

Curriculum vitae

Marco Di Natale

Current Position:

(since Dec. 2014) Scuola Superiore S. Anna, Pisa:
Full Professor, Computer Science and Computer Engineering Dept.

Past Positions:

(Sept. 2001-Dec. 2014) Scuola Superiore S. Anna, Pisa:
Associate Professor, Computer Science and Computer Engineering Dept.

(Jan-Dec 2003 and Dec 2004-Sept 2006) **Director of the Real-Time and Embedded Systems (ReTiS) Lab** at the Scuola S. Anna, Pisa. The lab hosts 5 faculty, 10 PhD students and other 10 researchers or professionals working on Real-Time Systems Research.

(March 14th 2006 – Nov 30th 2006 and Nov 2008-March 2009) **Visiting Associate Researcher** University of California at Berkeley. Electrical Engineering and Computer Science Dept. Working on Architecture Exploration Techniques at the General Motors Berkeley Labs.

(Sept 1st 2000 - Aug. 31st 2001) Scuola Superiore S. Anna, Pisa:
Assistant Professor, Computer Science and Computer Engineering Dept.

(May 22nd 1996 – Aug 31st 2000) Università degli Studi, Pisa:
Assistant Professor, Information Engineering Dept.

(Sept. 1993 - Aug 1994) University of Massachusetts, Amherst, USA:
Research Assistant, Computer Science dept.

Education:

Graduate degree

(Jan. 1992 - Feb 6th 1995) Scuola Superiore S. Anna, Pisa:
PhD Computer Science/Computer Engineering. PhD thesis on "Static and Dynamic Scheduling in Distributed Real-Time Systems",

(Sept. 1993 - Aug 1994) University of Massachusetts, Amherst, USA:
Computer Science PhD student (gpa 4.9/5.0) and Research Assistant.
Supervisor Prof. J. Stankovic, IEEE Fellow.

Undergraduate degree

(Spring 1991) Università degli Studi di Pisa:
Electronics Engineering 110/110 cum laude, thesis on: "Design and Development of a Hard Real-Time System" tutor Prof. P. Ancilotti.

Teaching:

2008 to 2014

Undergraduate degree courses (laurea I and II degree)

2008-09 Scuola Superiore S. Anna: Development of Embedded Systems (30 hours) (Dec 08 - Mar 09)
2009-10 Scuola Superiore S. Anna: Development of Embedded Systems (30 hours) (Feb10 - May 10)
2010-11 Scuola Superiore S. Anna, University of Pisa, University of Trento: Embedded Systems/Model-Based Design (48 hours) (Sep 10 - Dec 10)

2010-11 Scuola Superiore S. Anna, University of Pisa: Embedded Systems I/Model-Based Design (96 hours) (Sep 10 - May 11)
2011-12 Scuola Superiore S. Anna, University of Pisa, University of Trento: Embedded Systems/Model-Based Design (48 hours) (Sep 10 - Dec 10)
2011-12 Scuola Superiore S. Anna: Embedded Systems/Model-Based Design (30 hours) (Feb 12 - May 12)
2012-13 Scuola Superiore S. Anna: Embedded Systems/Model-Based Design (30 hours) (Feb 13 - May 13)
2013-14 Scuola Superiore S. Anna: Embedded Systems/Model-Based Design (30 hours) (Feb 14 - May 14)

2008.09

Graduate level courses

2008-09 Scuola Superiore S. Anna: Development of Embedded Systems (30 hours) (Dec 08 - Mar 09)
2009-10 Scuola Superiore S. Anna: Embedded Systems (30 hours) (Feb 10 - May 10)
2010-11 Scuola Superiore S. Anna: Embedded Systems I (48 hours) (Sep 10 - Dec 10)
2010-11 Scuola Superiore S. Anna: Embedded Systems II (30 hours) (Feb 11 - May 11)
2011-12 Scuola Superiore S. Anna: Embedded Systems (48 hours) (Sep 11 - Dec 11)
2012-13 Scuola Superiore S. Anna: Embedded Systems (30 hours) (Sep 12 - May 13)
2013-14 Scuola Superiore S. Anna: Embedded Systems (30 hours) (Sep 13 - May 14)

Before 2008

Undergraduate degree courses:

- Operating Systems (Università di Pisa, Electronics Engineering)
- Fundamentals of Computer Systems (Università di Pisa, Telecommunications engineering; Electronics Engineering and other Engineering courses)
- Computer Systems II (Università di Pisa, Computer Engineering and Electronics Engineering courses)
- Computer Graphics (Università di Pisa, Aeronautics and Civil Engineering courses)

PhD and Master-level courses:

- Embedded Systems Design – Model Based Design, Scuola Superiore S. Anna; year 2008 to 2012
- Models and Tools for the Design of Real-Time Embedded Systems, Scuola Superiore S. Anna; year 2004/2005
- Design of Embedded Systems – “International Master Course on SW Engineering”, Scuola Superiore S. Anna; year 2003/2004
- Interoperability of Internet Systems – “International Master Course on SW Engineering”, Scuola Superiore S. Anna; years 2003/2004
- Introduction to computer systems - Master course on “Management dell’Innovazione”, Scuola Superiore S. Anna; years 1996/97 and 1997/98

Other teaching activities:

- May 1998 An Introduction to Real-Time Systems; organized by Consorzio Qualital, Pisa
- Nov 2000 Web Technologies and Systems for the masters course "Web and Wireless" organized by Omnitel S.p.A.
- Feb 2001 Computer Engineering for the masters course "Web and Wireless" organized by Omnitel S.p.A.
- 2002/2003 Seminars and Courses on XML, UML and Real-Time Systems for Merloni S.p.A. and Magneti Marelli S.p.A.
- 2012 Course on SysML for Elettronica S.p.A., Roma.
- 2013 Module on Model-Based Design for Telecom S.p.A., Roma.
- 2014 Module on Visions: Embedded Systems Development for Telecom S.p.A., Roma.

Tutorship of students (current)

Undergraduate

Spigler Giacomo - Allievo Corsi I livello - Engineering, Scuola S. Anna
Latini Tommaso - Allievo Corsi I livello, Engineering, Scuola S. Anna
Giglio Marco - Electronic Engineering Thesis Candidate 2014 - Scuola S. Anna and University of Trento

PhD-level

Ghibaudi Marco - Perfezionamento Innovative Technologies (Engineering) - Scuola Superiore S. Anna
Pelliccia Riccardo - Perfezionamento Innovative Technologies (Engineering) - Scuola Superiore S. Anna
Salvadori Claudio - Perfezionamento Innovative Technologies (Engineering) - Scuola Superiore S. Anna
Macedo Simone - Perfezionamento Innovative Technologies (Engineering) - Scuola Superiore S. Anna
Matteo Morelli - PhD Computer Engineering - Scuola Superiore S. Anna
Fabio Cremona - PhD Computer Engineering - Scuola Superiore S. Anna
David Perillo - PhD Computer Engineering - Scuola Superiore S. Anna

Cofounder and scientific/technical fellow for the following academic startups

Evidence S.r.l. – Pisa (www.evidence.eu.com)

Icube S.r.l. - Pisa

Idea S.r.l. - Pisa

Funded Research Projects (Research Grants)

- **1991-94: URMAD (Mobile Robotic Unit for the Assistance to the Disabled)**
(PI Paolo Dario), from CNR (Italian National Research Council).
Computer Architecture Designer, Real-time and Communications systems design and implementation.
Funded Amt. (Approx) Overall 1,500,000 \$ - Unit (Scuola S. Anna) 250,000 \$
- **1992-95: ESPRIT III TRACS (Traffic Control System)**
(PI Paolo Ancilotti) financed by the European Union.
Design and Implementation of the Real-Time operating systems support and real-time software analysis tools.
Funded Amt. (Approx) Overall 1,000,000 \$ - Unit (Scuola S. Anna) 100,000 \$
- **1995-98: ESPRIT IV MORIS (Motorcycle Rider Simulator)**
(co-PI Paolo Ancilotti) financed by the European Union.
Responsible for the Architecture Development and system Integration phases; real-time software design and development, real-time support tools design and development, console subsystem design.
Funded Amt. (Approx) Overall 1,700,000 \$ - Unit (Scuola S. Anna) 750,000 \$. Research group at Scuola S. Anna of 10 people
- **1996-99: MOSAICO project, financed by CNR**
(PI Luciano Lenzini)
Real-time analysis tools: design and development
Funded Amt. (Approx) Overall 1,500,000 \$ - Unit (Università di Pisa) 200,000 \$
- **1998-2001: MADESS II (Materials and Devices for Solid State Electronics)**
(<http://www.madess.cnr.it/>)
financed by CNR
(co-PI Paolo Ancilotti)
design and development of real-time operating systems for single and multiprocessors embedded controllers.
Funded Amt. (Approx) Overall 800,000 \$ - Unit (Scuola S. Anna) 200,000 \$
- **1998-2001: LINK Project, financed by MURST (Italian University and Research Ministry) technology transfer program.** (<http://link.sssup.it>)
General Manager for the projects:
"Information and Network Services for Innovating Business to Business Processes"
"Training of professionals for the management of business to business IT systems and applications".

Funded Amt. (approx) Overall 2,500,000 \$ Manager of activities spanning 4 Research groups in Italy for a total of about 50 people

- *2000-2003*: LINK Project II, financed by MURST (Italian University and Research Ministry) technology transfer program.
General Manager for the project:
“Design, development and testing of information technology systems for the Research Center of Pontedera (managed by the Scuola S. Anna)”
Funded Amt. (approx) Overall 500,000 \$ Manager of a research group of 8 people
- *2001-2002*: HRT-UML project, financed by the Italian Space Agency (ASI) for the study of an HRT-UML profile in order to support the design and development of time-critical space application software.
Funded Amt. (Approx) Overall 300,000 \$ - Unit (Scuola S. Anna) 50,000 \$
- *2002-2004*: “Innovative use of Workflow Management Techniques”, financed by the Fondazione Cassa di Risparmio di Pisa for using WFMS for automating the processes of local Public Administrations and PMEs
Funded Amt. (Approx) Overall 200,000 \$
- *2001-2003*: ASWAD project IST-2001-35176 Agent-Supported Workflow in the Public Administration (<http://www.dfki.de/aswad/>) financed by the European Union.
for experimenting the use of workflow management techniques and tools in the management of Public Administration processes.
Funded Amt. (Approx) Overall 950,000 \$ - Unit (Scuola S. Anna) 60,000 \$
- *2001-2003*: project QUACK A Platform for the Quality of New Generation Integrated Embedded Systems (www.lta.disco.unimib.it/quack) financed by the Italian Ministry of University and Research (MIUR) (co-PI Paolo Ancilotti)
Funded Amt. (Approx) Overall 450,000 \$ - Unit (Scuola S. Anna) 90,000 \$
- *2002-2005*: RECSYS - IST 2011-37170 “Real-Embedded Control of Mobile Systems with Distributed Sensing”, (<http://www.recsys.org/>) financed by the European Union
for Research on Control with computation and communication constraints
Funded Amt. (Approx) Overall 1,270,000 \$ - Unit (Scuola S. Anna) 250,000 \$
- *2005-2008*: FP6-2004-IST-NMP-2 RI-MACS “Radically Innovative Mechatronics and Advanced Control Systems”, financed by the European Union, - Unit (Scuola S. Anna) 120,000 \$
- *2005-2006*: Project “Informatizzazione Cicli Produttivi”: Software systems for production cycle management, financed by Piaggio S.p.A., Unit (Scuola S. Anna), 40,000 \$
- *2005-2006*: Progetto Finanziato Fondazione Cassa di Risparmio “SensorNet” - Unit (Scuola S. Anna) 40,000 \$ Development of middleware and operating system-level support for a wireless sensor network infrastructure for environmental monitoring.
- *2005-2006*: Progetto finanziato MIUR per la Formazione: Programma Master Information Technology- Unit (Scuola S. Anna) 95,000 \$. Master-level course program for Indian students in Italy.
- *2005-2008*: Progetto PRIN “Sistemi Operativi e Middleware per applicazioni di Reti di Sensori Wireless”, - Unit (Scuola S. Anna) 35,000 \$ Development of middleware and operating system-level support for a wireless sensor network infrastructure for health care.
- *2006-2009*: Progetto FIRB “ART-DECO”, - Unit (Scuola S. Anna) 150,000 \$. Development of middleware and operating system-level support for a wireless sensor network infrastructure to be used in the development of supply chain management systems.
- *2006-2009*: Progetto MIUR TENDER: Development of workflow management support software and an ontology classification methodology to be used in the development of supply chain management systems.
- *2010-2012*: Progetto Industria 2015 OSTIS: 550.000\$ Development of architectures and processes for innovative embedded systems (PI research unit).
- 2010 Industrial project: “Methods and Tools for Model-based development of AUTOSAR Applications” (approx 45000\$), supported by General Motors Research.
- 2011 Industrial project “Methods and Tools for the Analysis and the Implementation of Synchronous Finite State Machines in Model-based development of AUTOSAR Applications”, (approx 45000\$) supported by General Motors Research.
- 2010 Industrial project “La raccolta e l’analisi di specifiche tecniche relative a sistemi software Embedded” (approx 20.000\$) supported by Elettronica S.p.A.

- 2011 Industrial project “Studio di Metodi e strumenti per la raccolta e l’analisi di specifiche relative a sistemi software Embedded” (approx 40.000\$) Financed by Elettronica S.p.A.
- 2014-2017 EU project Horizon 2020 Safure (approx 400000\$), PI Scuola Superiore S. Anna, A Methodology for Safe and Secure Mixed-critical CPS

Research activity:

Memberships

- Senior Member of the IEEE
- Responsible for the participation of the Scuola Superiore S. Anna to the Object Management Group (OMG) - 2008-09
- Subcommittee chair of the real-time systems subcommittee for the IEEE TC of the Industrial Electronic society (IES).

Conference chairmanship

- Chair of the Automotive Application track for the DATE conference 2010
- Chair of the Transportation track for the DATE conference 2011 and 2012
- General chair of the IEEE ICESS conference 2010
- General chair of the IEEE ICESS conference 2011
- Program chair of the IEEE RTAS conference 2012
- General chair of the IEEE RTAS conference 2013
- Program chair of the Embedded and Real-Time systems track for the ETFA conference 2012 and 2013
- General chair of the IEEE SIES conference 2014
- Program chair of the IEEE SIES conference 2015
- Program chair of the Embedded Systems track at the ACM SAC conference 2015
- Chair of the Automotive Track for the DAC Conference 2015

Conference Technical Program membership

- Member of the Technical Committee for the Design Automation Conference (DAC), years 2001, 2002, 2003.
- Member of the Technical Program Committee for the IEEE Real-Time and Embedded Technology and Application Symposium, RTAS years 2002, 2003, 2005, 2006, 2009, 2010 and 2015. Program Chair area B Methods and Tools, RTAS 2007
- Member of the Technical Program Committee for the IEEE Real-Time Systems Symposium, RTSS years 2005, 2012, 2013.
- Member of the Technical Committee for the Automotive track of the 2008 and 2009 DATE Conference.
- Member of the Program Committee for the SIES conference 2010, 2011
- Member of the Program Committee for the International Conference on Parallel Processing ICPP 2004.
- Member of the Program Committee for the IEEE Workshop on Large Scale Real-Time and Embedded Systems LARTES 2003 and the Workshop on Testing and Analysis of Component Based Systems TACOS 2003-2004.

Editorial boards

- Member of the Editorial board of the IEEE Transactions on Industrial Informatics
- Member of the Editorial board of the Leibniz Transactions on Embedded Systems
- Associate editor for
 - IEEE Transactions on CAD
 - Embedded Systems Letter
 - ACM Transactions on Embedded Systems
 - Real-Time Systems Journal - Springer

Organizer of the tutorials:

- “An introduction to embedded software design” IEEE/ACM Design Automation Conference (DAC) 2002
- “Linux for real-time” IEEE/ACM Design Automation Conference (DAC) 2004

Organizer of the workshops

- TiMoBD at ESWEEK 2011
- SOMRES at RTSS 2011

Organizer of special sessions:

- “Special day on Automotive Systems” DATE conference, 2007 Munich
- HOT TOPIC - Timing Specification and Analysis in Automotive Systems, DATE Conference 2009, Nice

Speaker of special sessions/panels

- 44th ACM Design Automation Conference: Special Session on Virtual Automotive Platforms

Winner of best paper awards

- ACM MODELS Conference 2014 (Industrial track)
- ACM Euromicro ECRTS Conference 2013
- IEEE/ACM Design Automation Conference (DAC) 2007 (also best presentation award)
- RTAS 2007
- SIES 2009, 2011
- SAE 2007

Winner of the Arch T. Colwell Award at SAE 2007

Winner of award for Excellence in oral presentation at the 2011 SAE World Congress

Reviewer for international journals (including IEEE Transactions On Computers, IEEE Transactions on Parallel and Distributed Systems, ACM Transactions on Embedded Systems) and conferences, session chair at several conferences.

- Visiting Associate Researcher, University of California at Berkeley, from March 2006 to November 2006, and from October 2008 to March 2009

Invited Speaker / Keynotes

- Workshop on Model Based Architecting and Construction of Embedded Systems - Denver, USA 2009, "Semantics preservation issues in the design and optimization of SW architectures for automotive systems"
- 4th Asia-Pacific Embedded Systems Education and Research Conference (APESER 2010) Hangzhou, China "From Models to Efficient Real-Time Software: Automotive Systems and Beyond"
- Bosch and ETAS Symposium on Model-based Embedded Software Engineering in 2020+
- International Workshop on Critical Software Component Reusability and Certification across Domains - Pisa, June 18 2013: "Enforcing time determinism at system level: issues and schedulability tradeoffs"
- Mathworks Academic Advisory Board 2013, Newton, MA, USA "Platform-based Design"
- IEEE ETFA Conference, Industrial day, Cagliari 2013: "Networked Embedded Systems in Industrial Automation"
- MDD4DRES 2014 Summer School, Brest France, Sept 2014: "Bridging the gap between functional and architecture models for time and resource analysis"
- IEEE ETFA Conference, Plenary Session, Barcelona 2014: "Time determinism and predictability: are we any closer? Will it be any better?"
- Mathworks Research Faculty Summit 2014, Newton, MA, USA,

Panels

ETFA 2013 Industrial day panel

DAC 2013 - Cyber-physical system software: Emperor's new clothes or not?

DAC 2010 - Designing the always connected car of the future

Curriculum development

Member of the Organizational board of the International Master on Software Engineering and International Master in Information Technology, organized by the Scuola Superiore S. Anna in cooperation with the University of Mumbai (India) years 2002/2003 and 2003/2004.

Organizer of the 2005-2006 edition of the International Master on Software Engineering organized by the Scuola Superiore S. Anna

(Feb 2005-Nov 2006) National representative in the mirror group of the European Union ARTEMIS Technology Platform on Embedded Systems.

(Dec 2004-2006) Member of the Scientific board of the Consorzio Benevento Ricerche.

(2009 to 2011) Area Leader for the TeCIP institute
2009 to 2010 area "Synthesis of Distributed Architectures"
2010 to 2011 area "Embedded Systems Design"

Reviewer for national research projects PRIN 2011

Scientific Reference for master Agreements between Scuola Superiore S. Anna and General Motors (since 2010) and between Scuola Superiore S. Anna and Elettronica SpA (ELT) (since 2011)

Member of the Academic advisory board for the EU projects

- ADAMS - Action for the Dissemination and Adoption of the MARTE and related Standards for component based middleware (FP7/2007/IST/224330)
- Cyphers Cyber-Physical European Roadmap and Strategy (FP7/2013/IST/611430)

Publication list

Books and Book Chapters

1. A Sangiovanni-Vincentelli, H Zeng, M Di Natale, P Marwedel, Introduction: Modeling, Analysis and Synthesis of Embedded Software and Systems, Embedded Systems Development, Springer, 2014
2. M. Di Natale, P. Giusto, H. Zeng, A. Ghosal "Understanding and Using the Controller Area Network Communication Protocol: Theory and Practice", Springer Verlag, NY, 2012.
3. M. Di Natale, "Specification and simulation of automotive functionality using AUTOSAR", in Katalin Popovici and Pieter J. Mosterman (editors), "Real-time Simulation Technologies: Principles, Methodologies, and Applications", CRC Press, Boca Raton, FL, ISBN 9781439846650, June, 2012.
4. Sébastien Gérard, Huascar Espinoza, François Terrier, Felice Tufo, Giacomo Gentile, Marco Di Natale and Bran Selic, "Modeling Languages for Real-time and Embedded Systems: Requirements and Standards-Based Solutions", Model-Based Engineering of Embedded Real-Time Systems (MBEERTS), of LNCS, Springer, 2010
5. M. Di Natale, "Embedded Software Modeling and Design", Handbook on Electronic Design Automation for Integrated Circuits, edited by Luciano Lavagno, Lou Scheffer and Grant Martin, CRC Press, 2006.
6. M. Di Natale, M.Saksena "Schedulability Analysis with UML" in "UML for Real" edited by B. Selic, G. Martin and L. Lavagno editors, Kluwer Academic Publishers, 2003.
7. M. Di Natale, T. Cucinotta and S. Kolachalam "A modular Open-source Architecture for ICT Services in the Public Administration" in "Electronic Government" edited by R. Traunmuller, Lecture Notes in Computer Science (LNCS) vol 2378 by Springer-Verlag, Proc. Of the Egov conference 2003, Prague Sept 1-5 2003.
8. S. Mazzini, M. D'Alessandro, M. Di Natale, A. Domenici, G. Lipari and T. Vardanega, "HRT-UML: Taking HRT-HOOD onto UML", Jean-Pierre Rosen, Alfred Strohmeier (Eds); Reliable Software Technologies - Ada-Europe 2003, Proceedings, Lecture Notes in Computer Science, vol. 2655,

Springer-Verlag, 2002, 8th Ada-Europe International Conference on Reliable Software Technologies, Toulouse, France, June 16-20, 2003.

9. M. Di Natale, A. Domenici "The DASE tool, an Environment for the Development of Real-Time Applications" in "Distributed and Parallel Embedded Systems" edited by Franz Rammig, Kluwer Academic Publishers, 1999.
10. G. Buttazzo, M. Di Natale "Linguaggio C/C++: Esercizi risolti" Editrice Esculapio Bologna, Luglio 1998.

Journals

1. M. Di Natale, Q. Zhu, A. Sangiovanni-Vincentelli, S. Tripakis, Optimized Implementation of Synchronous Models on Industrial LTTA Systems, *Journal of Systems Architecture*, 60 (4), 315-328, 2014
2. H. Zeng, M. Di Natale, Computing periodic request functions to speed-up the analysis of non-cyclic task models, *Real-Time Systems Journal*, Sept. 2014
3. Gang Han, Marco Di Natale, Haibo Zeng, Xue Liu, Wenhua Dou, Optimizing the Implementation of Real-Time Simulink Models onto Distributed Automotive Architectures, *Journal of Systems Architecture*, 59 (10), 1115-1127, 2013.
4. Gang Han, Haibo Zeng, Marco Di Natale, M., Xue Liu, Wenhua Dou, Experimental Evaluation and Selection of Data Consistency Mechanisms for Hard Real-Time Applications on Multicore Platforms, *IEEE Transactions on Industrial Informatics*, vol 10 (2), 2014, pp 903-918
5. Haibo Zeng, Marco Di Natale, Q. Zhu, "Minimizing Stack and Communication Memory Usage in Real-Time Embedded Applications", *ACM Transactions on Embedded Computing Systems (TECS)*, Volume 13, Issue 5, July 2014.
6. Ekain Azketa, J. Javier Gutiérrez, Marco Di Natale, Luís Almeida, Marga Marcos, Algoritmo genético permutacional para el despliegue y la planificación de sistemas de tiempo real distribuidos, *Revista Iberoamericana de Automática e Informática Industrial RIAI*, Elsevier, Sept. 2013
7. Haibo Zeng, Marco Di Natale, "An Efficient Formulation of the Real-time Feasibility Region for Design Optimization", *IEEE Transactions on Computers*, Volume 62, Number 4, Jan 2013, pp. 644-662.
8. Haibo Zeng, Marco Di Natale, Arkadeb Ghosal, and Alberto Sangiovanni-Vincentelli, "Schedule Optimization of Time-Triggered Systems Communicating over the FlexRay Static Segment", *IEEE Transactions on Industrial Informatics*, Volume 58, Number 1, Jan 2011.
9. Qi Zhu, Haibo Zeng, Wei Zheng, Marco Di Natale and Alberto Sangiovanni-Vincentelli, "Optimization of Task Allocation and Priority Assignment in Hard Real-Time Distributed Systems", *ACM Transactions on Embedded Systems*, 11(4) – 85, 2012.
10. Marco Di Natale, Liangpeng Guo, Haibo Zeng, and Alberto Sangiovanni-Vincentelli, "Synthesis of Multi-task Implementations of Simulink Models with Minimum Delays", *IEEE Transactions on Industrial Informatics*, vol 6 No 4, 2010.
11. Qi Zhu, Yang Yang, Marco Di Natale, Eelco Scholte and Alberto Sangiovanni-Vincentelli, "Optimizing the Software Architecture for Extensibility in Hard Real-time Distributed Systems", *IEEE Transactions on Industrial Informatics*, 2010, vol 6 issue 3..
12. Wang, G., Di Natale, M., Sangiovanni-Vincentelli, A., "Optimal synthesis of communication procedures in real-time synchronous reactive models", *IEEE Transactions on Industrial Informatics* vol 6 No 4, 2010.
13. Haibo Zeng, Di Natale, Marco, Paolo Giusto, and Alberto Sangiovanni-Vincentelli "Using Statistical Methods to Compute the Probability Distribution of Message Response Time in Controller Area Network", *IEEE Transactions on Industrial Informatics*, vol 6 No 4, 2010.
14. Di Natale, M., Sangiovanni-Vincentelli, A., "Moving from Federated to Integrated Architectures: the Role of Standards, Methods and Tools", *Proceedings of the IEEE*, vol.98, no.4, pp.603-620, April 2010.

15. Haibo Zeng, Di Natale, Marco, Paolo, Giusto and Sangiovanni-Vincentelli, Alberto, "Stochastic Analysis of CAN-based Real-time Automotive Systems", IEEE Transactions on Industrial Informatics, Special Section on Automotive Systems, vol. 5; p. 388-401, 2009.
16. Di Natale, Marco, Wang, Guoqiang and Sangiovanni-Vincentelli, Alberto, "Improving the size of communication buffers in synchronous models with time constraints", IEEE Transactions on Industrial Informatics, Special Section on Real-Time Networked Embedded Systems, Volume 5, Number 3, August 2009.
17. Sangiovanni-Vincentelli, A.; Di Natale, M., "Challenges and Solutions in the Development of Automotive Systems", IEEE Transactions on CAD, Special Issue on Automotive systems, July 2009.
18. S. Tripakis, C. Pinello, A. Benveniste, A. Sangiovanni-Vincentelli, P. Caspi and M. Di Natale "Implementing Synchronous models on Loosely Time-Triggered Architectures", IEEE Transactions on Computer, October 2008, Volume 57 Issue 10
19. Alberto Sangiovanni Vincentelli, Marco Di Natale "Embedded System Design for Automotive Applications", IEEE Computer, October 2007, 40, (10), pp. 42-51.
20. Marco Di Natale, Valerio Pappalardo, "Buffer optimization in multitask implementations of Simulink models", ACM Transactions on Embedded Computing Systems (TECS), Volume 7 Issue 3, April 2008.
21. Enrico Bini, Marco Di Natale and Giorgio Buttazzo, "Sensitivity Analysis for Fixed-Priority Real-Time Systems", Real-Time Systems journal, Vol. 39, No. 1-3, pp. 5-30, August 2008.
22. Tommaso Cucinotta, Marco Di Natale, David Corcoran, "An open middleware for smart cards", Special Issue of the Computer Science, Systems & Engineering Journal (CSSE), November 2005.
23. Tommaso Cucinotta, Marco Di Natale, Riccardo Brigo, "A Fingerprint Matching Algorithm For Programmable Smart Cards", Information Security Bulletin, November 2005.
24. Paolo Gai, Giuseppe Lipari and Marco Di Natale, "Stack size minimization for embedded real-time systems-on-a-chip", Design Automation for Embedded Systems Journal, Special Issue on Design Methodologies and Tools for Real-Time Embedded Systems, Nov 2002.
25. M. Di Natale, A. Meschi, "Scheduling Messages with Earliest Deadline Techniques" The Real-Time Systems Journal, May 2001.
26. M. Di Natale, J. Stankovic, "Scheduling Distributed Real-Time Tasks with Minimum Jitter", IEEE Transactions on Computers, vol 49, num 4, April 2000
27. P. Ancilotti, G. Buttazzo, M. Di Natale, M. Spuri, "Design and Programming Tools for Time Critical Applications", Real-Time Systems journal, Vol. 14, No. 3, pp. 251-267, May 1998.
28. P. Ancilotti, G. Buttazzo, M. Di Natale, M. Spuri "A Development Environment for Hard Real-Time Applications" International Journal on Software Engineering and Knowledge Engineering, Vol. 6 n. 3, 1996
29. J.A. Stankovic, M. Spuri, M. Di Natale, G. Buttazzo, "Implications of Classical Scheduling Results for Real-Time Systems " IEEE Computer Magazine , 1995

Refereed Conferences

1. Matteo Morelli, Marco Di Natale, "An MDE Approach for the Design of Platform-Aware Controls in Performance-Sensitive Applications", ETFA 2014 - IEEE International Conference on Emerging Technology and Factory Automation, Barcelona, Sept. 2014
2. Alessandro Biondi, Alessandra Melani, Mauro Marinoni, Marco Di Natale, Giorgio Buttazzo, "Exact Interference of Adaptive Variable-Rate Tasks under Fixed-Priority Scheduling", 26th Euromicro Conference on Real-Time Systems (ECRTS14), Madrid, June 2014
3. P Gai, F Esposito, R Schiavi, M Di Natale, C Diglio, M Pagano, C Camicia, "Towards an Open Source Framework for Small Engine Controls Development", SAE/JSAE 2014 Small Engine Technology Conference & Exhibition, Pisa, 2014

4. E Wozniak, M Di Natale, H Zeng, C Mraidha, S Tucci-Piergiovanni, Sebastien Gerard, "Assigning time budgets to component functions in the design of time-critical automotive systems", Proceedings of the 29th ACM/IEEE international conference on Automated Software Engineering, Vasteras, Sept. 2014, pp 235-246
5. P Deng, Q Zhu, M Di Natale, H Zeng, "Task synthesis for latency-sensitive synchronous block diagram" 9th IEEE International Symposium on Industrial Embedded Systems (SIES), Pisa, June 2014
6. M Di Natale, F Chirico, A Sindico, A Sangiovanni-Vincentelli, "An MDA Approach for the Generation of Communication Adapters Integrating SW and FW Components from Simulink", ACM Model-Driven Engineering Languages and Systems Conference (MODELS), Valencia, Sept. 2014, pp. 353-369
7. M Morelli, M Di Natale, "Control and Scheduling Co-design for a Simulated Quadcopter Robot: A Model-Driven Approach", Simulation, Modeling, and Programming for Autonomous Robots Conference, Bergamo, Italy, 49-61, Sept 2014
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2. H. Heinecke, W. Damm, B. Josko, A. Metzner, H. Kopetz, A. Sangiovanni-Vincentelli, M. Di Natale "Software Components for Reliable Automotive Systems" DATE Conference 2008, Munich, Germany, March 10-14, 2008
3. E. Frank, R Wilhelm, R Ernst, A. Sangiovanni-Vincentelli, M. Di Natale "Methods, Tools and Standards for the Analysis, Evaluation and Design of Modern Automotive Architectures" DATE Conference 2008, Munich, Germany, March 10-14, 2008

Workshops and WIP Proceedings

1. Matteo Morelli, Federico Moro, Daniele Fontanelli, Luigi Palopoli, Marco Di Natale and Tizar Rizano, A Robotic Vehicle Testbench for the Application of MBD-MDE Development Technologies, ETFA Work.in.Progress, Cagliari, Sept. 2013.
2. M. Di Natale, H. Zeng, "Reality Check: the Need for Benchmarking in RTS and CPS", 4th Real-time Open Problems Seminar, RTSOPS, Paris, July 2013.
3. M. Di Natale, H. Zeng, "Undoing the Task: Moving Timing Analysis back to Functional Models", Real-time Open Problems Seminar, RTSOPS, Pisa, July 2012.
4. Marco Di Natale, M. Bambagini, M. Morelli, A. Passaro, D. Di Stefano, G. Arturi, Enabling Model-Based Development of Distributed Embedded Systems on Open Source and Free Tools, WATERS workshop, Pisa, July 2012
5. M. Di Natale, A. Benveniste, P Caspi, C. Pinello. A. Sangiovanni-Vincentelli, S. Tripakis, "Applying LTTA to guarantee flow of data requirements in distributed systems using Controller Area Networks", DATE Workshop on Dependable Software Systems, Munich, March 14 2008
6. Marco Di Natale, "Latency driven architecture selection and optimization in automotive systems", HYCON Workshop, L'Aquila, September 27th, 2007.
7. G. Wang, M. Di Natale, A. Sangiovanni-Vincentelli, "An OSEK-VDX Implementation of Synchronous Reactive Semantics-Preserving Communication", OSPERT 2007, June 2007, Pisa, Italy.
8. Marco Di Natale, Wei Zheng, and Paolo Giusto, "Using system-level timing analysis for the evaluation and synthesis of automotive architectures", Workshop on formal methods in Automotive systems, Bangalore, India, Jan. 2007
9. Marco Di Natale "Evaluating message transmission times in Controller Area Networks without buffer preemption", Brazilian Workshop on Real-Time Systems, Curitiba, Brasil, May 2006.
10. Luciano Lavagno, Marco Di Natale, Alberto Ferrari, Paolo Giusto "SoftContract: Model-Based Design of Error-Checking Code and Property Monitors", UML Satellite Activities 2004: 150-162
11. F. Bertozzi, M. Di Natale, L. Almeida, "Admission Control and Overload Handling in FTT-CAN" Workshop on Factory Control Automation, Vienna, September 2004.
12. E. Bini, M. Di Natale, L. Palopoli, "Optimizing Application Performance by Rate Selection in Fixed-Priority RT Systems", WIP Session, IEEE Real-Time and Embedded Technology and Application Symposium 2004, Toronto, May 2004

13. Paolo Gai, Enrico Bini, Giuseppe Lipari, Marco Di Natale, Luca Abeni Architecture for a Portable Open-Source Real-Time Kernel Environment Second Real-Time Linux Workshop, Orlando, USA Novembre 2000
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15. M. Di Natale, A. Meschi "Guaranteeing End-to-end Deadlines in Distributed Client-Server Applications" Euromicro Workshop on Real-Time Systems, Berlin, May 1998
16. M. Di Natale, A. Domenici "The DASE tool: an environment for the development of real-time applications" IFIP Workshop on Distributed and Parallel Embedded Systems, Schloss Eringerfeld, October 1998
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21. P. Ancilotti, G. Buttazzo, M. Di Natale, M. Spuri "TRACS: A Flexible Real-Time Environment for Traffic Control Systems" Proceedings 1st IEEE Workshop on Real-Time Applications, New York, 1993
22. M. Di Natale, M. Spuri, M. Beatini "Programming and Evaluating Predictable Real-Time Tasks" Proc. of the International Workshop on Mechatronical Computer Systems for Perception and Action, 1993
23. P. Ancilotti, G.C. Buttazzo, M. Di Natale, M. Spuri "A Real-Time Vessel traffic System" Proc. of the International Workshop on Mechatronical Computer Systems for Perception and Action, 1993
24. Haibo Zeng, Marco Di Natale, Efficient Implementation of AUTOSAR Components with Minimal Memory Usage, SOMRES 2011.
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26. Marco Di Natale and Haibo Zeng, "Task Implementation and Schedulability Analysis of Synchronous of Finite State Machines", WiP RTAS 2011.

Declaration

Certifico che tutto quanto dichiarato corrisponde a verità ai sensi delle norme in materia di dichiarazioni sostitutive di cui all'art. 46 e ss. del D.P.R. 445/2000.

I hereby declare that the contents of this document are truthful in accordance with art. 46 e ss. of D.P.R. 445/2000.

In faith

Marco Di Natale

