CURRICULUM VITÆ OF BRESOLIN DAVIDE

Personal Information

Name	**Davide Bresolin**
Nationality	Italian
Date of birth	September 28th, 1978
Address	Department of Mathematics "Tullio Levi-Civita",
	University of Padova
	Via Trieste 63, 35121 Padova, Italy
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Current position

Dates	from October 17th, 2016
	Fixed Term Researcher, type B
Name and type of organization	Department of Mathematics "Tullio Levi-Civita", University of Padova

Research activity

My research activity is focused on modelling and verification of cyber-physical systems, that is, of advanced computational systems that integrate a computational nucleus into some kind of object or structure of the physical world. Examples of this type of systems are autonomous robotic systems, multi-agent and embedded systems, aerospace and automotive industry control systems, health and medical systems. They must operate under very strong security, efficiency, reliability and timing constraints, and are characterised by the simultaneous presence of components with continuous evolution and components with discrete evolution. Because of this dualism, cyber-physical systems cannot be studied neither through the usual approaches used in continuous dynamical systems, nor through finite-state approaches typically used in discrete systems, and require the development of new formalisms and new algorithmic techniques.

The verification of cyber-physical systems poses considerable challenges to the requirements specification languages. Most of the formalisms studied in the literature, such as the LTL and CTL temporal logics, have been designed for digital systems, where the temporal flow is subdivided into discrete instants. This approach is not suited to the specification of systems where the temporal flow alternates discrete events, that are considered instantaneous, with continuous events, which develop over a non-zero duration interval. In order to provide specification languages that are better suited to the testing of hybrid systems, I have studied a class of temporal logics where the fundamental units of the time domain are *intervals* endowed with duration, rather than single instants of time. Starting with my hD Thesis I studied a particular interval logic, called Propositional Neighborhood Logic, both from the point of view of decidability and its expressiveness [21]. These results were later extended, by considering new temporal operators [12,13,18,20], and by adding metric operators to constrain the length of the intervals [15,17]. These results led to the complete classification of the different interval logics with respect to their computational complexity and relative expressiveness [11]. More recently, I proposed an extension of the LTL logic with predicates on real variables and their derivatives, capable of representing the continuous evolution of a cyber-physical system [41].

A very widespread and powerful formalism for the modelling and verification of cyber-physical systems is that of the *hybrid automata*, intuitively definable as finite state automata enriched with continuous variables describing the "physical" component of the system. Because of its strong expressiveness, this formalism is very difficult to treat algorithmically, since even the simplest problems undecidable. To overcome this obstacle, I contributed to the development of approximation techniques to perform *reachability analysis* for hybrid automata, which were then implemented in the open-source library ARIADNE to obtain a semi-automatic verification flow based on the assumed-guarantee paradigm [9,14]. The tool was also applied for the verification of case studies in surgical robotics [10,19].

Besides verification problems, I also studied the problems of the *update* of an *self-adaptive system*, of the *modeling* of an *reactive system* with automata-based formalisms and *fault diagnosis*. I developed

a methodology based on automata to automatically symthesise the most general component capable of satisfying the new required properties [30]. Together with other Italian and foreign researchers, I defined a class of finite state machines with inputs and outputs capable of modelling delays and other time constraints. I studied the minimisation and equivalence problems for this class of automata [26]. Finally, the problem of fault diagnosis consists in detecting if a fault has occurred in a system by observing only the external behaviour of its components. The interleave of discrete and continuous behaviours of hybrid systems means that most of the solutions to the problem in the literature decouple faults in the continuous components from those in the discrete components of the system to treat them separately. Through the use of bisimulation and game theory techniques, I managed to give a general solution to the problem, which treats both types of failures in a synergistic way [16].

Previous Positions

Dates	2014 – 2016
	Fixed Term Researcher, type A
Organization providing education and training	University of Bologna
	Department of Computer Science and Engineering
Dates	2007 – 2013
	Postdoctoral Researcher
Organization providing education and training	University of Verona
	Department of Computer Science
Supervisor	Prof. Tiziano Villa

Education and training

Dates	from November 2003 to April 2007,
	PhD student in Computer Science.
Organization providing education and training	Università degli Studi di Udine,
	Dipartimento di Matematica e Informatica, Udine, Italy.
Supervisor	Prof. Angelo Montanari
Title of the thesis	Proof methods for Interval Temporal Logics.
Dates	1997 – 2003
Title of qualification awarded	Diploma di Laurea in Informatica
Level in international classification	MSc in Computer Science
Organization providing education and training	Università degli Studi di Udine,
	Udine, Italy
Thesis supervisor	Prof. Angelo Montanari
Title of the thesis	Reasoning about sets of temporal granularities with automata in database systems.
Grade	Full marks "cum laude"

Other education and training experience

Dates	April 2006 – May 2006
Host organization	University of the Witwatersrand, Johannesburg, South Africa
	Research visit to the research group of Prof. Valentin Goranko.
Dates	March 2006 – April 2006
Host organization	National institute of Telecommunication, Warsaw, Poland
	Research visit to the research group of Prof. Ewa Orłowska.

Research Projects

Project name	Formal verification techniques: from discrete to hybrid systems Department project SID 2017
Project name	Formal methods for combined verification National Project INdAM – GNCS 2019
Project name	Formal methods for verification and synthesis of discrete and hybrid systems National project INdAM – GNCS 2018
Project name	Logic and Automata for Interval-based Model-Checking National Project INdAM – GNCS 2017
Project name	Logic, games and automata for self-adaptive systems National Project INdAM – GNCS 2016
Role	Principal Investigator
Project name	CON4COORD: Control for coordination of distributed systems European Union project FP7-2007-ICT-2-223844, Seventh Framework Programme
Project name	COCONUT: A COrrect-by-CONstrUcTion Workbench for Design and Verification of Embedded Systems European Union project FP7-2007-IST-1-217069, Seventh Framework Programme
Project name	VERTIGO: Verification and Validation of Embedded System Design Workbench European Union project FP6-2005-IST-5-033709, Sixth Framework Programme
Project name	Temporal logics in computer and information sciences Italy/South Africa joint project
Project name	Algorithmic model-checking and synthesis of safety-critical systems Italian project INdAM – GNCS 2015
Project Name	Automata, games and temporal logics for verification and synthesis of controllers in safety-critical systems Italian project INdAM – GNCS 2014
Project Name	Extended Game Logics Italian project INdAM – GNCS 2013
Project Name	Logics, Automata, and Games for the formal verification of complex systems Italian Project INdAM – GNCS 2010

Teaching experience

Teaching4Learning@Unipd New Faculty Badge
The holder of this Badge has attended the training program on teaching innovation designed for academic staff starting a career at the University of Padova.

Dates	February 2019 - June 2019
Organization providing education and training	University of Padova, School of Science
Degree Course	Second cycle degree in Computer Science
Title of the course	Advanced Algorithms

Dates	February 2019 - June 2019
Organization providing education and training	University of Padova, School of Science
Degree Course	First cycle degree in Computer Science
Title of the course	Automata and Formal Languages
Dates	February 2018 - June 2018
Organization providing education and training	University of Padova, School of Science
Degree Course	Second cycle degree in Computer Science
Title of the course	Computability and Algorithms
Dates	September 2017
Organization providing education and training	University of Verona, Doctoral School on Natural and Engineering Sciences
Event	1st Summer School on Formal Methods for Cyber-Physical Systems
Title of the course	Formal models of real-time systems
Dates	February 2017 - June 2017
Organization providing education and training	University of Padova, School of Science
Degree Course	Second cycle degree in Computer Science
Title of the course	Computability and Algorithms
Dates	February 2017 - June 2017
Organization providing education and training	University of Padova, School of Science
Degree Course	First cycle degree in Computer Science
Title of the course	Automata and Formal Languages
Dates	November 2016 - June 2017
Organization providing education and training	University of Padova, School of Science
Degree Course	First cycle degree in Computer Science
Title of the course	Programming
Dates	November - December 2016
Organization providing education and training	University of Bologna, School of Pharmacy and Biotechnology
Degree Course	First cycle degree in Biotechnology
Title of the course	Computer Science
Dates	Aprile - Maggio 2016
Organization providing education and training	University of Bologna, School of Science
Degree Course	First cycle degree in Mathematics
Title of the course	Computer Science
Dates	November - December 2015
Organization providing education and training	University of Bologna, School of Pharmacy and Biotechnology
Degree Course	First cycle degree in Biotechnology
Title of the course	Computer Science
Dates	Aprile - Maggio 2015
Organization providing education and training	University of Bologna, School of Science
Degree Course	First cycle degree in Mathematics
Title of the course	Computer Science

Dates	November - December 2014
Organization providing education and training	University of Bologna, School of Pharmacy and Biotechnology
Degree Course	First cycle degree in Biotechnology
Title of the course	Computer Science
Dates	March - June 2013
Organization providing education and training	University of Verona, School of Science
Degree Course	First cycle degree in Bioinformatics
Title of the course	Introduction to computer architecture and operating systems
Dates	March - June 2012
Organization providing education and training	University of Verona, School of Science
Degree Course	First cycle degree in Bioinformatics
Title of the course	Introduction to computer architecture and operating systems
Dates	November – December 2010
Organization providing education and training	Università degli Studi di Verona, Faculty of Medicine and Surgery
Degree Course	First cycle degree in Medical Radiology Techniques, Imaging and Radiotherapy
Title of the course	Computer Networks and Database Systems
Dates	October – December 2008
Organization providing education and training	Università degli Studi di Verona, Faculty of Sicences
Degree Course	First Cycle degree in Multimedia Information technology, third year
Title of the course	Real Time Systems Lab
Dates	October – December 2007
Organization providing education and training	University of Verona, School of Science
Degree Course	First cycle degree in Multimedia Information technology, third year
Title of the course	Real Time Systems Lab
Dates	January – February 2006
Organization providing education and training	Università degli Studi di Udine, Udine, Italy
Degree course	First cycle degree in Computer Science, second year
Title of the course	Algorithms and Data Structures Lab
Dates	January – March 2005
Organization providing education and training	Università degli Studi di Udine, Udine, Italy
Degree course	First cycle degree in Computer Science, second year
Title of the course	Algorithms and Data Structures Lab

Organization of schools and meetings

Dates and location	16-19 October 2019, Málaga, Spain
Event	26th International Symposium on Temporal Representation and Reasoning (TIME 2019)
Role	PC Member
Dates and location	10-16 Agosto 2019, Macao, China
Event	28th International Joint Conference on Artificial Intelligence (IJCAI 2019)
Role	PC Member
Dates and location	13-19 July 2018, Stockholm, Sweden
Event	27th International Joint Conference on Artificial Intelligence (IJCAI 2018)
Role	PC Member

Dates and location	8 September 2015, York, UK
Event	VERY*SCART: The Art of Service Composition and Formal Verification for Self-* Systems
Role	Organizer
Dates and location	1-3 July 2015, Genova, Italy
Event	CILC 2015: 30 esimo Convegno Italiano di Logica Computazionale
Role	PC Member
Dates and location	25-31 July 2015, Buenos Aires, Argentina
Event	24th International Joint Conference on Artificial Intelligence (IJCAI 2015)
Role	PC Member
Dates and location	12 September 2014, Bertinoro
Event	1st Workshop on Logics and MODel-checking for self-* systems (MOD* 2014)
Role	Organizer
Dates and location	8-10 September 2014, Verona
Event	21st International Symposium on Temporal Representation and Reasoning (TIME 2014)
Role	PC Member
	Special Track Chair
	Panel Moderator
Dates and location	16-18 June 2014, Torino
Event	CILC 2014: 29 esimo Convegno Italiano di Logica Computazionale
Role	PC Member
Dates and location	21-23 March 2011, Verona
Event	Periodic meeting of the EU project CON4COORD
Dates and location	6-8 September 2010, Paris, France
Event	17th International Symposium on Temporal Representation and Reasoning (TIME'10)
Role	Program Committee Member
Dates and location	17-18 June 2010, Minori, Salerno, Italy
Event	GandALF 2010, First International Symposium on Games, Automata, Logics and Formal Verification
Dates and location	8-9 October 2009, Verona
Event	Periodic meeting of the EU project CON4COORD
Dates and location	5-7 October 2009, Verona
Event	C4C School on Control of Distributed Systems
Dates and location	14-17 September 2009, Udine
Event	2nd Annual Workshop of the ESF Networking Programme on Games for Design and Verification (GAMES)

Review and editorial activity

Journal or Series	Acta Informatica
Role	Special Issue Guest Editor
Journal or Series	Electronic Proceedings in Theoretical Computer Science
Role	Editor of the "Proceedings of the First Workshop on Logics and Model-checking for Self-* Systems", EPTCS 168, 2014
Review activity for International Journals	Acta Informatica, Annals of Mathematics and Artificial Intelligence, Artificial Intelligence, International Journal of Computer Mathematics, Logic Journal of the IGPL, Logical Methods in Computer Science, Transactions of Computational Systems Biology, Frontiers of Computer Science, Information and Computation

Personal skills and competences

MOTHER TOUNGE	**Italian**
OTHER LANGUAGE(S)	**English**
Reading	Excellent
Writing	Good
Speaking	Good

Publications

Books

[1] D. Bresolin. *Proof methods for Interval Temporal Logics*. PhD thesis, Dipartimento di Matematica e Informatica, Università degli Studi di Udine, 2007. Forum Editrice, PhD Thesis Series CS 2007

Book chapters

[2] D. Bresolin, L. Geretti, T. Villa, and P. Collins. An introduction to the verification of hybrid systems using Ariadne. In *Coordination Control of Distributed Systems*, volume 456 of *Lecture Notes in Control and Information Sciences*, pages 339–346. Springer, 2015

[3] D. Bresolin, L. Geretti, R. Muradore, P. Fiorini, and T. Villa. Formal verification applied to robotic surgery. In *Coordination Control of Distributed Systems*, volume 456 of *Lecture Notes in Control and Information Sciences*, pages 347–355. Springer International Publishing, 2015

International Journals

[4] D. Bresolin, D. Della Monica, A. Montanari, P. Sala, and G. Sciavicco. Decidability and complexity of the fragments of the modal logic of allen's relations over the rationals. *Information and Computation*, 2019

[5] D. Bresolin, E. Muñoz-Velasco, and G. Sciavicco. On sub-propositional fragments of modal logic. *Logical Methods in Computer Science*, 14(2), 2018

[6] A. A. Geraldes, L. Geretti, D. Bresolin, R. Muradore, P. Fiorini, L. S. Mattos, and T. Villa. Formal verification of medical CPS: A laser incision case study. *ACM Transactions on Cyber-Physical Systems (TCPS)*, 2(4):35:1–35:29, 2018

[7] D. Bresolin, A. Kurucz, E. Muñoz-Velasco, V. Ryzhikov, G. Sciavicco, and M. Zakharyaschev. Horn fragments of the halpern-shoham interval temporal logic. *ACM Trans. Comput. Log.*, 18(3):22:1–22:39, 2017

[8] D. Bresolin, F. Jiménez, G. Sánchez, and G. Sciavicco. Finite satisfiability of interval temporal logic formulas with multi-objective metaheuristics. *Multiple-Valued Logic and Soft Computing*, 28(2-3):217–249, 2017

[9] P. Nuzzo, A. Sangiovanni-Vincentelli, D. Bresolin, L. Geretti, and T. Villa. A platform-based design methodology with contracts and related tools for the design of cyber-physical systems. *Proceedings of the IEEE*, 103(11):2104–2132, 2015

[10] D. Bresolin, L. Geretti, R. Muradore, P. Fiorini, and T. Villa. Formal verification of robotic surgery tasks by reachability analysis. *Microprocessors and Microsystems*, 39(8):836 – 842, 2015

[11] D. Bresolin, D. D. Monica, A. Montanari, P. Sala, and G. Sciavicco. Interval temporal logics over strongly discrete linear orders: Expressiveness and complexity. *Theoretical Computer Science*, 560:269–291, 2014

[12] D. Bresolin, D. Della Monica, A. Montanari, and G. Sciavicco. The light side of interval temporal logic: the Bernays-Schönfinkel fragment of CDT. *Annals of Mathematics and Artificial Intelligence*, 71(1-3):11–39, 2014

[13] D. Bresolin, D. Della Monica, V. Goranko, A. Montanari, and G. Sciavicco. The dark side of interval temporal logic: marking the undecidability border. *Annals of Mathematics and Artificial Intelligence*, 71(1-3):41–83, 2014

[14] L. Benvenuti, D. Bresolin, P. Collins, A. Ferrari, L. Geretti, and T. Villa. Assume-guarantee verification of nonlinear hybrid systems with ARIADNE. *Int. J. Robust. Nonlinear Control*, 24(4):699–724, 2014

[15] D. Bresolin, D. Della Monica, V. Goranko, A. Montanari, and G. Sciavicco. Metric propositional neighborhood logics on natural numbers. *Software & Systems Modeling*, 12(2):245–264, 2013

[16] D. Bresolin and M. Capiluppi. A game-theoretic approach to fault diagnosis and identification of hybrid systems. *Theoretical Computer Science*, 493:15—29, 2013

[17] D. Bresolin, A. Montanari, P. Sala, and G. Sciavicco. Optimal decision procedures for MPNL over finite structures, the natural numbers, and the integers. *Theoretical Computer Science*, 493:98—115, 2013

[18] D. Bresolin, P. Sala, and G. Sciavicco. On Begin, Meets and Before. *International Journal of Foundations of Computer Science*, 23(3):559–583, 2012

[19] R. Muradore, D. Bresolin, L. Geretti, P. Fiorini, and T. Villa. Robotic surgery: Formal verification of plans. *Robotics Automation Magazine, IEEE*, 18(3):24–32, Sept. 2011

[20] D. Bresolin, V. Goranko, A. Montanari, and P. Sala. Tableaux for Logics of Subinterval Structures over Dense Orderings. *Journal of Logic and Computation*, 20(1):133–166, 2010

[21] D. Bresolin, V. Goranko, A. Montanari, and G. Sciavicco. Propositional interval neighborhood logics: Expressiveness, decidability, and undecidable extensions. *Annals of Pure and Applied Logic*, 161:289–304, 2009

[22] D. Bresolin, A. Montanari, and G. Puppis. A theory of ultimately periodic languages and automata with an application to time granularity. *Acta Informatica*, 46(5):331–360, Mar. 2009

[23] D. Bresolin, A. Montanari, and G. Sciavicco. An optimal decision procedure for right propositional neighborhood logic. *Journal of Automated Reasoning*, 38(1-3):173–199, 2007

[24] D. Bresolin, J. Golińska-Pilarek, and E. Orłowska. Relational dual tableaux for interval temporal logics. *Journal of Applied Non-Classical Logics*, 16(3–4):251–277, 2006

International conferences

[25] D. Bresolin, E. Cominato, S. Gnani, E. Muñoz-Velasco, and G. Sciavicco. Extracting interval temporal logic rules: A first approach. In *25th International Symposium on Temporal Representation and Reasoning, TIME 2018*, volume 120 of *LIPIcs*, pages 7:1–7:15, 2018

[26] D. Bresolin, A. Tvardovskii, N. Yevtushenko, T. Villa, and M. Gromov. Minimizing deterministic timed finite state machines. In *14th IFAC Workshop on Discrete Event Systems WODES 2018*, volume 51, issue 7 of *IFAC-PapersOnLine*, pages 486 – 492, 2018

[27] L. Geretti, R. Muradore, D. Bresolin, P. Fiorini, and T. Villa. Parametric formal verification: the robotic paint spraying case study. In *Proc. of the 20th IFAC World Congress*, volume 50, Issue 1 of *IFAC-PapersOnLine*, pages 9248–9253, 2017

[28] L. Geretti, D. Bresolin, P. Collins, S. Z. Gonzalez, and T. Villa. Ongoing work on automated verification of noisy nonlinear systems with ariadne. In *ICTSS*, volume 10533 of *Lecture Notes in Computer Science*, pages 313–319. Springer, 2017

[29] D. Bresolin, E. Muñoz-Velasco, and G. Sciavicco. Fast(er) Reasoning in Interval Temporal Logic. In *26th EACSL Annual Conference on Computer Science Logic (CSL 2017)*, volume 82 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 17:1–17:17, Stoccolma, Svezia, 2017

[30] D. Bresolin and I. Lanese. Most general property-preserving updates. In *Proc. of the 11th International Conference on Language and Automata Theory and Applications, LATA 2017*, volume 10168 of *LNCS*, pages 367–379, Umeå, Svezia, 6-9 Marzo 2017

[31] D. Bresolin, E. Muñoz-Velasco, and G. Sciavicco. On the expressive power of sub-propositional fragments of modal logic. In *Proc. of the Seventh International Symposium on Games, Automata, Logics and Formal Verification, GandALF 2016, Catania, Italy, 14-16 September 2016.*, volume 226 of *EPTCS*, pages 91–104, 2016

[32] D. Bresolin, E. Muñoz-Velasco, and G. Sciavicco. On the complexity of fragments of horn modal logics. In *23rd International Symposium on Temporal Representation and Reasoning, TIME 2016, Kongens Lyngby, Denmark, October 17-19, 2016*, pages 186–195. IEEE Computer Society, 2016

[33] D. Bresolin, D. D. Monica, A. Montanari, P. Sala, and G. Sciavicco. On the complexity of fragments of the modal logic of allen's relations over dense structures. In *Proc. of 9th International Conference (LATA 2015)*, volume 8977 of *Lecture Notes in Computer Science*, pages 511–523, Nizza, Francia, 2015. Springer

[34] D. Bresolin, K. El-Fakih, T. Villa, and N. Yevtushenko. Deterministic timed finite state machines: Equivalence checking and expressive power. In *Proc. of GandALF 2014: 5th International Symposium on Games, Automata, Logics and Formal Verification*, volume 161 of *EPTCS*, pages 203–216, Verona, Settembre 2014. Open Publishing Association

[35] D. Bresolin, L. Geretti, R. Muradore, P. Fiorini, and T. Villa. Verification of robotic surgery tasks by reachability analysis: a comparison of tools. In *Proc. of the 17th Euromicro Conference on Digital System Design (DSD2014)*, Verona, Aug. 2014. IEEE Comp. Society Press

[36] D. Bresolin, E. Muñoz-Velasco, and G. Sciavicco. Sub-propositional fragments of the interval temporal logic of allen's relations. In *Proc. of JELIA 2014: 14th European Conference on Logics in Artificial Intelligence*, volume 8761 of *LNCS*, pages 122–136, Madeira, Portogallo, Sept. 2014. Springer

[37] A. Artale, D. Bresolin, A. Montanari, G. Sciavicco, and V. Ryzhikov. DL-Lite and Interval Temporal Logics: a marriage proposal. In *Proc. of ECAI 2014: 21st European Conference on Artificial Intelligence*, volume 263 of *Frontiers in Artificial Intelligence and Applications*, pages 957–958, Praga, Repubblica Ceca, Aug. 2014. IOS Press

[38] L. Schreiter, D. Bresolin, M. Capiluppi, J. Raczkowsky, P. Fiorini, and H. Woern. Application of contract-based verification techniques for hybrid automata to surgical robotic systems. In *Proc. of 13th European Control Conference (ECC14)*, pages 2310–2315, Strasburgo, Francia, Giugno 2014. IEEE

[39] D. Bresolin and M. Capiluppi. A framework for Fault Diagnosis of Hybrid Systems based on Predicate Abstractions. In *Proc. of 2nd International Conference on Control and Fault-Tolerant Systems (SysTol'13)*, pages 802–807, Nizza, Francia, Ottobre 2013. IEEE Comp. Society Press

[40] D. Bresolin, D. Della Monica, A. Montanari, and G. Sciavicco. A tableau system for right propositional neighborhood logic over finite linear orders: an implementation. In *Proc. of the 22nd Conference on Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX2013)*, volume 8123 of *LNCS*, pages 74–80, Nancy, Francia, Settembre 2013. Springer

[41] D. Bresolin. Improving HyLTL model checking of hybrid systems. In *Proc. of GandALF 2013: 4th International Symposium on Games, Automata, Logics and Formal Verification*, volume 119 of *EPTCS*, pages 79–92, Borca di Cadore, Belluno, Agosto 2013. Open Publishing Association

[42] D. Bresolin, F. Jiménez, G. Sánchez, and G. Sciavicco. Finite satisfiability of propositional interval logic formulas with multi-objective evolutionary algorithms. In *Proc. of the 12th workshop on Foundations of genetic algorithms (FOGA2013)*, pages 25–36, Adelaide, Australia, Gennaio 2013. ACM

[43] D. Bresolin. HyLTL: a temporal logic for model checking hybrid systems. In *Proc. of 3rd International Workshop on Hybrid Autonomous Systems (HAS 2013)*, EPTCS, pages 73—84. Open Publishing Association, 2013

[44] L. Benvenuti, D. Bresolin, P. Collins, A. Ferrari, L. Geretti, and T. Villa. Ariadne: dominance checking of nonlinear hybrid automata using reachability analysis. In *Proc. of 6th International workshop on Reachability Problems (RP'12)*, volume 7550 of *LNCS*, pages 79–91. Springer, Settembre 2012

[45] D. Bresolin, L. Di Guglielmo, L. Geretti, R. Muradore, P. Fiorini, and T. Villa. Open problems in verification and refinement of autonomous robotic systems. In *Proc. of the 15th Euromicro Conference on Digital System Design (DSD2012)*, pages 469–476, Cesme-Izmir, Turchia, Sept. 2012. IEEE Comp. Society Press

[46] D. Bresolin, D. D. Monica, A. Montanari, P. Sala, and G. Sciavicco. Interval temporal logics over strongly discrete linear orders: The complete picture. In *Proc. of GandALF 2012: Third International Symposium on Games, Automata, Logics and Formal Verification*, volume 96 of *EPTCS*, pages 155–168, Napoli, Sept. 2012. Open Publishing Association

[47] D. Bresolin, D. D. Monica, A. Montanari, P. Sala, and G. Sciavicco. Interval temporal logics over finite linear orders: The complete picture. In *Proc. of ECAI 2012: 20th European Conference on Artificial Intelligence*, volume 242 of *Frontiers in Artificial Intelligence and Applications*, pages 199–204, Montpellier, Francia, Aug. 2012. IOS Press

[48] D. Bresolin and M. Capiluppi. Fault diagnosis of hybrid systems: an onboard camera model. In *Proc. of the 8th IFAC Symposium SAFEPROCESS-2012: Fault Detection, Supervision and Safety for Technical Processes*, pages 714–719, Mexico City, Mexico, Aug. 2012. Elsevier

[49] P. Collins, D. Bresolin, L. Geretti, and T. Villa. Computing the evolution of hybrid systems using rigorous function calculus. In *Proc. of the 4th IFAC Conference on Analysis and Design of Hybrid Systems (ADHS12)*, pages 284–290, Eindhoven, Olanda, June 2012. Elsevier

[50] D. Bresolin, D. Della Monica, V. Goranko, A. Montanari, and G. Sciavicco. The dark side of Interval Temporal Logic: sharpening the undecidability border. In C. Combi, M. Leucker, and F. Wolter, editors, *Proc. of TIME 2011: 18th International Symposium on Temporal Representation and Reasoning*, pages 131–138, Lübeck, Germany, Sept. 2011. IEEE Comp. Society Press

[51] D. Bresolin, D. Della Monica, A. Montanari, and G. Sciavicco. The light side of Interval Temporal Logic: the Bernays-Schönfinkel's fragment of CDT. In C. Combi, M. Leucker, and F. Wolter, editors, *Proc. of TIME 2011: 18th International Symposium on Temporal Representation and Reasoning*, pages 123–130, Lübeck, Germany, Sept. 2011. IEEE Comp. Society Press

[52] D. Bresolin and M. Capiluppi. A game-theoretic approach to fault diagnosis of hybrid systems. In *Proc. of GandALF 2011: Second International Symposium on Games, Automata, Logics and Formal Verification*, volume 54 of *EPTCS*, pages 237–239, Minori, Amalfi Coast, Italy, June 2011

[53] D. Bresolin, A. Montanari, P. Sala, and G. Sciavicco. An optimal decision procedure for MPNL over the integers. In *Proc. of GandALF 2011: Second International Symposium on Games, Automata, Logics and Formal Verification*, volume 54 of *EPTCS*, pages 192–206, Minori, Amalfi Coast, Italy, June 2011

[54] D. Bresolin, A. Montanari, P. Sala, and G. Sciavicco. Optimal tableau systems for propositional neighborhood logic over all, dense, and discrete linear orders. In *Proceedings of TABLEAUX 2011: The 20th International Conference on Automated Reasoning with Analytic Tableaux and Related Methods*, volume 6793 of *LNAI*, pages 73–87, Bern, Switzerland, July 2011. Springer

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