

Curriculum vitae - Annalisa Massini

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Associate Professor

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Education

In 1993 she received her PhD degree in Computer Science from University of Rome "La Sapienza", under the supervision of Prof. Giuseppe A. De Biase.

Dissertation: High efficiency self-routing interconnection networks

In 1989 she received her Master degree in Mathematics from the University of Rome "La Sapienza", under the supervision of Prof. Giuseppe A. De Biase.

Dissertation: Binary redundant number representation for a parallel arithmetic on optical and electronic computers

Positions

Since 2001 Annalisa Massini (<http://twiki.di.uniroma1.it/twiki/view/Users/AnnalisaMassini>) is an Associate Professor with the Computer Science Department of "Sapienza" University of Rome (Italy).

From 1996 to 2001, she was an Assistant Professor with the Computer Science Department of the University of Rome "La Sapienza".

Scientific Activity

Research

Her research interests include: system level verification, mobile sensor networks, GPU based simulations, parallel architecture and parallel arithmetic units, interconnection networks.

Annalisa Massini is a reviewer for scientific papers submitted to International Conferences and Journals.

Projects

- Sapienza university project 2016 - A vendor neutral approach to System Level Formal Verification of Cyber-Physical Systems: methods and tools - **Proponent**
- FP7-ICT-2011-9 - ICT-2011.5.2 – PAEON – **Task responsible**
Project Title: Model Driven Computation of Treatments for Infertility Related Endocrinological Diseases
Project Duration and Start Date: 36 Months, 1 January 2013
- FP7-ICT-2011-8 - ICT-2011.6.1 – SMARTHG – **Task responsible**
Project Title: Energy Demand Aware Open Services for Smart Grid Intelligent Automation
Project Duration and Start Date: 36 Months, 1 October 2012
- MIUR PRIN 2008 (2009-2011) "Autonomic Security" - Participant
- Participant in Sapienza university projects from 2001

Publications

Journal papers

1. T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci, "SyLVaaS: System Level Formal Verification as a Service". *Fundam. Inform.* 149(1-2): 101-132, 2016
2. T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci, "Anytime system level verification via parallel random exhaustive hardware in the loop simulation". *Microprocessors and Microsystems - Embedded Hardware Design* 41: 12-28, 2016
3. N. Bartolini, A. Massini, S. Silvestri "P&P: an asynchronous and distributed protocol for mobile sensor deployment", *Wireless Networks*, 18(4), 381-399, 2012
4. N. Bartolini, T. Calamoneri, A. Massini, S. Silvestri "On adaptive density deployment to mitigate the sink-hole problem in mobile sensor network", *ACM/Springer Mobile Networks and Applications*, ACM/Springer Mobile Networks and Applications, 16:134-145, 2011
5. N. Bartolini, T. Calamoneri, E. G. Fusco, A. Massini, S. Silvestri "Push and Pull: Autonomous Deployment of Mobile Sensors for a Complete Coverage", *Wireless Networks*, 16(3), 607 - 625, 2010
6. T. Calamoneri, A. Massini, L. Torok, I. Vrto "Antibandwidth of Complete k-ary Trees", *Discrete Mathematics*, Vol. 309, No. 22, 6408-6414, 2009
7. T. Calamoneri, A. Massini, "Nearly Optimal Three Dimensional Layout of Hypercubes", *Networks*, 47(19), pp. 1-8, 2006
8. T. Calamoneri, A. Massini, "Efficient Algorithms for Checking the Equivalence of Multistage Interconnection Networks", *Journal of Parallel and Distributed Computing*, 64, 1, 135-150, 2004
9. T. Calamoneri, A. Massini, I. Vrto, "New results on Edge-Bandwidths", *Theoretical Computer Science*, 307, pag 503-513, 2003
10. A. Massini, "All-to-all personalized communication on multistage interconnection networks", *Discrete Applied Mathematics*, 128, 435-446, 2003
11. T. Calamoneri, A. Massini, "Optimal Three-Dimensional Layout of Interconnection Networks", *Theoretical Computer Science*, 255, pag 263-279, 2001
12. G. Bongiovanni, G. A. De Biase, A. Massini, A. Monti, "The shuffled mesh: a flexible and efficient model for parallel computing", *Telecommunication Systems*, Vol 13-1, 21-27, 2000
13. T. Calamoneri, A. Massini, "An Optimal Layout of Multigrid Networks", *Information Processing Letters*, 72, 137-141, 1999.
14. G. A. De Biase, A. Massini, "A virtually nonblocking self-routing permutation network which routes packets in $O(\log_2 N)$ ", *Telecommunication Systems*, 10, 135-147, 1998.
15. G. A. De Biase, C. Ferrone, A. Massini, "An $O(\log_2 N)$ depth asymptotically nonblocking self-routing permutation network", *IEEE Trans. on Comp.*, vol. 44, 1047-1050, 1995.

16. A. Clementi, G. A. De Biase, A. Massini, "Fast parallel arithmetic on cellular automata", *Complex Systems*, vol. 8, 435-441, 1994.
17. G. A. De Biase, A. Massini, "High efficiency redundant binary number representations for parallel arithmetic on optical computers", *Optics & Laser Technology - Special Issue on Optical Computing*, vol.26, n. 4, 219-224, 1994.
18. G. A. De Biase, A. Massini, "Redundant Binary Number Representation for an Inherently Parallel Arithmetic on Optical Computers", *Applied Optics*, vol. 32, 659-664, 1993.
19. G. A. De Biase, A. Massini, "Parallel Optical Arithmetic on Images by a Redundant Binary Number Representation", *Applied Optics*, vol. 29, 1587-1589, 1990.

Conference papers

1. T. Mancini, E. Tronci, I. Salvo, F. Mari, A. Massini, I. Melatti, "Computing Biological Model Parameters by Parallel Statistical Model Checking". IWBBIO 2015
2. T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci, "SyLVaaS: System Level Formal Verification as a Service". Int. Conf. on Parallel, Distributed and Network-Based Computing, PDP 2015
3. T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci, "Simulator Semantics for System Level Formal Verification", GandALF 2015
4. T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci, "Anytime System Level Verification via Random Exhaustive Hardware in the Loop Simulation" DSD 2014
5. Enrico Tronci, Toni Mancini, Ivano Salvo, Stefano Sinisi, Federico Mari, Igor Melatti, Annalisa Massini, Francesco Davi, Thomas Dierkes, Rainald Ehrig, Susanna Röblitz, Brigitte Leeners, Tillmann H. C. Kruger, Marcel Egli, Fabian Ille, "Patient-specific models from inter-patient biological models and clinical records". FMCAD 2014
6. T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci, "System Level Formal Verification via Distributed Multi-Core Hardware in the Loop Simulation" Proc. 22nd Euromicro Int. Conf. on Parallel, Distributed and Network-Based Computing (PDP 2014) Turin, Italy, 2014
7. T. Mancini, F. Mari, A. Massini, I. Melatti, F. Merli, E. Tronci, "System Level Formal Verification via Model Checking Driven Simulation", CAV 2013, San Pietroburgo, Russia, 2013
8. F. Alessi, A. Massini, R. Basili, "High Performance Parallelization of COMPSYN on a Cluster of Multicore Processors with GPUs", Second Int. Workshop on Advances in High-Performance Computational Earth Sciences: Applications and Frameworks (IHPCES), International Conference on Computational Science, Omaha, Nebraska, USA, 2012
9. F. Alessi, A. Massini, R. Basili, "Accelerating the Production of Synthetic Seismograms by a Multicore Processor Cluster with Multiple GPUs", 20th Euromicro Int. Conf. on Parallel, Distributed and Network-Based Computing (PDP 2012) Garching, Germany, 2012
10. N. Bartolini, T. Calamoneri, A. Massini, S. Silvestri "Variable density deployment and topology control for the solution of the sink-hole problem", Proc. ICST QShine 2009, Las Palmas de Gran Canaria, Spain, 2009
11. N. Bartolini, A. Massini, S. Silvestri "P&P protocol: local coordination of mobile sensors for self-deployment", Proc. ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (ACM MSWIM 2009), Tenerife, Canary Island, Spain, 2009
12. N. Bartolini, T. Calamoneri, T. La Porta, A. Massini, S. Silvestri "Autonomous deployment of heterogeneous mobile sensors", Proc. IEEE International Conference on Network Protocols (IEEE ICNP 2009), Princeton, New Jersey, USA, 2009 - **Best Paper Award winner**
13. A. Massini, M. T. Raffa "Using the LCP based Decomposition for Permutation Routing on $(2 \log N - 1)$ Stage Interconnection Networks", Proc. IASTED International Conference on Parallel and Distributed Computing and Networks (PDCN2009), Austria, 2009.
14. N. Bartolini, T. Calamoneri, E.G. Fusco, A. Massini, S. Silvestri, "Autonomous deployment of self-organizing mobile sensors for a complete coverage", Proc. of 3rd International Workshop on Self-Organizing Systems (IWSOS 2008), Vienna, Austria, 2008.
15. N. Bartolini, T. Calamoneri, E. G. Fusco, A. Massini, S. Silvestri, "Snap and Spread: a self-deployment algorithm for mobile sensor networks", 4th IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS '08), Santorini, Grecia, 2008.
16. T. Calamoneri, A. Massini, L. Torok, I. Vrto, "Antibandwidth of complete k-ary tree", *Proc. of 5th Cracow Conference on Graph Theory, Electronic Notes in Discrete Mathematics*, 24, 259-266, 2006.
17. T. Calamoneri e A. Massini, "Nearly optimal three-dimensional layout of hypercube networks", *Proc. of Graph Drawing 03*, Italia, 64-75, 2003.
18. G. A. De Biase, A. Massini, "Parallel Sorting of n -strings in Kn Time", *Proc. International Conference on Communications in Computing CIC'2002*, 24-27, Las Vegas, USA, 2002.

19. T. Calamoneri, A. Massini, "A New Approach to the Rearrangeability of $(2 \log N - 1)$ Stage MINs", *Proc. IASTED International Conference on Applied Informatics (AI2001)*, Innsbruck, Austria, 2001.
20. A. Massini, "All-to-all personalized communication on multistage interconnection networks", *International Conference on Communications in Computing CIC'2000*, Las Vegas, Nevada, USA, pag. 217-223, 2000.
21. T. Calamoneri, A. Massini, "Efficiently checking the equivalence of multistage interconnection networks", *Proc. 11th IASTED International Conference on Parallel and Distributed Computing Systems (PDCS'99)*, Cambridge, Massachusetts, USA, pag. 23-30, 1999.
22. A. Clementi, G. A. De Biase, A. Massini, "Pipelined addition, accumulation and multiplication of binary numbers on cellular automata", *Proc. Fourth Joint Conference on Information Science (JCIS'98)*, RTP, North Carolina, USA, pag. 134-141, 1998.
23. G. Bongiovanni, G.A. De Biase, A. Massini, A. Monti, "The shuffled mesh: a flexible and efficient model for parallel computing", *Proc. 6th International Conference on Telecommunication Systems*, Nashville, USA, pag. 652-654, 1998.
24. T. Calamoneri, A. Massini, "On three-dimensional layout of interconnection networks", *Proc. of Graph Drawing 97*, Settembre Roma, Italia, pag. 64-75, 1997.
25. G. A. De Biase, A. Massini, "Parallel Arithmetic on Optical Computers by Redundant Binary Number Representation", *Proc. of International Conference on Application of Photonic Technology*, Plenum Press, Toronto, Canada, pag. 101-108, 1995.
26. G. A. De Biase, C. Ferrone, A. Massini, "A quasi-nonblocking self-routing network which routes packets in $\log_2 N$ time", *Proc. of IEEE INFOCOM'93*, S. Francisco, California, USA, pag. 1375-1381, 1993.