

Luca Bortolussi

Curriculum Vitae

July 9, 2015

Biographic Data

Name: Luca Bortolussi.

Date and Place of Birth: 01/07/1980, Latisana (UD), Italy.

Address: Via F. Severo 74, 34127, Trieste. Italy.

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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. Techniques of representation and management of incomplete knowledge”.

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

Employment

From 1/11/2015: Associate Professor of computer science, University of Trieste, Italy.

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, 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

My publications are predominantly in the areas of *quantitative formal methods*, both from a methodological viewpoint and with applications to *computational systems biology* and *performance evaluation*. I also have few papers in fields such as bioinformatics, string algorithms, fuzzy theory, and computational linguistic. My major contributions are: 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 thorough investigation of the underlying mathematical aspects. I am also pioneering the use of *mean-field approximations for approximating stochastic model checking* and the use of *advanced machine learning methods in the verification of formal properties*. I have published 18 papers in International Journals, 55 papers at major international peer-reviewed conferences and workshops, and contributed to 3 book chapters. My papers have received more than 800 citations overall according to Google Scholar. The majority of my papers are without the presence of my supervisor as co-author and I also have solo-authored papers among the most cited ones.

A more specific list of my main research interests follows:

- stochastic and hybrid modelling languages;
- techniques to approximate stochastic executions based on mean field or hybrid approaches;
- formal verification techniques for stochastic models, also using mean field or hybrid approaches;
- integration of quantitative formal methods (verification techniques) with machine learning techniques;
- applications to computational Systems Biology, performance evaluation, and socio-technical systems;
- foundational approaches to behavioural distances, logic, and learning.
- quantitative formal methods for dynamics on complex networks.
- machine learning and data analysis, with applications in complex systems modelling, health informatics and marketing.

Other research interests include:

- computational linguistics (evolution and phylogeny of natural languages);

- uncertainty management (fuzzy set theory, possibility theory, interval probabilities), with applications also in coding theoretical problems (DNA word design);
- approximate algorithms for strings, with application in bioinformatics;
- optimization algorithm, based on a multi-agent paradigm, with application in bioinformatics;

Linguistic skills

Italian: mother tongue.

English: fluent level (written and spoken).

French: school level (written and spoken).

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

Grants and fundings

Current grants:

- EU FP7 grant “QUANTICOL” (Strep project, FOCAS ICT call, www.quanticol.eu). From April 2013, 48 months (member of CNR unit).

Past Grants:

- 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 Calcoli 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).

PhD Students and Post-Docs

PhD boards:

- 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:

- Roberta Lanciani (IMT Lucca, co-supervised with Rocco De Nicola).
- Laura Nenzi (IMT Lucca, co-supervised with Rocco De Nicola).
- Simone Silvetti (Univ. of Udine, co-supervised with Alberto Policriti).

Community Service

Chairing of conferences and schools

- Appointed PC Chair of the Fourteenth International Conference on Quantitative Evaluation of SysTems, QEST 2017, to be held in Berlin.
- 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.
- 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.
- 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.
- Member of the steering committee of QEST (Quantitative Evaluation of SysTems), elected in 2013 until 2016.
- (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.

Program committees. **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 Evaluation 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 Evaluation 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

- 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.
- 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 APS (Applied probability society), 2013-2015.

Invited Talks at Conferences and Workshops

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

- “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, Dagstzul, 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.

Teaching Activity

Invited Lectures

- 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

- 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, Università 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, Università di Trieste.
- Algoritmi Avanzati (modulo A). AA. 2009/2010, Laurea magistrale in Informatica, Università 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

- Sara Battiston: XXXXX, 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 Cervasato: software per l'analisi filogenetica di dati sintattici in linguistica storica. Laurea Triennale in Informatica, Università di Trieste, 2011.
- Luca Macorin: Implementazione di programmi per lo studio di lingue possibili, Laurea Triennale in Informatica, Università di Trieste, 2009.
- Margherita Francescato: 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 González 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

- 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.
- Pignatton 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 Journal Issues and Proceedings

2. E. Bartocci, L. Bortolussi, and S. Smolka, guest editors (2014). Special Issue of *Information and Computation* on Hybrid Systems and Biology.
3. 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.
4. 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
5. 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
6. 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

7. 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.
8. 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.
9. 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

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