



# Alberto Policriti

## *Curriculum Vitae et Studiorum*

### Education

- 1980–1984 **“Laurea” degree in Mathematics**, *University of Turin, Italy, cum laude.*
- 1986 **CNR fellowship**, *Courant Insitute of Mathematical Sciences,, New York University, New York.*
- 1986-1988 **Master in Computer Science**, *Courant Insitute of Mathematical Sciences,, New York University, New York.*
- 1988-1990 **Ph.D. in Computer Science**, *Courant Insitute of Mathematical Sciences,, New York University, New York.*  
*Advisor prof. M. Davis*

### Academic, Administrative, and Visiting Positions

- 1986-1990 ENIDATA fellowship at CIMS-NYU
- 1989-1992 Researcher, University of Udine
  - 1991 Visiting member Robotics lab. NYU
  - 1992 Visiting member Robotics lab. NYU
- 1992-2000 Associate Professor, University of Udine
- 1998-2001 vice-Director of the Dept. of Mathematics and Computer Science
- 2000-today Full Professor, University of Udine
  - 2001 Visiting member at the Computer Science Department, University of Stanford (Sep.-Oct.)
- 2002 (Mar.) Visiting member at the NYU Bioinformatics Laboratory
- 2002-2006 Coordinator Biotechnology Program, University of Udine
- 2005 (Jul.) Visiting member at the “Laboratoire de Génomique Analitique”, University “Pierre et Marie Curie”, Paris
- 2006 (June) Scottish Informatics and Computer Science Alliance Distinguished Visitor
- 2004-06-07-08-10-12 Director of the summer school BCI (Biology, Computation and Information)
- 2008-2017 Coordinator of the PhD program in Informatics, Udine
  - 2013 Chairmar Annual Meeting of the Bioinformatics Italian Society
- 2013-14-15-16-17-18 Steering Committee Member of International Work-Conference on Bioinformatics and Biomedical Engineering
- 2015-2018 Vice President IGA (Institute of Applied Genomics)

*Dpt. of Mathematics, Computer Science and Physics, University of Udine. Applied Genomics Institute.*

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- 2016 Visiting member at the “Laboratoire de Génomique Analytique”, University “Pierre et Marie Curie”, Paris (Sept.-Oct.)
- 2017 Bioinformatics Technical Chairman, Computational Intelligence Methods for Bioinformatics and Biostatistics
- 2016-2018 Vice Director Scuola Superiore di Udine
- 2018-today Director Scuola Superiore di Udine

## Ph.D. students

- A. Dovier *Computable Set Theory and Logic Programming*, Ph.D. in Computer Science, Pisa-Udine
- A. Montanari *Metric and Layered Temporal Logic*, Ph.D., University of Amsterdam (co-promotor, promotor prof. J.F.A.K. van Benthem)
- G. D'Agostino *Modal Logic and Set Theory: Translation, Bisimulation and Interpolation*, Ph.D., University of Amsterdam (co-promotor, promotor prof. J.F.A.K. van Benthem)
- C. Piazza *Computing in Non Standard Set Theories* Ph.D. in Computer Science, Udine
- R. Gentilini *Graph Algorithms for Massive Data Sets* Ph.D. in Computer Science, Udine
- N. Vitacolonna *Intervals: decidability, algorithms, and games* Ph.D. in Computer Science, Udine
- A. Casagrande *Hybrid Systems: a first-order approach to verification and approximation techniques*. Ph.D. in Computer Science, Udine
- S. Scalabrin *Floating inside the genomes: from physical maps to transposable elements annotation* Ph.D. in Computer Science, Udine
- M. Zantoni *Bioinformatics support in a DNA sequence process* Ph.D. in Computer Science, Udine
- C. Del Fabbro *Repeated sequences in bioinformatics: assembly, annotation and alignments* Ph.D. in Computer Science, Udine
- F. Vezzi *Next Generation Sequencing Revolution Challenges: Search, Assemble, and Validate Genomes* Ph.D. in Computer Science, Udine
- A. Tomescu *Sets as Graphs* Ph.D. in Computer Science, Udine
- F. Nadalin *Paired is better: local assembly algorithms for NGS paired reads and applications to RNA-seq* Ph.D. in Computer Science, Udine
- R. Vicedomini *Alignment and reconciliation strategies for large-scale de-novo assembly* Ph.D. in Computer Science, Udine
- F. Galvan *First Quantization Table Detection in Double Compressed JPEG Images* Ph.D. in Computer Science, Udine
- N. Prezza *Compressed Computation for Text Indexing* Ph.D. in Computer Science and Mathematical and Physical Sciences, Udine
- S. Silveti *Combining Machine Learning and Formal Methods for Complex Systems Design*, Udine

## Research

### Topics

- Set-Theoretic Decidability and Combinatorial Problems
- Algorithms and Data-Structures for Compressed Computation
- Automated Deduction and Logic Decision Problems
- Languages for the Specification and Verification of Reactive Systems
- Algorithms and Techniques for Model Checking
- Algorithmic Aspects of Computational Biology and Bioinformatics
- Systems Biology

## Research statement

I started my research in Logic with special focus on set-theoretic decision procedures, deductive systems, and algorithms. My recent research interests have expanded to the (many) areas of interaction between Computer Science and Biology. In particular, I am now interested in the role and function of algorithmic ideas in Life Sciences. I had experiences in sequencing projects, in the analysis of epigenomic data, and in the application of verification and model-checking techniques to problems in Computational Biology. Starting from these experiences my main interests are now in the application of compressed computation techniques to large collections of genomic data, as well as in the design of new bioinformatics tools based on algorithmic ideas and methodologies.

## Editorial board

- International Journal on Data Mining and Bioinformatics
- Transactions on Computational Systems Biology
- Le Matematiche
- Network Modeling Analysis in Health Informatics and Bioinformatics
- Conference Papers in Computer Science
- Scientifica - Computational Biology
- (Former) LNAI book series of the Association of Logic, Language, and Information

## Other activities

- 1996-2004 Director of the Computer Science lab. at the School of Sciences of the University of Udine.
- 2001-today Director of the Laboratory for Bioinformatics, Verification, and Parallel Computation, Dipartimento di Matematica e Informatica, Università di Udine.
- Referee and program committee member for many international conferences and journals (including: Journal of Symbolic Computation, Communication on Pure and Applied Mathematics, Journal of Automated Reasoning, Theoretical Computer Science, Discrete Mathematics, Journal on Computational Biology, Bioinformatics, BMC-Bioinformatics Proceedings of the American Mathematical Society, PLOS ONE ).
- 2004-2013 Member of the Scientific Commission of the *Gruppo Nazionale per il Calcolo Scientifico* of the *Istituto Nazionale di Alta Matematica*.
- 2005-2008 Chairman of the *E. W. Beth Dissertation Prize* of the European Association for Logic, Language and Information.
- 2006 Member of the Bioinformatics Scientific Commission of the *CBM (Centro di Biomedicina Molecolare)*, Trieste.
- Co-founder and Director of the Bioinformatics division of the *IGA (Istituto di Genomica Applicata)*, Parco Scientifico e Tecnologico "L. Danieli", Udine.
- 2009-2010 Member of the committee of the *E. W. Beth Dissertation Prize* of the European Association for Logic, Language and Information.
- 2010 Member of the committee of the *Premio Tesi di Dottorato su argomenti di Informatica Teorica* of the Italian Chapter of the European Association of Theoretical Computer Science.
- European coordinator of the IEEE CS Technical Committee on Bioinformatics.
- 2013-2017 Member of the Council of the European Association for Theoretical Computer Science.
- 2015-today Vice-President IGA (Institute of Applied Genomics)
- 2016-today Vice-Director "Scuola Superiore", University of Udine.

## Support and Projects

1. "Fondo per gli Investimenti della Ricerca di Base (FIRB03).  
Project *LIBI: International Laboratory of Bioinformatics* Technological Research Units:- CINECA - INFN - SPACI/CACT-ISUFI, University of Lecce - IBM Semea Sud. Industrial partner, IBM. Scientific Research Units: - CNRBA (Istituto Tecnologie Biomediche, CNR, Section of Bari) - UNIBO (University of Bologna) - UNIMI (University of Milan) - CBM (Centro di Biomedicina Molecolare, Trieste). A. Policriti will operate as member of CBM.
2. Fondo speciale per la ricerca regionale in FVG, 02 - 04, *Formal verification, certification and model checking*

- for reactive, concurrent, and embedded systems. A. Policriti coordinator.
3. Fondo attrezzature di laboratorio, 02 - 05, Laboratory for Bioinformatics, Verification, and Parallel Computation. A. Policriti coordinator.
  4. Istituto Nazionale di Alta Matematica. Inter-group project 2003: *Metodi matematici e algoritmici per l'analisi di sequenze di nucleotidi e amminoacidi*. A. Policriti coordinator.
  5. Gruppo Nazionale Calcolo Scientifico project 2004: Bioinformatica: *Metodi computazionali e basi di dati per l'analisi di sequenze proteiche e di DNA*. A. Policriti coordinator.
  6. PRIN-Cofin project, 2004-06: *Computational Tools for Building and Checking Biological Systems Models* (in *Sybilla: Systems Biology: modellazione, linguaggi e analisi*). A. Policriti local coordinator.
  7. PRIN-Cofin project, 2007-09: *Biological systems, automata based hybrid models and model checking techniques* (in *BISCA: Biologically-inspired systems and calculi and their applications*). A. Policriti local coordinator.
  8. L.R. 11/2003 project, 2007: *BIOcheck A Scalable Computational Tool for Building and Checking Biological Models*. A. Policriti coordinator.
  9. INTAS european project *Algebraic and deduction methods in non-classical logic and their applications to Computer Science*. A. Policriti coordinator.
  10. Progetto bandiera *Epigen*: Sviluppo di algoritmi e software per l'analisi del metiloma. Principal Investigator.
  11. COST action *SeqAhead*. Member representative of Italy.
  12. Electrolux: "Algoritmi e tecniche di manipolazione dati per la gestione di sistemi per la ristorazione".

## Teaching

### 1992/93

1. *Teoria degli algoritmi e della calcolabilità* (S.M.F.N.);
2. *Lectures on Automated Deduction* (S.M.F.N.);

### 1993/94

1. *Teoria degli algoritmi e della calcolabilità* (S.M.F.N.);
2. *Trattamento dell'informazione nell'impresa* (S.M.F.N.);
3. *Informatica generale* (Lettere);

### 1994/95

1. *Documentazione automatica* (S.M.F.N.);
2. *Informatica generale* (Lettere);
3. organization of the course: *Introduction to Multimedia* by J. T. Schwartz;

### 1995/96

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Teoria degli Algoritmi e della Calcolabilità (avanzato)* (S.M.F.N.);
3. *Informatica generale* (Lettere);
4. *Informatica* (Scuola di specializzazione in Anestesia e Rianimazione, Medicina);

### 1996/97

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Teoria degli Algoritmi e della Calcolabilità (avanzato)* (S.M.F.N.);
3. *Informatica generale* (Lettere);
4. *Informatica* (Scuola di specializzazione in Anestesia e Rianimazione, Medicina);

### 1997/98

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Algoritmi e Strutture Dati (avanzato)* (S.M.F.N.);
3. *Informatica generale* (Lettere);
4. *Informatica* (Scuola di specializzazione in Anestesia e Rianimazione, Medicina);
5. *Automated Deduction* Ph.D. course, Valencia (Spain);
6. Organization of the course *Temporal verification of reactive systems* by Z. Manna;

### 1998/99

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Algoritmi e Strutture Dati (avanzato)* (S.M.F.N.);

3. Coordinatore dei corsi di Informatica per la Facoltà di Lettere;
4. *Informatica* (Scuola di specializzazione in Anestesia e Rianimazione, Medicina);
5. *Temporal Logics* Ph.D. course at Pisa and Udine;
6. *Temporal Logics and Model Checking* Ph.D. course, Valencia (Spagna);

#### 1999/00

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Algoritmi avanzati I* (S.M.F.N.);
3. *Informatica* (Scuola di specializzazione in Anestesia e Rianimazione, Medicina);
4. Organization of the course: *Hybrid Systems* by M. Antoniotti, A. Balluchi, L. Benvenuti and T. Villa
5. Organization of the course: *Logic and Games* by J.F.A.K. van Benthem;

#### 2000/01

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Model Checking I* (S.M.F.N.);
3. *Model Checking II* (S.M.F.N.);
4. Organization of the course: *Computing with Modal Logics* by Maarten de Rijke;
5. Summer course *Metric and Layered Temporal Logics for Time Granularities* at the European Summer School on Logic Language and Information 2000, Birmingham (UK);

#### 2001/02

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Model Checking I* (S.M.F.N.);
3. *Model Checking II* (S.M.F.N.);
4. Organization of the courses: *Topics in Computational Biology: Systems Biology* by B. Mishra and *Model-checking methods for infinite state systems* by W. Thomas;
5. Summer course *Model Checking and its Complexities* at the European Summer School on Logic Language and Information 2002, Trento (I);

#### 2002/03

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Informatica generale* (Biotecnologie, Interfacoltà);
3. *Model Checking* (S.M.F.N.);
4. *Algoritmi avanzati* (S.M.F.N.);
5. *Storia dell'Informatica* (S.S.I.S.S.);

#### 2003/04

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Informatica generale* (Biotecnologie, Interfacoltà);
3. *Model Checking* (S.M.F.N.);
4. *Algoritmi avanzati* (S.M.F.N.);
5. *Algoritmi e complessità* (S.M.F.N.);
6. *Storia dell'Informatica* (S.S.I.S.S.);
7. *Modelli di calcolo e programmazione* (S.S.I.S.S.);
8. Organization of the summer school BCI (Biology, Computation and Information);

#### 2004/05

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Informatica generale* (Biotecnologie, Interfacoltà);
3. *Model Checking* (S.M.F.N.);
4. *Algoritmi avanzati* (S.M.F.N.);
5. *Algoritmi e complessità* (S.M.F.N.);
6. *Storia dell'Informatica* (S.S.I.S.S.);
7. *Modelli di calcolo e programmazione* (S.S.I.S.S.);
8. Organization of the summer school BCI (Biology, Computation and Information);

#### 2006/07 Sabbatical.

#### 2007/08

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Informatica generale* (Biotecnologie, Interfacoltà);

3. *Model Checking* (S.M.F.N.);
4. *Bioinformatica* (Biotecnologie Sanitarie);
5. *Algoritmi avanzati* (S.M.F.N.);
6. *Modelli di calcolo e programmazione* (S.S.I.S.S.);
7. Organization of the summer school BCI (Biology, Computation and Information);

#### 2008/09

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Informatica generale* (Biotecnologie, Interfacoltà);
3. *Bioinformatica* (Biotecnologie Sanitarie);
4. *Algoritmi avanzati* (S.M.F.N.);
5. *Modelli di calcolo e programmazione* (S.S.I.S.S.);
6. *Systems Biology* (PhD program in Informatics);

#### 2009/10

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Informatica generale* (Biotecnologie, Interfacoltà);
3. *Bioinformatica* (Biotecnologie Sanitarie);
4. *Algoritmi e complessità* (S.M.F.N.);

#### 2010/11

1. *Algoritmi e Strutture Dati* (S.M.F.N.);
2. *Informatica generale* (Biotecnologie, Interfacoltà);
3. *Bioinformatica* (Scuola Superiore di Udine);
4. *Algoritmica II* (S.M.F.N.);

#### 2011/12

1. *Algoritmi e Strutture Dati* (corso di laurea in Informatica);
2. *Bioinformatica* (corso di laurea in Biotecnologie);
3. *Algoritmica II* (corsi di laurea in Informatica e Matematica).

#### 2012/13

1. *Algoritmi e Strutture Dati* (corso di laurea in Informatica);
2. *Bioinformatica* (corso di laurea in Biotecnologie);
3. *Algoritmica II* (corsi di laurea in Informatica e Matematica).

#### 2013/14

1. *Laboratorio di Algoritmi e Strutture Dati* (corso di laurea in Informatica);
2. *Bioinformatica* (corso di laurea in Biotecnologie);
3. *Algoritmica II* (corsi di laurea in Informatica e Matematica);
4. Organizzazione del ciclo di lezioni tenute da A. Tomescu su *Algoritmi per la Bioinformatica*

#### 2014/15

1. *Corso di dottorato: Logic, Sets, and Graphs* (Università di Pisa);
2. *Laboratorio di Algoritmi e Strutture Dati* (corso di laurea in Informatica);
3. *Bioinformatica* (corso di laurea in Biotecnologie);
4. *Algoritmica II* (corsi di laurea in Informatica e Matematica).

#### 2015/16

1. *Laboratorio di Algoritmi e Strutture Dati* (corso di laurea in Informatica);
2. *Bioinformatica* (corso di laurea in Biotecnologie);
3. *Algoritmica II* (corsi di laurea in Informatica e Matematica).

#### 2016/17

1. *Laboratorio di Algoritmi e Strutture Dati* (corso di laurea in Informatica);
2. *Bioinformatica* (Scuola Superiore e dottorato);
3. *Bioinformatica* (corso di laurea triennale e magistrale in Biotecnologie);
4. *Algoritmica* (corsi di laurea in Informatica e Matematica).

#### 2017/18

1. *Laboratorio di Algoritmi e Strutture Dati* (corso di laurea in Informatica);
2. *Bioinformatica* (corso di laurea triennale e magistrale in Biotecnologie);
3. *Algoritmica* (corsi di laurea in Informatica e Matematica).

## 2018/19

1. *Laboratorio di Algoritmi e Strutture Dati* (corso di laurea in Informatica);
2. *Bioinformatica* (corso di laurea triennale e magistrale in Biotecnologie);
3. *Algoritmica* (corsi di laurea in Informatica e Matematica).

## 2019/20

1. *Algorithms for massive data* (corso di laurea in Data Science & Scientific Computing);
2. *Bioinformatica* (corso di laurea triennale e magistrale in Biotecnologie);
3. *Seminario di Informatica* (Scuola Superiore)
4. *Algoritmica* (corsi di laurea in Informatica e Matematica).

## Publications

### PhD thesis

- [1] A. Policriti. *On a generalization of Herbrand's theorem*. PhD thesis, New York University - GSAS, Courant Inst. of Math. Sciences, 1990.

### Books

- [1] D. Cantone, E. G. Omodeo, and A. Policriti. *Set Theory for Computing. From Decision Procedures to Declarative Programming with Sets*. Monographs in Computer Science. Springer-Verlag, 2001.
- [2] Eugenio G. Omodeo and Alberto Policriti, editors. *Martin Davis on Computability, Computational Logic, and Mathematical Foundations*, volume 10 of *Outstanding Contributions to Logic*. Springer, 2016.
- [3] Eugenio G. Omodeo, Alberto Policriti, and Alexandru I. Tomescu. *On Sets and Graphs. Perspectives on Logic and Combinatorics*. Springer, 2017.

### Chapters in Books

- [1] Francesco Vezzi, Giuseppe Lancia, and Alberto Policriti. Algorithms and data structures for next-generation sequences. In *Biological Knowledge Discovery Handbook*, pages 223–250. John Wiley & Sons, Inc., 2013.
- [2] Enrico Francia, Nicola Pecchioni, Alberto Policriti, and Simone Scalabrin. CNV and Structural Variation in Plants: Prospects of NGS Approaches. In Gaurav Sablok, Sunil Kumar, Saneyoshi Ueno, Jimmy Kuo, and Claudio Varotto, editors, *Advances in the Understanding of Biological Sciences Using Next Generation Sequencing (NGS) Approaches*, pages 211–232. Springer International Publishing, Cham, 2015.

### Papers published on international scientific journals

- [1] A. Policriti. Completeness and decidability of the deducibility problem for some class of formulas of set theory. *Matematiche*, 42:49–66, 1987.
- [2] F. Parlamento and A. Policriti. Decision procedures for elementary sublanguages of set theory. IX. Unsolvability of the decision problem for a restricted subclass of the  $\Delta_0$ -formulas in set theory. *Comm. Pure Appl. Math.*, XLI:221–251, 1988.
- [3] F. Parlamento and A. Policriti. The logically simplest form of the infinity axiom. *Proc. of the American Mathematical Society*, 103(1):274–276, May 1988.
- [4] D. Cantone, V. Cutello, and A. Policriti. Decidability results for classes of purely universal formulae and quantifiers elimination in Set Theory. *Matematiche*, 43:303–336, 1988.
- [5] F. Parlamento and A. Policriti. Note on: The logically simplest form of the infinity axiom. *Proc. of the American Mathematical Society*, 108(1), 1990.
- [6] D. Cantone, E.G. Omodeo, and A. Policriti. The automation of syllogistic. II: Optimization and complexity issues. *Journal of Automated Reasoning*, 6(2):173–187, 1990.
- [7] F. Parlamento and A. Policriti. Decision procedures for elementary sublanguages of set theory. XIII. Model graphs, reflection and decidability. *Journal of Automated Reasoning*, 7:271–284, 1991.

- [8] F. Parlamento and A. Policriti. Expressing infinity without foundation. *Journal of Symbolic Logic*, 56(4):1230–1235, 1991.
- [9] F. Parlamento and A. Policriti. The decision problem for restricted universal quantification in set theory and the axiom of foundation. *Zeitschrift für Mathematische Logik und Grundlagen der Mathematik*, 38(2):143–156, 1992.
- [10] F. Parlamento and A. Policriti. Undecidability results for restricted universally quantified formulae of set theory. *Comm. Pure Appl. Math.*, XLVI(1):57–73, 1993.
- [11] E.G. Omodeo, F. Parlamento, and A. Policriti. A derived algorithm for evaluating  $\varepsilon$ -expressions over abstract sets. *Journal of Symbolic Computation*, 15(5-6):673–704, 1993. Special issue on Automatic Programming, A.W. Biermann and W. Bibel editors.
- [12] A. Policriti and J.T. Schwartz.  $T$ -theorem proving I. *Journal of Symbolic Computation*, 20:315–342, 1995.
- [13] G. D’Agostino, A. Montanari, and A. Policriti. A set-theoretic translation method for polymodal logics. *Journal of Automated Reasoning*, 3(15):317–337, 1995.
- [14] E.G. Omodeo and A. Policriti. Solvable set/hyperset contexts: I. Some decision procedures for the pure, finite case. *Comm. Pure Appl. Math.*, 48(9-10):1123–1155, 1995. Special issue in honor of J.T. Schwartz.
- [15] E.G. Omodeo, F. Parlamento, and A. Policriti. Decidability of  $\exists^*\forall$ -sentences in Membership Theories. *Mathematical Logic Quarterly*, 42(1):41–58, 1996.
- [16] D. Dikranjan and A. Policriti. Complementation in the Lattice of Equivalence Relations. *Discrete Mathematics*, 159:83–94, 1996.
- [17] A. Montanari and A. Policriti. Decidability results for metric and layered temporal logics. *Notre Dame Journal of Symbolic Logic*, 37(2):260–282, 1996.
- [18] J.F.A.K. van Benthem, G. D’Agostino, A. Montanari, and A. Policriti. Modal deduction in second-order logic and set theory-I. *Journal of Logic and Computation*, 7(2):251–265, 1997.
- [19] F. Parlamento, A. Policriti, and K.P.S.B. Rao. Witnessing Differences Without Redundancies. *Proc. of the American Mathematical Society*, 125(2):587–594, February 1997.
- [20] A. Montanari and A. Policriti. Book review: Temporal logic. from ancient ideas to artificial intelligence (by Peter Øhrstrøm and Per F. V. Hasle). *Journal of Symbolic Logic*, 62(3):1044–1046, 1997.
- [21] J.F.A.K. van Benthem, G. D’Agostino, A. Montanari, and A. Policriti. Modal deduction in second-order logic and set theory-II. *Studia Logica*, 60(3):387–420, 1998.
- [22] A. Dovier, A. Policriti, and G. Rossi. A uniform axiomatic view of lists, multisets, and sets, and the relevant unification algorithms. *Fundamenta Informaticae*, 36(2/3):201–234, 1998.
- [23] A. Formisano and A. Policriti.  $T$ -resolution: refinements and model elimination. *Journal of Automated Reasoning*, 22(4):433–483, 1999.
- [24] A. Marcone, F. Parlamento, and A. Policriti. Finite families with few symmetric differences. *Proc. of the American Mathematical Society*, 127(3):835–845, 1999.
- [25] A. Dovier, E.G. Omodeo, and A. Policriti. Solvable set/hyperset contexts: II. A goal driven unification algorithm for the blended case. *Applicable Algebra in Engineering, Communication, and Computing*, 9(4):293–332, 1999.
- [26] A. Montanari, A. Peron, and A. Policriti. Theories of  $\omega$ -layered metric temporal structures: Expressiveness and decidability. *Logic Journal of the IGPL*, 7(1):79–102, 1999.



- [27] A. Montanari, A. Peron, and A. Policriti. The taming (timing) of the states. *Logic Journal of the IGPL*, 8(5):681–699, September 2000.
- [28] M. Falaschi, A. Policriti, and A. Villanueva. Modeling timed concurrent systems in a temporal concurrent constraint language. I. *Electronic Notes in Theoretical Computer Science*, 48, 2001.
- [29] R. Gentilini, Piazza C., and A. Policriti. Simulation reduction as constraint. *Electronic Notes in Theoretical Computer Science*, 76, 2002.
- [30] A. Montanari, A. Peron, and A. Policriti. Extending Kamp's theorem to model time granularity. *Journal of Logic and Computation*, 12(4):641–678, August 2002.
- [31] A. Montanari, A. Policriti, and M. Slanina. Alternative translation techniques for propositional and first-order modal logics. *Journal of Automated Reasoning*, 28(4):397–415, 2002.
- [32] M. Antoniotti, A. Policriti, N. Ugel, and B. Mishra. Model building and model checking for biochemical processes. *Cell Biochemistry and Biophysics*, 38(3):271–286, 2003.
- [33] R. Gentilini, C. Piazza, and A. Policriti. From Bisimulation to Simulation. Coarsest Partition Problems. *Journal of Automated Reasoning*, 31(1):73–103, 2003.
- [34] L. Martí, A. Policriti, and L. Garcí. Hybrid adaptive resonance theory neural networks for universal function approximation. In Ajith Abraham and Lakhmi Jain, editors, *Innovations in Intelligent Systems and Applications, Studies in Fuzziness and Soft Computing*. Springer Verlag, 2003.
- [35] C. Piazza and A. Policriti. Ackermann encoding, bisimulations, and OBDD's. *Theory and Practice of Logic Programming*, 4(5):1–24, 2004. Special issue on Verification and Computational Logic.
- [36] A. Dovier, C. Piazza, and A. Policriti. An Efficient Algorithm for Computing Bisimulation Equivalence. *Theoretical Computer Science*, 311(1-3):221–256, 2004.
- [37] R. Daruwala, Y. Zhou, N. Ugel, A. Policriti, M. Antoniotti, S. Paxia, M. Rejali, A. Rudra, V. Cherepinsky, N. Silver, W. Casey, C. Piazza, M. Simeoni, P. Barbano, M. Spivak, J-W. Feng, O. Gill, M. Venkatesh, F. Cheng, B. Sun, I. Ioniata, T.S. Anantharaman, E.J.A. Hubbard, A. Pnueli, D. Harel, V. Chandru, R. Hariharan, M. Wigler, F. Park, S.-C. Lin, Y. Lazebnik, F. Winkler, C. Cantor, A. Carbone, , M. Gromov, and B. Mishra. A sense of life: Computational & experimental investigations with models of biochemical & evolutionary processes. *OMICS - A Journal of Integrative Biology*, 7(3):253–268, 2003. Special Issue on BioCOMP, Ed.: S. Kumar.
- [38] M. Antoniotti, C. Piazza, A. Policriti, M. Simeoni, and B. Mishra. Taming the Complexity of Biochemical Models through Bisimulation and Collapsing: Theory and Practice. *Theoretical Computer Science*, 325(1):45–67, 2004.
- [39] A. Formisano, E. Omodeo, and A. Policriti. Three-variable statements of set-pairing. *Theoretical Computer Science*, 322(1):147–173, 2004.
- [40] A. Formisano, E.G. Omodeo, and A. Policriti. The axiom of elementary sets on the edge of Peircean expressibility. *Journal of Symbolic Logic*, 70(3):953–968, 2005.
- [41] M. Morgante, A. Policriti, N. Vitacolonna, and A. Zuccolo. Structured Motifs Search. *Journal of Computational Biology*, 12(8):1063–1080, October 2005.
- [42] Eugenio G. Omodeo, Domenico Cantone, Alberto Policriti, and Jacob T. Schwartz. A computerized referee. In Oliviero Stock and Marco Schaerf, editors, *Reasoning, Action and Interaction in AI Theories and Systems. Essays Dedicated to Luigia Carlucci Aiello*, volume 4155 of *Lecture Notes in Computer Science*, pages 117–139. Springer, 2006.
- [43] R. Gentilini, C. Piazza, and A. Policriti. Symbolic graphs: Linear solutions to connectivity related problems. *Algorithmica*, 50(1):120–158, 2007.

- [44] O. Jaillon, J. M. Aury, B. Noel, A. Policriti, C. Clepet, A. Casagrande, N. Choisne, S. Aubourg, N. Vitulo, C. Jubin, A. Vezzi, F. Legeai, P. Hugueney, C. Dasilva, D. Horner, E. Mica, D. Jublot, J. Poulain, C. Bruyere, A. Billault, B. Segurens, M. Gouyvenoux, E. Ugarte, F. Cattonaro, V. Anthouard, V. Vico, C. Del Fabbro, M. Alaux, G. Di Gaspero, V. Dumas, N. Felice, S. Paillard, I. Juman, M. Moroldo, S. Scalabrin, A. Canaguier, I. Le Clainche, G. Malacrida, E. Durand, G. Pesole, V. Laucou, P. Chatelet, D. Merdinoglu, M. Delledonne, M. Pezzotti, A. Lechary, C. Scarpelli, F. Artiguenave, M. E. Pe, G. Valle, M. Morgante, M. Caboche, A. F. Adam-Blondon, J. Weissenbach, F. Quetier, and P. Wincker. The grapevine genome sequence suggests ancestral hexaploidization in major angiosperm phyla. *Nature*, 449:463–467, 2007.
- [45] L. Bortolussi and A. Policriti. Modeling biological systems in stochastic concurrent constraint programming. *Constraints*, 13(1), 2008.
- [46] M. Zantoni, E. Dalla, A. Policriti, and C. Schneider. Motif discovery fixing mismatch positions. In Giorgio Fotia Vincenzo Cutello and Luigia Puccio, editors, *APPLIED AND INDUSTRIAL MATHEMATICS IN ITALY II. Selected Contributions from the 8th SIMAI Conference*, volume 75 of *Series on Advances in Mathematics for Applied Sciences*. World Scientific, 2007. (ISBN 978-981-270-938-7).
- [47] L. Bortolussi and A. Policriti. Stochastic concurrent constraint programming and differential equations. In *Proceedings of Fifth Workshop on Quantitative Aspects of Programming Languages, QAPL 2007*, volume ENTCS 16713, 2007.
- [48] Alberto Casagrande, Carla Piazza, Alberto Policriti, and Bud Mishra. Inclusion dynamics hybrid automata. *Inf. Comput.*, 206(12):1394–1424, 2008.
- [49] L. Bortolussi and A. Policriti. Hybrid systems and biology. continuous and discrete modeling for systems biology. In M. Bernardo, P. Degano, and G. Zavattaro, editors, *Formal Methods for Computational System Biology*, volume 5016, pages 424–448. Springer, 2008. (ISBN/ISSN: 978-3-540-68892-1).
- [50] Luca Bortolussi and Alberto Policriti. Hybrid dynamics of stochastic pi-calculus. *Mathematics in Computer Science*, 2(3):465–491, 2009.
- [51] Simone Scalabrin, Michele Morgante, and Alberto Policriti. Automated fingerprint background removal: FPB. *BMC Bioinformatics*, 10, 2009.
- [52] Luca Bortolussi and Alberto Policriti. The importance of being (a little bit) discrete. *Electr. Notes Theor. Comput. Sci.*, 229(1):75–92, 2009.
- [53] Luca Bortolussi and Alberto Policriti. Dynamical systems and stochastic programming: To ordinary differential equations and back. *Transaction on Comp. Sys. Biology*, 11:216–267, 2009.
- [54] Alberto Casagrande, Carla Piazza, and Alberto Policriti. Discrete semantics for hybrid automata. *Discrete Event Dynamic Systems*, 19(4):471–493, 2009.
- [55] S. Scalabrin, M. Troggio, M. Moroldo, M. Pindo, N. Felice, G. Coppola, G. Prete, G. Malacarne, R. Marconi, G. Faes, I. Jurman, S. Grando, T. Jesse, C. Segala, G. Valle, A. Policriti, P. Fontana, M. Morgante, and R. Velasco. Physical mapping in highly heterozygous genomes: a physical contig map of the pinot noir grapevine cultivar. *BMC Genomics*, 11, 2010.
- [56] Erica Mica, Viviana Piccolo, Massimo Delledonne, Alberto Ferrarini, Mario Pezzotti, Cesare Casati, Cristian Del Fabbro, Giorgio Valle, Alberto Policriti, Michele Morgante, Graziano Pesole, M Enrico Pè, and David S Horner. High throughput approaches reveal splicing of primary microRNA transcripts and tissue specific expression of mature microRNAs in *vitis vinifera*. *BMC Genomics*, 10, 2009.
- [57] Eugenio G. Omodeo and Alberto Policriti. The Bernays-Schönfinkel-Ramsey class for set theory: semidecidability. *J. Symb. Log.*, 75(2):459–480, 2010.
- [58] Cipriani G., Spadotto A., Jurman I., Di Gaspero G., Crespan M., Meneghetti S., Frare E., Vignani R., Cresti M., Morgante M., Pezzotti M., Pè E., Policriti A., and Testolin R. The SSR-based molecular profile

of 1005 grapevine (*Vitis vinifera* L.) accessions uncovers new synonymy and parentages, and reveals a large admixture amongst varieties of different geographic origin. *TAG Theoretical and Applied Genetics*, 121(8):1569–1585, 2010.

- [59] Luca Bortolussi and Alberto Policriti. Hybrid dynamics of stochastic programs. *Theor. Comput. Sci.*, 411(20):2052–2077, 2010.
- [60] E. Omodeo, A. Policriti, and A. Tomescu. Statements of ill-founded infinity in Set Theory. *Studies in Weak Arithmetics. Stanford Center for the Study of Language and Information - Lecture Notes*, pages 173–199, 2010. ISBN 9781575866024.
- [61] F. Fabris, F. Fogolari, and A. Policriti. Bioinformatica, ovvero l'Informatica per la Biologia. *Nuova Secondaria*, XXVIII(1), 2010.
- [62] Alberto Policriti and Alexandru I. Tomescu. Counting extensional acyclic digraphs. *Inf. Process. Lett.*, 111(16):787–791, 2011.
- [63] Eugenio G. Omodeo, Alberto Policriti, and Alexandru I. Tomescu. Infinity, in short. *J. Log. Comput.*, 22(6):1391–1403, 2012.
- [64] Eugenio G. Omodeo and Alberto Policriti. The Bernays - Schönfinkel - Ramsey class for set theory: decidability. *J. Symb. Log.*, 77(3):896–918, 2012.
- [65] Alberto Policriti, Alexandru I. Tomescu, and Francesco Vezzi. A randomized Numerical Aligner (rNA). *J. Comput. Syst. Sci.*, 78(6):1868–1882, 2012.
- [66] Francesca Nadalin, Francesco Vezzi, and Alberto Policriti. Gapfiller: a de novo assembly approach to fill the gap within paired reads. *BMC Bioinformatics*, 13(S-14):S8, 2012.
- [67] Francesco Vezzi, Cristian Del Fabbro, Alexandru I. Tomescu, and Alberto Policriti. rNA: a fast and accurate short reads numerical aligner. *Bioinformatics*, 28(1):123–124, 2012.
- [68] Verde I., Abbott A. G., Scalabrin S., Jung S., Shu S., Marroni F., Zhebentyayeva T., Dettori M.T., Grimwood J., Cattonaro F., Zuccolo A., Rossini L., Jenkins J., Vendramin E., Meisel L.A., Decroocq V., Sosinski B., Prochnik S., Mitros T., Policriti A., Cipriani G., Dondini L., Ficklin S., Goodstein D. M., Xuan P., Del Fabbro C., Aramini V., Copetti D., Gonzalez S., Horner D.S., Falchi R., Lucas S., Mica E., Maldonado J., Lazzari B., Bielenberg D., Pirona R., Miculan M., Barakat A., Testolin R., Stella A., Tartarini S., Tonutti P., Arús P., Orellana A., Wells C., Main D., Vizzotto G., Silva H., Salamini F., Schmutz J., Morgante M., and Rokhsar D.S. The high-quality draft genome of peach (*prunus persica*) identifies unique patterns of genetic diversity, domestication and genome evolution. *Nature Genetics*, 2013.
- [69] Luca Bortolussi and Alberto Policriti. (Hybrid) Automata and (Stochastic) Programs: The hybrid automata lattice of a stochastic program. *J. Log. Comput.*, 23(4):761–798, 2013.
- [70] Alberto Policriti and Alexandru I. Tomescu. Well-quasi-ordering hereditarily finite sets. *Int. J. Comput. Math.*, 90(6):1278–1291, 2013.
- [71] Riccardo Vicedomini, Francesco Vezzi, Simone Scalabrin, Lars Arvestad, and Alberto Policriti. GAM-NGS: genomic assemblies merger for next generation sequencing. *BMC Bioinformatics*, 14(S-7):S6, 2013.
- [72] Marco Beccuti, Matteo Carrara, Francesca Cordero, Fulvio Lazzarato, Susanna Donatelli, Francesca Nadalin, Alberto Policriti, and Raffaele Calogero. Chimera: a bioconductor package for secondary analysis of fusion products. *Bioinformatics*, 30(24):3556–3557, 2014.
- [73] Chiara Bodei, Luca Bortolussi, Davide Chiarugi, Maria Luisa Guerriero, Alberto Policriti, and Alessandro Romanel. On the impact of discreteness and abstractions on modelling noise in gene regulatory networks. *Computational Biology and Chemistry*, 56:98–108, 2015.

- [74] Alberto Policriti and Nicola Prezza. Fast randomized approximate string matching with succinct hash data structures. *BMC Bioinformatics*, 16(S-9):S4, 2015.
- [75] Raffaella Gentilini, Carla Piazza, and Alberto Policriti. Rank and simulation: the well-founded case. *J. Log. Comput.*, 25(6):1331–1349, 2015.
- [76] Giovanna D’Agostino, Eugenio G. Omodeo, Alberto Policriti, and Alexandru I. Tomescu. Mapping sets and hypersets into numbers. *Fundam. Inform.*, 140(3-4):307–328, 2015.
- [77] Nicola Prezza, Francesco Vezzi, Max Kaller, and Alberto Policriti. Fast, accurate, and lightweight analysis of bs-treated reads with ERNE 2. *BMC Bioinformatics*, 17(S-4):69, 2016.
- [78] Alberto Casagrande, Carla Piazza, and Alberto Policriti. Is hyper-extensionality preservable under deletions of graph elements? *Electr. Notes Theor. Comput. Sci.*, 322:103–118, 2016.
- [79] Eugenio G. Omodeo, Alberto Policriti, and Alexandru I. Tomescu. Set-syllogistics meet combinatorics. *Mathematical Structures in Computer Science*, 27(2):296–310, 2017.
- [80] Alberto Policriti and Nicola Prezza. LZ77 computation based on the run-length encoded BWT. *Algorithmica*, 80(7):1986–2011, 2018.
- [81] Laura Giordano and Alberto Policriti. Adding the power-set to description logics. *Theor. Comput. Sci.*, 813:155–174, 2020.

#### Contributions to international scientific conferences

- [1] D. Cantone, A. Ferro, E.G. Omodeo, and A. Policriti. Scomposizione sillogistica disgiuntiva. In *Atti del Convegno Nazionale sulla Programmazione Logica*, 1989.
- [2] D. Cantone, V. Cutello, and A. Policriti. Set-theoretic reductions of Hilbert’s tenth problem. In *Proc. of 3rd Workshop “Computer Science Logic” 1989*, pages 65–75, 1990. Lecture Notes in Computer Science, 440.
- [3] V. Cutello and A. Policriti. On the complexity of the satisfiability problem for an unquantified theory involving basic notion of real plane topology. In G. Ausiello, D.P. Bovet, and R. Petreschi, editors, *Proc. of the 1st Italian Conference on Algorithms and Complexity (CIAC 1990)*, pages 129–147. World Scientific, Singapore, 1990.
- [4] E.G. Omodeo, F. Parlamento, and A. Policriti. A contribution to the automated treatment of membership theories. In *Atti del Convegno Nazionale sulla Programmazione Logica*, 1990.
- [5] E.G. Omodeo, F. Parlamento, and A. Policriti. Truth tables for a combinatorial kernel of set theories. In L. Carlucci Aiello, editor, *Proc. of ECAI’90: 9-th European Conference on Artificial Intelligence (Stockholm, Sweden)*, pages 485–490, New York, 1990. John Wiley & Sons.
- [6] E.G. Omodeo, A. Policriti, and G. Rossi. Che genere di insiemi/multi-insiemi/iperinsiemi incorporare nella programmazione logica? In *Proceedings of AGP-93*, 1993.
- [7] E.G. Omodeo and A. Policriti. Decision procedures for set/hyperset contexts. In A. Miola, editor, *Design and Implementation of Symbolic Computation Systems (DISCO’93)*, LNCS 722, pages 192–215, Berlin, 1993. Springer-Verlag.
- [8] Dovier A., E.G. Omodeo, A. Policriti, and G. Rossi. Solving systems of equations over hypersets. In *Proceedings of AGP-94*, 1994.
- [9] G. D’Agostino, A. Montanari, and A. Policriti. Translating modal formulas as set-theoretic terms. In *Proceedings of Logic Colloquium 1994*, 1994.
- [10] G. D’Agostino, A. Montanari, and A. Policriti. A set-theoretic translation method for (poly)modal logics. In *Proceedings of STACS 1995*, 1995.

- [11] G. D'Agostino, A. Montanari, and A. Policriti. Set theoretic decidability results for modal theorem proving. In *Proc. of ICTCS-95*, 1995.
- [12] G. D'Agostino, A. Montanari, and A. Policriti. Set theoretic decidability results for modal theorem proving. In *Proceedings of Logic Colloquium 1995*, 1995.
- [13] G. D'Agostino, A. Montanari, and A. Policriti. Set theoretic analysis of modal deduction. In *Proceedings of the 10th International Congress on Logic, Methodology, and Philosophy of Science*, 1995.
- [14] A. Dovier, G. Rossi, and A. Policriti. Integrating lists, multisets, and sets in a logic programming framework. In *Proc. of FroCoS '96*, 1996.
- [15] A. Montanari and A. Policriti. A set-theoretic approach to automated deduction in graded modal logics. In *Proc. of the International Joint Conference on Artificial Intelligence, IJCAI97*, Nagoya, Japan, 1997.
- [16] A. Montanari and A. Policriti. Executing metric temporal logic. In *Proc. of the IJCAI97 Workshop on Programming in Temporal and Non Classical Logics*, Nagoya, Japan, 1997.
- [17] A. Dovier, A. Formisano, and A. Policriti. On T-logic programming. In *Proc. of ILPS 1997*, Port Jefferson, USA, 1997.
- [18] Dovier A. and A. Policriti. Set domains for structural properties of terms. In *Proceedings of AGP-97*, 1997.
- [19] A. Montanari, A. Peron, and A. Policriti. Decidable theories of  $\omega$  layered metric temporal structures. In *Proc. of the ICTL 1997*, Manchester, 1997.
- [20] A. Montanari, A. Peron, and A. Policriti. Exploiting systolic and Rabin tree automata to decide time granularity. In *Proceedings of Logic Colloquium 1997*, 1997.
- [21] A. Montanari, A. Peron, and A. Policriti. The way to go: Multi-level temporal logics. In *Proc. of the IWTS 1999*, Kyoto, 1999.
- [22] A. Montanari, A. Peron, and A. Policriti. The taming (timing) of the states. In *Proceedings of WoLLIC '99*, 1999.
- [23] C. Piazza and A. Policriti. Towards tableau-based decision procedures for non-well-founded fragments of set theory. In R. Dyckhoff, editor, *Proc. of the International Conference on Theorem Proving with Analytic Tableaux and Related Methods (TABLEAUX 2000)*, LNCS 1847 (LNAI), pages 368–382, Berlin, 2000. Springer-Verlag.
- [24] A. Dovier, C. Piazza, and A. Policriti. Comparing expressiveness of set constructor symbols. In H. Kirchner and C. Ringeissen, editors, *Frontiers of Combining Systems, Third International Workshop, FroCoS 2000*. Nancy, LNCS 1794, Berlin, March 2000. Springer-Verlag.
- [25] A. Montanari, A. Policriti, and M. Slanina. Supporting automated deduction in first-order modal logics. In T. Cohn, F. Giunchiglia, and B. Selman, editors, *Proc. of KR 2000: 7th Int. Conf. on Principles of Knowledge Representation and Reasoning (Breckenridge, Colorado)*, pages 547–556, Los Altos, CA, 2000. Morgan Kaufmann.
- [26] A. Montanari, A. Policriti, and M. Slanina. Derivability in locally quantified modal logics via translation in set theory. In M. Nielsen and B. Rovan, editors, *Proc. of MFCS 2000: 25th Int. Symp. on Mathematical Foundations of Computer Science (Bratislava, Slovak Republic)*, LNCS 1893, pages 559–568, Berlin, 2000. Springer-Verlag.
- [27] A. Policriti. A few thoughts on temporal logic and verification. *ALP newsletter*, 15(1), 2000.
- [28] A. Montanari, A. Peron, and A. Policriti. Extending kamp theorem with binary operators to model time granularity. In *Proc. of the 3rd International Conference on Temporal Logic (ICTL)*, pages 135–144, October 2000. Extended on the Journal of Logic and Computation.

- [29] A. Montanari and A. Policriti. A logical approach to time granularity. *Bollettino AI\*IA*, March 2001. Numero speciale su “Management of Temporal Information”, guest editor A. Artale.
- [30] A. Dovier, C. Piazza, and A. Policriti. A fast bisimulation algorithm. In G. Berry, H. Comon, and A. Finkel, editors, *Proceedings of Computer Aided Verification (CAV'01)*, volume 2102 of *LNCS*, pages 79–90. Springer, 2001.
- [31] A. Formisano, E. G. Omodeo, and A. Policriti. The edge of 3-variable-inexpressibility beside Tarski's Peircean formulation of set-pairing. In *Proceedings of the ESSLLI Workshop on Logic and Games*, August 2001.
- [32] A. Formisano, E. G. Omodeo, and A. Policriti. The edge of 3-variable-inexpressibility. the axiom of elementary sets and peircean inexpressibility. In *Proceedings of the twentieth Weak Arithmetics Days. IUT de Fontainebleau*, June 2001.
- [33] C. Piazza and A. Policriti. Ackermann encoding, bisimulations, and obdd's. In *Proceedings of the 2nd Workshop on Verification and Computational Logic (VCL'01)*, September 2001. Extended version in press on Theory and Practice of Logic Programming.
- [34] Piazza C. and A. Policriti. Deciding modal logics using tableaux and set theory. In *Proceedings of AGP-01*, 2001.
- [35] M. Falaschi, A. Policriti, and A. Villanueva. Time limited model checking. In G. Delzanno, S. Etalle, , and M. Gabbrielli, editors, *Proceedings of Int. Workshop on Specification Analysis and Validation for Emerging Technologies in Computational Logic (SAVE'01)*, 2001.
- [36] Luis Marti, Alberto Policriti, and Luciano Garca. Appart: an art hybrid stable learning neural network for universal function approximation. In A. Abraham and M. Koeppen, editors, *Hybrid Information Systems*, pages 92–120, Heidelberg, 2002. Physica Verlag.
- [37] C. Piazza R. Gentilini and A. Policriti. Simulation as coarsest partition problem. In *Proceedings of Tools and Algorithms for the Construction and Analysis of Systems. (TACAS-02)*, volume 2280 of *LNCS*, pages 415–430. Springer, 2002.
- [38] A. Dovier, R. Gentilini, C. Piazza, and A. Policriti. Rank-based symbolic bisimulation (and model checking). In Ruy J. Guerra B. de Queiroz, editor, *Proc. of Workshop on Language, Logic, Information, and Computation (Wollic'02)*, volume 67 of *ENTCS*. Elsevier Science, 2002.
- [39] A. Formisano, E. G. Omodeo, and A. Policriti. Three-variable statements of set-pairing. In *Proceedings of Denis Richard 60th Birthday Conference*, Laboratoire de Logique, Algorithmique et Informatique de Clermont-Ferrand, May 2002.
- [40] M. Antoniotti, B. Mishra, A. Policriti, and N. Ugel. Xs-systems: extended s-systems and algebraic differential automata for modeling cellular behavior. In V.K. Prasanna S. Sahni and U. Shukla, editors, *Proceedings of the International Conference on High Performance Computing, HiPC 2002*, volume 2552 of *LNCS*, pages 431–442, Bangalore (INDIA), December 2002. Springer Verlag.
- [41] R. Gentilini, C. Piazza, and A. Policriti. Computing strongly connected components in a linear number of symbolic steps. In *Proc. of the fourteenth Int. Symposium on Discrete Algorithms (SODA'03)*, ACM-SIAM, pages 573–582, 2003.
- [42] Martí L., Policriti A., García L., and Lazo R. Appart + growing neural gas = high performance hybrid neural network for function approximation. In E. Damiani, R. J. Howlet, L. C. Jain, and N. Ichalkaranje, editors, *Proceedings of Knowledge-based Intelligent Information Engineering Systems and Allied Technologies (KES'2002). Workshop on Intelligent Knowledge Management Techniques (IKOMAT'2002)*, pages 1483–1487, Amsterdam, 2002. IOS Press.

- [43] A. Formisano, E.G. Omodeo, and A. Policriti. Automation of aggregate theories: The cornerstones of equational expressibility. In J.J. Moreno-Navarro and J. Marino Carballo, editors, *Proceedings of the Joint Conference on Declarative Programming (AGP02)*, Madrid (SPAIN), September 2002.
- [44] F. Fabris and A. Montanari and A. Policriti, J. Reid, and C. Schneider. The problem of finding transcription factor binding sites and its impact in defining co-regulated gene-networks. In *Proceedings of the Conference of the Italian Association of Artificial Intelligence. (AIIA 2002)*, Siena (ITALY), September 2002.
- [45] M. Morgante and A. Policriti, N. Vitacolonna, and A. Zuccolo. Automated search for Itr retrotransposons. In *Proceedings of the Conference of the Italian Association of Artificial Intelligence. (AIIA 2002)*, Siena (ITALY), September 2002.
- [46] M. Antoniotti and B. Mishra, F. Park, A. Policriti, and N. Ugel. Simulating large biochemical and biological processes and reasoning about their behavior. In *Proceedings of the 3rd International Conference on Systems Biology (ICSB 2002)*, Stockholm, Sweden, December 2002. Karolinska Institutet.
- [47] M. Antoniotti, B. Mishra, C. Piazza, A. Policriti, and M. Simeoni. Modelling cellular behavior with hybrid automata: Bisimulation and collapsing. In C. Priami, editor, *International workshop on Computational Methods in Systems Biology, (CMSB'03)*, volume 2602 of *LNCS*, pages 57–74, Rovereto (ITALY), February 2003. Springer Verlag.
- [48] M. Antoniotti, B. Mishra, F. Park, A. Policriti, and N. Ugel. Foundations of a query and simulation system for the modeling of biochemical and biological processes. In R.B. Altman, A.K. Dunker, L. Hunter, T.A. Jung, and T.E. Klein, editors, *The Pacific Symposium on Biocomputing (PSB 2003)*, pages 116–127. World Scientific, January 2003.
- [49] E. Marzano, A. Montanari, and A. Policriti. Binary extension of S1S and the composition method. In N. Dershowitz, editor, *Proceedings of the conference in honor of Z. Manna's 64th birthday*, volume 2772 of *LNCS*, pages 626–644. Springer Verlag, 2004.
- [50] R. Gentilini and A. Policriti. Biconnectivity on symbolic graphs: a linear solution. In *In Proceedings of the 14th Annual International Symposium on Algorithms and Computation (ISAAC 2003)*, volume 2906 of *LNCS*, pages 554–564. Springer Verlag, 2003.
- [51] M. Morgante, A. Policriti, N. Vitacolonna, and A. Zuccolo. Structured motifs search. In *Proceedings of the Eighth Annual International Conference on Research in Computational Molecular Biology (RECOMB 2004)*, March 2004.
- [52] A. Policriti and B. Mishra. Systems biology and automata. In *Proceedings of the 3rd Workshop on Computation of Biochemical Pathways and Genetic Networks*, Villa Bosch, Heidelberg, October, 6-7 2003.
- [53] A. Casagrande, A. Balluchi, L. Benvenuti, A. Policriti, T. Villa, and A. Sangiovanni-Vincentelli. Improving reachability analysis of hybrid automata for engine control. In *43rd IEEE Conference on Decision and Control (CDC)*. IEEE, December 2004.
- [54] A. Policriti and B. Mishra. Systems biology, automata, and languages. In *Proceedings of the Bioinformatics Italian Society Meeting (BITS04)*, Padova, March 2004.
- [55] Angelo Montanari, Alberto Policriti, and Nicola Vitacolonna. An algorithmic account of winning strategies in ehrenfeucht games on labeled successor structures. In *Logic for Programming, Artificial Intelligence, and Reasoning, 12th International Conference, LPAR 2005, Montego Bay, Jamaica, December 2-6, 2005, Proceedings*, volume 3835 of *Lectures Notes in Computer Science*, pages 139–153, 2005.
- [56] C. Piazza, M. Antoniotti, V. Mysore, A. Policriti, F. Winkler, and B. Mishra. Algorithmic algebraic model checking i: Challenges from systems biology. In K. Etessami and S. K. Rajamani, editors, *Proc. of Int. Conference on Computer Aided Verification (CAV'05)*, volume 3576 of *Lecture Notes in Computer Science*, pages 5–19. Springer, 2005.

- [57] L. Bortolussi, F. Fabris, and A. Policriti. Bundled suffix trees. In *Proceedings of BITS 2005*, 2005.
- [58] L. Bortolussi and A. Policriti. Relating stochastic process algebras and differential equations for biological modeling. *Proceedings of PASTA 2006*, 2006.
- [59] L. Bortolussi and A. Policriti. Modeling biological systems in concurrent constraint programming. In *Proceedings of Second International Workshop on Constraint-based Methods in Bioinformatics, WCB 2006*, 2006.
- [60] L. Bortolussi, F. Fabris, and A. Policriti. Bust - bundled suffix trees. In G. Navarro, L. Bertossi, and Y. Kohayakawa, editors, *Proceedings of IFIP-TCS 2006*, volume 207 of *IFIP series*, Santiago de Chile, August 2006. Springer-Verlag.
- [61] A. Formisano, E. Omodeo, and A. Policriti. Views on time in systems biology. In *Proceedings of Information Processing and Management of Uncertainty in Knowledge-Based Systems*, 2006.
- [62] G. D'Agostino, A. Montanari, and A. Policriti. Extensions of s1s and the composition method. In *Proceedings of JM'06: 11th Mons Days of Theoretical Computer Science*, pages 165–178, 2006.
- [63] M. Zantoni, E. Dalla, A. Policriti, and C. Schneider. Finding regulatory elements fixing error layouts. In *Proceedings of International Symposium on Computational Biology & Bioinformatics (ISBB 06)*, 2006.
- [64] S. Scalabrin, M. Morgante, and A. Policriti. Stem-loop structure search for helitron discovery. In *Proceedings of International Symposium on Computational Biology & Bioinformatics (ISBB 06)*, 2006.
- [65] Luca Bortolussi, Simone Fonda, and Alberto Policriti. Constraint-based simulation of biological systems described by molecular interaction maps. In *BIBM*, pages 288–293, 2007.
- [66] C. Del Fabbro, F. Cattonaro, M. Morgante, and A. Policriti. Automatic identification of transposable elements. In *Proceedings of the meeting of the Bioinformatics Italian Society (BITS 2007)*, 2007.
- [67] L. Bortolussi, S. Fonda, and A. Policriti. Constraint-based simulation of biological systems described by molecular interaction maps. In *Proceeding of CILC 2007*, 2007.
- [68] L. Bortolussi, S. Fonda, and A. Policriti. Constraint-based simulation of biological systems described by molecular interaction maps. In *Proceeding of WCB 2007*, 2007.
- [69] C. Piazza A. Casagrande and A. Policriti. Discreteness, hybrid automata, and biology. In *Proceeding of WODES 2008*, 2008.
- [70] L. Bortolussi and A. Policriti. Hybrid approximation of stochastic process algebras for systems biology. In *Proceeding of IFAC 2008*, 2008.
- [71] L. Bortolussi and A. Policriti. The importance of being (a little bit) discrete. In *Proceeding of FBTC 2008*, 2008.
- [72] L. Bortolussi and A. Policriti. Hybrid semantics for stochastic  $\pi$ -calculus. In *Proceeding of AB 2008*, pages 40–55, 2008. extended version accepted for publication on the Journal of Symbolic Computation.
- [73] R. Mardare and A. Policriti. A complete axiomatic system for a process-based spatial logic. In *Proceeding of MFCS 2008*, pages 491–502, 2008.
- [74] Alberto Casagrande, Cristian Del Fabbro, Simone Scalabrin, and Alberto Policriti. GAM: Genomic assemblies merger: A graph based method to integrate different assemblies. In *BIBM*, pages 321–326, 2009.
- [75] Cristian Del Fabbro, Michele Morgante, Alberto Policriti, and Nicola Vitacolonna. TEA: a transposable elements annotator. In *BIOCOMP*, pages 528–525, 2009.
- [76] Luca Bortolussi and Alberto Policriti. Hybrid semantics of stochastic programs with dynamic reconfiguration. In *COMPMOD*, pages 63–76, 2009.



- [77] Luca Bortolussi and Alberto Policriti. Stochastic programs and hybrid automata for (biological) modeling. In *CiE*, pages 37–48, 2009.
- [78] Alberto Policriti, Alexandru I. Tomescu, and Francesco Vezzi. A randomized Numerical Aligner (rNA). In *Proceedings of LATA*, pages 512–523, 2010.
- [79] G. D’Agostino, E. Omodeo, A. Policriti, and A. Tomescu. Mapping hypersets into numbers (extended abstract). In *12th Italian Conference on Theoretical Computer Science (ICTCS)*, 2010.
- [80] F. Cattonaro, A. Policriti, and F. Vezzi. Enhanced Reference Guided Assembly. In *Proceedings of BIBM*, pages 77–80, 2010.
- [81] Cristian Del Fabbro, Francesco Vezzi, and Alberto Policriti. mrNA: The MPI randomized Numerical Aligner. In *Proceedings of BIBM*, pages 139–142, 2011.
- [82] Alberto Policriti and Alexandru I. Tomescu. Well-quasi-ordering hereditarily finite sets. In *Proceedings of LATA*, pages 440–451, 2011.
- [83] Luca Bortolussi and Alberto Policriti. Programmable models of growth and mutation of cancer-cell populations. In *Proceedings of CompMod*, pages 19–33, 2011.
- [84] Francesca Nadalin, Francesco Vezzi, and Alberto Policriti. A multi-objective optimisation approach to the design of experiment in *de novo* assembly projects. In *Proceedings of DEXA Workshops*, pages 213–217, 2012.
- [85] Raffaella Gentilini, Carla Piazza, and Alberto Policriti. Rank-based simulation on acyclic graphs. In *Proceedings of CILC*, pages 149–160, 2012.
- [86] Nicola Prezza, Cristian Del Fabbro, Francesco Vezzi, Emanuele De Paoli, and Alberto Policriti. ERNE-BS5: aligning BS-treated sequences by multiple hits on a 5-letters alphabet. In *Proceedings of ACM-BCB*, pages 12–19, 2012.
- [87] Alberto Policriti. Encodings of sets and hypersets. In *Proceedings of the 28th Italian Conference on Computational Logic, Catania, Italy, September 25-27*, pages 235–240, 2013.
- [88] Alberto Policriti. On the decidability of the  $\exists^*\forall^*$  prefix class in set theory. In *Proceedings of the 28th Italian Conference on Computational Logic, Catania, Italy, September 25-27*, page 13, 2013.
- [89] Cristian Del Fabbro, Fabio Tardivo, and Alberto Policriti. A parallel algorithm for the best k-mismatches alignment problem. In *22nd Euromicro International Conference on Parallel, Distributed, and Network-Based Processing, PDP 2014, Torino, Italy, February 12-14, 2014*, pages 586–589, 2014.
- [90] Eugenio G. Omodeo, Carla Piazza, Alberto Policriti, and Alexandru I. Tomescu. Hyper-extensionality and one-node elimination on membership graphs. In *Proceedings of the 29th Italian Conference on Computational Logic, Torino, Italy, June 16-18, 2014.*, pages 341–346, 2014.
- [91] Alberto Policriti and Nicola Prezza. Fast online lempel-ziv factorization in compressed space. In *String Processing and Information Retrieval - 22nd International Symposium, SPIRE 2015, London, UK, September 1-4, 2015, Proceedings*, pages 13–20, 2015.
- [92] Alberto Policriti, Nicola Gigante, and Nicola Prezza. Average linear time and compressed space construction of the burrows-wheeler transform. In *Language and Automata Theory and Applications - 9th International Conference, LATA 2015, Nice, France, March 2-6, 2015, Proceedings*, pages 587–598, 2015.
- [93] Riccardo Vicedomini, Francesco Vezzi, Simone Scalabrin, Lars Arvestad, and Alberto Policriti. Hierarchical assembly of pools. In *Bioinformatics and Biomedical Engineering - Third International Conference, IWBBIO 2015, Granada, Spain, April 15-17, 2015. Proceedings, Part II*, pages 207–218, 2015.

- [94] Alessandro Dal Palù, Agostino Dovier, Andrea Formisano, Alberto Policriti, and Enrico Pontelli. Logic programming applied to genome evolution in cancer. In *Proceedings of the 31st Italian Conference on Computational Logic, Milano, Italy, June 20-22, 2016.*, pages 148–157, 2016.
- [95] Alberto Policriti and Nicola Prezza. Computing LZ77 in run-compressed space. In *2016 Data Compression Conference, DCC 2016, Snowbird, UT, USA, March 30 - April 1, 2016*, pages 23–32, 2016.
- [96] Luca Bortolussi, Alberto Policriti, and Simone Silveti. Logic-based multi-objective design of chemical reaction networks. In *Hybrid Systems Biology - 5th International Workshop, HSB 2016, Grenoble, France, October 20-21, 2016, Proceedings*, pages 164–178, 2016.
- [97] Alberto Policriti and Nicola Prezza. From LZ77 to the Run-Length Encoded Burrows-Wheeler Transform, and Back. In *28th Annual Symposium on Combinatorial Pattern Matching, CPM 2017, July 4-6, 2017, Warsaw, Poland*, pages 17:1–17:10, 2017.
- [98] Alice Tarzariol, Agostino Dovier, and Alberto Policriti. Towards a Logic Programming Tool for Cancer Analysis. In *Joint Proceedings of the 18th Italian Conference on Theoretical Computer Science and the 32nd Italian Conference on Computational Logic co-located with the 2017 IEEE International Workshop on Measurements and Networking (2017 IEEE M&N), Naples, Italy, September 26-28, 2017.*, pages 361–375, 2017.
- [99] Simone Silveti, Alberto Policriti, and Luca Bortolussi. An Active Learning Approach to the Falsification of Black Box Cyber-Physical Systems. In *Integrated Formal Methods - 13th International Conference, IFM 2017, Turin, Italy, September 20-22, 2017, Proceedings*, pages 3–17, 2017.
- [100] Domenico Cantone and Alberto Policriti. Encoding sets as real numbers. In *Proceedings of the 3rd International Workshop on Sets and Tools co-located with the 6th International ABZ Conference, SETS@ABZ 2018, Southampton, UK, June 5, 2018*, pages 2–16, 2018.
- [101] Laura Giordano and Alberto Policriti. Power (set) ALC. In *Proceedings of the 19th Italian Conference on Theoretical Computer Science, Urbino, Italy, September 18-20, 2018*, pages 162–173, 2018.
- [102] Dominik Kempa, Alberto Policriti, Nicola Prezza, and Eva Rotenberg. String attractors: Verification and optimization. In *26th Annual European Symposium on Algorithms, ESA 2018, August 20-22, 2018, Helsinki, Finland*, pages 52:1–52:13, 2018.
- [103] Laura Giordano and Alberto Policriti. Power (set) ALC (extended abstract). In *Proceedings of the 33rd Italian Conference on Computational Logic, Bolzano, Italy, September 20-22, 2018*, pages 17–21, 2018.
- [104] Laura Giordano and Alberto Policriti. Extending ALC with the power-set construct. In *Logics in Artificial Intelligence - 16th European Conference, JELIA 2019, Rende, Italy, May 7-11, 2019, Proceedings*, pages 387–398, 2019.
- [105] Jarno Alanko, Giovanna D'Agostino, Alberto Policriti, and Nicola Prezza. Regular languages meet prefix sorting. In *Proceedings of the 2020 ACM-SIAM Symposium on Discrete Algorithms, SODA 2020, Salt Lake City, UT, USA, January 5-8, 2020*, pages 911–930, 2020.