

# Curriculum Vitae

MARIA GRAZIA BUSCEMI

## Personal Details

**Date of birth:** August 2nd 1975

**Place of birth:** Catania

**Nationality:** Italian

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## Current Position

From May 2006: Assistant Professor at IMT Lucca Institute for Advanced Studies.

## Past Positions

From January 2006 to April 2006: post-doctoral researcher position (*assegno di ricerca*) at the Computer Science Department, University of Pisa.

From September 2005 to December 2005: Research contract at the Computer Science Department, University of Pisa, within the European Global Computing project EU IST FET **SENSORIA** *Software Engineering for Service-Oriented Overlay Computers*.

From May to August 2005: Research contract at the Computer Science Department, University of Pisa.

From April 2002 to April 2005: Research contract at the Computer Science Department, University of Pisa, within the European Global Computing project EU IST FET **PROFUNDIS** *Proofs of Functionality for Mobile Distributed Systems*.

## Education

- 2003 [February] PhD in Applied Mathematics and Computer Science, University of Naples "Federico II", Italy. Title of the thesis: *Models for Mobility and Security in Distributed Systems*.
- 1998 [July] Master Degree (*cum laude*) in Computer Science, University of Catania, Italy. Title of the thesis: *Computability Theory on Hereditarily Finite Sets*.

## Teaching Activity

- 2009-2010 Graduate course on *Fundamentals in Computer Science - Introduction to Semantics*, PhD program in Computer Science and Engineering, IMT Lucca
- 2008-2009 Graduate course on *Constraint Programming*, PhD program in Computer Science and Engineering, IMT Lucca
- 2007-2008 Graduate course on *Fundamentals in Computer Science*, PhD program in Computer Science and Engineering, IMT Lucca
- 2006-2007 Course on *Basics of Computer Science*, "Corso di Laurea in Scienze e Tecnologie dell'Ambiente", University of Pisa  
Introductory course in Computer Science, "Casa Circondariale di Porto Azzurro", Livorno
- 2005-2006 Seminar on *Network Security* as part of a course in *Computer Networks*, Computer Science Department, University of Pisa.
- 2001-2002 Seminar on *Symbolic Analysis of Security Protocols* as part of course in *Computer Security*, Department of Computer Science and Systems, University of Firenze.
- 1999-2000 Preliminary course on Operating Systems, University of Catania.

## Research Activity

### Interests

Foundational Aspects of Global Computing and Service Oriented Computing  
Semantics of Programming Languages  
Constraint Programming  
Computational Models (Process Algebras, Logics, Types, Meta-models)  
Formal Methods for Security Application  
Game-theoretic models of Grid and Global Computing

## Participation to Projects

- 2010- **ASCENS** (Autonomic Service-Component Ensembles Software Engineering for Service-Oriented Overlay Computers). EU IST FET Integrated Project funded by the European Community.
- 2010- **IPODS**. Italian PRIN Project partially funded by MIUR.
- 2006- **TOCAI.IT** (Tecnologie Orientate alla Conoscenza per Aggregazioni in Imprese in Internet). FIRB project partially funded by the Italian Ministry of Education, University and Research (MIUR).
- 2005-2010 **SENSORIA** (Software Engineering for Service-Oriented Overlay Computers). EU IST FET-Global Computing project funded by the European Community.
- 2001-2005 **PROFUNDIS** (Proofs of Functionality for Mobile Distributed Systems'). EU IST FET-Global Computing project funded by the European Community.
- 2002-2003 **COMETA** (Metamodelli Computazionali). Project partially funded by MIUR.
- 2002-2003 **NAPOLI** (Network Aware Programming - Objects, Languages, Implementations). Project partially funded by MIUR.
- 1999-2001 **TOSCA** (Teoria della Concorrenza, Linguaggi di Ordine Superiore e Strutture di Tipi). Project partially funded by MIUR.

## Visits

- 2009 (*February-March*) Visit to LIX, École Polytechnique, Palaiseau Cedex, FRANCE
- 2007 (*June*) Visit to the Chinese Academy of Science, Beijing, China  
(*January*) Visit to the French National Institute for Research in Computer Science and Control *INRIA Futurs*, Palaiseau, France.
- 2001-2002 (*May 2001 - December 2002*) Collaboration with the 'Mobility and Concurrency Group', Department of Computer Science and Systems, University of Firenze.
- 2000 (*October-December*) Visit to *INRIA* Sophia-Antipolis, France and collaboration with the 'MIMOSA' research team.
- 1999 (*July*) Visit to BRICS Research Centre, University of Aarhus, Denmark.
- 1997 (*October-December*) Visit to the Computer Science Department, University of California at Berkeley, USA, and collaboration with Professor Martin D. Davis.

## Participation to Committees

Member of the Program Committee of ESOP 2010 (*19th European Symposium on Programming*).

Member of the Organising Committee of *Concurrency, Graph and Models (Colloquium in Honour of Ugo Montanari)*.

Member of the Scientific Committee of *Fondazione Barsanti e Matteucci*.

Member of the Organising Committee of TGC 2006 (*Second Symposium on Trustworthy Global Computing*).

## Refereeing Activity

### Journals

Logical Methods in Computer Science

IEEE Transactions on Computers

Information and Computation

Computer Languages

Information Sciences

The Computer Journal

### International Conferences

IEEE Symposium on Logic in Computer Science (LICS)

International Colloquium on Automata, Languages and Programming (ICALP)

International Conference on Concurrency Theory (CONCUR)

European Symposium on Research in Computer Security (ESORICS)

European Symposium on Programming (ESOP)

International Conference on Formal Methods for Open Object-Based Distributed Systems (FMOODS)

International Conference on Algebraic Methodology And Software Technology (AMAST)

International Symposium on Fundamentals of Computation Theory (FCT)

Theoretical Computer Science Conference (TCS)

International Workshop on Expressiveness in Concurrency (Express)

ACM Symposium on Applied Computing - Computer Security Track (SAC)

Foundations of Computer Security (FCS)

Symposium on Trustworthy Global Computing (TGC)

Conference on Algebra and Coalgebra in Computer Science (CALCO)

Web Services and Fomal Methods (WSFM)

## Invited Seminars

- 2009 (February) Seminar on *Abstract Processes in Orchestration Languages*. Paris 7 University, PPS Laboratory, France.  
(February) Seminar on *A concurrent constraint pi-calculus: an overview*. LIX, École Polytechnique, France.
- 2007 (May) Seminar on *China-EU R & D perspective cooperation in Global Computing*, EU-CHINA Meeting organised by the SPICE EU Project. Shanghai, China.  
(June) Talk on *A process calculus for Specifying Service Level Agreements and Resource Allocation*. Laboratory for Computer Science, Institute of Software, Chinese Academy of Sciences, Beijing, China.
- 2005 (October) Talk on *Fusion and Binding Mechanisms in Process Calculi*. Department of Physics, Computer Science Division, University of Naples Federico II.
- 2002 (September) Talk on *Security Protocol Analysis*. Computer Science Department, University of Bologna.
- 2001 (March) Talk on *Mobile Petri Nets and the Join Calculus*. Department of Computer Science and Systems, University of Florence.  
(October) Talk on *Symbolic Analysis of Security Protocols*. Department of Computer Science, University of Pisa.
- 1998 (October) Talk on *Computability Theory on Hereditarily Finite Sets*. BRICS Research Centre, University of Aarhus, Denmark.

## Publications

### Journals

- [BBCG11] F. Bonchi, M. G. Buscemi, V. Ciancia, and F. Gadducci. A Presheaf Environment for the Explicit Fusion Calculus. *Journal of Automated Reasoning - Special issue on Binding, Substitution and Naming*. Springer Verlag, 2011. To appear.
- [BM11] M.G. Buscemi and U. Montanari. QoS Negotiation in Service Composition. *Journal of Logic and Algebraic Programming*, 80(1): pages 13–24. Elsevier Science, 2011.
- [BM08c] M.G. Buscemi and U. Montanari. A Survey of Constraint-based Programming Paradigms. *Computer Science Review* 2(3): 137-141. Elsevier, 2008.
- [BM07b] M.G. Buscemi and U. Montanari. A Compositional Coalgebraic Model of Fusion Calculus. *Journal of Logic and Algebraic Programming* 72(1): 78–97. Elsevier, 2007.
- [BB05] M. Boreale and M.G. Buscemi. A Method for Symbolic Analysis of Security Protocols. *Theoretical Computer Science* 338(1-3): 393–425. Elsevier, 2005.

## Book Chapters

- [SNSR10] Maria Grazia Buscemi and Ugo Montanari. CC-Pi: A Constraint Language for Service Negotiation and Composition. In *Rigorous Software Engineering for Service-Oriented Systems Results of the SENSORIA project on Software Engineering for Service-Oriented Computing*. Lecture Notes in Computer Science. Springer-Verlag, 2010.

## International Conferences

- [BMT10] M.G. Buscemi, U. Montanari, and S. Taneja. Toward a Game-Theoretic Model of Grid Systems. In *Post-proceedings of the 5th Symposium on Trustworthy Global Computing (TGC'10)*. Lecture Notes in Computer Science 6084, pages 57–72. Springer-Verlag, 2010.
- [BMe10] M.G Buscemi, H. Melgratti. Contracts for Abstract Processes in Service Composition. In *Proceedings Foundations for Interface Technologies (FIT'10)*. Electronic Proceedings in Theoretical Computer 46, pages 9–27, 2010.
- [BBM10] D. Bacciu, M.G. Buscemi and L. Mkrtychyan. Adaptive Fuzzy-valued Service Selection. In *Proceedings of ACM Symposium in Applied Computing (SAC '10)*, pages 2467–2471. ACM Press, 2010.
- [BM09] M.G. Buscemi and H. Melgratti. Abstract Processes in Orchestration Languages. In *Proceedings of the 18th European Symposium on Programming (ESOP'09)*. Lecture Notes in Computer Science 5502, pages 301–315. Springer-Verlag, 2009.
- [BBCG08] F. Bonchi, M.G. Buscemi, V. Ciancia, and F. Gadducci. A Category of Explicit Fusions. In *Concurrency, Graphs and Models, Essays Dedicated to Ugo Montanari on the Occasion of His 65th Birthday*. Lecture Notes in Computer Science 5065, pages 544–562. Springer-Verlag, 2008.
- [BM08a] M.G. Buscemi and H. Melgratti. Transactional Service Level Agreement. In *Post-proceedings of the 3rd Symposium on Trustworthy Global Computing (TGC'07)*. Lecture Notes in Computer Science 4912, pages 124–139. Springer-Verlag, 2008.
- [BM08b] M.G. Buscemi and U. Montanari. Open Bisimulation for the Concurrent Constraint Pi-calculus. In *Proceedings of the 17th European Symposium on Programming (ESOP'08)*. Lecture Notes in Computer Science 4960, pages 254–268. Springer-Verlag, 2008.
- [BFMM07] M.G. Buscemi, L. Ferrari, C. Moiso, and U. Montanari. Constraint-Based Policy Negotiation and Enforcement for Telco Services. In *Proceedings of the 1st IEEE & IFIP Theoretical Aspects of Software Engineering Conference (TASE'07)*, pages 463–472. IEEE Computer Society, 2007.
- [BM07a] M.G. Buscemi and U. Montanari. CC-Pi: A Constraint-Based Language for Specifying Service Level Agreements. In *Proceedings of the 16th European Symposium on Programming (ESOP'07)*. Lecture Notes in Computer Science 4421, pages 18–32. Springer-Verlag 2007.

- [BM06] M.G. Buscemi and U. Montanari. A Compositional Coalgebraic Model of a Fragment of Fusion Calculus. *Electronic Notes in Computer Science* 162:135–139. Elsevier, 2006.
- [BBM05] M. Boreale, M.G. Buscemi, and U. Montanari. A General Name Binding Mechanism. In *Proceedings of Symposium on Trustworthy Global Computing (TGC '05)*. Lecture Notes in Computer Science 3705, pages 61–74. Springer-Verlag, 2005.
- [BBM04] M. Boreale, M.G. Buscemi, and U. Montanari. D-Fusion: a Distinctive Fusion Calculus. In *Proceedings of the Second Asian Symposium on Programming Languages and Systems (APLAS'04)*. Lecture Notes in Computer Science 3302, pages 296–310. Springer-Verlag, 2004.
- [BB03] M. Boreale, M.G. Buscemi. Symbolic Analysis of Crypto-Protocols based on Modular Exponentiation. In *Proceedings of the 28th International Symposium on Mathematical Foundations of Computer Science (MFCS '03)*. Lecture Notes in Computer Science 2747, pages 269–278. Springer-Verlag, 2003.
- [BM02] M.G. Buscemi, U. Montanari. A First Order Coalgebraic Model of Pi-Calculus Early Observational Equivalence. In *Proceedings of the 13th International Conference on Concurrency Theory (CONCUR '02)*. Lecture Notes in Computer Science 2421, pages 449–465. Springer-Verlag, 2002. Extended version available as Technical Report TR-02-14, Dipartimento di Informatica, Università di Pisa.
- [BB02a] M. Boreale, M.G. Buscemi. A Framework for the Analysis of Security Protocol. In *Proceedings of the 13th International Conference on Concurrency Theory (CONCUR '02)*. Lecture Notes in Computer Science 2421, pages 483–498. Springer-Verlag, 2002.
- [BB02b] M. Boreale, M.G. Buscemi. Experimenting with STA, a Tool for Automatic Analysis of Security Protocols. In *Proceedings of ACM Symposium in Applied Computing (SAC '02)*, pages 281–285. ACM Press, 2002.
- [BS01] M.G. Buscemi, V. Sassone. High-Level Petri Nets as Type Theories in the Join Calculus. In *Proceedings of Foundations of Software Science and Computation Structure (FoSSaCS '01)*. Lecture Notes in Computer Science 2030, pages 104–120. Springer-Verlag, 2001.

## Foreign Languages

- English: fluent.
- Spanish: advanced.
- French: intermediate.