

Curriculum Vitae et Studiorum

Cosimo Laneve

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1 Personal Details

NAME: Laneve Cosimo

BORN: 28 November 1962, Carosino (TA), Italy

NATIONALITY: Italian

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2 Education

PHD IN COMPUTER SCIENCE, University of Pisa, 28/5/1993. PhD Thesis:
Optimality and Concurrency in Interaction Systems; Supervisor: Ugo
Montanari.

LAUREA IN COMPUTER SCIENCE, University of Pisa, 19/6/ 1987.

3 Activities

3.1 Permanent Positions

- *University of Bologna, Dipartimento di Scienze dell'Informazione. Professor*, since November 2002.
- *University of Bologna, Dipartimento di Scienze dell'Informazione. Associate Professor*, From November 1998 to October 2002.
- *University of Bologna, Dipartimento di Scienze dell'Informazione. Assistant Professor*, from November 1994 to October 1998.

3.2 Temporary Positions

- *INRIA Sophia-Antipolis – CMA Ecole des Mines, Francia. Maitre de Recherche* from January 1993 to April 1994; *Post-Doctoral Fellow* from May 1994 to October 1994;
- *INRIA Rocquencourt, Francia. Visiting Scholar* from March 1992 to June 1992;
- *University of Pisa, Dipartimento di Scienze dell’Informazione. PhD student*, from November 1988 to October 1992;
- *University of Siena, Dipartimento di Matematica. Student of the Master in Mathematical Logic*, from October 1987 to May 1988;
- *Soc. Olivetti, Ivrea. Fellow* from October 1986 to June 1987.

4 Teaching

4.1 Courses

- *Compiler Construction*, years 2001/02 and 2002/03;
- *Software Verifications*, years 2000/01 and 2001/02;
- *Foundations of Object-Oriented Programming*, years 1998/99 and 1999/2000;
- *Practicum of Programming*, years 1994/95, 1995/96, 1996/97; 1997/98, 1999/2000, 2000/01, 2001/02
- *Mathematical Logic*, spring 1995;

4.2 Teaching Material

- Notes for the course of *Compiler Construction*, 2002, see www.cs.unibo.it/~laneve;
- Notes for the course of *Software Verifications*, 2001, see www.cs.unibo.it/~laneve;
- Notes for the course of *Practicum of Programming*, 2000, see www.cs.unibo.it/~laneve;
- “*La descrizione Operazionale dei Linguaggi di Programmazione*”, book, edited by Franco Angeli, Milan, 1998.
- Notes on Mathematical Logics, 1995;

4.3 Supervisor of PhD Thesis

- 2003: Manuel Mazzara, “*Transactional Mechanisms in Distributed Programming Languages*”, PhD in Computer Science, Università di Bologna.
- 2004: Samuele Carpineti, “*Network Aware Languages and their Implementation*”, PhD in Computer Science, Università di Bologna.

4.4 Supervisor of Diploma Thesis (abroad)

- 2002: Daniel Bünzli, University of Lousanne, Svizerland.

4.5 Supervisor of “Laurea Thesis”

- 2003: Samuele Carpineti, Casciaroli Simone, Enrico Persiani.
- 2002: Lorenzo Agostinelli, Roberto Barontini, Paolo Domenico Bevere, Iolanda Delle Foglie, Marco Di Felice, Francesco Gapito, Michele Fantetti, Sergio Govoni, Patrizia Mariani, Manuel Mazzara, Tiziana Tomasetti, Veronica Vezzali.
- 2001: Gaetano Bigliardi;
- 2000: Massimo D’Agostino;
- 1998: Tommaso Mascioli;
- 1997: Tiziana Valentini.

5 Scientific Activity

Cosimo Laneve’s research interests include functional programming, logics and concurrency theory. His research mainly focuses on foundational investigations of programming languages. His main achievements concern the theory and practice of sequential and concurrent implementations of functional programming languages, the semantics of higher order calculi and the analysis of sensible extensions, the verification of concurrent systems.

Research interests and classification of publications by arguments:

- *Verification of concurrent systems with temporal logics:* [13, 41, 42, 43].
- *Syntactic and semantics aspects of higher order (concurrent) languages:* [50, 6, 12, 29, 38, 39, 14];
- *Teory and practice of functional languages implementations:* [8, 9, 10, 27, 29, 31, 32, 33, 34, 35, 36, 50];
- *Analysis of extensions of functional languages:* [7, 30, 14] *and concurrent languages:* [11, 37, 40];
- *Mobile calculi and languages:* [25, 26, 28, 29, 39, 5, 22, 21].
- *Object-oriented programming and type systems:* [15, 44, 49, 23, 24, 4].
- *Biological systems:* [19, 18].

5.1 Invited Lectures

- *Lecture on Join-Calculus*, Third Italian Workshop on Functional Programming, March 26 – 27, 1997.
- *4° FMOODS Conference*, Florence, Italy: “Calculi for Concurrent Objects”, February 1999;

5.2 Projects

- MURST’01, Programmazione Network Aware: Oggetti, Linguaggi e Implementazioni; 2001–2003; *Local Coordinator*;
- Microsoft Research Grant No: 2001-44, Network Aware Programming; 2001–2003; *Local Coordinator*;
- ESPRIT TMR Network *Linear*; 1999–2002.
- MURST’99, Teoria della Concorrenza, Linguaggi di Ordine Superiore e Strutture di Tipi; 2000–2001; *Local Coordinator*;
- Microsoft Research Grant, The design and the analysis of Concurrent Object Oriented Languages; 2000–2001; *Local Coordinator*;
- Esprit Network of Excellence 21035 *CaberNet*; 1998–2001;
- ESPRIT WG-21836, CONFER: CONcurrency and Functionality: Evaluation and Reduction; 1997–2000.
- MURST’96, Tecniche formali per la specifica, l’analisi, la verifica, la sintesi e la trasformazione di sistemi software; 1997–1999.
- ESPRIT Basic Research Action n. 6454, CONFER (CONcurrency and Functionality: Evaluation and Reduction) 1993–1997.

5.3 Reviewer of Research Projects

February 2003 Reviewer of European (CEE) Projects for Future and Emerging Technologies (FET) Pepito, Myths, and Mikado.

5.4 Invited Scientist

- *Microsoft Corporation*, Redmond. Invited Professor, June 2003, January 2004, June 2004;
- *Université de Paris VII*, France. Invited Professor, June 2002;
- *INRIA Rocquencourt*, France. In February 1997, June 1998, February 2000, February 2001;

- *Uppsala University*, Sweden. In June 2000.
- *Microsoft Research*, Cambridge, U.K. In June 1999.
- *Université de Marseille*, France. In February 1998.
- *INRIA Sophia-Antipolis*, France. In February 1996.
- *Centrum voor Wiskunde en Informatica*, Amsterdam, Holland. In October 1993.
- *IRISA Rennes*, France. In June 1991.

5.5 Conferences

- *Member of the Program Committee of*
 - “*Workshop on Object-Oriented Developments* ” (WOOD’04).
 - “*Fifteenth International Conference on Concurrency Theory* ” (CONCUR’04).
 - “*Formal Methods for Open Object-Based Distributed Systems*” (FMOODS’03).
 - “*Eighth Italian Conference on Theoretical Computer Science* ” (ICTCS’03), Bertinoro, 13–15 Ottobre 2003. *Program Co-Chair*.
 - “*Third International Workshop on Verification, Model Checking and Abstract Interpretation*”, Venice, 21–22 January 2002.
- *Member Organizing Committee of*
 - “*First Workshop MSR Grant No: 2001-44*”, Cambridge, 7 – 8 June 2001.
 - “*First Workshop CONFER WG-21836*”, Bologna, 24 – 26 March 1997.
 - “*First Italian Workshop on Functional Programming*”, Bologna, 10 – 11 March 1995;

6 Publications

Riviste (*refereed*)

- [1] V. Danos, C. Laneve: “Formal Molecular Biology”, apparirà in *Theoretical Computer Science*, Volume ?(?), pp. ?? – ??, 2004.
- [2] C. Fournet, C. Laneve, L. Maranget, D. Remy: “Inheritance in the Join-Calculus”, in *Journal of Logic and Algebraic Programming*, Volume 54(1-2), pp. 23 – 69, 2003.

- [3] C. Laneve, B. Victor: “Solos in concert”, in in *Mathematical Structures in Computer Science*, Volume 13(5), pp. 657 – 683, 2003.
- [4] C. Laneve: “A Type System for JVM threads”, in *Theoretical Computer Science*, Volume 290(1), pp. 741 – 778, 2003.
- [5] C. Fournet, C. Laneve: “Bisimulations in the Join-Calculus”, *Theoretical Computer Science*, Volume 266(1-2), pp. 569 – 603, 2001.
- [6] C. Laneve, U. Montanari: “Axiomatizing Permutation Equivalence”, in *Mathematical Structures in Computer Science*, Volume 6(3), pp. 219 – 250, Giugno 1996.
- [7] G. Boudol, C. Laneve: “The discriminating power of multiplicities in the λ -calculus”, in *Information and Computation*, Volume 126(1), pp. 83 –102, Aprile 1996.
- [8] A. Asperti, C. Laneve: “Interaction Systems II: the practice of optimal reductions”, *Theoretical Computer Science*, Volume 159(2), pp. 191 – 244, 1996.
- [9] A. Asperti, C. Laneve: “Paths, Computations and Labels in the λ -calculus”, in *Theoretical Computer Science*, Volume 142(2), pp. 277–297, 1995.
- [10] A. Asperti, C. Laneve: “Interaction Systems I: the theory of optimal reductions”, in *Mathematical Structures in Computer Science*, Volume 4(4), pp. 457 – 504, 1995.
- [11] R. Gorrieri, C. Laneve: “Split and ST bisimulation semantics”, *Information and Computation*, Volume 118(2), pp. 272 – 288, Maggio 1995.
- [12] C. Laneve: “Distributive Evaluations of λ -calculus”, *Fundamenta Informaticae*, Volume 20(4), pp. 333 – 352, Giugno 1994.
- [13] A. Fantechi, S. Gnesi, C. Laneve: “Two standards means problems: A case study on formal protocol descriptions”, *Computer Standards and Interfaces*, Volume 9(1), pp.11-19, 1989.

Collezioni (refereed)

- [14] G. Boudol, C. Laneve: “Lambda-Calculus, Multiplicities and the π -calculus”, *Proof, Language, and Interaction: Essays in Honour of Robin Milner*, a cura di G. Plotkin, C. Stirling e M. Tofte, MIT Press. Maggio 2000.

Collezioni — Articoli invitati (non refereed)

- [15] C. Laneve: “Inheritance in Concurrent Objects”, in *Formal Methods for Distributed Processing, An Object Oriented Approach*, a cura di H. Bowman e J. Derrick, Cambridge University Press. Dicembre 2001, ISBN 0521771846.

Atti di Congressi (refereed)

- [16] L. Bocchi, C. Laneve, G. Zavattaro: “A calculus for long-running transactions”, in *6th Int. Conference on Formal Methods for Open Object based Distributed Systems (FMOODS’03)*, Lecture Notes in Computer Science n. 2884, pp. 124 – 138, Springer-Verlag, 2003.
- [17] P. Gardner, C. Laneve, L. Wischik: “Linear Forwarders”, *CONCUR ’03*, Lecture Notes in Computer Science n. 2761, pp. 415 – 430, Springer-Verlag, 2003.
- [18] V. Danos, C. Laneve: “Core Formal Molecular Biology”, *ETAPS ’03*, Lecture Notes in Computer Science n. 2618, pp. 302 – 318, Springer-Verlag, 2003.
- [19] V. Danos, C. Laneve: “Graphs for Core Formal Molecular Biology”, *CMSB ’03*, Lecture Notes in Computer Science n. 2602, pp. 34 – 46, Springer-Verlag, 2003.
- [20] P. Gardner, C. Laneve, L. Wischik: “The Fusion Machine”, *CONCUR ’02*, Lecture Notes in Computer Science n. 2421, pp. 418 – 433, Springer-Verlag, 2002.
- [21] R. Bruni, C. Laneve, U. Montanari: “Orchestrating Transactions in Join Calculus”, *CONCUR ’02*, Lecture Notes in Computer Science n. 2421, pp. 321 – 337, Springer-Verlag, 2002.
- [22] C. Laneve, J. Parrow, B. Victor: “Solo Diagrams”, In Proc. *4th Theoretical Aspects of Computer Science, TACS’01*, Lecture Notes in Computer Science 2215, pp. 127–144, Springer-Verlag, 2001.
- [23] C. Fournet, C. Laneve, L. Maranget, D. Remy: “Inheritance in the Join-Calculus (Extended Abstract)”, Proc. of Foundations of Software Technology and Theoretical Computer Science *FTCTCS 2000*, Lecture Notes in Computer Science n. 1974, pp. 397 – 408, Springer-Verlag, 2000.
- [24] G. Bigliardi, C. Laneve: “A Type System for JVM Threads”, ACM SIGPLAN Workshop on Types in Compilation (TIC’00), Montreal, 21 Settembre 2000.
- [25] C. Laneve, B. Victor: “Solos in concert”, Proc. *26th International Colloquium on Automata, Languages and Programming*, Lecture Notes in Computer Science n. 1644, pp. 513 – 523, Springer-Verlag, 1999.

- [26] M. Boreale, C. Fournet, C. Laneve: “Bisimulations in the Join-Calculus”, Proc. *Programming Concepts and Methods, PROCOMET '98*, edito da D. Gries e W.P. de Roever, pp. 68 – 86, Chapman e Hall, Giugno 1998.
- [27] A. Asperti, C. Laneve: “On the Dynamics of Sharing Graphs”, Proc. *24th International Colloquium on Automata, Languages and Programming*, Lecture Notes in Computer Science n. 1256, pp. 259 – 269, Springer-Verlag, 1997. Anche Rapporto Tecnico UBLCS 96-08, Dipartimento di Scienze dell’Informazione, Università di Bologna, Aprile 1996.
- [28] C. Fournet, C. Laneve, L. Maranget, D. Rémy: “Implicit typing à la ML for the join-calculus”, *Eighth International Conference on Concurrency Theory*, Lecture Notes in Computer Science, Springer-Verlag, 1997.
- [29] C. Laneve: “An Investigation on the Optimal Implementation of Processes”, Atti del *Fifth Italian Conference on Theoretical Computer Science*, pp. 402 – 417, World Scientific, 1996. Ravello, 9-11 Novembre 1995. Versione completa: Rapporto Tecnico UBLCS 96-1, Dipartimento di Scienze dell’Informazione, Università di Bologna, Gennaio 1996.
- [30] G. Boudol, C. Laneve: “Termination, deadlock and divergence in the λ -calculus with multiplicities”, Proc. *11^o Conference on the Mathematical Foundations of Programming Semantics, MFPS'95*, Electronic Notes in Theoretical Computer Science n. 1, pp. 63 – 76, Springer-Verlag, 1995.
- [31] A. Asperti, C. Laneve: “Comparing λ -calculus translations in Sharing Graphs”, Proc. *International Conference on Typed Lambda Calculi and Applications, TLCA '95*, Lecture Notes in Computer Science n. 902, pp. 1 – 15, Springer-Verlag, 1995.
- [32] A. Asperti, V. Danos, C. Laneve, L. Regnier: “Paths in the λ -calculus”, Proc. *Logic in Computer Science 1994*, pp. 426 – 436, 1994.
- [33] A. Asperti, C. Laneve: “The Family Relation in Interaction Systems”, Proc. *Theoretical Aspects of Computer Science, TACS'94*, Lecture Notes in Computer Science n. 789, pp. 366 – 384, Springer-Verlag, 1994.
- [34] A. Asperti, C. Laneve: “Interaction Systems”, Proc. *International Workshop on Higher Order Algebras, Logic and Term Rewriting, HOA '93*, Lecture Notes in Computer Science n. 816, pp. 1 – 19, Springer-Verlag, 1994.
- [35] A. Asperti, C. Laneve: “Paths, Computations and Labels in the λ -calculus”, Proc. *Rewriting Techniques and Applications, RTA '93*, Lecture Notes in Computer Science n. 690, pp. 152 – 167, Springer-Verlag, 1993.
- [36] A. Asperti, C. Laneve: “Optimal Reductions in Interaction Systems”, Proc. *Colloquium on Trees in Algebra and Programming, CAAP'93*, Lecture Notes in Computer Science n. 668, pp. 485 – 500, Springer-Verlag, 1993.

- [37] R. Gorrieri, C. Laneve: “An Extensional Formulation of ST-bisimulation”, Atti del *IV Convegno Italiano di Informatica Teorica*, L’Aquila, 28-30 Ottobre 1992.
- [38] C. Laneve, U. Montanari: “Axiomatizing Permutation Equivalence in the λ -calculus”, Proc. *3° Intern. Conf. on Algebraic and Logic Programming, ALP’92*, Lecture Notes in Computer Science n. 632, pp. 350 – 363, Springer-Verlag, 1992.
- [39] C. Laneve, U. Montanari: “Mobility in the cc-paradigm”, Proc. *Mathematical Foundations of Computer Science, MFCS’92*, Lecture Notes in Computer Science n. 629, pp. 336 – 345, Springer-Verlag, 1992.
- [40] R. Gorrieri, C. Laneve: “The Limit of CCS Split_n-bisimulations”, Proc. *Mathematical Foundations of Computer Science, MFCS’91*, Lecture Notes in Computer Science n. 520, pp.170-180, Springer-Verlag, 1991.
- [41] A. Fantechi, S. Gnesi, C. Laneve: “An Expressive Temporal Logic for Basic LOTOS”, Proc. *FORMal description Techniques, FORTE’89*, Vancouver, 5-8 Dicembre 1989, North-Holland.
- [42] A. Fantechi, S. Gnesi, C. Laneve: “A method to compare formal protocol specifications”, Proc. *1° EUROpean conference on INFORMATION technology for Organisational systems, EURINFO’88*, Atene, Grecia, Maggio 1988, North-Holland.
- [43] A. Fantechi, S. Gnesi, C. Laneve: “Comparing LOTOS and Estelle Formal Descriptions”, Proc. *EUropean TELEinformatics CONference, EUTECO’88*, Vienna, Austria, Aprile 1988, North-Holland.

Tutorials a Conferenze Internazionali (*non refereed*)

- [44] C. Laneve: “Calculi for Concurrent Objects”, Third International Conference on Formal Methods for Open Object-Based Distributed Systems (FMOODS’99), edito da P. Ciancarini, A. Fantechi e R. Gorrieri, pp. 351 – 352, Chapman e Hall, Febbraio 1999.

Libri (*Didattici*)

- [45] C. Laneve: “La descrizione operativa dei linguaggi di programmazione”, Franco Angeli Editore, Maggio 1998.

Editore di Special Issues, Libri, Proceedings

- [46] C. Blundo, C. Laneve: “Proceedings of the 8th Italian Conference of Theoretical Computer Science”, *Bertinoro, 13–15 Ottobre 2003*, LNCS 2841, 2003.

Rapporti Tecnici Non Pubblicati (*non refereed*)

- [47] G. Bigliardi, C. Laneve: “A Type System for JVM Threads”, Rapporto Tecnico UBLCS 2000-06, Dipartimento di Scienze dell’Informazione, Università di Bologna, Giugno 2000. (Versione completa di [24].)
- [48] C. Laneve: “May and Must Testing in the Join-Calculus”, Rapporto Tecnico UBLCS 96-04, Dipartimento di Scienze dell’Informazione, Università di Bologna, Marzo 1996.
- [49] F. Boussinot, C. Laneve: “Two Semantics for a Language of Reactive Objects”, Rapport de Recherche RR 2511, Marzo 1995, INRIA Sophia Antipolis.
- [50] C. Laneve: “Optimality and Concurrency in Interaction Systems”, *tesi di dottore di ricerca*, Rapporto Interno TD-8/93, Dip. di Scienze dell’Informazione di Pisa, Marzo 1993.
- [51] A. Fantechi, S. Gnesi, C. Laneve: “A Logic Approach to Guarded and Unguarded Recursion”, I.E.I. Rapporto Interno B4-06, Marzo 1989.

Software

- [52] G. Bigliardi, C. Laneve: “Java Bytecode Verifier with structured locking checks”, Software e documentazione a www.cs.unibo.it/~laneve/html/software, Aprile 2001.

Dispense, Note, Manoscritti (*non refereed*)

- [53] C. Laneve: “Introduzione alla Logica e alla Programmazione Logica”, manoscritto per il corso di *Metodi per il Trattamento dell’Informazione*, Università di Bologna, 1995.