

Annalisa Massini

Curriculum Vitae

*"Ma, soprattutto, bisognerebbe imparare a dubitare,
a diventare scettici." - Margherita Hack*

Appointments

- 2001–today **Associate Professor**, INF01, Computer Science Department - *Sapienza* University of Rome.
1st november 2001
- 1996–2001 **Researcher**, K05B, Computer Science Department - *Sapienza* University of Rome.
8th January 1996 - 31st October 2001

Current institutional role

- 2023–today **Chair of the Teaching Board for the Computer Science Programmes**, Coordination of the courses of study: Bachelor's Degree in Applied Computer Science and Artificial Intelligence (taught in English), Bachelor's Degree in Computer Science (taught in Italian), Bachelor's Degree in Computer Science taught mainly at distance (in Italian) and the Master's Degree in Computer Science (taught in English), Computer Science Department - *Sapienza* University of Rome.

Education

- 1993 **PhD in Computer Science**, V cycle, Computer Science Department - University of Rome *La Sapienza*, PhD thesis: *High efficiency self-routing interconnection networks*.
Advisor Prof. G. A. De Biase
- 1989 **Laurea degree in Mathematics**, University of Rome *La Sapienza*, Thesis: *Binary redundant number representation for a parallel arithmetic on optical and electronic computers*.
Supervisor Prof. G. A. De Biase

Research interests

Research interests include: parallel architectures, parallel arithmetic units, quantum arithmetic units, interconnection networks, computer networks, mobile sensor networks, system level verification, GPU based simulations.

Scholarship

- 1994-1996 **PostDoc Scholarship**, Computer Science Department - University of Rome *La Sapienza*.
- 1993-1994 **Scholarship**, Hewlett Packard, realization of a prototype for Information Appliance.
- 1990 **Scholarship**, National Research Council (CNR), n. 201.12.61 - 21/7/89 for Focused Project *Sistemi Informatici e Calcolo Parallelo* on the topic *Design of HW modules for numerical signal processing elaboration (Studio e progetto di moduli HW per l'elaborazione numerica di segnali)*.

Teaching

- 2025/26 – **Computer Architecture - Unit 1**, *Joint double degree between Sapienza University of Rome - Bachelor's degree in Applied Computer Science and Artificial Intelligence - and Zhongnan University of Economics and Law (ZUEL), Wuhan, China - Bachelor's degree in Artificial Intelligence (Chinese degree: Engineering).*
- 2024/25 – **Fundamentals and Epistemology of Computer Science**, *PFI A041 - Initial Training Course for the qualification to teach in secondary schools of first and second degree for the class A041 Informatics and Information Technologies*, Sapienza University of Rome.
- 2008/09 – **Digital System Design**, *Bachelor degree in Computer Science*, Sapienza University of Rome.
- 2022/23 – **Advanced Architectures**, *Master's degree in Computer Science*, Sapienza University of Rome.
- 2007/08 – **Intensive Computation**, *Master's degree in Computer Science*, Sapienza University of Rome.
- 2020/21 – **Operating Systems**, *Bachelor's degree in Mathematics*, Sapienza University of Rome.
- 2009/2010 – **Informatics**, *Specialization School in Medical Physics*, Sapienza University of Rome, Matlab programming. Image processing, Sapienza University of Rome.
- Previous and other courses **Computer Architecture, Advanced Parallel Architectures, Computer Networks.**

Maternity leave

Mandatory maternity leave from 16/05/2003 to 16/10/2003

Mandatory maternity leave from 30/04/2001 to 30/09/2001

Mandatory maternity leave from 22/10/1997 to 26/03/1998

Mandatory maternity leave from 07/02/1996 to 07/07/1996

Institutional activities

Department and Faculty

- 2024–today Director of the PFI - A041 at Sapienza University of Rome - *Initial Training Course for the qualification to teach in secondary schools of first and second degree for the class A041 Computer Science and Information Technologies*
- 2023–today Chair of the Teaching Board for the Computer Science Programmes - Department of Computer Science (*Elective role*) - Leadership and coordination of the courses of study: Bachelor's Degree in Applied Computer Science and Artificial Intelligence (taught in English), Bachelor's Degree in Computer Science (taught in Italian), Bachelor's Degree in Computer Science taught mainly at distance (in Italian) and the Master's Degree in Computer Science (taught in English)
- 2023–today Member of the Sapienza University of Rome *Teaching and Learning Center Sapienza* (TLC-S) for the Computer Science Department
- 2020–2023 Member of the Monitoring Committee of the Sapienza Faculty I3S (support to the Quality Team and the teaching and research University Evaluation Committee) for the Computer Science Department
- 2019–2021 Member of the Committee for Teaching and Research activities of the graduate and undergraduate program for the Department of Computer Science

- 2014–2021 Member of the Department Board as Representative of Associate Professors for the Department of Computer Science - *Elective role*
- 2014–2021 Member of the Faculty Board as Representative of Associate Professors for the Faculty of Information Engineering, Informatics, and Statistics (I3S Faculty) - *Elective role*
- 2011–today Member of the Sapienza Committee of UGOV Research (Integrated information system used by Sapienza University of Rome for management processes) for the Computer Science Department
- 2011–2023 Member of the Sapienza Committee of VQR (Valutazione della Qualità della Ricerca - Evaluation of Research Quality) for the Computer Science Department
- 2009–2010 Member of the Quality Evaluation Committee of the Faculty of Mathematical, Physical and Natural Sciences (SMFN Faculty) for the Department of Computer Science
- 2004–2007 Member of the Commission for the transfer of students to the three-year degree courses in Computer Science
- 1996–today Member of the Department of Computer Science of Sapienza University of Rome

PhD school

- 2001–today Member of the Teaching Board of the PhD in Computer Science
 - 2019 Member of the PhD Admission Committee in Computer Science Program (XXXIV cycle) Sapienza University of Rome
- 2018–2022 Advisor for the PhD Program in Computer Science of Daniele Izzi, Sapienza University of Rome, XXXIV cycle, *On Communication Problems for Multistage Interconnection Networks*
- 2017–2021 Advisor for the PhD Program in Computer Science of Viviana Arrigoni, Sapienza University of Rome, XXXIII cycle, *Network Performance Analysis through Boolean Network Tomography and Parallelization of Fundamental Operations in Numerical Linear Algebra*
- 2012–2015 Co-advisor (with prof. Dario Tedesco) of Lucio Badiali, International PhD Course in Novel Physics Methodologies for Environmental Research XXVI ciclo, Seconda Università di Napoli, *A predictive model for lava effusion rate using machine learning methodology*
 - 2010 Member of the PhD Admission Committee in Computer Science Program (XXVI cycle) Sapienza University of Rome
 - 2006 Chair of the PhD Admission Committee in Computer Science Program (XXII cycle) Sapienza University of Rome

Other Committees and Activities

- 2016–today Coach and supervisor for the selection and participation of Sapienza teams in the International Competitive Programming Competitions SWERC (Southwestern Europe Regional Contest) - **2019 Bronze Medal** to the SapienzaBlack team
- 2013–2015 Member of the Admissions Committee for the Active Training Internship (TFA) for the A042 class for teaching Informatics in secondary schools
- 2012–today Member of the Admissions Committee for the Specialization School in Medical Physics and of the Committee for the Awarding of the Degree for the Specialization School in Medical Physics
- 2011–today Regional representative and supervisor for the Computer Science Olympiad at the Lazio regional headquarters LAZ2
- 1996–today Full member of the Degree Commissions for the three-year degree course in Applied Computer Science and Artificial Intelligence, in Computer Science and for the Master's degree course in Computer Science, and also supervisor and co-supervisor of theses

Projects

PI, Co-PI, Task Leader role in Projects

- 2022 **PI** of the University Project *Quantum Circuits for RNS (Residue Number Systems) Parallel Arithmetic* - Funding assigned 3850 euros
- 2021–2023 **Co-PI** in the JPMorgan Chase Research Award Project 2021 - *Understanding interdependent market dynamics: vulnerabilities and opportunities*
- 2020–2022 **Co-PI** in the JPMorgan Chase Research Award Project 2020 - *The impact of trading strategies and market rules on fairness of financial markets - A framework for fairness assessment in financial markets*
- 2018 **Co-Proposer** of the University Project for Large Scientific Equipment *In vivo Advanced Systems for qualitative and quantitative Magnetic Resonance Imaging of the brain and heart* - Funding assigned 420.000 euros
- 2017 **PI** of the University Project *A Holistic Model-Based Approach to Design, Verification and Diagnosis of Cyber Physical Systems* - Funding assigned 4000 euros
- 2017–2018 **PI and Scientific responsible** of project CINECA ISCRA (Italian SuperComputing Resource Allocation) class C, n. HP10CDHUFS, Title: *Design and development of an application for the parallelization of bioinformatics pipelines for NGS data analysis - PaPi-NGS*. Computational CINECA hours assigned: 35.000 on MARCONI A1
- 2016 **PI** of the University Project *A vendor neutral approach to System Level Formal Verification of Cyber-Physical Systems: methods and tools* - Funding assigned 4000 euros
- 2016–2017 **PI and Scientific responsible** of project CINECA ISCRA (Italian SuperComputing Resource Allocation) class C n. HP10C0ICO0, Title: *Parallelization and optimization of bioinformatics pipelines for Next Generation Sequencing data analysis - popNGS*. Computational CINECA hours assigned: 100.000 on GALILEO.
- 2013–2016 **Task Leader** for task T1.2 in the *EU Research Project* FP7-ICT-2011-9 - ICT-2011.5.2 – PAEON – *Project Title: Model Driven Computation of Treatments for Infertility Related Endocrinological Diseases* *Project Duration: 36 Months, 01/02/2013 – 31/01/2016*
- 2012–2015 **Task Leader** for task T1.3 in the *EU Research Project* FP7-ICT-2011-8 - ICT-2011.6.1 – SMARTHG – *Project Title: Energy Demand Aware Open Services for Smart Grid Intelligent Automation* *Project Duration: 36 Months, 01/10/2012 – 30/09/2015*
- 2011–2013 **Scientific responsible** for the agreement between the Computer Science Department of Sapienza University of Rome and the National Institute for Geophysics and Vulcanology (INGV) on High Performance Computation on GPGPU based architectures on the cloud and optimization of software for seismic and acoustic modelling.

International and National Projects Participation

- 2024– Project NET4EXA (NETwork for European EXAscale Systems) - HORIZON JU Innovation Actions. Call: HORIZON-EUROHPC-JU-2023-INTER-02. Grant agreement: 101175702 - **Participant to the research activities of Sapienza University of Rome Unit**
- 2020–2022 Project POR FESR 2014-2020, Progetti strategici Aerospazio - *Satellite Driven Fire Simulator (SDFS)* - **Participant to the research activities of Sapienza University of Rome Unit**
- 2018–2019 Project Bando Aerospazio regione Lazio - SCAPR (POR FESR Aerospazio e sicurezza) - *A system for hostile UAV detection in critical areas* - **Participant to the research activities of Sapienza University of Rome Unit**
- 2015–2019 Project NATO G4936 Science for Peace and Security - *Hybrid Sensor Networks for Emergency Critical Scenarios* - **Participant to the research activities**

- 2009–2011 MIUR PRIN 2008 *Autonomic Security* - **Participant to the research activities of Sapienza University of Rome Unit**
- 2006–2012 Project under the MIUR Program (Art. 12, Decreto Ministeriale 8 agosto 2000 n. 593 - Bando Aerospazio Lazio) Title: Integrated system for management and control of TRANsport of Dangerous Materials - TRAMP (DM 24283) **Direction and coordination of the phases of the planned activities. Coordination of implementation management. Coordination of training activities. Responsibility for project reporting**

Third Mission Projects and Activities

- 2025 – Direction and coordination of the third mission project G4GRETA (Girls for Green technology Applications) and related funds (previously coordinated by Paola Velardi). The G4GRETA project aims to get a greater number of girls interested in using ICT (Information and Communication Technology) technologies by showing how they, together with other technologies, are a great support for environmental sustainability.
- 2024 – Director of the PFI - A041 at Sapienza University of Rome - *Initial Training Course for the qualification to teach in secondary schools of first and second degree for the class A041 Computer Science and Information Technologies*
- 2024 – Participation to the third mission project: MuSa Open Network, Responsible: Daniele Gorla

University Projects Participation

- 2023 Participation in the research project: Real-Time Internet-Wide and Quantum Networks Monitoring through Distributed and Dynamic Network Tomography – Responsible: Daniele De Sensi
- 2023 Participation in the research project: MUSE - MUseum management, enhancement and accessibility: a Sustainable digital Ecosystem of interactive digital collections – Responsible: Elena Ippoliti
- 2021 Participation in the research project: Drones as a service for first emergency response – Responsible: Gaia Maselli
- 2020 Participation in the research project: An autonomous control framework for swarms of aerial vehicles – Responsible: Novella Bartolini
- 2019 Participation in the research project: Model Based Design of Autonomous Cyber Physical Systems of Systems – Responsible: Igor Melatti
- 2018 Participation in the research project: Computing Complete Cohorts of Virtual Phenotypes for In Silico Clinical Trials and Model-Based Precision Medicine – Responsible: Toni Mancini
- 2015 Participation in the research project: Models and Software Tools for in-silico Clinical Trials – Responsible: Enrico Tronci
- 2014 Participation in the research project: Politics as cultural practice. A pioneering approach to connect consumption and political orientation of Twitter users – Responsible: Marzia Antenore
- 2013 Participation in the research project: System Level Formal Verification via Model Checking Driven Simulation – Responsible: Enrico Tronci
- 2012 Participation in the research project: Parallel automatic synthesis of control software for embedded systems – Responsible: Igor Melatti
- 2011 Participation in the research project: Efficient and secure deployment and coordination of mobile sensors in critical scenarios – Responsible: Novella Bartolini
- 2010 Participation in the research project: Entropy and dynamics of large-scale social networks – Responsible: Alessandro Panconesi

- 2009 Participation in the research project: Progettazione e valutazione sperimentale e analisi della sicurezza di Autonomic Communication Systems – Responsible: Luigi Vincenzo Mancini
- 2008 Participation in the research project: Analisi e sviluppo di sistemi autonomi distribuiti – Responsible: Chiara Petrioli
- 2007 Participation in the research project: Progettazione ed analisi di architetture, applicazioni e servizi innovativi per reti eterogenee – Responsible: Alessandro Mei
- 2006 Participation in the research project: Progettazione ed analisi di architetture, applicazioni e servizi di rete innovativi ad alte prestazioni – Responsible: Novella Bartolini
- 2005 Participation in the research project: Progettazione ed analisi di architetture, applicazioni e servizi di rete innovativi – Responsible: Giancarlo Bongiovanni
- 2004 Partecipazione al programma di ricerca dal titolo Progettazione ed analisi di architetture, applicazioni e servizi di rete innovativi – Responsible: Giancarlo Bongiovanni
- 2003 Participation in the research project: Sperimentazione di servizi innovativi per reti eterogenee – Responsible: Luigi Vincenzo Mancini
- 2002 Participation in the research project: Servizi innovativi su reti geografiche eterogenee – Responsible: Luigi Vincenzo Mancini
- 2001 Participation in the research project: Sistemi distribuiti: servizi innovativi su cluster e reti geografiche eterogenee – Responsible: Giancarlo Bongiovanni

Other activities

Reviewer

- 1998–today Reviewer for international journals: Theoretical Computer Science, Journal of Computational and Applied Mathematics, Pervasive and Mobile Computing, Int'l Journal of Software Engineering and Knowledge Engineering, ACM Transactions on Parallel Computing, Network (MPDI), Journal of Parallel and Distributed Computing, International Journal of Computers and Applications, Networks, IEEE Transactions on Parallel and Distributed Systems, IEEE COMPUTER, Robotics and Autonomous Systems, Discrete Mathematics, Optical Engineering, IEEE/ACM Transaction on Networking, Journal of Visual Languages and Computing
- 1996–today Reviewer for international conferences: International Conference on High Performance Computing, Data, and Analytics (HiPC), International Performance Computing and Communications Conference (IPCCC), International Conference on Computing, Networking and Communication (ICNC), Haifa Verification Conference (HVC), Vehicular Technology Conference (VTC), Conference on Distributed Computing in Sensor Systems (DCoSS), International Parallel and Distributed Processing Symposium (IPDPS), SIROCCO, Aracne, European Symposium on Algorithms (ESA), International Conference on Communications in Computing (CIC), International Conference on Algorithms and Complexity (CIAC)

Conference Program Committee

- 2025 Member of the Program Committee of the 32nd IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), Hyderabad, India, December 17-20, 2025
- 2025 Member of the Program Committee of the International Conference on Computing, Networking and Communication (ICNC), Maui, Hawaii, USA, February 16-19, 2026
- 2025 Member of the Program Committee of the 44th IEEE – International Performance Computing and Communications Conference IPCCC, November 21-23, 2025, Austin, Texas, USA

- 2024 Member of the Program Committee of the 31st IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), Bengaluru, India, December 18-21, 2024
- 2024 Member of the Program Committee of the International Conference on Computing, Networking and Communication (ICNC), Honolulu, Hawaii, USA, February 17-20, 2025
- 2024 Member of the Program Committee of the 43rd IEEE – International Performance Computing and Communications Conference IPCCC, November 22-24, 2024, Orlando, Florida, USA
- 2023 Member of the Program Committee of the 30th IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), Goa, India, December 18-21, 2023
- 2023 Member of the Program Committee of the International Conference on Computing, Networking and Communication (ICNC), Big Island, Hawaii, USA, February 19-22, 2024
- 2023 Member of the Program Committee of the 42nd IEEE – International Performance Computing and Communications Conference IPCCC, November 17-19, 2023, Anaheim, California, USA
- 2022 Member of the Program Committee of the International Conference on Computing, Networking and Communication (ICNC), Honolulu, Hawaii, USA, February 20-22, 2023
- 2022 Member of the Program Committee of the 41st IEEE – International Performance Computing and Communications Conference IPCCC, November 11-13, 2022, Austin, Texas, USA
- 2022 Publication Chair del 9th International Workshop on Computer and Networking Experimental Research using Testbeds (CNERT), in IEEE International Conference on Computer Communications (INFOCOM), May 2-5 2022
- 2020 Member of the Program Committee of the International Conference on Computing, Networking and Communication (ICNC), Big Island, Hawaii, USA, February 17-20, 2020
- 2019 Member of the Program Committee of the International Conference on Computing, Networking and Communication (ICNC), Honolulu, Hawaii, USA, February 18-21, 2019
- 2017 Member of the Program Committee of the Thirteenth Haifa Verification Conference - HVC 2017, November 13 - 15 2017, Haifa, Israel, sponsored by IBM
- 2016 Member of the Program Committee of the Twelfth Haifa Verification Conference - HVC 2016, November 14 - 17 2016, Haifa Israel, sponsored by IBM
- 2015 Member of the Program Committee of the Eleventh Haifa Verification Conference - HVC 2015 , November 17 - 19 2015, Haifa Israel, sponsored by IBM
- 2009 Publicity Chair della 6th International ICST Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness, QShine 2009, November 23-25 2009, Las Palmas, Spain
- 2005 Member of the Program Committee of the Int. Conference on Communications in Computing, CIC'05, June 27-30, 2005, Las Vegas, Nevada, USA
- 2004 Member of the Program Committee of the Int. Conference on Communications in Computing, CIC '04, June 21-24, 2004, Las Vegas, Nevada, USA
- 2003 Membro del Comitato di programma della Int. Conference on Communications in Computing, CIC'03, June 23-26, 2003, Las Vegas, Nevada, USA
- 2022 Member of the Program Committee of the Int. Conference on Communications in Computing, CIC'02, June 24-27 2002, Las Vegas, Nevada, USA
- 2001 Member of the Program Committee of the Int. Conference on Communications in Computing, CIC'01, June 25-28, 2001, Las Vegas, Nevada, USA - 2001
- 2000 Membro del Comitato di programma della Int. Conference on Communications in Computing, CIC'00, June 26-29, 2000, Las Vegas, Nevada, USA

Journal publications

- J1 D. Izzi, A. Massini *Realizing Optimal All-to-All Personalized Communication Using Butterfly-Based Networks*. IEEE ACCESS, vol. 11, p. 51064-51083, 2023
- J2 V. Arrigoni, N. Bartolini, A. Massini, F. Trombetti *A Bayesian Approach to Network Monitoring for Progressive Failure Localization* IEEE-ACM Transactions on Networking, p. 1-14, 2022
- J3 V. Arrigoni, N. Bartolini, A. Massini *Topology Agnostic Bounds on Minimum Requirements for Network Failure Identification* IEEE ACCESS, vol. 9, p. 6076-6086, 2021
- J4 F. Mari, A. Massini, I. Melatti, E. Tronci *A Constraint Optimization-Based Sense and Response System for Interactive Business Performance Management* Applied Artificial Intelligence, vol. 35, p. 353-372, 2021
- J5 T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci *On checking equivalence of simulation scripts* The Journal of Logical and Algebraic Methods in Programming, vol. 120, 2021
- J6 N. Bartolini, T. He, V. Arrigoni, A. Massini, F. Trombetti, H. Khamfroush *On Fundamental Bounds on Failure Identifiability by Boolean Network Tomography* IEEE-ACM TRANSACTIONS ON NETWORKING, vol. 28, p. 588-601, 2020
- J7 A. Pappagallo, A. Massini, E. Tronci *Monte carlo based statistical model checking of cyber-physical systems: A review* INFORMATION, vol. 11, p. 1-24, 2020
- J8 S. Gioiosa, M. Bolis, T. Flati, A. Massini, E. Garattini, G. Chillemi, M. Fratelli, T. Castrignanó *Massive NGS data analysis reveals hundreds of potential novel gene fusions in human cell lines* GIGASCIENCE, vol. 7, p. 1-8, 2018
- J9 T. Mancini, A. Massini, E. Tronci *Parallelization of Cycle-Based Logic Simulation* Parallel Processing Letters, 27(2): 1-16, 2017
- J10 T. Mancini, F. Mari, A. Massini, I. Melatti, I. Salvo, E. Tronci *On minimising the maximum expected verification time*, Information Processing Letters, 122, 1, 8-16, 2017
- J11 T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci *SyLVaaS: System Level Formal Verification as a Service*, Fundamenta Informaticae 149(1-2): 101-132, 2016
- J12 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
- J13 N. Bartolini, A. Massini, S. Silvestri *P&P: an asynchronous and distributed protocol for mobile sensor deployment*, Wireless Networks, 18(4), 381-399, 2012
- J14 N. Bartolini, T. Calamoneri, A. Massini, S. Silvestri *On adaptive density deployment to mitigate the sink hole problem in mobile sensor networks*, ACM Springer Mobile Networks and Applications, 16:134-145, 2011
- J15 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
- J16 T. Calamoneri, A. Massini, L. Torok, I. Vrto *Antibandwidth of Complete k-ary Trees* Discrete Mathematics, Vol. 309, No. 22, 6408-6414, 2009
- J17 T. Calamoneri, A. Massini *Nearly Optimal Three Dimensional Layout of Hypercubes* Networks, 47(19), pp. 1-8, 2006

- J18 T. Calamoneri, A. Massini *Efficient Algorithms for Checking the Equivalence of Multistage Interconnection Networks* Journal of Parallel and Distributed Computing, 64, 135 - 150, 2004
- J19 T. Calamoneri, A. Massini, I. Vrto *New results on Edge-Bandwidth* Theoretical Computer Science, 307, 503-513, 2003
- J20 A. Massini *All-to-all personalized communication on multistage interconnection networks* Discrete Applied Mathematics, 128, 435-446, 2003
- J21 T. Calamoneri, A. Massini *Optimal Three-Dimensional Layout of Interconnection Networks* Theoretical Computer Science, 255, 263-279, 2001
- J22 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
- J23 T. Calamoneri, A. Massini *An Optimal Layout of Multigrid Networks* Information Processing Letters, 72, 137-141, 1999
- J24 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
- J25 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
- J26 A. Clementi, G. A. De Biase, A. Massini *Fast parallel arithmetic on cellular automata* Complex Systems, vol. 8, 435-441, 1994
- J27 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
- J28 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
- J29 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 publications

- C1 Annalisa Massini, Federico Mingardi *A Delay-Efficient Implementation of Quantum Carry Select Adders* IPDPS (Workshops). p 1095-1104, San Francisco, 2024
- C2 D. Izzi, A. Massini *All-to-All Personalized Communication on Fat-Trees Using Latin Squares* Proc. Int. Conf. on Software, Telecommunications and Computer Networks (SoftCOM). p. 1-6, Split, Croatia, 2022
- C3 V. Arrigoni, F. Maggioli, A. Massini, E. Rodolà *Efficiently Parallelizable Strassen-Based Multiplication of a Matrix by its Transpose* Proc. 50th International Conference on Parallel Processing (ICPP), p. 1-12, 2021
- C4 V. Arrigoni, N. Bartolini, A. Massini, F. Trombetti *Failure localization through progressive network tomography* Proc. IEEE INFOCOM, vol. 2021, p. 1-10, Vancouver, BC, Canada - online, 2021
- C5 F.G. Cabangcla, D. Izzi, A. Massini *A New Perspective for Rearrangeability of MINs* Proc. Int. Conf. on Software, Telecommunications and Computer Networks (SoftCOM). p. 1-6, Hvar, Croatia, 2021

- C6 D. Izzi, A. Massini *Optimal all-to-all personalized communication on Butterfly networks through a reduced Latin square* Proc. IEEE 22nd Int. Conf. on High Performance Computing and Communications, (HPCC-SmartCity-DSS 2020) p. 1065-1072, Fiji, 2020
- C7 V. Alimguzhin, T. Mancini, A. Massini, S. Sinisi, E. Tronci *In silico clinical trials through AI and statistical model checking* Proc. 1st Workshop on Artificial Intelligence and Formal Verification, Logic, Automata, and Synthesis, OVERLAY vol. 2509, p. 17-22, CEUR-WS, ISSN: 1613-0073, Rende, Italy, 2019
- C8 A. Calabrese, T. Mancini, A. Massini, S. Sinisi, E. Tronci *Generating T1DM virtual patients for in silico clinical trials via AI-guided statistical model checking* Proc. Workshop CEUR, vol. 2538, Rende, Italy, 2019
- C9 V. Arrigoni, A. Massini *Hybrid Solver for Quasi Block Diagonal Linear Systems* Proc. of Parallel Processing and Applied Mathematics. Lecture Notes on Artificial Intelligence, Springer, Bialystok, Poland, 2019
- C10 T. Mancini, F. Mari, A. Massini, I. Melatti, I. Salvo, S. Sinisi, E. Tronci, R. Ehrig, S. Röblitz, and B. Leeners *Computing personalised treatments through In Silico Clinical Trials. A case Study on downregulation in assisted reproduction* Proc. 25th Int Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion, RCRA, vol. 2271, CEUR-WS, Oxford, UK, 2018
- C11 T. Mancini, E. Tronci, I. Salvo, F. Mari, A. Massini, I. Melatti *Computing Biological Model Parameters by Parallel Statistical Model Checking* Proc. IWBBIO (2), 542-554, 2015
- C12 T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci *SyLVaaS: System Level Formal Verification as a Service* Proc. PDP, 476-483, 2015
- C13 T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci *Simulator Semantics for System Level Formal Verification* Proc. Gandalf, 86-99, 2015
- C14 R. Ehrig, T. Dierkes, S. Schäfer, S. Röblitz, E. Tronci, T. Mancini, I. Salvo, V. Alimguzhin, F. Mari, I. Melatti, A. Massini, T. Krüger, M. Egli, F. Ille, B. Leeners *An integrative approach for model driven computation of treatments in reproductive medicine* Proc. 15th Int. Symposium on Mathematical and Computational Biology, (BIOMAT), Roorkee, Uttarakhand, India, 2015
- C15 T. Mancini, F. Mari, A. Massini, I. Melatti, E. Tronci *Anytime System Level Verification via Random Exhaustive Hardware In The Loop Simulation* Proc. 17th Euromicro Conf. on Digital Systems Design (DSD 2014) Verona, Italy, 2014
- C16 T. Mancini, I. Salvo, F. Mari, I. Melatti, A. Massini, S. Sinisi, E. Tronci, F. Daví, T. Dierkes, R. Ehrig et al. *Patient-Specific Models from Inter-Patient Biological Models and Clinical Records* Formal Methods in Computer-Aided Design (FMCAD), Lausanne, Switzerland, 2014
- C17 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
- C18 T. Mancini, F. Mari, A. Massini, I. Melatti, F. Merli, E. Tronci *System Level Formal Verification via Model Checking Driven Simulation* Proc. CAV 2013 - 25th Int. Conf. on Computer Aided Verification, Saint Petersburg, Russia , 2013
- C19 F. Alessi, A. Massini, R. Basili *High Performance Parallelization of COMPSYN on a Cluster of Multicore Processors with GPUs* Proc. 2nd Int. Workshop on Advances in High-Performance Computational Earth Sciences: Applications and Frameworks (IHPCES), Int. Con. on Computational Science, Omaha, Nebraska, USA, 2012

- C20 F. Alessi, A. Massini, R. Basili *Accelerating the Production of Synthetic Seismograms by a Multicore Processor Cluster with Multiple GPUs* Proc. 20th Euromicro Int. Conf. on Parallel, Distributed and Network-Based Computing (PDP 2012) Garching, Germany, 2012
- C21 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
- C22 N. Bartolini, A. Massini, S. Silvestri *P&P protocol: local coordination of mobile sensors for self-deployment* Proc. ACM Int. Conf. on Modeling, Analysis and Simulation of Wireless and Mobile Systems (ACM MSWIM 2009), Tenerife, Canary Island, Spain, 2009
- C23 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**
- C24 A. Massini, M. T. Raffa *Using the LCP based Decomposition for Permutation Routing on $(2 \log N - 1)$ Stage Interconnection Networks* Proc. International Conference on Parallel and Distributed Computing and Networks (PDCN2009), Innsbruck, Austria, 2009
- C25 N. Bartolini, T. Calamoneri, E.G. Fusco, A. Massini, S. Silvestri *Autonomous deployment of self-organizing mobile sensors for a complete coverage* Proc. 3rd International Workshop on Self-Organizing Systems (IWSOS 2008), Vienna, Austria, 2008
- C26 N. Bartolini, T. Calamoneri, E. G. Fusco, A. Massini, S. Silvestri *Snap and Spread: a self-deployment algorithm for mobile sensor networks* Proc. 4th IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS '08), Santorini, Greece, 2008
- C27 T. Calamoneri, A. Massini, L. Torok, I. Vrto *Antibandwidth of complete k -ary tree* Proc. of 5th Cracow Conference on Graph Theory, Polland, Electronic Notes in Discrete Mathematics, 24, pp. 259-266, 2006
- C28 T. Calamoneri, A. Massini *Nearly optimal three-dimensional layout of hypercube networks* Proc. of Graph Drawing 03, Italy, Lecture Notes in Computer Science, vol. 2912, 64-75, 2003
- C29 G. A. De Biase, A. Massini *Parallel Sorting of n -strings in Kn Time* Proc. International Conference on Communications in Computing - CIC'2002, Las Vegas, Nevada, USA, 24-27, 2002
- C30 T. Calamoneri, A. Massini *A New Approach to the Rearrangeability of $(2 \log N - 1)$ Stage MINs* Proc. International Conference on Applied Informatics (AI2001), Austria, 2001
- C31 A. Massini *All-to-all personalized communication on multistage interconnection networks* International Conference on Communications in Computing - CIC'2000, Las Vegas, Nevada, USA, 217-223, 2000
- C32 T. Calamoneri, A. Massini *Efficiently checking the equivalence of multistage interconnection networks* Proc. 11th International Conference on Parallel and Distributed Computing Systems (PDCS'99), Cambridge, Massachusset, USA, 23-30, 1999
- C33 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, 134-141, 1998
- C34 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, 652-654, 1998

- C35 T. Calamoneri, A. Massini *On three-dimensional layout of interconnection networks* Proc. of Graph Drawing 97, Roma, Italy, 64-75, 1997
- C36 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, 101-108, 1995
- C37 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, 1375-1381, 1993