipartimento / Departmental service** Commissione di procedura selettiva per un posto da Professore Associato (Hiring Committee for one Associate Professor position) 2014; Presidente, Commissione di concorso per un posto da ricercatore (Chair, Hiring Committee for one Assistant Professor position) 2008; Commissione ammissione al *Dottorato di Ricerca* (PhD Admissions Committee) 2006; Coordinatrice, *Serie Seminari del Dipartimento di Informatica* (Chair, Computer Science Colloquia) 2003.

**Per la Facoltà / College service** Preside Vicaria (Executive Associate Dean) 2009–2012; Consiglio di Presidenza (Executive Committee) 2003–2012; Presidente, Commissione permanente sviluppo attività esterne, **eletta** (Chair, Outreach Activities Committee, **elected**) 2006–2009; Presidente del Consiglio dei Corsi di Laurea in Informatica, **eletta** (Director of Computer Science Studies, **elected**) 2003–2006.

**Per l'Ateneo / University service** Senato Accademico, Rappresentante dei Professori Ordinari di Scienze e Ingegneria, **eletta** (Academic Senate, Representative of the Professors of Sciences and Engineering, **elected**) 2012–2015; Commissione per la revisione dello Statuto, **eletta** (Committee for the revision of the University Statute, **elected**) 2011; Direttrice della Scuola di Dottorato di Scienze Ingegneria Medicina, **eletta** (Dean of the Graduate School of Sciences Engineering Medicine, **elected**) 2007–2009; Presidente, Comitato di Area CIVR,<sup>15</sup> *Scienze matematiche ed informatiche*, **eletta** (Chair, Research Evaluation Committee, Computer Science and Mathematics, **elected**) 2004–2008.

**All'esterno / External service** Rappresentante dell'Università degli Studi di Verona nel *Consiglio Direttivo del Consorzio Interuniversitario Nazionale per l'Informatica (CINI)*, 2012–2015; Consulente per il giudice, Tribunale di Trento, causa relativa a concorso da dirigente di ricerca CNR<sup>16</sup> (Consultant for the judge, lawsuit on promotion to CNR principal scientist) 2008–2009.

<sup>15</sup>Comitato Interuniversitario per la Valutazione della Ricerca

<sup>16</sup>Consiglio Nazionale delle Ricerche

## At The University of Iowa

**Departmental service** Graduate Admissions Committee: Spring 2002; Faculty Hiring Committee (**elected**): Academic years 2000/01, 1999/2000, 1998/99, 1997/98, 1995/96; Advisory Committee: Academic years 2001/02, 2000/01, 1999/2000, 1998/99; Library Committee: Academic years 1999/2000, 1998/99, 1997/98, Spring 1997, Academic years 1995/96, 1993/94; Hiring Committee for an Administrative Assistant position: Fall 1999, Summer 1998; Chair, Computer Science Colloquia: Spring 1998, Fall 1997, Spring 1997; Research Committee: Academic year 1994/95, Spring 1994.

**College service** Faculty Assembly, College of Liberal Arts and Sciences, Academic year 2001/02 (**elected**); Review Committee of the Department of Linguistics (Spring 2002); Panel *Getting established at Iowa*, Orientation for new faculty, College of Liberal Arts, 8/1996.

**University service** Selection Committee, Ida Cordelia Beam Distinguished Visiting Professorship<sup>17</sup> (Spring 2000); Goldwater Scholarship, Honors Program, Faculty Nomination Committee (Fall 1995; Fall 1994).

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<sup>17</sup>The Ida Beam prizes are awarded each year by the University of Iowa to distinguished scholars in any field; winners visit the University and deliver lectures. In Computer Science, Richard Karp received this award in 1999.