

Curriculum Vitæ et Studiorum

Paolo Baldan

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GENERAL DATA

Born: DOLO (VENEZIA), APRIL, 14 1969.
Address: VENEZIA (VE), Via B. Marcello 9, c.a.p. 30171,
Citizenship ITALIAN.
Current Position: ASSOCIATE PROFESSOR
Department of Mathematics, University of Padova.

EDUCATION

- 1989** High school diploma with grade 60/60 at “ITIS Francesco Severi” (Padova)
- 1994** M.Sc. degree in Computer Science (110/110 summa cum laude) at the University of Udine, with the thesis *A fixed point theorem for the solution of domain equations in a category of trees* (supervisors: Prof. Furio Honsell, Fabio Alessi).
- 2000** PhD in Computer Science at the University of Pisa, with the thesis *Modelling Concurrent Computation: from Contextual Petri Nets to Graph Grammars* (supervisors: Prof. Ugo Montanari, Andrea Corradini).
- 2000–2001** PostDoc Researcher at the Computer Science Department of the University of Pisa.
- 2001–2006** Assistant professor at the Computer Science Department of the University “Ca’ Foscari” of Venice.
- 2006–today** Associate professor at the Department of Mathematics of the University of Padova.

RESEARCH ACTIVITY

◇ Research Interests

Generally speaking, I am interested in *languages, models and semantics for concurrent, distributed and mobile systems*.

I have been studying *metric spaces* as semantic domains for concurrent processes; techniques for the solution of *metric domain equations*; *computational models* for metric and topological spaces.

More recently I have been focusing on formalisms for the specification of *distributed and concurrent systems*, ranging from *Petri nets* (and their generalisations), to *graph transformation systems* and *process calculi*. More specifically, I am interested in:

- Foundational aspects in the development of *truly concurrent* semantics (based, e.g., on traces, processes, unfoldings and event structures, possibly in a categorical setting).
- *Analysis techniques* for concurrent and distributed systems, relying on their truly concurrent semantics. This includes *logics* for expressing behavioural properties of the modelled systems, verification techniques for such logics, techniques for model-based diagnosis of concurrent systems.
- *Symbolic techniques* for the analysis of open-ended systems, based on the generalisation of bisimulation and trace semantics to open processes.

I am interested in the use of formalisms for concurrency in the modelling and analysis of *bio-systems*. I have also been studying their use in the area of *process mining*.

◇ Awards

- EATCS “Best Theoretical Paper” award for the paper “Approximating the Behaviour of Graph Transformation Systems” (joint work with B. König), presented at the *1st International Conference on Graph Transformation*, 2002.
- EATCS “Best Theoretical Paper” award for the paper “Graph Transactions as Processes” (joint work with A. Corradini, L. Foss, F. Gadducci), presented at the *3rd International Conference on Graph Transformation*, 2006.
- *Most influential paper in 8 years of ICGT (International Conference on Graph Transformation)* for the paper “Approximating the Behaviour of Graph Transformation Systems” (joint work with B. König) awarded at the 2010 edition of the conference.
- *Outstanding Paper Award* for the paper “Non-interference by unfolding” (joint work with A. Carraro), presented at the *35th International Conference on Application and Theory of Petri Nets and Concurrency*, 2014.

◇ National and International Projects

Scientific Responsibility

- Bilateral Italian/German project: *Models based on Graph Transformation Systems: Analysis and Verification*, CRUI/ DAAD Programma Vigoni, 2006 (Italian Coordinator).
- MIUR Project *ART (Analisi di sistemi di Riduzione mediante sistemi di Transizione)*, 2005–2006 (Site Coordinator).
- Project *Analysis, Verification and abstract Interpretation of MOdels for concurrency (AVIAMO)*, funded by the University of Padova, 2009–2010 (Coordinator).
- Exchange project with LIF (Laboratoire d'Informatique Fondamentale) Marseille, 2009–2010 (Italian referent).
- MIUR Project *SisteR (Sistemi di Riduzione: sintesi, raffinamento e verifica di modelli comportamentali)*, 2010–2011 (Site Coordinator).

Project Participations

International Projects

- EU Project *MASK (Mathematical Structures in Concurrency)*. 1994–1995.
- EU Project *Lambda Calcul Typé*. 1997–1998.
- EC TMR Project *GETGRATS (GEneral Theory of GRaphs TransformationS)*. 1997–2000.
- IST Programme on FET-GC *AGILE (Architectures for Mobility)*. 2002–2005.
- CNR/CNPq Project *IQ-Mobile II (Improving the Quality of Open Systems with Code Mobility through Rigorous Development)*. 2002–2004.
- EC RTN Project *SeGraVis (Semantic and Syntactic Integration of Visual Modeling Techniques)*. 2003–2006

National Projects

- MURST Project *Tecniche Formali per la Specifica, l'Analisi, la Verifica, la Sintesi e la Trasformazione di Sistemi Software*, 2000–2001.
- MURST Project *TOSCa (Tipi, Ordine Superiore e Concorrenza (Types, Higher Order and Concurrency))*, 2001–2002.
- MIUR Project *CoMeta (Computational Metamodels)*, 2003–2004.
- MIUR Project *CINA: Composizionalità, Interazione, Negoziazione, Autonomicità per la società ICT futura*, 2012–2015.

◇ **Visits**

- 2000 (*20 Jun – 20 Jul*) Research Fellow at the Computer Science Department of the Technische Universität Berlin, under the supervision of Prof. H. Ehrig.
- 2003 (*9 Oct – 11 Nov*) Computer Science Department of the Universidade Federal do Rio Grande do Sul, for a collaboration with Prof. L. Ribeiro.
- 2004 (*30 Gen – 4 Feb*) IRISA–INRIA, Rennes, for a collaboration with Prof. Stefan Haar.
- (*22–25 Feb*) LORIA, Université Nancy 1, for a collaboration with Prof. C. Kirchner and H. Cirstea, and Dr. Clara Bertolissi.
- (*12 Jul – 10 Aug*) Computer Science Department of the Technische Universität Berlin, for a collaboration with Prof. H. Ehrig.
- (*22–25 Nov*) LORIA, Université Nancy 1, for a collaboration with Prof. C. Kirchner and H. Cirstea, and Dr. Clara Bertolissi.
- (*5 Dec – 26 Dec*) Computer Science Department of “Pontificia Universidade Catholica do Rio Grande do Sul”, for a collaboration with prof. L. Ribeiro and Prof. F. Dotti.
- 2005 (*14 Jul – 14 Aug*) Computer Science Department of Technische Universität Berlin, for a collaboration with prof. H. Ehrig, in the context of the European project *SeGraVis*.
- (*19–25 Sep*) Computer Science Department of Technische Universität Stuttgart, for a collaboration with Dr. B. König.
- (*26–29 Oct*) LORIA, Université Nancy 1, for a collaboration with Prof. C. Kirchner and H. Cirstea and for participating to the PhD commission of Clara Bertolissi.
- 2006 (*9–16 Jun*) Mathematics and Computer Science Department of the University of Balearic Islands, in the context of the project Socrates-Erasmus.
- (*26 Jun – 1 Jul*) Computer Science Department of Technische Universität Duisburg-Essen, for a collaboration with Prof. B. König.
- (*15 Jul – 15 Aug*) Computer Science Department of Technische Universität Berlin, for a collaboration with prof. H. Ehrig, in the context of the European project *SeGraVis*.
- 2007 (*3–7 Dec*) Computer Science Department of Technische Universität Duisburg-Essen, for a collaboration with Prof. B. König.
- 2008 (*9–13 Dec*) Computer Science Department of Technische Universität Duisburg-Essen, for a collaboration with Prof. B. König.
- 2009 (*28 Sep – 4 Oct*) Laboratoire d’Informatique Fondamentale de Marseille, for a collaboration with Dr. C. Bertolissi.
- (*30 Nov – 4 Dec*) Computer Science Department of Technische Universität Duisburg-Essen, for a collaboration with Prof. B. König and for participating in the PhD committee of Tobias Heindel.

(8 – 9 Dec) LIX (Laboratoire d’Informatique de l’Ecole Polytechnique), Paris for a collaboration with Prof. C. Palamidessi.

(10 – 12 Dec) ENS de Cachan, Paris for a collaboration with Dr. S. Schwoon.

2012 (1–6 Oct) Laboratoire de l’Informatique du Parallélisme (LIP) - ENS de Lyon for a collaboration with Dr. F. Bonchi.

PUBLICATIONS

◇ International Journals

1. F. Alessi, P. Baldan, G. Bellè. “A Fixed Point Theorem in a Category of Compact Metric Spaces”. *Theoretical Computer Science* 146(1–2), pp. 311–320 (1995).
2. F. Alessi, P. Baldan. “A Characterization of Distance between 1-Bounded Compact Ultrametric Spaces through a Universal Space”. *Theoretical Computer Science* 193(1–2), pp. 113–127 (1998).
3. P. Baldan, G. Ghelli, A. Raffaetà. “Basic Theory of F-Bounded Quantification”. *Information and Computation* 153 (1), pp. 173–237 (1999).
4. P. Baldan, A. Corradini, U. Montanari, “Contextual Petri Nets, Asymmetric Event Structures and Processes”. *Information and computation* 171 (1), pp. 1–49 (2001).
5. F. Alessi, P. Baldan, F. Honsell, “A Category of Compositional Domain-Models for Separable Stone Spaces”. *Theoretical Computer Science* 290 (1), pp.599–635 (2003).
6. P. Baldan, N. Busi, A. Corradini, G. M. Pinna, “Domain and Event Structure Semantics for Petri Nets with Read and Inhibitor Arcs”. *Theoretical Computer Science* 323 (1–3) pp. 129–189 (2004).
7. P. Baldan, A. Corradini, H. Ehrig, R. Heckel, “Compositional Semantics for Open Petri Nets based on Deterministic Processes”. *Mathematical Structures in Computer Science* 15, pp. 1–35 (2005).
8. P. Baldan, A. Corradini, U. Montanari, L. Ribeiro “Unfolding Semantics of Graph Transformation”. *Information and Computation* 205, pp. 733–782 (2007).
9. C. Bertolissi, P. Baldan, H. Cirstea, C. Kirchner “A rewriting calculus for cyclic higher-order term graphs”. *Mathematical Structures in Computer Science*, 17(3), pp. 363–406 (2007).
10. P. Baldan, R. Bruni, A. Bracciali “A Semantic Framework for Open Processes”. *Theoretical Computer Science*, 389(3) pp. 446–483 (2007).
11. P. Baldan, A. Corradini, B. König “A Framework for the Verification of Infinite-State Graph Transformation Systems”. *Information and Computation* 206, pp. 869–907 (2008).

12. P. Baldan, A. Corradini, H. Ehrig, R. Heckel, B. König “*Bisimilarity and Behaviour-Preserving Reconfigurations of Open Petri Nets*”. Logical Methods in Computer Science 4 (4–3), pp. 1–41 (2008).
13. P. Baldan, A. Corradini, B. König, S. Schwoon “McMillan’s Complete Prefix for Contextual Nets”. Transactions on Petri Nets and Other Models of Concurrency (ToPNoC), LNCS 5100, pp. 199–220 (2008).
14. P. Baldan, T. Chatain, S. Haar, B. König “*Unfolding-Based Diagnosis of Systems with an Evolving Topology*”. Information and Computation 208(10), pp. 1169–1192 (2010).
15. P. Baldan, N. Cocco, A. Marin, M. Simeoni “*Petri Nets for Modelling Metabolic Pathways: A Survey*”. Natural Computing 9, pp. 955–989 (2010).
16. P. Baldan, F. Bonchi, A. Corradini, T. Heindel, B. König “*A lattice-theoretical perspective on adhesive categories*”. Journal of Symbolic Computation 46(3), pp. 222–245 (2011).
17. P. Baldan, A. Corradini, B. König, C. Rodríguez, S. Schwoon “*Efficient unfolding of contextual Petri nets*”. Theoretical Computer Science 449(1) pp. 2–22 (2012).
18. P. Baldan, N. Cocco, F. Giummolè, and M. Simeoni. “*Comparing Metabolic Pathways through Reactions and Potential Fluxes*”. LNCS Transactions on Petri Nets and Other Models of Concurrency Vol. 8100, pp. 1–23 (2013).
19. P. Baldan, A. Corradini, T. Heindel, B. König P. Sobocinski “*Processes and Unfoldings: Concurrent Computations in Adhesive Categories*”. Mathematical Structures in Computer Science 24(4), pp. 1–51 (2014).
20. P. Baldan and S. Crafa. “*A Logic for True Concurrency*. Journal of the ACM 61(4), pp. 24:1–24:36 (2014).
21. P. Baldan, F. Bonchi, F. Gadducci G. Monreale “Concurrency Can’t Be Observed, Asynchronously”. Accepted for publication in Mathematical Structures in Computer Science.
22. P. Baldan, F. Bonchi, F. Gadducci G. Monreale “Modular Encoding of Synchronous and Asynchronous Interactions using Open Petri Nets”. Accepted for publication in Science of Computer Programming.

◇ Proceedings of International Conferences

1. F. Alessi, P. Baldan, G. Bellè, J.J.M.M. Rutten. “*Functorial and Non-Functorial Solution of Metric Domain Equations*”. Proceedings of MFPS’95. S. Brookes, M. Main, A. Melton, M. Mislove eds., ENTCS Volume 1, pp. 1–12 (1995).
2. F. Alessi, P. Baldan and F. Honsell. “*Partializing Stone Spaces Using SFP Domains*”. Proceedings of TAPSOFT’97, M. Bidoit and M. Dauchet eds., Springer LNCS vol. 1214, pp. 478–489 (1997).
3. P. Baldan, A. Corradini, U. Montanari. “*An Event Structure Semantics for P/T Contextual Nets: Asymmetric Event Structures*”. Proceedings of FoSSaCS’98, M. Nivat, eds., Springer LNCS vol. 1378, pp. 63–80 (1998).

4. P. Baldan, A. Corradini, U. Montanari. “*Concatenable Graph Processes: Relating Processes and Derivation Traces*”. Proceedings of ICALP’98, K. Larsen, S. Skyum and G. Winskel eds., Springer LNCS vol. 1443, pp. 283–295 (1998).
5. P. Baldan, A. Corradini, U. Montanari. “*Unfolding and Event Structure Semantics for Graph Grammars*”. Proceedings of FoSSaCS’99, Thomas, W. eds., Springer LNCS vol. 1578, pp. 73–89 (1999).
6. P. Baldan, A. Corradini, U. Montanari. “*Unfolding of DPO Graph Grammars is a Coreflection*”. Proceedings of TAGT’98, H. Ehrig, G. Engels, H.J. Kreowsky and G. Rozenberg eds., Springer LNCS vol. 1764, pp. 145–163 (1999).
7. P. Baldan, A. Corradini, U. Montanari. “*History Preserving Bisimulation for Contextual Nets*”. Proceedings of WADT’99, D. Bert and C. Choppy eds., Springer LNCS vol. 1827, pp. 291–310 (2000).
8. P. Baldan, N. Busi, A. Corradini, G.M. Pinna. “*Functorial Concurrent Semantics for Petri Nets with Read and Inhibitor Arcs*”. Proceedings of CONCUR’00, Palamidessi, C. ed., Springer LNCS vol. 1877, pp. 442–457 (2000).
9. P. Baldan, A. Corradini, H. Ehrig, R. Heckel “*Compositional Modeling of Reactive Systems Using Open Nets*”. Proceedings of CONCUR’01, K.G. Larsen and M. Nielsen eds. Springer LNCS vol. 2151, pp. 502–508 (2001).
10. P. Baldan, A. Corradini, B. König “*A Static Analysis Technique for Graph Transformation Systems*”. Proceedings of CONCUR’01, K.G. Larsen and M. Nielsen eds. Springer LNCS, vol. 2151, pp. 381–395 (2001).
11. P. Baldan “*Concurrency for graph grammars (in a Petri net shell)*”. Electronic Notes in Theoretical Computer Science, 51 , M. Bauderon and A. Corradini, eds., ENTCS Volume 51, 2002, 18 pp. Elsevier Science.
12. P. Baldan, A. Corradini, B. König “*Static analysis of distributed systems with mobility specified by graph grammars—A case study*”. Proceedings of IDPT’02 (Sixth International Conference on Integrated Design & Process Technology), H. Ehrig, B. Krämer, and A. Ertas, editors. Society for Design and Process Science, 2002, 8 pp.
13. P. Baldan, R. Bruni, A. Bracciali “*Bisimulation by Unification*”. Proceedings of AMAST’02, H. Kirchner and C. Ringeissen, eds. Springer LNCS, vol. 2422, pp. 254–270 (2002).
14. P. Baldan, B. König “*Approximating the Behaviour of Graph Transformation Systems*”. Proceedings of ICGT’02, A. Corradini, H. Ehrig, H.-J. Kreowski, G. Rozenberg eds. Springer LNCS, vol. 2505, pp. 14–30 (2002).
15. P. Baldan, A. Corradini, U. Montanari, L. Ribeiro “*Coreflective Concurrent Semantics for Single-Pushout Graph Grammars*”. Proceedings of WADT’02, M. Wirsing, D. Pattinson and R. Hennicker eds., Springer LNCS, vol. 2755, pp. 165–184 (2003).
16. P. Baldan, R. Bruni, U. Montanari “*Pre-nets, read arcs and unfolding: a functorial presentation*”. Proceedings of WADT’02, M. Wirsing, D. Pattinson and R. Hennicker eds., Springer LNCS vol. 2755, pp. 145–164 (2003).

17. P. Baldan, B. König, B. König “*A Logic for Analyzing Abstractions of Graph Transformation Systems*”. Proceedings of SAS’03, R. Cousot ed., Springer LNCS vol. 2694, pp. 255–272 (2003).
18. P. Baldan, A. Corradini, B. König, B. König “*Verifying a Behavioural Logic for Graph Transformation Systems*” Proceedings of CoMeta’03, F. Honsell, M. Lenisa, M. Miculan ed., ENTCS, pp. 5–24, Elsevier Science (2004).
19. P. Baldan, A. Corradini, B. König “*Verifying Finite-State Graph Grammars: an Unfolding-Based Approach*”. Proceedings of CONCUR’04, P. Gardner and N. Yoshida, eds. Springer LNCS, vol. 3170, pp. 83–98 (2004).
20. P. Baldan, B. König, I. Stürmer, “*Generating Test Cases for Code Generators by Unfolding Graph Transformation Systems*”. Proceedings of ICGT’04, H. Ehrig, G. Engels, F. Parisi-Presicce and G. Rozemberg eds. Springer LNCS, vol. 3256, pp. 194–209 (2004).
21. C. Bertolissi, P. Baldan, H. Cirstea, C. Kirchner. “*A Rewriting calculus for cyclic higher order graphs*”. Proceedings of TERMGRAPH’04, M. Fernández ed., ENTCS Volume 127(5), pp. 21–41 Elsevier Science (2005).
22. P. Baldan, A. Corradini, U. Montanari. “*Relating SPO and DPO graph rewriting with Petri nets having read, inhibitor and reset arcs*”. Proceedings of PNGT’04, H. Ehrig, J. Padberg, G. Rozenberg, eds., ENTCS 127(2), pp. 5–28, Elsevier Science (2005).
23. P. Baldan, A. Corradini, J. Esparza, T. Heindel, B. König, V. Kozioura “*Verifying Red-Black Trees*”. Proceedings of COSMICAH 2005, First international workshop on the verification of COncurrent Systems with dynaMIC Allocated Heaps, D. Distefano, P. O’Hearn, R. Iosif eds. (2005)
24. P. Baldan, A. Corradini, T. Heindel, B. König, P. Sobocinski “*Processes for Adhesive Rewriting Systems*”. Proceedings of FoSSaCS’06, L. Aceto and A. Ingólfssdóttir eds., Springer LNCS vol. 3921, pp. 202–216 (2006)
25. P. Baldan, S. Haar, B. König “*Distributed Unfolding of Petri Nets*”. Proceedings of FoSSaCS’06, L. Aceto and A. Ingólfssdóttir eds., Springer LNCS vol. 3921, pp. 126–141 (2006).
26. P. Baldan, A. Corradini, L. Foss, F. Gadducci “*Graph Transactions as Processes*”. Proceedings of ICGT’06, A. Corradini, H. Ehrig, U. Montanari, L. Ribeiro and G. Rozenberg eds., Springer LNCS vol. 4178, pp. 199–214 (2006).
27. P. Baldan, B. König, H. Ehrig “*Composition and Decomposition of DPO Transformations with Borrowed Context*”. Proceedings of ICGT’06, A. Corradini, H. Ehrig, U. Montanari, L. Ribeiro and G. Rozenberg eds., Springer LNCS vol. 4178, pp. 153–167 (2006).
28. P. Baldan, F. Gadducci, U. Montanari “*Concurrent Rewriting for Graphs with Equivalences*”. Proceedings of CONCUR’06, C. Baier and H. Hermanns eds., Springer LNCS vol. 4137, 2006, pp. 279–294 (2006).

29. P. Baldan, A. Corradini, A. Lluch Lafuente, B. König “*A Temporal Graph Logic for Verification of Graph Transformation Systems*”. Proceedings of WADT’06, J. Fiadeiro ed., Springer LNCS vol. 4409, pp. 1–20 (2007).
30. P. Baldan, R. Bruni, A. Bracciali, L. Brodo “*Deducing Interactions in Partially Unspecified Biological Systems*”. Proceedings of Algebraic Biology’07, H. Anai, K. Horimoto, and T. Kutsia, eds., Springer LNCS vol. 4545, pp. 262–276 (2007).
31. P. Baldan, F. Gadducci, U. Montanari “*Modelling Calculi with Name Mobility using Graphs with Equivalences*”. Proceedings of Termgraph’06, I. Mackie eds., ENTCS Volume 176, pp. 85–97 (2007).
32. P. Baldan, A. Corradini, H. Ehrig, R. Heckel, B. König “*Bisimilarity and Behaviour-Preserving Reconfigurations of Open Petri Nets*”. Proceedings of CALCO’07, U. Montanari and T. Mossakowski eds. Springer LNCS, vol. 4624, pp. 126–142 (2007).
33. C. Bertolissi, P. Baldan, H. Cirstea, C. Kirchner “*Towards a sharing strategy for the graph rewriting calculus*”. Proceedings of WRS’07, J. Giesl ed. ENTCS Volume 204, pp. 111–126 (2008).
34. P. Baldan, A. Corradini, F.L. Dotti, L. Foss, F. Gadducci, L. Ribeiro “*Towards a Notion of Transaction in Graph Rewriting*”. Proceedings of GT-VMT’06, R. Bruni and D. Varro eds., ENTCS Volume 211, pp. 39–50 (2008).
35. P. Baldan, F. Gadducci “*Petri nets are dioids*”. Proceedings of AMAST’08, J. Meseguer and G. Rosu eds., Springer LNCS vol. 5140, pp. 51–66 (2008).
36. P. Baldan, T. Chatain, S. Haar, B. König “*Unfolding-Based Diagnosis of Systems with an Evolving Topology*”. Proceedings of CONCUR’08, F. van Breugel and M. Chechik eds., Springer LNCS vol. 5201, pp. 203–217 (2008).
37. G. Rangel, L. Lambers, H. Ehrig, B. König, P. Baldan “*Behavior Preservation in Model Refactoring using DPO Transformations with Borrowed Contexts*”. Proceedings of ICGT’08, H. Ehrig, R. Heckel, G. Rozenberg, G. Taentzer eds., Springer LNCS vol. 5214, pp. 242–256 (2008).
38. P. Baldan, A. Corradini, H. Ehrig, B. König “*Open Petri Nets: Non-deterministic Processes and Compositionality*”. Proceedings of ICGT’08, H. Ehrig, R. Heckel, G. Rozenberg, G. Taentzer eds., Springer LNCS vol. 5214, pp. 257–273 (2008).
39. P. Baldan, F. Bonchi, F. Gadducci “*Encoding asynchronous interactions using open Petri nets*”. Proceedings of CONCUR’09, M. Bravetti and L. Zavattaro eds., Springer LNCS vol. 5710, pp. 99–114 (2009).
40. P. Baldan, A. Corradini, T. Heindel, B. König, P. Sobocinski “*Unfolding Grammars in Adhesive Categories*”. Proceedings of CALCO’09, M. Lenisa, A. Kurz and A. Tarlecki, eds. Springer LNCS vol. 5728, pp. 350–366 (2009).
41. P. Baldan, A. Bruni, A. Corradini, B. König, S. Schwoon “*On the Computation of McMillan’s Prefix for Contextual Nets and Graph Grammars*”. Proceedings of ICGT’10, H. Ehrig, A. Rensink, G. Rozenberg, A. Schürr eds., Springer LNCS vol. 6372, pp. 91 - 106 (2010).

42. P. Baldan, S. Crafa “*A logic for true concurrency*”. Proceedings of CONCUR’10, P. Gastin and F. Laroussinie eds., Springer LNCS vol. 6269, pp. 147 - 161 (2010).
43. P. Baldan, F. Bonchi, F. Gadducci, G. Monreale “*Concurrency Can’t Be Observed, Asynchronously*”. Proceedings of APLAS’10, K. Ueda eds. Springer LNCS vol. 6461, pp. 424-438 (2010).
44. P. Baldan, F. Gadducci, P. Sobocinski “*Adhesivity Is Not Enough: Local Church-Rosser Revisited*”. Proceedings of MFCS’11, F. Murlak, P. Sankowski eds. Springer LNCS vol. 6907, pp. 48-59 (2011).
45. C. Rodríguez, S. Schwoon P. Baldan “*Efficient contextual unfolding*”. Proceedings of CONCUR’11, J.-P. Katoen and B. König eds., Springer LNCS vol. 6901, pp. 342-357 (2011).
46. P. Baldan, M. Bocci, N. Cocco, M. Simeoni. “*Comparing metabolic pathways through potential fluxes: a selective opening approach*”. Proceedings of BioPPN’13. G. Balbo and M. Heiner eds., CEUR Workshop Proceedings vol. 988, pp. 1-15 (2013).
47. P. Baldan, N. Cocco, M. Simeoni. “*Representing and Comparing Metabolic Pathways as Petri Nets with MPath2PN and CoMeta*”. Proceedings of CS2Bio’13. Electronic Notes in Theoretical Computer Science vol. 299, pp. 5-13 (2013).
48. A. Armas-Cervantes, P. Baldan, M. Dumas, L. García-Bañuelos. “*Behavioral Comparison of Process Models Based on Canonically Reduced Event Structures*”. Proceedings of BPM’14. S. Wasim Sadiq, P. Soffer, and H. Voelzer, eds., Springer LNCS vol. 8659, pp. 267-282, (2014).
49. A. Armas-Cervantes, P. Baldan, M. Dumas, L. García-Bañuelos. “*P-Diff: A Tool for Behavioral Comparison of Business Process Models*”. Proceedings of BPM’14 Demo Sessions. L. Limonad and B. Weber, eds., CEUR Workshop Proceedings vol. 1295, pp. 267-282 (2014).
50. P. Baldan, F. Bonchi, F. Gadducci, and G.V. Monreale. “*Encoding Synchronous Interactions using Labelled Petri Nets*”. Proceedings of COORDINATION’14. E. Kühn and R. Pugliese. Springer LNCS vol. 8459, pp. 1-16 (2014).
51. P. Baldan and A. Carraro. “*Non-interference by Unfolding*”. Proceedings of Petri Nets’14. G. Ciardo and E. Kindler, eds., Springer LNCS vol. 8489, pp. 190-209 (2014).
52. P. Baldan and S. Crafa. “*Hereditary History-Preserving Bisimilarity: Logics and Automata*”. Proceedings of APLAS’14. J. Garrigue ed., Springer LNCS vol. 8858, pp. 469-488 (2014).
53. P. Baldan, F. Bonchi, H. Kerstan, and B. König. “*Behavioral Metrics via Functor Lifting*”. To appear in the Proceedings of FSTTCS’14.
54. P. Baldan, F. Burato, and A. Carraro. “*Intransitive Non-interference by Unfolding*”. To appear in the Proceedings of FACS’14.

◇ Book Chapters

1. P. Baldan, A. Corradini, H. Ehrig, M. Loewe, U. Montanari, F. Rossi “*Concurrent semantics of algebraic graph transformations*”. Handbook of Graph Grammars and Computing by Graph Transformation, Vol. III: Concurrency, Parallellism, and Distribution, Capitolo 3. World Scientific, pp. 109–187 (1999).
2. P. Baldan, A. Corradini, U. Montanari “*Bisimulation Equivalences for Graph Grammars*”. In Formal and Natural Computing, W. Brauer, H. Ehrig, J. Karhumäki, A. Salomaa eds., Springer LNCS vol. 2300, pp. 158–190 (2002).
3. H. Ehrig, K. Hoffmann, J. Padberg, P. Baldan, R. Heckel “*High-Level Net Processes*” In *Formal and Natural Computing*, W. Brauer, H. Ehrig, J. Karhumäki, A. Salomaa eds. Springer LNCS vol. 2300, pp. 191–219 (2002).
4. P. Baldan, P. Mancarella, A. Raffaetà, F. Turini “*MuTACL P: A Language for Temporal Reasoning with Multiple Theories*”. In *Computational Logic: Logic Programming and Beyond*, A.C. Kakas and F. Sadri eds. Springer LNAI vol. 2408, pp. 1–40 (2002).
5. P. Baldan, R. Bruni, A. Bracciali “*Symbolic Equivalences for Open Systems*”. In *Global Computing: IST/FET International Workshop, GC 2004*, C. Priami and P. Quaglia eds. Springer LNCS vol. 3267, pp. 1-17 (2005).
6. P. Baldan, A. Corradini, F. Gadducci “*Specifying and Verifying UML Activity Diagrams via Graph Transformation*”. In *Global Computing: IST/FET International Workshop, GC 2004*, C. Priami and P. Quaglia eds. Springer LNCS vol. 3267, pp. 18-33 (2005).
7. P. Baldan, A. Corradini “*On the Concurrent Semantics of Algebraic Graph Grammars*”. In *Formal Methods in Software and Systems Modeling*, H.-J. Krewski, U. Montanari, F. Orejas, et al., eds. Springer LNCS vol. 3393, pp. 3–22 (2005).
8. P. Baldan, A. Corradini, B. König “*Unfolding Graph Transformation Systems: Theory and Applications to Verification*”. In “*Concurrency, Graphs and Models, Essays Dedicated to Ugo Montanari on the Occasion of His 65th Birthday*”, P. Degano, R. De Nicola, R. and J. Meseguer eds. Springer LNCS vol. 5065, pp. 16–36 (2008).
9. P. Baldan, A. Corradini, F. Gadducci, U. Montanari “*From Petri Nets to Graph Transformation Systems*”. In “*Manipulation of Graphs, Algebras and Pictures: Essays Dedicated to Hans-Joerg Kreowski on the Occasion of His 60th Birthday*”, F. Drewes, A. Habel, B. Hoffmann, D. Plump eds. ECEASST vol. 26 (2010).

◇ Theses and other papers

1. P. Baldan. “*Un Teorema di Punto Fisso per la Soluzione di Equazioni di Dominio in una Categoria di Alberi*”. Tesi di laurea. Università di Udine, 1994.
2. P. Baldan “*Modelling Concurrent Computation: from Contextual Petri Nets to Graph Grammars*”. Tesi di dottorato. TD-1/00 Dipartimento di Informatica, Università di Pisa, 2000.

3. L. Andrade, P. Baldan, H. Baumeister, R. Bruni, A. Corradini, R. De Nicola, J.L. Fiadeiro, F. Gadducci, S. Gnesi, P. Hoffman, N. Koch, P. Kosiuczenko, A. Lapadula, D. Latella, A. Lopes, M. Loreti, M. Massink, F. Mazzanti, U. Montanari, C. Oliveira, R. Pugliese, A. Tarlecki, M. Wermelinger, M. Wirsing, A. Zawlocki “*AGILE: Software Architecture for Mobility*” Proceedings of WADT’02, M. Wirsing, D. Pattinson and R. Hennicker eds., Springer LNCS vol. 2755, pp. 1–33 (2003).
4. P. Baldan, B. König, A. Rensink “*Graph Grammar Verification through Abstraction*” *Dagstuhl Seminar 04241 on Graph Transformations and Process Algebras for Modeling Distributed and Mobile Systems*, B. Koenig, U. Montanari, P. Gardner, eds.

ORGANISATION ACTIVITY

◇ Organisation and chairing

I have been organising the following workshops and conferences:

- *PNGT 2006 (2nd Workshop on Petri Nets and Graph Transformation)* (co-chair).
- *PNGT 2008 (2nd Workshop on Petri Nets and Graph Transformation)* (co-chair).
- *CONCUR 2014 (25th International Conference on Concurrency Theory)* (co-chair)

◇ Program Committees

I have been serving in the program committee of many international workshops and conferences:

- *GT-VC 2005 (Graph Transformation for Verification and Concurrency)* (affiliated to CONCUR’05).
- *GT-VMT 2006 (5th International Workshop on Graph Transformation and Visual Modeling Techniques)*.
- *ICGT 2006 (International Conference on Graph Transformation)*.
- *SMBF 2006 (Brazilian Symposium on Formal Methods)*.
- *GT-VC 2006 (Graph Transformation for Verification and Concurrency)* (affiliated to CONCUR’06).
- *3rd Workshop on the Rewriting Calculus, 2006*.
- *GT-VMT 2007 (6th International Workshop on Graph Transformation and Visual Modeling Techniques)*.

- *GT-VC 2007 (Graph Transformation for Verification and Concurrency)* (affiliated to CONCUR'07).
- *GT-VMT 2008 (7th International Workshop on Graph Transformation and Visual Modeling Techniques)*.
- *ICGT 2008 (4th International Conference on Graph Transformation)*.
- *GT-VMT 2009 (8th International Workshop on Graph Transformation and Visual Modeling Techniques)*.
- *GT-VMT 2010 (9th International Workshop on Graph Transformation and Visual Modeling Techniques)*.
- *ICGT 2010 (5th International Conference on Graph Transformation)*.
- *ICE 2010 - 3rd Interaction and Concurrency Experience (focus on Guaranteed Interaction)*.
- *AMAST 2010 (30th International Conference on Algebraic Methodology And Software Technology)*.
- *CONCUR 2011 (22nd International Conference on Concurrency Theory)*.
- *GT-VMT 2011 (10th International Workshop on Graph Transformation and Visual Modeling Techniques)*.
- *TERMGRAPH 2011 (6th International Workshop on Computing with Terms and Graphs)*
- *CALCO Tools 2011*
- *GT-VMT 2012 (11th International Workshop on Graph Transformation and Visual Modeling Techniques)*.
- *RTA 2012 (23rd International Conference on Rewriting Techniques and Applications)*
- *PNGT 2012 (5th International Workshop on Petri Nets, Graph Transformation and other Concurrency Formalisms)*
- *GCM 2012 (4th International Workshop on Graph Computation Models)*
- *ICGT 2012 (6th International Conference on Graph Transformation)*
- *GT-VMT 2013 (12th International Workshop on Graph Transformation and Visual Modeling Techniques)*.
- *TERMGRAPH 2013 (7th International Workshop on Computing with Terms and Graphs)*
- *CONCUR 2013 (24th International Conference on Concurrency Theory)*
- *ICTCS 2014 (15th Italian Conference on Theoretical Computer Science)*

- *ICALP 2014 (41st International Colloquium on Automata, Languages, Programming)*
- *ICGT 2014 (7th International Conference on Graph Transformation)*
- *ICGT 2015 (8th International Conference on Graph Transformation)*

◇ **Reviewing activity**

I have been serving as a reviewer for many international conferences and journals:

1. *International Conferences*

AMAST, ACM GIS, AGT, ATPN, CALCO, CMSB, CONCUR, Coordination, CSL, CSFW, EXPRESS, ESSL, ETAPS, FMSE, FSTTCS, FORTE, GT-VMT, ICALP, ICGT, ICLP, ICTCS, LATA, LICS, MFCS, PaCT, PEPM, PPDP, RTA, SBMF, SOFSEM, TAGT, Termgraph, VMCAI, WADT, WOOD, WRLA, WS-FM

2. *International Journals*

“*Computer Languages, Systems & Structures*”, “*Fundamenta Informaticæ*”, “*IEEE Transactions on Computer*”, “*Information and Computation*”, “*Information Processing Letters*”, “*Journal of Visual Languages and Computing*”, “*Mathematical Structures in Computer Science*”, “*Software and System Modeling*”, “*Theoretical Computer Science*”, “*The Computer Journal*”, “*Transactions on Petri Nets and Other Models of Concurrency*”.

TEACHING ACTIVITY

I have been teaching various courses both on applied and theoretical subjects, at undergraduate and graduate levels of the Computer Science degree. A detailed list follows:

(1998–1999), (1999–2000)

University of Pisa. Course on:

- *Foundations of Computer Science: Semantics* (assistant)

(2000–2001)

University of Pisa. Courses on:

- *Programming Laboratory I* (assistant)
- *Programming Laboratory II* (assistant)
- *Operational research* (assistant)

(2001–2002)

University of Pisa. Course on:

- *Programming Laboratory I* (assistant)

University Ca' Foscari of Venice. Courses on
- *Computing System Architecture B* (assistant)
- *Operating System Laboratory* (assistant).

(2002–2003), (2003–2004)

University Ca' Foscari of Venice. Courses on
- *Operating Systems B* (undergraduate)
- *Operating System Laboratory* (undergraduate).

(2004–2005), (2005–2006)

University Ca' Foscari of Venice. Courses on
- *Operating System Laboratory* (undergraduate)
- *Mathematical Logic* (graduate)

(2006–2007)

- *Mathematical Logic*, at the University Ca' Foscari of Venice
- *Databases*, at the University of Padova.

(2007–2008)

University of Padova. Courses on
- *Databases* (undergraduate)
- *Advanced algorithms* (undergraduate)
- *Formal methods in concurrency* (graduate)

(2008–2009), (2009–2010)

University of Padova. Courses on
- *Databases* (undergraduate)
- *Computability and Algorithms* (graduate)
- *Formal methods in concurrency* (graduate)

(2010–2011), (2011–2012), (2012–2013)

University of Padova. Courses on
- *Databases* (undergraduate)
- *Computability and Algorithms* (graduate)
- *Languages and Models for Global Computing* (graduate)

(2014–2015)

University of Padova. Courses on
- *Algorithms and Data Structures* (undergraduate)
- *Computability and Algorithms* (graduate)
- *Languages and Models for Global Computing* (graduate)

SERVICES AND ADMINISTRATIVE DUTIES

◇ Juries

- [10–11 Apr 2006] Member of the jury for a position of assistant professor - University of Trento.

- [28 Oct 2006] Member of the PhD Jury of Dr. Clara Bertolissi at the Institut National Polytechnique de Lorraine - University of Nancy (France).
- [5 Nov 2008] Member of the PhD Jury of Dr. Oana Andrei at the Institut National Polytechnique de Lorraine - University of Nancy (France).
- [2 Apr 2009] Member of the PhD Jury of Dr. Fernando Jose Braz at the Computer Science Department - University Ca' Foscari of Venice.
- [4-5 Nov 2009] Member of the admission committee for the PhD in Computer Science - University of Bologna-Padova.
- [2 Dec 2009] Member of the PhD Jury of Dr. Tobias Heindel at the Universität Duisburg-Essen (Germany).
- [20 Mag 2013] Member of the PhD Jury of Dr. Tiziana Cimoli at the University of Cagliari.

◇ Administrative duties

- at the University of Venice
 - [2002/03]: Member of the *Library board (Commissione biblioteca)* - Computer Science Department, University Ca' Foscari of Venice.
 - [2004–2007] Examiner for Test Center ECDL (European Computer Driving Licence) - Computer Science Department, University Ca' Foscari of Venice. di Venezia.
- at the University of Padova
 - [2007–2012]: Member of the *Library board (Commissione biblioteca)* - Department of Mathematics.
 - [2008–2012], [2014–now]: Member of the *Department Board (Giunta di Dipartimento)* - Department of Mathematics.
 - [2011–2013]: Member of the *Committee for School Teachers Training (Commissione formazione insegnanti)* - Department of Mathematics.
 - [2007–2012]: Member of the *Bullettin committee (Commissione Bollettino-Notiziario)* for the degrees in Computer Science.
 - [2009-2014]: Member of *External Communication Committee Commissione Comunicazione Esterna* - Department of Mathematics.
 - [2009–2013]: Member of the *Board of the PhD Program in Computer Science (Collegio di Dottorato)*
 - [2009–now]: Referent of the Department of Mathematics for the National and Regional Civil Service.
 - [2011–now]: Referent for the Erasmus exchange program with the University of Marseille.
 - [2012–now]: Member of the *Self Assessment Committee (Gruppo di Autovalutazione)* for the Degrees in Computer Science.

– [2013–now]: Member of the *Board of the PhD Program Brain, Mind and Computer Science (Collegio di Dottorato)*

PADOVA, DECEMBER 4, 2014

(Paolo Baldan)