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Luca Bortolussi

Curriculum Vitae

November 2021

Biographic Data

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Qualifications

1/11/2003–31/10/2006: PhD in Computer Science from University of Udine, Italy, with PhD thesis titled: "Constraint-based approaches to stochastic dynamics of biological systems".

01/09/1999–09/07/2003: graduated on 9 July 2003 in Mathematics cum laude and Excellence award, University of Trieste, Italy. Thesis: "Possibilities as coherent previsions. Tecniques of representation and management of incomplete knowledge".

01/09/1994–14/07/1999: diploma di liceo scientifico (scientific high school degree), with evalutation of 100/100, granted by Liceo scientifico "XXV Aprile" Portogruaro (VE), Italy.

Employment

Current

From 1/10/2021: Full Professor of Computer Science, University of Trieste, Italy.

Past

From 1/11/2015-30/09/2021: Associate Professor of Computer Science, University of Trieste, Italy.

01/11/2018-31/10/2021: Mercator fellow and visiting guest professor of Modelling and Simulation, Department of Informatics, Saarland University, Germany (within a DFG research project).

01/04/2016-31/12/2016: Visiting guest professor of Modelling and Simulation, Department of Informatics, Saarland University, Germany.

15/12/2006–31/10/2015: Ricercatore (Assistant Professor) of computer science, University of Trieste, Italy.

01/06/2014–31/05/2015: Gastprofessor (guest professor) of Modelling and Simulation, temporary coordinator of the Modelling and Simulation group, Department of Informatics, Saarland University, Germany.

From 01/04/2012: Associate Researcher at CNR/ISTI, Pisa (National research council, Institute of Information Science and Technology).

From 01/01/2013: Honorary fellow of the School of Informatics, University of Edinburgh.

01/01/2013-31/12/2014: Visiting professor at IMT, Lucca.

1/11/2011–30/10/2012: Visiting researcher at the Laboratory for the Foundations of Computer Science, School of Informatics, University of Edinburgh.

15/01/2005–14/07/2005: visiting PhD Student at Dept. of Computer Science, Imperial College, London, UK, under the supervision of Chris Hankin and Herbert Wiklicky.

1/11/2003–31/10/2006: PhD fellow of computer science, University of Udine, Italy.

01/10/2002–09/07/2003: tutor of Mathematical Analysis and Physics for the undergraduate course of mathematics, University of Trieste, Italy.

Awards

- Best paper award at QEST 2013 (Learning and Designing Stochastic Processes from Logical Constraints, with Guido Sanguinetti).
- Best paper award at QEST 2011 (Hybrid Limits of Continuous Time Markov Chains).
- Best paper award at ASMTA 2010 (Limit behavior of the hybrid approximation of Stochastic Process Algebras).
- Premio Marco Reni 2006, for the excellence of the master thesis, awarded by Dipartimento di Matematica ed Informatica, Università di Trieste.

Research Summary and Interests

Keywords: Modelling and Simulation; Machine Learning; Quantitative Formal Methods; Artificial Intelligence; Cyber-Physical Systems; Computational Systems Biology; Computational Medicine; Computational Linguistics.

My publications are predominantly at the intersection between *computational modelling*, *machine learning*, and *quantitative formal methods*, both from a methodological viewpoint and with applications to *computational systems biology*, *Cyber Physical Systems*, *medicine*, and *performance evaluation*. I also have few papers in fields such as bioinformatics, string algorithms, fuzzy theory, statistics for medicine, and computational linguistic.

My major contributions are: the use of advanced machine learning methods for parametric verification of formal properties and for model identification and synthesis; the use of mean-field approximations for approximating stochastic model checking; the development of spatio-temporal logics for monitoring and specifying properties of spatially distributed systems; the development of modelling languages for complex systems (systems biology and hybrid systems); the definition of mean-field, moment closures, and (stochastic) hybrid semantics for homogeneous population process-algebra models, including a though investigation of the underlying mathematical aspects; a theoretical characterization of adversarial robustness for Bayesian deep neural networks.

I have published 34 papers in International Journals, 88 papers at major international peer-reviewed conferences and workshops, contributed to 6 book chapters, and edited 9 conference proceedings and special issues.

Bilbiometrics

Data from November 13, 2021

Source	Citations	h-index	i10 index	Documents
Google Scholar	2544	28	68	n/a
Scopus	1363	20	n/a	144

Linguistic skills

Italian: mother tongue.

English: fluent level (written and spoken).

French: school level (written and spoken).

German, Spanish, Slovenian, Russian: survival level (spoken).

Grants and fundings

Current grants:

- PRIN 2017 SEDUCE: Designing Spatially Distributed Cyber-Physical Systems under Uncertainty. PI of Trieste unit, starting spring 2019. Funding: 208.500 euros (TS units).
- DFG grant 391984329 - MULTIMODE: Methodologies and Tools for the Analysis and Design of Multimodal Stochastic Systems. Co-PI and Mercator Fellow, together with Verena Wolf, started November 2018, duration 3 years. Funding: 300.000 euro.

Past Grants:

- FRB (Fondo per la Ricerca di Base) 2018 - MIUR.
- University of Trieste, FRA 2016 (Local Research Grant - coordinator).
- EU FP7 grant "QUANTICOL" (Strep project, FOCAS ICT call, `www.quanticol.eu`). From April 2013, 48 months (member of CNR unit, co-coordinator of Work Package 2 on Spatial Modelling).
- University of Trieste, FRA 2011 (Local Research Grant - coordinator).
- GNCS, Progetto Giovani Ricercatori 2009 (individual grant).
- GNCS, Progetto Giovani Ricercatori 2010 (individual grant).
- Royal Society Exchange Program 2010-2011 with the University of Edinburgh (coordinator together with prof. Jane Hillston).
- University of Trieste, FRA 2009 (Local Research Grant - coordinator).
- Firb 2003 RBLA039M7M, LiBI. (National Laboratory for Bioinformatics, Italian National grant for Base Research). From 2004 to 2008, 48 months (member of Trieste unit).

- Firb 2003 RBNE03B8KK,"Il riconoscimento molecolare nelle interazioni proteina-ligando, proteina-proteina e proteina superficie: sviluppo di approcci sperimentali e computazionali integrati per lo studio di sistemi di interesse farmaceutico". (Molecular recognition of protein-ligand, protein-protein, and protein-surface interactions. Italian National grant for Base Research). From 2004 to 2007, 36 months (member of Udine unit).
- Prin 2005 2005015491, "Vincoli e preferenze come formalismo unificante per l'analisi di sistemi informatici e la soluzione di problemi reali" (Constraints and preferences as a unifying formalism for the analysis of computer systems and the solution of real-life problems, Italian Research Projects of National Relevance) (member of Udine unit).
- Prin 2006 2006011235, "BiSCA — Bio-Inspired Systems and Calculi with Applications" (Italian Research Projects of National Relevance). From 2007 to 2009, 24 months (member of Udine unit).
- Regional project FVG (L.R. 11/2003 project), 2007. BIOcheck A Scalable Computational Tool for Building and Checking Biological Models (member of Udine unit).

Other funds:

- Raised more than 107.000 euros for scholarships of Data Science and Scientific Computing Students, from companies and institutions.

PhD Students and Post-Docs

PhD boards:

- **From 2021**: Member of the scientific board of the PhD in Applied Data Science and Artificial Intelligence of the University of Trieste.
- **From 2018 to 2021**: Member of the scientific board of the PhD in Earth Science, Fluid Dynamics, and Mathematics. Interactions and Methods of the University of Trieste, ICTP, and OGS.
- **From 2013 to 2017**: Member of the scientific board of the FVG PhD in Molecular Biology, joint between SISSA, ICGEB, University of Trieste, and University of Udine.

Current PhD students:

- Stefano Alberto Russo (Univ. of Trieste) - since November 2020
- Ginevra Carbone (Univ. of Trieste) - since November 2019
- Francesca Cairoli (Univ. of Trieste) - since November 2018

Former PhD students:

- Laura Nenzi (IMT Lucca), currently Post-Doc at TU Wien.
- Roberta Lanciani (IMT Lucca), currently business analyst at Gucci (fashion company).
- Simone Silvetti (Univ. of Udine), currently working for Esteco SpA (software company).

Previous Post-Docs:

- Enrico Regolin (PRIN SEDUCE project).
- Marco Pandolfi (Department of Excellence framework)
- Laura Nenzi (2016-2017, co-supervised with Michele Loreti within QUANTICOL project at IMT Lucca).
- Rytis Paŝkauskas (2013-2015, co-supervised with Mieke Massink within QUANTICOL project at ISTI CNR, Pisa)

Community Service

Chairing of conferences and schools

- PC Chair and local organizer of the 17th International Conference on Computational Methods in Systems Biology, CMSB 2019, September 2019, Trieste.
- PC Chair of the Fourteenth International Conference on Quantitative Evaluation of SysTems, QEST 2017, Berlin, Germany, September 5-7, 2017 .
- PC Chair of the Twelfth International Workshop on Quantitative Aspects of Programming Languages and Systems, co-located with ETAPS 2014, Grenoble, March 2014.
- PC Chair of the Eleventh International Workshop on Quantitative Aspects of Programming Languages and Systems, co-located with ETAPS 2013, Rome, March 2013.
- PC Chair of the Third International Workshop on Hybrid Autonomous Systems, co-located with ETAPS 2013, Rome, March 2013.
- PC Chair of the First International Workshop on Hybrid Systems and Biology, co-located with CONCUR 2012, Newcastle-upon-Tyne, September 2012.
- Scientific Co-Director of the Bioinformatics section of the CODATA-RDA Research Data Science Summer School, ICTP, Trieste, July 24-27, 2017.
- Co-Director of the joint 2st FVG International Summer School on Bioinformatics — 7th International School on Biology, Computation, and Information (BCI 2012), 2012, Udine, Italy.
- Co-Director of the 1st FVG International Summer School on Bioinformatics, July 4–8, 2011, Trieste, Italy.
- Co-Director of the 6th International School on Biology, Computation, and Information (BCI 2010), September 20–24, Dobbiaco, Italy (http://www.dmi.units.it/bci2010/)
- Co-Director of the 5th International School on Biology, Computation, and Information (BCI 2008), September 8–12, Trieste, Italy (http://bci2008.cbm.fvg.it)

Steering committees and editorial boards.

- Member of the editorial board of *Information and Computation*, since July 2014.
- Member of the editorial board of *ACM Transactions of Modelling and Simulation*, since 2017.
- Guest editor of a special issue on the Quantitative Evaluation of Systems of *ACM Transactions of Modelling and Simulation*, 2017-2018.
- Guest editor of a special Issue on "Quantitative Aspects of Programming Languages and Systems' of *Theoretical Computer Science*, 2014-2015.
- Guest editor of a special Issue on "Hybrid Systems and Biology" of *Information and Computation*, 2013.
- (Founding) member of the steering committee of HSB (Hybrid Systems and Biology), since 2012.
- Member of the steering committee of QAPL (Quantitative Aspects of Programming Languages and Systems), since 2013.
- Elected member of the steering committee of QEST (Quantitative Evaluation of SysTems), 2014-2016, and 2018-2020.

Program committees. **AAAI 2022** (AAAI Conference on Artificial Intelligence), **AAAI 2021** (AAAI Conference on Artificial Intelligence), **ATVA 2021** (International Symposium on Automated Technology for Verification and Analysis), **QEST 2021** (International Conference on Quantitative Evaluation of SysTems), **CMSB 2021** (International Conference on Computational Methods in Systems Biology), **IJCAI 2020** (International Joint Conference on Artificial Intelligence and European Conference on Artificial Intelligence), **VALUETOOLS 2020** (International Conference on Performance Evaluation Methodologies and Tools), **HSB 2020** (International Workshop on Hybrid Systems and Biology), **CMSB 2020** (International Conference on Computational Methods in Systems Biology), **ATVA 2020** (International Symposium on Automated Technology for Verification and Analysis) **IJCAI 2019** (International Joint Conference on Artificial Intelligence and European Conference on Artificial Intelligence), **ICPE 2020** (ACM/SPEC International Conference on Performance Engineering), **AAAI 2020** (AAAI Conference on Artificial Intelligence), **ATVA 2019** (International Symposium on Automated Technology for Verification and Analysis), **IJCAI-ECAI 2019** (International Joint Conference on Artificial Intelligence and European Conference on Artificial Intelligence), **CMSB 2019** (International Conference on Computational Methods in Systems Biology), **QEST 2019** (International Conference on Quantitative Evaluation of SysTems), **HSB 2019** (International Workshop on Hybrid Systems and Biology), **SIGSIM-PADS'19** (ACM SIGSIM Conference on Principles of Advanced Discrete Simulation), **VALUETOOLS 2019** (International Conference on Performance Evaluation Methodologies and Tools), **IJCAI-ECAI 2018** (International Joint Conference on Artificial Intelligence and European Conference on Artificial Intelligence), **QAPL 2018** (Sixteenth International Workshop on Quantitative Aspects of Programming Languages and Systems), **CMSB 2018** (16th International Conference on Computational Methods in Systems Biology), **ICTCS 2018** (19th Italian Conference on Theoretical Computer Science), **MedCPS 2018** (Medical Cyber Physical Systems Workshop 2018), **ADHS 2018** (IFAC Conference on Analysis and Design of Hybrid Systems), **BIOINFORMATICS 2018** (International Joint Conference on Biomedical Engineering Systems and Technologies), **VALUETOOLS 2017** (International Conference on Performance Evaluation Methodologies and Tools), **CMSB 2017** (International Conference on Computational Methods in Systems Biology), **DataMod 2017** (International Symposium "From Data to Models and Back"), **BIOINFORMATICS 2017** (International Joint Conference on Biomedical Engineering Systems and Technologies), **eCAS2016** (eCAS Workshop on Engineering Collective Adaptive Systems) **INSCI2016** (International Conference on Internet Science) **FORECAST 2016** (Workshop on FORmal methods for the quantitative Evaluation of Collective Adaptive SysTems) **MEMICS 2016** (Doctoral Workshop on Mathematical and Engineering Methods in Computer Science) **QEST 2016** (International Conference on Quantitative Evalution of SysTems), **HSB 2016** (International Workshop on Hybrid Systems and Biology), **CMSB 2016** (International Conference on Computational Methods in Systems Biology), **Medical CPS 2016** (International Workshop on Medical Cyber-Physical Systems), **DataMod 2016** (International Symposium "From Data to Models and Back"), **FORECAST 2016** (Workshop on FORmal methods for the quantitative Evaluation of Collective Adaptive SysTems), **HSB 2015** (International Workshop on Hybrid Systems and Biology), **FORMATS 2015** (International Conference on Formal Modelling and Analysis of Timed Systems), **RV 2015** (International Conference on Runtime Verification), **QEST 2015** (International Conference on Quantitative Evalution of SysTems), **SCOPES 2015** (International Workshop on Spatial and COllective PErvasive Computing Systems), **QAPL 2015** (International Workshop on Quantitative Aspects of Programming Languages and Systems), **MoKMaSD 2015** (International Symposium on Modelling and Knowledge Management applications: Systems and Domains), **IFIP PERFORMANCE 2014** (International Symposium on Computer Performance, Modeling, Measurements and Evaluation), **PDP 2014** (International Conference on Parallel and Distributed Computing - Advances in High-Performance Bioinformatics, Systems and Synthetic Biology), **FORMATS 2014** (International Conference on Formal Modelling and Analysis of Timed Systems), **QEST 2014** (International Conference on Quantitative Evalution of SysTems), **HSB 2014** (International Workshop on Hybrid Systems and Biology), **DCPerf14** (International Workshop on Data Center Performance), **COMPMOD 2013** (International Workshop on Computational Models for Cell Processes), **HSB 2013** (International Workshop on Hybrid Systems and Biology), **QAPL 2012** (International Workshop on Quantitative Aspects of Programming Languages and Systems), **FBTC 2012** (International Workshop "From Biology to Concurrency and Back"), **NETTAB 2009** (Network Tools and Applications in Biology).

Organising committees. Member of the organization and scientific committee of the following international schools and conferences: **BCI 2007** (Fourth Int. School on Biology, Computation and Information, July 2–6, 2007, Trieste, Italy, http://bci2007.cbm.fvg.it), **BCI 2006** (Third Int. School on Biology, Computation and Information, September 11–16, 2006, Dobbiaco (BZ), Italy, http://bioinf.dimi.uniud.it/bci), **RCRA 2006** (Italian Conference on Knowledge representation and Automated Reasoning), **BCI 2005** (Second Int. School on Biology, Computation and Information, September 11–16, 2005, Dobbiaco, Italy), **BCI 2004** (First Int. School on Biology, Computation and Information, September 19–25, 2004, Dobbiaco, Italy, http://bioinf.dimi.uniud.it/bci).

Reviewer Activity. I reviewed papers for the major journals and conferences in my area, including Theoretical Computer Science, Transactions in Computational Systems Biology, Information and Computation, Performance Evaluation, Theory and Practice of Logic Programming, BCM Bioinformatics, IEEE Bioinformatics.

Administrative Activities

- Deputy coordinator of the phd program in "Applied Data Science and Artificial Intelligence", University of Trieste, from March 2021.
- Coordinator of the bachelor program in "Artificial Intelligence and Data Analytics", University of Trieste, from April 2021.
- Coordinator of the master program in "Data Science and Scientific Computing", of the University of Trieste, jointly organised with University of Udine, SISSA, and ICTP, from September 2016.
- Member of the directive board of CINI and local responsible of the CINI unit of Trieste (2020-2022).
- Rector Delegate on the CINECA Board (since 2021)
- Member of the "giunta di dipartimento" (Departmental executive board) of the Department of Mathematics and Geosciences, University of Trieste, Italy, from 2013 to June 2014 and from November 2015 to 2019.
- Member of the Open Access commission of the University of Trieste, Italy.
- Member of the administration board of the University of Trieste, Italy, from July 2009 to October 2011, as representative of Associate Researchers.
- Member of the administration board of the University of Trieste, Italy, from May 2002 to July 2003, as representative of Students.

Membership of Scientific Societies

- Member of INFORMS SIMULATION (Modelling and Simulation Society), from 2018.
- Member of INdAM GNCS (National Institute of High Mathematics - Scientific Computing Group), from 2004 to 2019.
- Member of INFORMS APS (Applied probability society), 2013-2015.

Invited Talks at Conferences and Workshops

December 2018: WSC 2018, Winter Simulation Conference, invited tutorial on 'Bayesian Statistical Parametric Verification and Synthesis by Machine Learning', Goteborg, Sweden.

November 2018: DYNET 2018, Stochastic Dynamics on Large Networks, Prediction and Inference, Max Plank for Complex Systems, Dresden, Germany: "Bayesian Verification of Behavioural Properties".

September 2018: CAP Workshop, organized within the sino-german CAP project, Beijing, China: "Parametric Verification and Synthesis: the Bayesian Machine Learning Way".

October 2016: MEMICS 2016, Doctoral Workshop on Mathematical and Engineering Methods in Computer Science, Telc, Czeck Republic: "The Machine Learning Way to Formal Verification".

September 2016: RiSE Workshop, Pöllenberg, Austria: "Mean-Field Approximation for Stochastic Verification".

September 2016: 7th International Symposium on Games, Automata, Logics and Formal Verification (GandALF 2016), Catainia, Italy: "Machine Learning Meets Formal Verification".

June 2016: 16th edition of the Schools on Formal Methods (SFM) on Dynamical Systems, Bertinoro, Italy: "Introduction to Mean Field".

October 2014: 6th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (ISoLA 2014), Corfu, Greece.

September 2014: 11th European Workshop on Performance Engineering (EPEW), Firenze, Italy.

July 2013: 18th INFORMS Applied Probability Society Conference (APS), Costa Rica.

June 2013: 13th edition of the Schools on Formal Methods (SFM) on Dynamical Systems, Bertinoro, Italy.

March 2012: 2nd international workshop on Hybrid Autonomous Systems, Tallinn, Estonia.

September 2011: Third annual meeting of the MLQA ERCIM working group, Aachen, Germany.

May 2011: International Workshop on Quantitative Modelling and Formal Analysis IMT, Lucca.

February 2011: Scimmie parlanti: linguistiche e altre scienze naturali, Modena and Reggio Emilia, Italy.

September 2010: Ravenna 2010: rifiuti, acqua, energia, buone pratiche, economia ambientale. Ravenna, Italy.

April 2010: 1st international workshop on Modeling and Verification of Uncertain Hybrid Systems, Stockholm, Sweden.

August 2009: 8th international workshop on Process Algebras and Stochastically Timed Activities, PASTA 2009, Edinburgh, UK.

Invited Seminar Talks

- "Robustness of Bayesian Neural Networks to Gradient-Based Attacks", University of Venice, January 29, 2021.
- "Machine Learning and Logic for Model-Based Testing and Design", Royal Holloway, University of London, Trieste, January 26, 2020.
- "Combining Machine Learning and Logics for Complex Systems", ICTP Condensed Matter Seminars, Trieste, February 28, 2019.
- "Bayesian Verification of Behavioural Properties", Ca Foscari University, Venice, January 11, 2019.
- "Combining Machine Learning and Logics for Complex Systems", SISSA, November 30, 2018
- "Bayesian Statistical Parameter Synthesis", PEPA club, Edinburgh, June 8, 2018.
- "Statistical Parametric Verification of Stochastic Models", Dagstuhl seminar on Machine Learning and Model Checking Join Forces, March 18-23, 2018

- "Machine Learning for Model Abstraction", Ecole Centrale, Paris, July 3, 2017.
- "Statistical Learning and the Analysis of Stochastic Models", TU Wien, January 19, 2017.
- "Monitoring Spatio-Temporal Properties", TU Wien, University of Trieste, January 17, 2017.
- "Introduction to Computational Systems Biology", Life Science Department, University of Trieste, November 24, 2016.
- "Statistical Learning and the Analysis of Stochastic Models", ICTP, Trieste, October 18, 2016.
- "Logic-based design of Spatio-Temporal Behaviours", Max Plank for Software Systems, Kaiserslautern, February 4, 2016.
- "Stochastic Approximation for Stochastic Model Checking", Dagstuhl Seminar, December 2, 2015.
- "Machine Learning Meets Formal Verification", INRIA, Rennes, June 25, 2015.
- "U-check: statistical model checking under uncertainty", MAS, Ecole Centrale Paris, June 24, 2015.
- "Machine Learning Meets Formal Verification", RWTH Aachen, March 25, 2015.
- "Machine Learning Meets Formal Verification", University of Rostock, March 5, 2015.
- "Data-driven Statistical Learning of Temporal Logic Properties", University of Edinburgh, November 21, 2014.
- "Stochastic Approximations For Model Checking", AVACS Meeting, Saarland University, September 25, 2014.
- "A Statistical Approach For Computing Reachability Of Non-Linear And Stochastic Dynamical Systems", PEPA Club, University of Edinburgh, August 8, 2014.
- "Stochastic Approximation Of Global Reachability Probabilities Of Markov Population Models", PEPA Club, University of Edinburgh, August 1, 2014.
- "Smoothed Model Checking for Uncertain CTMC", Univ. of Camerino, March 24, 2014.
- "Learning Stochastic Processes From Qualitative Data", SISSA, Trieste, January 23, 2014.
- "Parameter Identification and Synthesis from Qualitative Data and Behavioural Constraints", Dagstuhl Seminar on Randomized Timed and Hybrid Models for Critical Infrastructures, Dagstuhl, Germany, January 14, 2014.
- "Learning Stochastic Processes From Qualitative Data", Trieste, Department of Physics, December 18, 2013.
- "Mean Field Approximation For Stochastic Model Checking", Venice, May 29, 2013.
- "Hybrid Modelling of Biological Systems", Torino, PhD program in Complex Systems, March 13, 2013.
- "Learning and Designing stochastic processes from logical constraints", Torino, March 12, 2013.
- "Steady-State Bounds on the Deviation of Discrete-Time Markov Chains from their Mean Field Model", PEPA club, Edinburgh, February 1, 2013.
- "Fluid Approximation And Stochastic Model Checking", University of Twente, January 25, 2013.
- "Fluid Approximation And Stochastic Model Checking", Computing Laboratory, Oxford, January 21, 2013.
- "From Boolean To Reals: Quantitative Temporal Logic for Real-Valued Systems", PEPA club, Edinburgh, August 10, 2012.

- "Fluid Model Checking", Imperial College, London, June 19, 2012.
- "Hybrid Performance Modelling of Opportunistic Networks", PEPA Club, Edinburgh, May 18, 2012.
- "Towards Fluid Model Checking", ISAB, SynthSys, Edinburgh, May 15, 2012.
- "On Constraints, Energy, and Hybrid Systems", SynthSys, Modelling Reading Group Edinburgh, March 8, 2012.
- "Hybrid Fluid Limits", ERGO seminars, Edinburgh, February 15, 2012.
- "Towards Fluid Model Checking", PEPA Club meeting, Edinburgh, December 2, 2011.
- "Hybrid Limits of Continuous Time Markov Chains", PEPA Club meeting, Edinburgh, December 2, 2011.
- "Can Fluid Ants Eat Solid Food?" LFCS Lab Lunch, Edinburgh, November 22, 2011.
- "Stochastic Concurrent Constraint Programming: an overview" IMT, Lucca, 25th May 2011.
- "Hybrid approximation of stochastic process algebra models of biological systems" Dagstuhl meeting on Formal Methods in Molecular biology, 13th April 2011.
- "Comparing Fluid and Mean Field Approximations on Markov Chains", 19th October 2010, ISTI CNR, Pisa.
- "Fluid and Mean Field Salad". PEPA club meeting, 10th September 2010, Edinburgh, UK.
- "Hybrid Semantics of Stochastic Programs: Potentials and Challenges", PEPA club meeting, 5th June 2009, Edinburgh, UK.
- "Hybrid Dynamics of Stochastic Programs", 4th May 2009, Camerino, Italy.
- "Discreteness in Systems Biology", GNCS meeting, 4th February 2009, Montecatini, Italy.
- "Hybrid Models of Biological Systems: Discreteness, Stochasticity, and Robustness", 3rd April 2008, Dortmund, Germany.
- "Constraint-Based Modeling and Analysis of Biological Systems", 29th February 2008, Udine, Italy.
- "Hybridizing stochastic Concurrent Constraint Programming", 18th June 2007, PEPA Club meeting, Edinburgh, UK.
- "Biochemical simulation by stochastic concurrent constraint programming and hybrid systems", 20th April 2007, PRIN meeting, Siena, Italy.
- "Computation and Proteins", 16th June 2006, SISSA, Trieste, Italy.
- "From Process Algebras to Differential Equations and Return", 21st April 2006, Dagsthul, Germany.
- "Stochastic Concurrent Constraint Programming", 10th April 2006, PRIN meeting, Padova, Italy.
- "Fuzzy Codebooks and Fuzzy Channels", 15th February 2006, GNCS meeting, Milano, Italy.
- "Multi-Agent Simulation of Protein Folding", 13th December 2005, FIRB meeting, Verona, Italy.
- "Perspectives on concurrency and Biological Systems", 12th December 2005, SISSA, Trieste, Italy.
- "Multi-Agent Simulation of Protein Folding", 16th September 2005, student session at BCI 2005, Dobbiaco, Italy.
- "Multi-Agent Simulation of Protein Folding", 20th July 2005, student session at EASSS 2005, Utrecht, NL.
- "Multi-Agent Simulation of Protein Folding", 8th July 2005, EBI, Cambridge, UK.
- "Protein Folding Simulation in CCP", 3rd June 2004, student session at 1st International School on Advanced BioMedicine and BioInformatics, Lipari, Italy.

Dissemination Activities

- **2021** - Invited workshop "Intelligenza Artificiale" by gruppo78, Urban Center, Trieste.
- **2021** - Seminars on "Introduction to Deep Learning" for the Generali Academy "Actuary of the future", organized by MiB- Trieste.
- **2021** - Organization of the panel "Big Data tre volte al giorno", Trieste Next, 2021.
- **2021** - Participation as a panelist to "From High Performance Computing to Artificial Intelligence: University education" at "EuroBioHighTech 2021".
- **2021** - Participation to AI2S Research Fair - organized by the Artificial Intelligence Student Society.
- **2021** - Article on Agenda Digitale (online) on "La via italiana all?intelligenza artificiale? Servono più fondi all?università"
- **2020** - Seminars on "Introduction to Deep Learning" for the Generali Academy "Actuary of the future", organized by MiB- Trieste.
- **2020** - Interview at Buongiorno Regione FVG (local RAI TV program) on Artificial Intelligence.
- **2020** - Participation as a panelist to "La Libertà al tempo dell?Intelligenza Artificiale", part of the journalism festival "Dialoghi"
- **2020** - Participation as a panelist to "Artificial Intelligence Education in Trieste" part of Big Bang Data 2020 at ESOF 2020.
- **2020** - Participation as a panelist to "From High Performance Computing to Artificial Intelligence: University education" at "EuroBioHighTech 2020", part of ESOF 2020.
- **2020** - Interview at Buongiorno Regione FVG (local RAI TV program) on the new bachelor program in Artificial Intelligence and Data Analytics.
- **2020** - Participation to the TV program "TG-COM24 - La città della scienza" on Artificial Intelligence.
- **2020** - Participation to AI2S Research Fair - organized by the Artificial Intelligence Student Society.
- **2020** - Participation to "Orientamento peer to peer" for high school pupils.
- **2019** - Participation to Magazzino 26, episode 3, a RAI Scuola National TV program on scientific dissemination. Interview on big data and artificial intelligence.
- **30 December 2019** - Interview in Buongiorno Regione (local RAI TV program) on Artificial Intelligence.
- **September 2019** - Discussant in the panel for Trieste Next: "Quali regole per l'intelligenza artificiale?".
- **September 2019** - Proponent of the conference for Trieste Next: "Fake news e polarizzazione: come cambia l'informazione ai tempi di internet" - a dialogue between Fabiana Zollo (computer scientist) and Davide Casali (Journalist).
- **18 April 2019** - Discussant in the panel with Fabrizio Barca on the programmatic document of the forum in Inequalities and Diversities.
- **28-30 September 2018** - Proponent of the dissemination laboratory for Trieste Next: "Intelligenza Artificiale - tra arte ed immaginazione" (with A. Ansuini).
- **29th September 2018** - Proponent of the conference for Trieste Next: "L'uomo e le macchine intelligenti: come l'intelligenza artificiale sta cambiando le nostre vite" - a dialogue between Marcello Pelillo (computer scientist) and Simone Arnoldi (Sociologist).

- **23rd May 2018** - Lecture at Formindustria Mechanics 4.0 formation course on "An Introduction to Deep Learning".
- **8th-10th March 2018** - Participation to EDUfair - Belgrade, as delegate of University of Trieste.
- **28th February 2018** - Presentation at Liceo Scientifico Duca D'Abruzzi, Gorizia, on "How Artificial Intelligence is Changing the World".
- **20th February 2018** - Seminar on "Science meets humanities - discussion between a computer scientist and an historian", with Tullia Catalan, Humanities Department, University of Trieste.
- **16th January 2018** - Lecture at Confindustria formation course on "How Artificial Intelligence is Changing the World".
- **13th December 2017** - Lecture at Formindustria Health 4.0 formation course on "An Introduction to Deep Learning".
- **15th March 2016** - "CLERICI VAGANTES: giovani scienziati dell'Italia che invecchia", organised by Circolo della Cultura e delle Arti of Trieste, at the Public Library Largo Papa Giovanni XXIII Trieste.

Patents

- U. Lucangelo, L. Bortolussi, A. Casagrande, F. Fabris, M. Borelli, F. Quintavalle (2016). Apparatus and method for control of parameters of an assisted ventilation machine. International patent number 102016000103298. University of Trieste.

Teaching Activity

Invited Lectures

- Scientific Programming and Algorithms, January-February 2021, SISSA, Italy. Nine hours on algorithms for data science.
- Fluid and Mean Field Approximation. September-October 2013, IMT Lucca, Italy. Six hours lectures, to to PhD students in computer science.
- Formal Methods for Complex Systems. May 2012, Mazarik University, Brno, Czech Republic. Fifteen hours lectures, to PhD students.

Courses Taught

- Informatica, AA. 2020-2021, Laurea Triennale in Matematica, Universitá di Trieste (24 ore).
- Probabilistic Machine Learning, AA. 2020-2021, Master Program in Data Science and Scientific Computing, University of Trieste.
- Stochastic Modelling and Simulation, AA. 2020-2021, Master Program in Data Science and Scientific Computing, University of Trieste.
- Statistical Machine Learning, AA. 2019-2020, Master Program in Data Science and Scientific Computing, University of Trieste.
- Stochastic Modelling and Simulation, AA. 2019-2020, Master Program in Data Science and Scientific Computing, University of Trieste.
- Statistical Machine Learning, AA. 2018-2019, Master Program in Data Science and Scientific Computing, University of Trieste.

- Stochastic Modelling and Simulation, AA. 2018-2019, Master Program in Data Science and Scientific Computing, University of Trieste.
- Statistical Machine Learning, AA. 2017-2018, Master Program in Data Science and Scientific Computing, University of Trieste.
- Stochastic Modelling and Simulation, AA. 2017-2018, Master Program in Data Science and Scientific Computing, University of Trieste.
- Modelli Computazionali, AA. 2016/2017, Laurea Magistrale in Matematica, Università di Trieste.
- Statistica Computazionale, AA. 2016/2017, Laurea Magistrale in Matematica, Università di Trieste.
- Modelli Computazionali, AA. 2015/2016, Laurea Magistrale in Matematica, Università di Trieste.
- Statistica Computazionale, AA. 2015/2016, Laurea Magistrale in Matematica, Università di Trieste.
- Modelling and Simulation, Winter Semester 2014/2015, Master in Computer Science, Saarland University.
- Computational Modelling of Complex Networks, Block Course, September 2014, Master in Computer Science, Saarland University.
- Metodi Formali in Informatica, AA. 2013/2014, Laurea Magistrale in Matematica, Università di Trieste.
- Metodi Formali in Informatica, AA. 2012/2013, Laurea Magistrale in Matematica, Università di Trieste.
- Algoritmi Avanzati. AA. 2010/2011, Laurea Triennale in Informatica, Università di Trieste.
- Algoritmi e Strutture Dati. AA. 2010/2011, Laurea Triennale in Ingegneria dell'Informazione, Università di Trieste (con A. Sgarro).
- Informatica (modulo in corso integrato). AA. 2010/2011, Laurea Triennale in Tecnico di Laboratorio, Universitá di Trieste.
- Algoritmi e Strutture Dati. AA. 2009/2010, Laurea Triennale in Informatica, Università di Trieste.
- Informatica 2. AA. 2009/2010, Laurea Specialistica in Infermieristica ed Ostetricia, Università di Trieste.
- Informatica (modulo in corso integrato). AA. 2009/2010, Laurea Triennale in Tecnico di Laboratorio, Universitá di Trieste.
- Algoritmi Avanzati (modulo A). AA. 2009/2010, Laurea magistrale in Informatica, Universitá di Trieste.
- Algoritmi e Strutture Dati. AA. 2008/2009, Laurea Triennale in Informatica, Università di Trieste.
- Logica e Linguaggi (in collaborazione con il prof. Andrea Sgarro), AA. 2008/2009, Laurea Triennale in Informatica, Università di Trieste.
- Sistemi Informativi I e II. AA. 2007/2008, Laurea Specialistica in Infermieristica ed Ostetricia, Università di Trieste.
- Algoritmi e Strutture Dati. AA. 2007/2008, Laurea Triennale in Informatica, Università di Trieste.
- Algoritmi e Strutture Dati. AA. 2006/2007, Laurea Triennale in Informatica, Università di Trieste.
- A Short course in Computational Systems Biology. AA 2006-2007, PhD in Genomics, SISSA (Institute for Advanced Studies), Trieste.
- Bioinformatica — Computational Systems Biology. AA. 2006-2007, Laurea Specialistica in Biotecnologie Sanitarie, Università di Udine.

- Fondamenti Logici dell'Informatica — Logics for Computer Science. AA. 2006-2007, Laurea Triennale in Informatica, Università di Trieste.
- Fondamenti Logici dell'Informatica — Logics for Computer Science. AA. 2005-2006, Laurea Triennale in Informatica, Università di Trieste.
- Laboratorio di Algoritmi e Strutture Dati — Exercitations of Algorithms and Data Structures. AA. 2005-2006, Laurea Triennale in Informatica, Università di Udine.
- Teoria dell 'Informazione- Information Theory (Second Module- Channel Codes). AA. 2004-2005, Laurea Specialistica in Informatica, Università di Udine.

Supervisor of the following dissertations

- Arianna Tasciotti, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2021.
- Gaia Saveri, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2021.
- Matteo Boi, Laurea Triennale in Fisica, Università di Trieste, 2021.
- Giacomo Rossato, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2021.
- Emanuele Ballarin, Laurea Triennale in Fisica, Università di Trieste, 2020.
- Francesco Franchina, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2020.
- Domagoj Korais, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2020.
- Alex Dagri, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2019.
- Ginevra Carbone, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2019.
- Giuseppe Gallo, Laurea Magistrale in Matematica, Università di Trieste, 2019.
- Francesca Randone, Laurea Magistrale in Matematica, Università di Trieste, 2019.
- Laura Falciani, Laurea Magistrale in Matematica, Università di Trieste, 2019.
- Kevin Bianco, Laurea Triennale in Fisica, Università di Trieste, 2019.
- Lorenzo Taroni, Laurea Triennale in Fisica, Università di Trieste, 2019.
- Francesco Cicala, Laurea Triennale in Fisica, Università di Trieste, 2018.
- Michele Rispoli, Laurea Triennale in Matematica, Università di Trieste, 2017.
- Luca Palmieri, Laurea Magistrale in Matematica, Università di Trieste, 2017.
- Elia Calderan, Laurea Magistrale in Matematica, Università di Trieste, 2017.
- Mara Ghersinic, Laurea Magistrale in Matematica, Università di Trieste, 2017.
- Antonio Toreno, Laurea Magistrale in Matematica, Università di Trieste, 2017.
- Francesca Cairoli, Laurea Magistrale in Matematica, Università di Trieste, 2017.
- Davide Prandini, Laurea Triennale in Matematica, Università di Trieste, 2017.

- Sara Battiston: Gestione dell'incertezza per modelli di diffusione epidemica, Laurea Triennale in Matematica, Università di Trieste, 2015.
- Miriam Bah: Moment reconstruction by phase type distributions, Master in Computer Science, Saarland University, 2015.
- Mayank Goyal: Lumping of Approximate Master Equations for Networks, Master in Computer Science, Saarland University, 2015.
- Ludovica Luisa Vissat: Modelling public transportation in smart cities: the Edinburgh bus network. Laurea Magistrale in Matematica, Università di Trieste, 2014. Co-supervised by Stephen Gilmore, University of Edinburgh.
- Maddalena Raineri: MeSSPA: a message-based spatial stochastic process algebra. Laurea Magistrale in Matematica, Università di Trieste, 2014. Co-supervised by Jane Hillston, University of Edinburgh.
- Sara Bufo: A Temporal Logic Approach to Monitor Patients Receiving Mechanical Ventilation" Laurea Magistrale in Matematica, Università di Trieste, 2014. Co-supervised by Umberto Lucangelo, Dept. of Medicine, University of Trieste.
- Roberta Lanciani: Central limit approximation for stochastic model checking. Laurea Magistrale in Matematica, Università di Trieste, 2012.
- Laura Nenzi: A logic-based approach to determine the connection between biological modules and their behavioural properties. Laurea Magistrale in Matematica, Università di Trieste, 2012.
- Ilaria Gandin: Integrating Continuous and Discrete Dynamics for Bio-PEPA Models of Biological Systems, Laurea Magistrale in Matematica, Università di Trieste, 2012.
- Ludovica Luisa Vissat: Comportamenti emergenti nella dinamica delle folle. Laurea Triennale in Matematica, Università di Trieste, 2011.
- Diego Banovaz: Implementazione in .NET di un framework per l'analisi di sistemi biologici basato sulla programmazione concorrente con vincoli. Laurea Magistrale in Ingegneria Informatica, Università di Trieste, 2011.
- Gianfranco Gallizia: protocolli multiagente per la predizione di strutture proteiche. Laurea Triennale in Informatica, Università di Trieste, 2011.
- Andrea Cervesato: software per l'analisi filogenetica di dati sintattici in linguistica storica. Laurea Triennale in Informatica, Università di Trieste, 2011.
- Luca Macorin: Implementazione di programmin per lo studio di lingue possibili, Laurea Triennale in Informatica, Università di Trieste, 2009.
- Margherita Francescatto: Applicazione del clustering markoviano a sequenze biologiche per la classificazione di regioni ultra-conservate, Laurea Specialistica in Matematica, Università di Trieste, 2008.
- Diego Banovaz: Un'implementazione Java di Stochastic Concurrent Constraint Programming, Laurea Triennale in Informatica, Università di Trieste, 2008.
- Florida Nanushi: Modelli matematici del ciclo cellulare, Laurea Triennale in Informatica, Università di Trieste, 2008.
- Alja Sturman: Inferenza Filogenetica in Constraint Logic Programming, Laurea Triennale in Informatica, Università di Trieste, 2008.
- Inés Gonzaléz Inan: Un approccio euristico per il problema della sottostringa più vicina, Laurea Specialistica in Matematica, Università di Trieste, 2007.
- Fabrizio Torretta: Algoritmi per il problema della Clique, Laurea di primo Livello in Informatica, Università di Trieste, 2007.

Co-supervisor of the following dissertations

- Andrea Lorenzon, Laurea Magistrale in Data Science and Scientific Computing, Università di Trieste, 2020.
- Franco Corazza: Equazioni di Reazione Diffusione per G-Proteine: Simulazione su Geometrie Complesse, Laurea Magistrale in Matematica, Università di Trieste, 2015.
- Simone Fonda: Simulazione combinatoria a vincoli di mappe di interazione molecolare, Laurea magistrale in informatica, Università di Pisa, relator: prof. Pierpaolo Degano and Prof. Alberto Policriti.
- Cristiano Crescenti: Implementazione dei Bundled Suffix Trees, Laurea di primo Livello in Informatica, Università di Udine, relator: prof. Alberto Policriti, 2007.
- Tonolo Piero: Implementazione MPI di un metodo multiagente per la predizione di struttura di proteine. Laurea in Informatica, vecchio ordinamento, Università di Udine, relator: prof. Agostino Dovier, 2006.
- Zardini Marco, Simulazione concorrente del processo di folding di proteine. Laurea di primo Livello in Informatica, Università di Udine. Relator: prof. Agostino Dovier, 2005.
- Pignaton Fabio, Simulazione multiagente del processo di folding di proteine. Laurea di primo Livello in Informatica, Università di Udine. Relator: prof. Agostino Dovier, 2005.
- Pivetta Fabio, Determinazione dei Self-avoiding Walks su vari reticoli: algoritmo slithering snake. Laurea di primo Livello in Informatica, Università di Udine. Relator: prof. Agostino Dovier, 2005.
- D'Arrigo Giulio, Determinazione dei Self-avoiding Walks su vari reticoli: algoritmo del pivot. Laurea di primo Livello in Informatica, Università di Udine. Relator: prof. Agostino Dovier, 2005.
- Bosco Matteo, Studio dei SAW su reticolo SQ. Laurea di primo Livello in Informatica, Università di Udine. Relator: prof. Agostino Dovier, 2004.

Publications

Books

1. L. Bortolussi (2008). Computational Systems Biology With Constraints. Stochastic modeling of biological systems with concurrent constraint programming. VDM Verlag Dr. Mueller e.K., Germany, ISBN: 978-3-639-08875-5.

Edited Books, Journal Issues, and Proceedings

2. L. Bortolussi, G. Sanguinetti (2019). Computational Methods in Systems Biology: 17th International Conference, CMSB 2019, Trieste, Italy, September 18?20, 2019, Proceedings. Lecture Notes in Computer Science 11773.

3. L Bortolussi, N Bertrand (2019). Special Issue on Quantitative Evaluation of Systems in ACM Transactions on Modeling and Computer Simulation (TOMACS) 29 (4), 1-2.

4. N. Bertrand, L. Bortolussi, editors (2017). Proceedings of the 14th International Conference on Quantitative Evaluation of Systems, QEST 2017, Berlin, Germany, September 5-7, 2017. Lecture Notes in Computer Science 10503, Springer, ISBN 978-3-319-66334-0.

5. N. Bertrand, L. Bortolussi, H. Wiklicky, guest editors (2016). Special Issue of *Theoretical Computer Science* on Quantitative Aspects of Programming Languages and Systems, vol 91.

6. E. Bartocci, L. Bortolussi, and S. Smolka, guest editors (2014). Special Issue of *Information and Computation* on Hybrid Systems and Biology.

7. N. Bertrand, L. Bortolussi, editors (2014). Proceedings of the 12th International Workshop on Quantitative Aspects of Programming Languages and Systems, QAPL 2014, April 12-13, Grenoble. Electronic Proceedings in Theoretical Computer Science, vol. 154. DOI: 10.4204/EPTCS.154, ISSN: 2075-2180.

8. L. Bortolussi, M.L. Bujorianu, and G. Pola, editors (2013). Proceedings of the Third International Workshop on Hybrid Autonomous Systems, HAS 2013, March 17, 2013, Rome, Italy. Electronic Proceedings in Theoretical Computer Science, vol. 124. DOI: 10.4204/EPTCS.124, ISSN: 2075-2180

9. L. Bortolussi, H. Wiklicky, editors (2013). Proceedings of the Eleventh International Workshop on Quantitative Aspects of Programming Languages and systems, QAPL 2013, March 23-24, 2013, Rome, Italy. Electronic Proceedings in Theoretical Computer Science, vol. 117. DOI: 10.4204/EPTCS.117, ISSN: 2075-2180

10. E. Bartocci, L. Bortolussi, editors (2012). Proceedings of the First International Workshop on Hybrid Systems and Biology, HSB 2012, September 3, 2012, Newcastle Upon Tyne, UK. Electronic Proceedings in Theoretical Computer Science, vol. 92. DOI: 10.4204/EPTCS.92, ISSN: 2075-2180

Book Chapters

11. Bortolussi, Luca, Francesca Cairoli, Nicola Paoletti, and Scott D Stoller (2019). Conformal Predictions for Hybrid System State Classification. In From Reactive Systems to Cyber-Physical Systems, LNCS 11500, 225?41. Springer.

12. A. Andreychenko, L. Bortolussi, R. Grima, P. Thomas, V. Wolf (2017) Distribution Approximations for the Chemical Master Equation: Comparison of the Method of Moments and the System Size Expansion. In F. Graw, F. Matthäus, J. Pahle editors, Modeling Cellular Systems. Contributions in Mathematical and Computational Sciences, vol 11. Springer.

13. L. Bortolussi,and N. Gast (2016). Mean-field limits beyond ordinary differential equations. In Formal Methods for the Quantitative Evaluation of Collective Adaptive Systems, M. Bernardo, R. De Nicola and J. Hillston eds, Lecture Notes in Computer Science, vol 9700, Springer-Verlag, pag 61-82. DOI: 10.1007/978-3-319-34096-8_3

14. L. Bortolussi and J. Hillston (2013). Checking Individual Agent Behaviours in Markov Population Models by Fluid Approximation. In: Formal Methods for Dynamical Systems, M. Bernardo and E. P. de Vink and A. Di Pierro and H. Wiklicky eds, Lecture Notes in Computer Science, vol 7938, Springer-Verlag, pag 113-149,. DOI: 10.1007/978-3-642-38874-3_4. ISBN: 978-3-642-38873-6.

15. L. Bortolussi, A. Sgarro, G. Longobardi, and C. Guardiano (2011). How Many Possible Languages Are There? In: Biology, Computation and Linguistics - New Interdisciplinary Paradigms, Bel-Enguix G., Dahl V., Jiménez-López M. D. eds, IOS Press, pp. 168–179. ISBN: 978-1-607-50761-1.

16. L. Bortolussi and A. Policriti (2008). Hybrid Systems and Biology. Continuous and Discrete Modeling for Systems Biology. In: M. Bernardo, P. Degano, and G. Zavattaro eds, Formal Methods For Computational System Biology. Lecture Notes in Computer Science, vol. 5016, Springer-Verlag, pag. 424–448, ISBN/ISSN: 978-3-540-68892-1.

Papers on International Scientific Journals

17. T Waizmann, L Bortolussi, A Vandin, M Tribastone. Improved estimations of stochastic chemical kinetics by finite-state expansion. Proceedings of the Royal Society A 477 (2251), 20200964

18. G Roncoroni, C Fortini, L Bortolussi, N Bienati, M Pipan. Synthetic seismic data generation with deep learning. Journal of Applied Geophysics 190, 104347

19. F. Randone, L. Bortolussi, M. Tribastone: Refining Mean-field Approximations by Dynamic State Truncation. Proc. ACM Meas. Anal. Comput. Syst. 5(2): 25:1-25:30 (2021).

20. L. Bortolussi, F. Cairoli, N. Paoletti, S. Smolka, S. Stroller (2021). Neural Predictive Monitoring and a Comparison between a Frequentist and a Bayesian Approach. International Journal on Software Tools for Technology Transfer, 23(4): 615-640.

21. A Ceolin, C Guardiano, G Longobardi, MA Irimia, L Bortolussi, A Sgarro (2021). At the boundaries of syntactic prehistory. Philosophical Transactions of the Royal Society B 376 (1824).

22. G Grossmann, L Bortolussi, V Wolf (2020). Efficient simulation of non-Markovian dynamics on complex networks. Plos one 15 (10).

23. L Bortolussi, J Hillston, M Loreti (2020). Fluid approximation of broadcasting systems. Theoretical Computer Science, 816: 221-248.

24. L. Bortolussi, L. Cardelli, M. Kwiatkowska, L. Laurenti (2019) Central limit model checking. ACM Transactions on Computational Logic (TOCL) 20 (4), 1-35.

25. Castelpietra, G., Bortolussi, L., Gobbato, M., Arnoldo, L., Balestrieri, M., and Wettermark, B. (2019). Discontinuation of antidepressants in suicides findings from the Friuli Venezia Giulia Region, Italy, 2005?2014. Basic and clinical pharmacology and toxicology, 124(3), 312-320.

26. L. Bortolussi, N. Gast, M. Tribastone (2018). Size expansions of mean field approximation: Transient and steady-state analysis. Performance Evaluation, 129: 60-80.

27. L. Nenzi, L. Bortolussi, V. Ciancia, M. Loreti, And M. Massink (2018). Qualitative and Quantitative Monitoring of Spatio-Temporal Properties with SSTL. Logical Methods in Computer Science, 14(4).

28. L. Bortolussi, R. Lanciani, L. Nenzi (2018). Model checking Markov population models by stochastic approximations. Information and Computation, 262: 189-220.

29. C. Kyriakopoulos, G. Grossmann, V. Wolf, L. Bortolussi (2018). Lumping of degree-based mean-field and pair-approximation equations for multistate contact processes. Physical Reviews E, 97, 012301.

30. M. Backenkohler, L. Bortolussi, V. Wolf (2018) Moment-Based Parameter Estimation for Stochastic Reaction Networks in Equilibrium. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 15(4): 1180-1192, 10.1109/TCBB.2017.2775219.

31. E. Bartocci, L. Bortolussi, T. Brázdil, D. Milios, G. Sanguinetti (2017). Policy learning in continuous-time Markov decision processes using Gaussian Processes. Performance Evaluation 116: 84-100.

32. L. Bortolussi, D. Milios, G. Sanguinetti (2016). Smoothed Model Checking for Uncertain Continuous Time Markov Chains. Information and Computation. 247, 235-253.

33. L. Bortolussi (2016). Hybrid Behaviour of Markov Population Models. Information and Computation. 247, 37-86.

34. L. Bortolussi, L.P. Dinu, L. Franzoi, A. Sgarro (2015). Coding Theory: A General Framework and Two Inverse Problems. Fundamenta Informaticae. 141(4): 297–310.

35. L. Bortolussi, G. Sanguinetti (2015). Learning and Designing Stochastic Processes from Logical Constraints. Logical Methods in Computer Science. 11.

36. E. Bartocci, L. Bortolussi, L. Nenzi, G. Sanguinetti (2015). System Design of Stochastic Models using Robustness of Temporal Properties. Theoretical Computer Science. 587: 3–25.

37. L. Bortolussi, J. Hillston (2015). Model Checking Single Agent Behaviours by Fluid Approximation. Information and Computation. 242: 183–226.

38. C. Bodei, L. Bortolussi, D. Chiarugi, M.L. Guerriero, A. Policriti, A. Romanel (2015). On the impact of discreteness and abstractions on modelling noise in gene regulatory networks. Computational Biology and Chemistry. 56: 98–108.

39. L. Bortolussi, R. Hayden (2013). Bounds on the deviation of discrete-time Markov chains from their mean-field model. *Performance Evaluation*. 70(10): 736-749 (special issue of PERFORMANCE 2013).

40. L. Bortolussi, J. Hillston, D. Latella, M. Massink (2013). Continuous Approximation of Collective Systems Behaviour: a Tutorial. *Performance Evaluation*. 70(5): 317-349.

41. V. Galpin, L. Bortolussi and J. Hillston (2013). HYPE: Hybrid modelling by composition of flows. *Formal Aspects of Computing*, 25(4): 503-541.

42. L. Bortolussi and A. Policriti (2013). (Hybrid) Automata and (Stochastic) Programs The hybrid automata lattice of a stochastic program. *Journal of Logic and Computation*, 23(4):761-798.

43. L. Bortolussi and A. Policriti (2012). Studying cancer-cell populations by programmable models of networks. *Network Model Analysis in Health Informatics and Bioinformatics*, 1:117–133.

44. L. Bortolussi, L. Dinu, and A. Sgarro (2012). Spearman permutation distances and Shannon's distinguishability. *Fundamenta Informaticae*, 118(3): 245-252.

45. L. Bortolussi, A. Policriti (2010). Hybrid dynamics of stochastic programs. *Theoretical Computer Science*, vol. 411(20), April 2010, pag. 2052-2077, ISSN 0304-3975, DOI: 10.1016/j.tcs.2010.02.008.

46. L. Bortolussi and A. Policriti (2009). Dynamical Systems and Stochastic Programming - From Ordinary Differential Equations and Back. *Transactions of Computational Systems Biology*, vol. 11, pag. 216–267, ISSN: 1861-2075, doi: 10.1007/978-3-642-04186-0_11.

47. L. Bortolussi and A. Policriti (2009). Hybrid Dynamics of Stochastic π-Calculus. *Mathematics in Computer Science*, vol. 2(3), pag. 465–491, ISSN: 1661-8270.

48. L. Bortolussi and A. Policriti (2008). Modeling Biological Systems in Stochastic Concurrent Constraint Programming, *Constraints*, vol. 13(1); pag. 66–90, ISSN: 1383-7133.

49. L. Bortolussi, A. Dovier, and F. Fogolari (2007). Multi-Agent Protein Structure Prediction. *Journal of Multi Agents and Grid Systems*, vol. 3, n.2, ISSN: 1574-1702.

50. F. Fogolari, L. Pieri, A. Dovier, L. Bortolussi, G. Giuliarelli, A. Corazza, G. Esposito, P. Viglino (2007). Scoring predictive models using a reduced representation of proteins: model and energy definition. *BMC Structural Biology*, vol. 7 n. 1, ISSN: 1472-6807.

51. L. Bortolussi, A. Dovier, F. Fogolari (2007). Agent-based protein structure prediction. Multiagent and Grid Systems 3(2): 183-197.

52. A. Sgarro and L. Bortolussi (2006). Codeword Distinguishability in Minimum Diversity Decoding. *Journal of Discrete Mathematical Sciences and Criptography*, vol. 9, n.3, p. 487–502, ISSN: 0972-0529.

53. L. Bortolussi and P. Vicig (2004). Fuzzy Possibilities as Upper Previsions, *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems*, vol. 12, n. 5; p. 559-574, ISSN: 0218-4885.

Proceedings of Peer-Reviewed Conferences and Workshops (ISBN/ISSN)

54. Francesca Cairoli, Luca Bortolussi, Nicola Paoletti: Neural Predictive Monitoring Under Partial Observability. Runtime Verification 2021: 121-141

55. Michael Backenköhler, Luca Bortolussi, Gerrit Großmann, Verena Wolf: Abstraction-Guided Truncations for Stationary Distributions of Markov Population Models. Quantitative Evaluation of SysTems 2021: 351-371

56. F. Cairoli, G. Carbone, L. Bortolussi: Abstraction of Markov Population Dynamics via Generative Adversarial Nets. Computational Methods in Systems Biology 2021: 19-35

57. F. Randone, L. Bortolussi, M. Tribastone (2021). Refining Mean Field Approximation by Dynamic State Truncation, SIGMETRICS 2021.

58. Luca Bortolussi, Francesca Cairoli, Ginevra Carbone, Francesco Franchina, Enrico Regolin. (2021). Adversarial Learning of Robust and Safe Controllers for Cyber-Physical Systems. ADHS 2021.

59. Ginevra Carbone, Guido Sanguinetti, Luca Bortolussi (2021). Random Projections for Improved Adversarial Robustness. IJCNN 2021.

60. Michael Backenköhler, Luca Bortolussi, Gerrit Großmann, Verena Wolf (2021). Analysis of Markov Jump Processes under Terminal Constraints. TACAS (1) 2021: 210-229.

61. Ginevra Carbone, Matthew Wicker, Luca Laurenti, Andrea Patane, Luca Bortolussi, Guido Sanguinetti (2020). Robustness of Bayesian Neural Networks to Gradient-Based Attacks. NeurIPS 2020.

62. E Bartocci, L Bortolussi, M Loreti, L Nenzi, S Silvetti (2020). Moonlight: A lightweight tool for monitoring spatio-temporal properties, International Conference on Runtime Verification, 417-428.

63. L Nenzi, E Bartocci, L Bortolussi, M Loreti, E Visconti (2020). Monitoring Spatio-Temporal Properties (Invited Tutorial), International Conference on Runtime Verification, 21-46.

64. M Backenkoehler, L Bortolussi, V Wolf (2020) Bounding mean first passage times in population continuous-time Markov chains. International Conference on Quantitative Evaluation of Systems, 155-174

65. G Roncoroni, M Dossi, E Forte, M Pipan, L Bortolussi (2020) Velocity analysis on common offset GPR data: A deep learning approach. 18th International Conference on Ground Penetrating Radar, 388-391.

66. Backenkoehler, Michael, Luca Bortolussi, and Verena Wolf (2019). Control Variates for Stochastic Simulation of Chemical Reaction Networks, CMSB, LNCS 11773 42-59. Springer.

67. Bortolussi, Luca, Francesca Cairoli, Nicola Paoletti, Scott A Smolka, and Scott D Stoller (2019). Neural Predictive Monitoring, RV2019, LNCS 11757 129?47. Springer.

68. Bortolussi, Luca, Vincenzo Gulisano, Eric Medvet, and Dimitrios Palyvos-Giannas (2019). Automatic Translation of Spatio-Temporal Logics to Streaming-Based Monitoring Applications for IoT-Equipped Autonomous Agents, M4IoT '19: Proceedings of the 6th International Workshop on Middleware and Applications for the Internet of Things, 7?12.

69. Grossmann, Gerrit, Luca Bortolussi, and Verena Wolf (2019). Rejection-Based Simulation of Non-Markovian Agents on Complex Networks, COMPLEX NETWORKS 2019. Studies in Computational Intelligence, vol 881 , 349?61. Springer.

70. L Bortolussi, F Cairoli (2019). Bayesian Abstraction of Markov Population Models. International Conference on Quantitative Evaluation of Systems, LNCS 11785, 259-276.

71. G Grossmann, L Bortolussi (2019). Reducing spreading processes on networks to Markov population models. International Conference on Quantitative Evaluation of Systems, LNCS 11785, 292-309.

72. Bortolussi, L., Sanguinetti, G., and Silvetti, S. (2018). Bayesian Statistical Parametric Verification and Synthesis by Machine Learning. In 2018 Winter Simulation Conference (WSC) (pp. 381-394). IEEE

73. S. Silvetti, L. Nenzi, E. Bartocci, L. Bortolussi: Signal Convolution Logic. Proceedings of 16th International Symposium on Automated Technology for Verification and Analysis, ATVA 2018, LNCS 11138, 267-283, Springer.

74. L. Bortolussi, L. Palmieri: Deep Abstractions of Chemical Reaction Networks. Proceedings of the 16th International Conference on Computational Methods in Systems Biology, CMSB 2018, LNCS 11095, 21-38, Springer.

75. G. Grossmann, C. Kyriakopoulos, L. Bortolussi, V. Wolf: Lumping the Approximate Master Equation for Multistate Processes on Complex Networks. Proceedings of 15th International Conference of Quantitative Evaluation of Systems, QEST 2018. LNCS 11024: 157-172, Springer.

76. L. Nenzi, S. Silvetti, E. Bartocci, L. Bortolussi: A Robust Genetic Algorithm for Learning Temporal Specifications from Data. Proceedings of 15th International Conference of Quantitative Evaluation of Systems, QEST 2018. LNCS 11024: 323-338, Springer.

77. L. Bortolussi, S. Silvetti: Bayesian Statistical Parameter Synthesis for Linear Temporal Properties of Stochastic Models. Proceedings of 24th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, TACAS (2) 2018. LNCS 10806: 396-413, Springer.

78. S. Silvetti, A. Policriti, L. Bortolussi: An Active Learning Approach to the Falsification of Black Box Cyber-Physical Systems. Proceedings of 13th International Conference on Integrated Formal Methods, IFM 2017, LNCS 10510: 3-17.

79. E. Bartocci, L. Bortolussi, M. Loreti, L. Nenzi: Monitoring mobile and spatially distributed cyber-physical systems. Proceedings of the 15th ACM-IEEE International Conference on Formal Methods and Models for System Design, MEMOCODE 2017: 146-155.

80. L. Laurenti, A. Abate, L. Bortolussi, L. Cardelli, M. Ceska, M. Z. Kwiatkowska: Reachability Computation for Switching Diffusions: Finite Abstractions with Certifiable and Tuneable Precision. Proceedings of the 20th International Conference on Hybrid Systems: Computation and Control, HSCC 2017: 55-64.

81. L. Bortolussi, A. Policriti, S. Silvetti: Logic-Based Multi-objective Design of Chemical Reaction Networks. Proceedings of 5th International Workshop on Hybrid Systems Biology, HSB 2016, LNCS 9957: 164-178.

82. M. Backenöhler, L. Bortolussi, V. Wolf: Generalized Method of Moments for Stochastic Reaction Networks in Equilibrium. Proceedings of 14th International Conference on Computational Methods in Systems Biology, CMSB 2016. LNCS 9859: 15-29.

83. G. Caravagna, L. Bortolussi, G. Sanguinetti: Matching Models Across Abstraction Levels with Gaussian Processes. Proceedings of 14th International Conference on Computational Methods in Systems Biology, CMSB 2016. LNCS 9859: 49-66.

84. L. Bortolussi, L. Cardelli, M. Kwiatkowska, L. Laurenti: Approximation of Probabilistic Reachability for Chemical Reaction Networks Using the Linear Noise Approximation. Proceedings of 13th International Conference on Quantitative Evaluation of Systems, QEST 2016. LNCS 9826: 72-88.

85. E. Bartocci, L. Bortolussi, T. BrÃ¡zdil, D. Milios, G. Sanguinetti: Policy Learning for Time-Bounded Reachability in Continuous-Time Markov Decision Processes via Doubly-Stochastic Gradient Ascent. Proceedings of 13th International Conference on Quantitative Evaluation of Systems, QEST 2016. LNCS 9826: 244-259.

86. L. Bortolussi, M. Tschaikowski (2016) Fluid Analysis of Spatio-Temporal Properties of Agents in a Population Model. Proceedings of 23rd International Conference on Analytical and Stochastic Modelling Techniques and Applications, ASMTA 2016. LNCS 2948: 92–106.

87. L. Bortolussi and N. Gast (2016). Mean Field Approximation of Uncertain Stochastic Models. Proceedings of the 46th Annual IEEE/IFIP International Conference on Dependable Systems and Networks, DSN 2016.

88. C. Bock, L. Bortolussi, T. Krüger, L. Mikeev, V. Wolf (2015). Model-Based Whole-Genome Analysis of DNA Methylation Fidelity. Proceedings of the Fourth International Workshop on Hybrid Systems Biology, HSB 2015. LNCS 9271:141-155.

89. E. Bartocci, L. Bortolussi, D. Milios, L. Nenzi, G. Sanguinetti (2015). Studying Emergent Behaviours in Morphogenesis Using Signal Spatio-Temporal Logic. Proceedings of the Fourth International Workshop on Hybrid Systems Biology, HSB 2015. LNCS 9271:156–172.

90. L. Bortolussi, D. Milios, G. Sanguinetti (2015). Efficient stochastic simulation of systems with multiple time scales via statistical abstraction. Proceedings of the 13th International Conference on Computational Methods in Systems Biology, CMSB 2015. LNCS 9308:40–51.

91. L. Bortolussi, R. Lanciani (2015). Fluid Model Checking of Timed Properties. Proceedings of the 13th International Conference on Formal Modeling and Analysis of Timed Systems, FORMATS 2015. LNCS 9268:172–188.

92. L. Bortolussi, D. Milios, G. Sanguinetti (2015). Machine Learning Methods in Statistical Model Checking and System Design – A Tutorial Introduction. Accepted at the 15th International Conference on Runtime Verification, RV 2015. LNCS 9333:323–341.

93. L. Nenzi, L. Bortolussi, V. Ciancia, M. Loreti, M. Massink (2015). Qualitative and Quantitative Monitoring of Spatio-Temporal Properties. Proceedings of the 15th International Conference on Runtime Verification, RV 2015. LNCS 9333:21–37.

94. L. Bortolussi, D. Milios, G. Sanguinetti (2015). U-check: Model Checking and Parameter Synthesis under Uncertainty. Proceedings of the 12th International Conference on Quantitative Evaluation of SysTems, QEST 2015. LNCS 9259:89–104.

95. L. Bortolussi, R. De Nicola, V. Galpin, S. Gilmore, J. Hillston, D. Latella, M. Loreti and M. Massink (2015). CARMA: Collective Adaptive Resource-sharing Markovian Agents. Proceedings of the 13th Workshop on Quantitative Aspects of Programming Languages and Systems, QAPL 2015, London, UK. EPTCS 194, 16–31.

96. L. Bortolussi and J. Hillston (2015). Efficient Checking of Individual Rewards Properties in Markov Population Models. Proceedings of the 13th Workshop on Quantitative Aspects of Programming Languages and Systems, QAPL 2015, London, UK. EPTCS 194, 32–47.

97. L. Bortolussi, T. Krüger, T. Lehr and V. Wolf (2015). Rule-Based Modelling and Simulation of Drug-Administration Policies. Proceedings of Symposium on Theory of Modeling and Simulation, TMS'15.

98. L. Bortolussi, J. Hillston, M. Tribastone (2015). Fluid performability analysis of nested automata models. Proceeding of the Seventh International Workshop on the Practical Application of Stochastic Modelling (PASM). In: Electronic Notes in Theoretical Computer Science. 310: 27–47.

99. L. Bortolussi, L. Nenzi (2014). Specifying and Monitoring Properties of Stochastic Spatio-Temporal Systems in Signal Temporal Logic, Proceedings of the 8th International Conference on Performance Evaluation Methodologies and Tools, VALUETOOLS 2014, ICST, 66–73.

100. S. Bufo, E. Bartocci, G. Sanguinetti, M. Borelli, U. Lucangelo, L. Bortolussi (2014). Temporal Logic Based Monitoring of Assisted Ventilation in Intensive Care Patients. Proceeding of 6th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation. Specialized Techniques and Applications - ISoLA 2014. LNCS 8803:391–403.

101. L. Bortolussi, R. Lanciani (2014). Stochastic Approximation of Global Reachability Probabilities of Markov Population Models. Proceeding s of 11th European Workshop on Computer Performance Engineering, EPEW 2014 . LNCS 8721:224–239.

102. E. Bartocci, L. Bortolussi, G. Sanguinetti (2014). Data-Driven Statistical Learning of Temporal Logic Properties. Proceedings of 12th International Conference on Formal Modeling and Analysis of Timed Systems, FORMATS 2014. LNCS 8711:23–37.

103. L. Bortolussi, R. Paskauskas (2014). Mean-Field approximation and Quasi-Equilibrium reduction of Markov Population Models. Proceedings of 11th International Conference on Quantitative Evaluation of SysTems, QEST 2014.LNCS 8657:106–121.

104. L. Bortolussi, G. Sanguinetti (2014). A statistical approach for computing reachability of non-linear and stochastic dynamical systems. Proceedings of 11th International Conference on Quantitative Evaluation of SysTems, QEST 2014. LNCS 8657:41–56.

105. L. Bortolussi, M. Tribastone (2013). Differential Analysis of Interacting Automata with Immediate Actions. Proceedings of VALUETOOLS 2013, December 2013, Torino, Italy.

106. E. Bartocci, L. Bortolussi, L. Nenzi (2013). A temporal logic approach to modular design of synthetic biological circuits. Proceedings of CMSB 2013, September 2013, Vienna, Austria. LNCS 8130, pp. 164-177.

107. E. Bartocci, L. Bortolussi, L. Nenzi, G. Sanguinetti. (2013). On the Robustness of Temporal Properties for Stochastic Models. Proceedings Second International Workshop on Hybrid Systems and Biology, HSB 2013. EPTCS 125:3-19.

108. L. Bortolussi, G. Sanguinetti (2013). Learning and designing stochastic processes from logical constraints. Proceedings of QEST 2013, August 2013, Buenos Aires, Argentina. LNCS 8054, pp. 89-105.

109. L. Bortolussi, R. Lanciani (2013). Central Limit Approximation for Stochastic Model Checking. Proceedings of QEST 2013, August 2013, Buenos Aires, Argentina. LNCS 8054, pp. 123-138.

110. L. Bortolussi, D. Latella M. Massink (2013). Stochastic Process Algebra and Stability Analysis of Collective Systems. Proceedings of COORDINATION 2013, June 2013, Firenze, Italy. LNCS 7890, 1-15.

111. L. Bortolussi, J. Hillston (2012). Fluid approximation of CTMC with deterministic delays. Ninth International Conference on Quantitative Evaluation of Systems, QEST 2012, September 17-19, London, UK. IEEE Computer Society.

112. Luca Bortolussi, Jane Hillston (2012). Fluid Model Checking. Proceedings of 23rd International Conference on Concurrency Theory, CONCUR 2012, Newcastle upon Tyne, UK, September 4-7, 2012. LNCS 7454, 333-347.

113. L. Bortolussi and B. Van Houdt (2012). Fluid limit of an asynchronous optical packet switch with shared per link full range wavelength conversion. ACM SIGMETRICS/PERFORMANCE Joint International Conference on Measurement and Modeling of Computer Systems, SIGMETRICS '12, London, United Kingdom, June 11-15, 2012. pp 113–124.

114. L. Bortolussi and M. Tribastone (2012). Fluid Limits of Queueing Networks with Batches. Proceedings of the Third Joint WOSP/SIPEW International Conference on Performance Engineering, ICPE'12, ACM proceedings, Boston, MA, USA - April 22 - 25, 2012. pp 45–56.

115. L. Bortolussi, V. Galpin, and J. Hillston (2012). Hybrid performance modelling of opportunistic networks. Proceedings of the 10th Workshop on Quantitative Aspects of Programming Languages and Systems, QAPL 2012, Tallinn, Estonia, March 31, April 1, 2012. EPTCS 85, 106–121.

116. A. Pourranjbar, J. Hillston, and L. Bortolussi, (2012). Don't just go with the flow: cautionary tales of fluid flow approximation. Proceedings of the 9th European conference on Computer Performance Engineering, LNCS, 156–171.

117. L. Bortolussi and A. Policriti (2011). Programmable models of growth and mutation of cancer-cell populations. Proceedings Third International Workshop on Computational Models for Cell Processes (COMPMOD 2011). Aachen, 10 September 2011. EPTCS 67, 19–33, 2011

118. L. Bortolussi (2011). Hybrid Limits of Continuous Time Markov Chains. Eighth International Conference on Quantitative Evaluation of Systems, QEST 2011, Aachen, Germany, 5-8 September, 2011. IEEE Computer Society 2011, 3–12. ISBN 978-1-4577-0973-9.

119. L. Bortolussi, L. Dinu, and A. Sgarro (2011). Geometry of strings and possibilistic coding. Proceedings of the 14th Conference on Applied Stochastic Models and Data Analysis (ASMDA2011), Rome, 7-10 June 2011. ISBN 978-8-8467-3045-9

120. L. Bortolussi, V. Galpin, J. Hillston (2011). HYPE with stochastic events. Proceedings of the Ninth Workshop on Quantitative Aspects of Programming Languages (QAPL 2011), April 1-3, 2011, Saarbrücken, Germany. Electronic Proceedings in Theoretical Computer Science, 57, pp. 120–133.

121. L. Bortolussi, V. Galpin, J. Hillston, M. Tribastone (2010). Hybrid Semantics for PEPA. Proceedings of Seventh International Conference on the Quantitative Evaluation of Systems, QEST 2010, pp.181-190. IEEE Computer Society. ISBN/ISSN: 978-0-7695-4188-4.

122. L. Bortolussi, A. Sgarro (2010). Possibilistic coding: error detection vs. error correction. Proceedings of SMPS 2010, fifth international conference on Soft Methods in Probability and Statistics. Oviedo, Spain, September 28-October 1, 2010. Advances in Intelligent and Soft Computing, Springer-Verlag. ISBN/ISSN: 1867-5662.

123. L. Bortolussi (2010). Limit behavior of the hybrid approximation of Stochastic Process Algebras. To appear in: Proceedings of ASMTA 2010, Seventeenth International Conference on Analytical and Stochastic Modelling Techniques and Applications. Cardiff, UK, June 14-16, 2010. LNCS 6148, pp. 367-381. ISSN/ISBN: 0302-9743.

124. L. Bortolussi, A. Policriti (2009). Tales of Spatiality in stochastic Concurrent Constraint Programming. In: Proceedings of the First International Workshop on Logic-based Approaches in Bioinformatics, Bio Logical 2009. Reggio Emilia, Italy, December 12, 2009, AI*IA, p. 42–52, ISBN/ISSN: 978-88-903581-1-1.

125. L. Bortolussi, A. Policriti(2009). Hybrid Semantics of Stochastic Programs with Dynamic Reconfiguration. In: Proceedings of the Second International Workshop on Computational Models for Cell Processes, Electronic Proceedings in Theoretical Computer Science. Eindhoven, Netherlands, November 3, 2009. EPTCS, vol. 6, pag. 63–76, ISBN/ISSN: 2075-2180, doi: 10.4204/EPTCS.6.5.

126. V. Galpin, L. Bortolussi, and J. Hillston (2009). HYPE: a process algebra for compositional flows and emergent behavior. In: Proceedings of CONCUR 2009, Lecture Notes in Computer Science. Bologna, Italy, September 1–4, 2009. vol. LNCS 5710, pag. 305–320, Springer-Verlag, ISBN/ISSN: 0302-9743.

127. L. Bortolussi and A. Policriti (2009). Stochastic Programs and Hybrid Automata for (Biological) Modeling. In: Proceeding of 5th conference on Computability in Europe, CiE 2009, Lecture Notes in Computer Science. Heidelberg, Germany, July 19–24, 2009. LNCS 5635, pag. 37–48, Springer-Verlag, ISBN/ISSN: 0302-9743.

128. L. Bortolussi and M.G. Vigliotti (2009). CoBiC: Context-dependent Bioambient Calculus. In: Proceeding of the Seventh Workshop on Quantitative Aspects of Programming Languages, QAPL 2009, Electronic Notes in Theoretical Computer Science. York, UK, March 28–29, 2009. ENTCS 253, pag. 187–201, Elsevier, ISBN/ISSN: 1571-0661, doi: 10.1016/j.entcs.2009.10.012.

129. L. Bortolussi and A. Policriti (2008). Hybrid Semantics for Stochastic π-calculus. In: Proceedings of 3rd International Conference on Algebraic Biology, AB 2008, Lecture Notes in Computer Science. RISC, Castle of Hagenberg, Austria, July 31–August 2, 2008. LNCS 5147, pag. 40-57, Springer-Verlag, ISBN/ISSN: 0302-9743.

130. L. Bortolussi and A. Policriti (2008). The importance of being (a little bit) discrete. In: Proceedings of the 2nd International Workshop "From Biology to Concurrency and back", FBTC 2008, Electronic Notes in Theoretical Computer Science. Reykjavik, Iceland, July 12, 2008. ENTCS 229, pag. 75–92, Elsevier, ISBN/ISSN: 1571-0661, doi: 10.1016/j.entcs.2009.02.006.

131. L. Bortolussi and A. Policriti (2008). Hybrid approximation of Stochastic Concurrent Constraint Programming. In: Proceedings of the 17th IFAC World Congress. Seoul, South Korea, July 2008. ISBN/ISSN: 978-3-902661-00-5, doi: 10.3182/20080706-5-KR-1001.2419.

132. V. Galpin, L. Bortolussi, J. Hillston (2008). HYPE Applied to the Modelling of Hybrid Biological Systems. In: Proceedings of24th Conference of Mathematical Foundations of Programming Semantics, MFPS 2008, Electronic Notes in Theoretical Computer Science. University of Pennsylvania, USA, May 22–25, 2008. ENTCS 218, pag. 33-51. 218, Elsevier, ISBN/ISSN: 1571-0661.

133. L. Bortolussi, A. Sgarro, and L. Dinu (2008). Measures of fuzzy disarray in linguistic typology. In: Proceedings of the 12th conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2008. Malaga, Spain, 22-27 June 2008, MALAGA: IPMU, pag. 167-172, ISBN/ISSN: 978-84-612-3061-7.

134. L. Bortolussi (2008) . On the Approximation of Stochastic Concurrent Constraint Programming by Master Equation. Proceeding of the Sixth Workshop on Quantitative Aspects of Programming Languages, QAPL 2008, Electronic Notes in Theoretical Computer Science. Budapest, Hungary, March 29–30, 2008. ENTCS 220(3), pag. 163–180, Elsevier, ISBN/ISSN: 1571-0661, doi: 10.1016/j.entcs.2008.11.025

135. L. Bortolussi, S. Fonda, and A. Policriti (2007). Constraint-based simulation of biological systems described by Molecular Interaction Maps. Proceedings of IEEE conference on Bioinformatics and Biomedicine, BIBM 2007. Silicon Valley, USA, November 2007. IEEE computer society, p. 288–293, ISBN/ISSN: 0-7695-3031-1.

136. L. Bortolussi and A. Policriti (2007). Stochastic Concurrent Constraint Programming and Differential Equations. In: Proceeding of 5th International Workshop of Quantitative Aspects of Programming Languages, QAPL 2007, Electronic Notes in Theoretical Computer Science. Braga, Portugal, March 24–25, 2007. ENTCS 190(3); p. 27-42, Elsevier, ISBN/ISSN: 1571-0661.

137. L. Bortolussi and A.Sgarro (2006). Possibilistic channels for DNA word design. In: Proceedings of International Conference on Soft Methods in Probability and Statistics, SMPS 2006, Advances in Soft Computing Series. Bristol, UK, September 2006. Springer-Verlag, pag. 327–335, ISBN/ISSN: 1615-3871

138. L. Bortolussi, F. Fabris, and A. Policriti (2006). BuST - Bundled Suffix Trees. In: Proceedings of IFIP conference on Theoretical Computer Science, IFIP-TCS 2006. Santiago, Chile, August 2006. IFIP 209, pag. 91–102, Springer-Verlag, ISBN/ISSN: 0-387-34633-3.

139. L. Bortolussi and A. Sgarro (2006). Fuzzy Codebooks for DNA Word Design. Proceedings of International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2006. Paris, France, July 2006. ISBN/ISSN: 2-84254-112-X.

140. L. Bortolussi (2006). Stochastic Concurrent Constraint Programming. In: Proceedings of 4th International Workshop of Quantitative Aspects of Programming Languages, QAPL 2006, Electronic Notes in Theoretical Computer Science. Wien, Austria, April 2006. ENTCS 164(3); p. 65-80, Elsevier, ISBN/ISSN: 1571-0661

141. L. Bortolussi (2005). Concurrent Methodologies for Global Optimization. Doctoral Consortium. In: Proceedings of 21st International Conference of Logic Programming, ICLP 2005, Lecture Notes in Computer Science. Sitges, Spain, October 2005. LNCS 3368, Springer-Verlag, pag. 441-443, ISBN/ISSN: 0302-9743.

142. L. Bortolussi and H. Wiklicky (2005). A Distributed and Probabilistic Concurrent Constraint Programming Language. In: Proceedings of 21st International Conference of Logic Programming, ICLP 2005, Lecture Notes in Computer Science. Sitges, Spain, October 2005. LNCS 3368, Springer-Verlag, pag. 143–158, ISBN/ISSN: 0302-9743.

143. L. Bortolussi, A. Dal Palù, A. Dovier, and F. Fogolari (2004). Protein Folding Simulation in CCP, Proceedings of IX Convegno della Associazione Italiana Intelligenza Artificiale, AI*IA 2004, Perugia, Italy, September 2004.

144. L. Bortolussi and A. Sgarro (2004). Fuzzy Integrals and Error Correction in a Telephone Network with Sensitive Users. In: Proceedings of the International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, IPMU 2004. Perugia, Italy, July 2004. pag. 1503–1508, ISBN/ISSN: 88-87242-54-2.

Papers on National Scientific Journals

145. L. Bortolussi and A. Sgarro (2011). Language Sampling for Universal Grammars. *Rendiconti dell'istituto di matematica della Università di Trieste*, 43, 95–110. ISSN 0049-4704.

146. L. Bortolussi and A. Sgarro (2008). A Criterion for the Stochasticity of Matrices with Specified Order Relations. *Rendiconti dell'istituto di matematica della Università di Trieste*, vol. 40, pag. 55–64, ISSN 0049-4704.

147. L. Bortolussi and A. Sgarro (2007). Hamming-like distances for ill-defined strings in linguistic classification. *Rendiconti dell'istituto di matematica della Università di Trieste*, vol. 39, pag. 105–118, ISSN: 0049-4704.

148. L. Bortolussi, A. Dal Palù, A. Dovier, and F. Fogolari (2005). Agent-based Protein Folding Simulation. In *Intelligenza Artificiale*, Anno II, n. 1, ISSN: 1724-8035.

Proceedings of Conferences and Workshops (no ISBN/ISSN)

149. Luca Bortolussi, Giuseppe Maria Gallo, Laura Nenzi (2020). A kernel function for Signal Temporal Logic formulae. OVERLAY 2020: 29-34

150. Luca Bortolussi, Francesca Cairoli, Ginevra Carbone, Francesco Franchina (2020). Adversarial Learning of Robust and Safe Controllers for Cyber-Physical Systems. OVERLAY 2020: 77-81

151. Luca Bortolussi, Francesca Cairoli, Nicola Paoletti, Scott A. Smolka, Scott D. Stoller (2020). Bayesian Neural Predictive Monitoring. OVERLAY 2020: 95-100

152. L. Bortolussi (2011). A Rough Guide to Hybrid Limits of Continuous Time Markov Chains. In: Proceedings of 10th workshop on Process Algebras and Stochastically Timed Activities, PASTA 2010. Ragusa, Italy, September 2011. Extended Abstract.

153. L. Bortolussi, V. Galpin, J. Hillston (2010). Modeling Hybrid Systems with Stochastic Events in HYPE. In: Proceedings of 9th workshop on Process Algebras and Stochastically Timed Activities, PASTA 2010. London, UK, September 2010. Extended Abstract.

154. L. Bortolussi, A. Policriti (2010). Perspectives on Constraints, Process Algebras, and Hybrid Systems. In Proceedings of WCB2010, Sixth International Workshop on Constraint Based Methods for Bioinformatics. Edinburgh (UK), July 2010.

155. L. Bortolussi, A. Policriti (2009). Dynamical Compartments in stochastic Concurrent Constraint Programming. In: Proceedings of WCB09, Fifth Workshop on Constraint Based Methods for Bioinformatics. Lisbon (Portugal), 20th September 2009, pag. 9–18.

156. L. Bortolussi (2009) The Hybrid Way to Fluid Flow Approximation. In: Proceedings of 8th workshop on Process Algebras and Stochastically Timed Activities, PASTA 2009. Edinburgh, UK, August 2009. Abstract only.

157. L. Bortolussi, S. Fonda, and A. Policriti (2007). Constraint-based simulation of biological systems described by Molecular Interaction Maps. In: Proceedings of 3rd Workshop on Constraint Based Methods for Bioinformatics, WCB 2007. Porto, Portugal, September 2007.

158. L. Bortolussi and A. Policriti (2007). Hybrid approximation of Stochastic Concurrent Constraint Programming. In : Proceedings of 6th workshop on Process Algebras and Stochastically Timed Activities, PASTA 2007. London, UK, July 2007.

159. L. Bortolussi, S. Fonda, and A. Policriti (2007). Constraint-based simulation of biological systems described by Molecular Interaction Maps. In: Proceedings of Convegno Italiano di Programmazione Logica, CILC 2007. Messina, Italy, June 2007.

160. L. Bortolussi, M. Borelli, and A. Sgarro (2007). Maximum possibility vs. maximum likelihood decisions. In: Proceeding of Linz Seminar 2007. Linz, Austria, February 2007, LINZ: D. Dubois, E. P. Klement, R. Mesiar, pag. 12–17.

161. L. Bortolussi and A. Policriti (2006). Modeling Biological Systems in Stochastic Concurrent Constraint Programming. In: Proceedings of 2nd Workshop on Constraint Based Methods for Bioinformatics, WCB 2006. Nantes, France, September 2006.

162. L. Bortolussi and A. Policriti (2006). Connecting Process Algebras and Differential Equations for Systems Biology. In: Proceedings of 5th workshop on Process Algebras and Stochastically Timed Activities, PASTA 2006. London, UK, June 2006.

163. L. Bortolussi and A. Sgarro (2006). Channel Models for DNA Word Design. In: Proceedings of convegno della Società Italiana di Matematica Applicata ed Industriale, SIMAI 2006. Baia Samuele, Ragusa, Italy, 21-26 May 2006.

164. F. Fogolari, L. Pieri, L. Bortolussi, and A. Dovier (2006). A statistical empirical energy function for proteins. In: Proceedings of annual meeting of the Bioinformatics Italian Society, BITS 2006. Bologna, Italy, April 2006.

165. L. Bortolussi and A. Sgarro (2005). Constraint Satisfaction Problems on DNA Strings. In: Proceedings of 1st Workshop on Constraint Based Methods for Bioinformatics, WCB 2005. Sitges, Spain, October 2005.

166. L. Bortolussi, A. Dovier, and F. Fogolari (2005). Multi-Agent Simulation of Protein Folding. In: Proceedings of 1st International Workshop on Multi-Agent Systems for Medicine, Computational Biology, and Bioinformatics. MAS-BIOMED 2005, Utrecht, The Netherlands, July 2005.

167. L. Bortolussi, F. Fabris, and A. Policriti (2005). Bundled Suffix Trees, In: Proceedings of annual meeting of the Bioinformatics Italian Society, BITS 2005. Milano, Italy, March 2005.

168. L. Bortolussi, A. Dal Palù, A. Dovier, and F. Fogolari (2004). Protein Folding Simulation in Concurrent Constraint Programming. In: Proceedings of 2nd Workshop on Concurrent Models in Molecular Biology, BioConcur 2004. London, UK, August 2004.

169. L. Bortolussi, A. Dal Palù, and A. Dovier (2004). Constraint-based tools for protein folding. In: Proceedings of Convegno Italiano di Logica Computazionale, CILC'04. Parma, Italy, June 2004. pag. 365-367.

PhD Thesis

170. L. Bortolussi. Constraint-based approaches to stochastic dynamics of biological systems, University of Udine PhD Thesis Series, CS2007/1.

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