# FEDERICO MARI
# Curriculum Vitæ

**Last Update: December 21, 2023**

## Education

2010 | **Ph.D.**
Computer Science, Sapienza University of Rome
*Dissertation: Verification and Synthesis for Discrete Time Linear Hybrid Systems*
Advisor: Prof. Enrico Tronci

2006 | **University Graduation**
Computer Science, Sapienza University of Rome
*Thesis: Bounded Model Checking of Safety Properties for Discrete Time Linear Hybrid Systems*
Graded Summa Cum Laude

## Appointments

2022–current | **Associate Professor**
Department of Movement, Human and Health Sciences
University of Rome Foro Italico
*Professore associato*

2020–current | **Member of the Laboratory of Bioengineering and Neuromechanics of Movement at the University of Rome Foro Italico**
Headed by Prof. Andrea Macaluso

2020–2022 | **Rector's Delegate for ICT**
University of Rome Foro Italico
*Delegato del Rettore per l'innovazione tecnologica e per i rapporti con CINECA*

2019–2022 | **Responsible for Digital Transition**
University of Rome Foro Italico
*Responsabile per la Transizione al Digitale (AgID)*

2019–2021 | **Assistant Professor (tenure track)**
Department of Movement, Human and Health Sciences
University of Rome Foro Italico
*Ricercatore a Tempo Determinato, Tipologia b)*

2015–2018 | **Assistant Professor**
Computer Science Department, Sapienza University of Rome
*Ricercatore a Tempo Determinato, Tipologia a)*

2010–2014 **Postdoctoral Researcher**
Computer Science Department, Sapienza University of Rome

2008 **Visiting Ph.D. Student**
Computer Science Department, University of Texas at Austin
With Prof. Lorenzo Alvisi

2008–current **Member of the Model Checking Lab (MCLab) Group at the Sapienza University of Rome**
Headed by Prof. Enrico Tronci
The MCLab group mclab.di.uniroma1.it focuses on designing algorithms and developing tools for the automatic verification (model checking) of safety-critical and mission-critical systems. The group is involved in many on-going collaborations with international scientists from several countries and it is active and efficient in accessing to funding opportunities, also as principal investigator.

# Teaching Activities

## Doctoral School

Sept 2018 **Lecturer**
Lecture on *Model Based Design of Cyber-Physical System with QKS and SyLVer*
Department of Computer, Control, and Management Engineering, Sapienza University of Rome
*Course on "Hybrid systems: Computation and Control"*
Ph.D. Programme "Automatica, Bioengineering and Operations Research"

Sept 2017 **Lecturer**
Lecture on *Automatic Synthesis of Control Software for Discrete Time Hybrid Systems (with QKS)*
Computer Science Department, University of Verona
*Summer School on Formal Methods for Cyber-Physical Systems – Edition 2017: Automatic Synthesis of Controllers for Hybrid Systems*
Ph.D. School in Natural Sciences and Engineering

2015/16–current **Member of the Doctoral School Committee**
Computer Science Department, Sapienza University of Rome

## Professor

2020/21–2022/23 **"INPS Valore PA" – Base and Advanced Level Education for Italian Public Administration Employees**
**2023** – *"Introduzione all'intelligenza artificiale"* (base level)
**2023** – *"PIAO e reingegnerizzazione dei processi, open data, intelligenza artificiale, bot e risponditori automatici nella PA"* (base level)
**2022** – *"Comunicazione e condivisione dati e documenti tra PA, all'interno dell'ente, tra PA e cittadini e imprese - le novità della L. 108/2021 (Semplificazioni Bis)"* (base level)
**2022** – *"Open Government, Smart Cities, open data, dati aperti e basi di dati di interesse nazionale dopo la L. 29/07/2021, n. 108, Big Data Management, Intelligenza Artificiale e bot nella PA"* (base level)
**2021** – *"Comunicazione digitale nella PA, usabilità ed accessibilità delle applicazioni e delle interfacce Web. Dati aperti e basi di dati di interesse nazionale, Smart Cities, Intelligenza Artificale e Machine Learning: prospettive ed opportunità per la PA."* (base level)
**2021** – *"Dati aperti e basi di dati di interesse nazionale, governance, Responsabile per la Transizione al Digitale, applicazione dell'Intelligenza Artificiale nella PA."* (base level)
**2021** – *"L'intelligenza artificiale nella PA: opportunità e rischi – Smart Cities, Open Government, dati aperti e basi di dati di interesse nazionale."* (advanced level)

2019/20–current **Statistics & Computers for Sport and Movement Sciences**
Department of Movement, Human and Health Sciences
University of Rome Foro Italico
*Bachelor degree in Excercise and Sport Sciences*
*Master degree in Preventive and Adapted Motor Activities*

2018/19 **Teaching Education** (*QuID–Qualità e Innovazione della Didattica*)
Sapienza University of Rome
*Tutor for newly hired assistant professors*

2012/13–2018/19 **Relational Databases Design** (*Basi di dati, modulo II*)
Computer Science Department, Sapienza University of Rome
*Bachelor second year*

2009/10 **Relational Databases Design** (*Basi di dati*)
Associazione Centro Elis (Roma)
School "*Tecnico Superiore per lo Sviluppo del Software IFTS (Istruzione Formazione Tecnico Superiore)"*

2014/15–current **Students thesis supervisor**
Computer Science Department, Sapienza University of Rome
*Bachelor, Master, and Ph.D. students level*

### Teaching Assistant

2016/17–current **Formal Methods for Software Development**
Computer Science Department, Sapienza University of Rome
*Master Degree in English*

2008/09—2014/15 **Formal Methods for Software Development** (*Metodi Formali per il Software*)
Computer Science Department, Sapienza University of Rome
*Master Degree in Italian*

2008/09 **Programming Languages** (*Fondamenti di Programmazione*)
Computer Science Department, Sapienza University of Rome
*Bachelor Degree in Italian*

2007/08 **Laboratory of Programming** (*Laboratorio di Programmazione*)
Computer Science Department, Sapienza University of Rome
*Bachelor Degree in Italian*

## Society Membership, Awards and Honours

2018 **Best Paper Award at ISMIS 2018**
[19] T. Mancini, F. Mari, I. Melatti, I. Salvo, E. Tronci. *An Efficient Algorithm for Network Vulnerability Analysis under Malicious Attacks.* Proc. of The 24th International Symposium on Methodologies for Intelligent Systems (ISMIS 2018). LNCS vol. 11177. Springer, 2018.

2018–current **Gruppo Nazionale per il Calcolo Scientifico (GNCS)**
Member of the Italian GNCS
*INdAM – Istituto Nazionale di Alta Matematica "F. Severi"*

2012–current **Association for Computing Machinery (ACM)**
Professional Member

2011 **Best Paper Award at ICSEA 2011**
[43] F. Mari, I. Melatti, I. Salvo, and E. Tronci. *From boolean relations to control software.* The Sixth International Conference on Software Engineering Advances (ICSEA), pp. 528—533. ThinkMind, 2011.

2011 **Award from "Fondazione Anna Maria Catalano"**
Fondazione Anna Maria Catalano is a non-profit organisation for sustaining environment and renewable energy. This € 2,000 award has been granted to F. Mari for his research activities related to formal methods and tools for automatic synthesis of control software from formal specifications of the closed loop system [44].

# Funding

## Personal Grants

2017 **FFABR 2017**
*Fondo per il Finanziamento dell'Attività di Base della Ricerca*, granted by the Italian Ministry of University "Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR)"
€ 3,000

2007 **Algorithms and Tools for SAT-based Bounded Model Checking of Hybrid Systems**
Department of Mathematics "Ennio de Giorgi" of University of Salento, Lecce IT
€ 2,000

## Participant

2020–2022 **Biomarkers and artificial intelligence: a multidisciplinary approach for anterior cruciate ligament recovery**
University funding in collaboration with "Villa Stuart Sport Clinic-FIFA Medical Centre of Excellence"
€ 25,000
Scientific responsible of WPs "FAIR data collection and Clinical Database" (for Villa Stuart clinical records), "AI-based Decision Support System" (for Return To Sport after intervention), "Communication and Dissemination"
– Active participation to the writing of this multidisciplinary project proposal together with one biologist and one biomechanical engineer

2013–2016 **PAEON** – `paeon.di.uniroma1.it`
*Model Driven Computation of Treatments for Infertility Related Endocrinological Diseases*
EC Seventh Framework Programme FP7-ICT-2011-9
€ 2,453,997 (€ 626,382 to partner Sapienza)
– Scientific responsible of the research task (RTD) "T5.1 - Dissemination Plan, Project Web Site, Communication Channels" (of "WP5 - Dissemination & Exploitation"), due from partner Sapienza University of Rome, headed by E. Tronci
– Active participation to the writing of this project proposal

2012–2015 **SmartHG** – smarthg.di.uniroma1.it
*Energy Demand Aware Open Services for Smart Grid Intelligent Automation*
EC Seventh Framework Programme FP7-ICT-2011-8
€ 3,299,998 (€ 597,378 to partner Sapienza)
– Responsible of the management task (MGT) "T1.2 - Project Monitoring" (of "WP1 - Project Management"), due from partner Sapienza University of Rome, headed by E. Tronci
– Scientific responsible of the research task (RTD) "T3.4 - Design and Development of home Energy Bill Reduction (EBR) service" (of "WP3 - Design of Home Intelligent Automation Services"); this task T3.4 was initially due from Spanish partner IMDEA Energía but scientific responsibility has beed moved during the project lifetime to partner Sapienza University of Rome, headed by E. Tronci
– Active participation to the writing of this project proposal

2009 **ULISSE**
*USOCs KnowLedge Integration and Dissemination for Space Science Experimentation*
EC Seventh Framework Programme FP7-SPACE-2007-1
€ 4,858,223 (€ 155,460 to partner Sapienza)
– Scientific responsible of the research task (RTD) "T2420 - Automatic plan validation and verification" on satellite operational procedures V&V (of work package "WP2400 - Planning and validation"), due from partner Sapienza University of Rome, headed by E. Tronci

2010 **ESA-ITI-AO6067**
*Verifying Satellite Operational Procedures*
European Space Agency (ESA) Innovation Triangle Initiative (ITI). ITI Type B
€ 150,000 (€ 45,000 to partner Sapienza)

2008 **SSFRT**
*System and Software Functional Requirements Technique*
European Space Agency (ESA) ITT AO5459
€ 200,000 (€ 15,000 to partner Sapienza)

# Professional Service

## Selection of Peer Reviews

1 IEEE Transactions on Computers
IEEE journal (2016)

2 IEEE Transactions on Circuits and Systems I: Regular Papers
IEEE journal (2018)

1 | Electronics
MDPI journal (2016)

5 | Simulation Modelling Practice and Theory
Elsevier journal (1 in 2016, 4 in 2015)

1 | Mathematical Reviews
American Mathematical Society online database (2018)

2 | Applied Sciences
MDPI journal (2018)

1 | Information and Computation
Elsevier journal (2017)

1 | International Journal of Parallel Programming
Springer journal (2017)

1 | Journal of Energy Storage
Elsevier journal (2018)

2 | IEEE International Parallel and Distributed Processing Symposium
IEEE IPDPS conference (2015)

1 | Intelligenza Artificiale
IOS Press journal (2018)

1 | Forum for fundamental research on theory, models, tools, and applications for distributed systems
Springer FORTE conference (2014)

Publons Verified Record https://publons.com/a/1441585

## Conference and PhD Schools Organization

2021 | **Organizing Committee Member of PhD School**
*International Summer School on Wearable Sensors in Sport*
Within the IEEE Sensors Council Italy Chapter
Department of Movement, Human and Health Sciences, University of Rome "Foro Italico", Italy, 14-16 June 2021

2013 | **Finance chair**
European Joint Conferences on Theory & Practice of Software (ETAPS)

## Invited Speaker

2019 | International Conference on Information Technologies for Intelligent Decision Making Support (ITIDS'19)
May 28–30, 2019, Ufa, Russia
*Simulation-based Formal Verification of Cyber-Physical Systems*

### Speaker at Peer Reviewed Conferences

2012 | International Conference on Embedded Software (EMSOFT)
V. Alimguzhin, F. Mari, I. Melatti, I. Salvo, and E. Tronci. *On model based synthesis of embedded control software.*

2009 | Stabilization, Safety, and Security of Distributed Systems (SSS)
F. Mari, I. Melatti, I. Salvo, E. Tronci, L. Alvisi, A. Clement, and H. Li. *Model checking coalition Nash equilibria in MAD distributed systems.*

2007 | Hybrid Systems Computation and Control (HSCC)
F. Mari, and E. Tronci. *CEGAR based bounded model checking of discrete time hybrid systems.*

## Technology Transfer

### Free Software

2017 | **SyLVer** – System Level Formal Verifier
SyLVer [9, 10] is a program realising system level formal verification of safety properties for cyber-physical systems. SyLVer uses an assume-guarantee approach, assuming the system is available as a black-box through a simulator (MATLAB Simulink block diagram).
– Docker image mclab/sylver
– SyLVer as a service (SyLVaaS) is also available at `http://mclab.di.uniroma1.it/site/index.php/software/44-sylvaas`

2017 | **QKS** – Quantified Controller Synthesis for discrete time **linear** hybrid systems
QKS is a software for the automatic generation of control software (as C code) for discrete time **linear** hybrid systems starting from formal specifications of the closed loop system.
– QKS executable available at BitBucket public repository mclab/qks; this software implements sequential [11, 44, 39, 38, 39, 40] and parallel [34] methods, on-the-fly algorithm [33], and method to obtain succinct software [37].

### Open Source Software

2017 **QKS Linearizer** – QKS for discrete time **non-linear** hybrid systems
QKS linearizer is an open-source software for the linearization of discrete time non-linear hybrid systems. The linearizer, used in cascade with QKS, allows automatic generation of control software (as C code) for discrete time **non-linear** hybrid systems starting from formal specifications of the closed loop system.
– QKS linearizer [7, 36] available as open-source software at BitBucket public repository mclab/linearizer-benchmark (also with a comparison of QKS with state-of-the-art synthesis tool PESSOA on the inverted pendulum example).

2017 **NashMV** – Verifying (Coalition) Nash Equilibria in MAD Distributed Systems
NashMV [46, 49] is a software for checking whether a given protocol is a Nash equilibrium in a Multiple Administrative Domain (MAD) system, that is checking if all participants are rationally stimulated to follow the protocol.
– NashMV is available as open-source software at BitBucket public repository mclab/nashmv.

## Scientific Achievements

Source Scopus (updated **July 5, 2021**).

Indicators related to scientific production:

- Number of documents: **40**
- Hirsch-index: **15**
- Number of journal papers (in last 5 years): **6**
- Number of citations (in last 10 years): **481** by **134** documents
- Average number of citations per publication: **12.025**

## List of Publications

F. Mari has more than **50** publications:

- **14 journal papers** including IEEE Transactions on Automatic Control (TAC) and ACM Transactions On Software Engineering And Methodology (TOSEM)
- **48 conference papers** including Computer Aided Verification (CAV), Formal Methods in Computer Aided Design (FMCAD) and one as Publisher of Proceedings [18]
- **7 technical reports**

- **2 dissertations**

# Journal Articles

[1] Igor Melatti, Federico Mari, Toni Mancini, Milan Prodanovic, and Enrico Tronci. A two-layer near-optimal strategy for substation constraint management via home batteries. *IEEE Trans. Ind. Electron.*, 69(8):8566–8578, 2022.

[2] Cristina Antinozzi, Elisa Grazioli, Maria De Santis, Francesca Motta, Paolo Sgrò, Federico Mari, Caterina Mauri, Attilio Parisi, Daniela Caporossi, Guglielmo Duranti, Roberta Ceci, Luigi Di Luigi, and Ivan Dimauro. The preventive role of physical activity in systemic sclerosis: A cross-sectional study on the correlation with clinical parameters and disease progression. *International Journal of Environmental Research and Public Health*, 19(16), 2022.

[3] Federico Mari, Annalisa Massini, Igor Melatti, and Enrico Tronci. A constraint optimization-based sense and response system for interactive business performance management. *Appl. Artif. Intell.*, 35(5):353–372, 2021.

[4] Igor Melatti, Federico Mari, Ivano Salvo, and Enrico Tronci. Visualisation of control software for cyber-physical systems. *Inf.*, 12(5):178, 2021.

[5] Toni Mancini, Federico Mari, Annalisa Massini, Igor Melatti, and Enrico Tronci. On checking equivalence of simulation scripts. *J. Log. Algebraic Methods Program.*, 120:100640, 2021.

[6] Stefano Sinisi, Vadim Alimguzhin, Toni Mancini, Enrico Tronci, Federico Mari, and Brigitte Leeners. Optimal personalised treatment computation through in silico clinical trials on patient digital twins. *Fundam. Informaticae*, 174(3-4):283–310, 2020.

[7] V. Alimguzhin, F. Mari, I. Melatti, I. Salvo, and E. Tronci. Linearizing discrete-time hybrid systems. *IEEE Trans. Automat. Contr.*, 62(10):5357–5364, 2017.

[8] T. Mancini, F. Mari, A. Massini, I. Melatti, I. Salvo, and E. Tronci. On minimising the maximum expected verification time. *Inf. Process. Lett.*, 122:8–16, 2017.

[9] T. Mancini, F. Mari, A. Massini, I. Melatti, and E. Tronci. Anytime system level verification via parallel random exhaustive hardware in the loop simulation. *Microprocessors and Microsystems*, 41:12–28, 2016.

[10] T. Mancini, F. Mari, A. Massini, I. Melatti, and E. Tronci. Sylvaas: System level formal verification as a service. *Fundamenta Informaticae*, 149(1-2):101–132, 2016.

[11] F. Mari, I. Melatti, I. Salvo, and E. Tronci. Model based synthesis of control software from system level formal specifications. *ACM Transactions On Software Engineering And Methodology*, 23(1):Article 6, 2014.

[12] F. Mari, I. Melatti, E. Tronci, and A. Finzi. A multi-hop advertising discovery and delivering protocol for multi administrative domain manet. *Mobile Information Systems*, 3(9):261–280, 2013.

[13] F. Mari, I. Melatti, I. Salvo, and E. Tronci. Linear constraints and guarded predicates as a modeling language for discrete time hybrid systems. *International Journal on Advances in Software*, vol. 6, nr 1&2:155–169, 2013.

[14] F. Mari, I. Melatti, I. Salvo, and E. Tronci. Synthesizing control software from boolean relations. *International Journal on Advances in Software*, vol. 5, nr 3&4:212–223, 2012.

## Conference Papers

[15] Emanuele D'Angelantonio, Leandro Lucangeli, Valentina Camomilla, Federico Mari, Guido Mascia, and Antonio Pallotti. Classification-based screening of phlebopathic patients using smart socks. In *IEEE International Symposium on Medical Measurements and Applications, MeMeA 2021, Lausanne, Switzerland, June 23-25, 2021*, pages 1–6. IEEE, 2021.

[16] Stefano Sinisi, Vadim Alimguzhin, Toni Mancini, Enrico Tronci, Federico Mari, and Brigitte Leeners. Ai-guided synthesis of personalised pharmacological treatments via in silico clinical trials. In *OVERLAY*, volume 2785 of *CEUR Workshop Proceedings*, pages 59–64. CEUR-WS.org, 2020.

[17] Igor Melatti, Vadim Alimguzhin, Federico Mari, Milan Prodanovic, and Barry P. Hayes. Electricity network constraint management using individualised demand aware price policies. In *OVERLAY*, volume 2785 of *CEUR Workshop Proceedings*, pages 71–76. CEUR-WS.org, 2020.

[18] Nicola Gigante, Federico Mari, and Andrea Orlandini, editors. *Proceedings of the 1st Workshop on Artificial Intelligence and Formal Verification, Logic, Automata, and Synthesis, co-located with the 18th International Conference of the Italian Association for Artificial Intelligence, OVERLAY AI*IA 2019, Rende, Italy, November 19-20, 2019*, volume 2509 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2020.

[19] T. Mancini, F. Mari, I. Melatti, I. Salvo, and E. Tronci. An efficient algorithm for network vulnerability analysis under malicious attacks. In M. Ceci, N. Japkowicz, J. Liu, G.A. Papadopoulos, and Z.W. Ras, editors, *Foundations of Intelligent Systems - 24th International Symposium, ISMIS 2018, Limassol, Cyprus, October 29-31, 2018, Proceedings*, volume 11177 of *Lecture Notes in Computer Science*, pages 302–312. Springer, 2018. **Best Paper Award**.

[20] T. Mancini, F. Mari, A. Massini, I. Melatti, I. Salvo, S. Sinisi, E. Tronci, R. Ehrig, S. Roeblitz, and B. Leeners. Computing personalised treatments through in silico clinical trials. A case study on downregulation in assisted reproduction. In *Proceedings of 25th RCRA International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion (RCRA 2018)*, 2018. To appear.

[21] T. Mancini, F. Mari, I. Melatti, I. Salvo, E. Tronci, J.K. Gruber, B.P. Hayes, and L. Elmegaard. Parallel statistical model checking for safety verification in smart grids. In *Proceedings of 2018 IEEE International Conference on Smart Grid Communications (SmartGridComm 2018)*. IEEE, 2018. To appear.

[22] V. Alimguzhin, F. Mari, I. Melatti, E. Tronci, E. Ebeid, S.A. Mikkelsen, R.H. Jacobsen, J.K. Gruber, B. Hayes, F. Huerta, and M. Prodanovic. A glimpse of smarthg project test-bed and communication infrastructure. In *Digital System Design (DSD), 2015 Euromicro Conference on*, pages 225–232, 2015.

[23] R. Ehrig, T. Dierkes, S. Schaefer, S. Roeblitz, E. Tronci, T. Mancini, I. Salvo, V. Alimguzhin, F. Mari, I. Melatti, A. Massini, B. Leeners, T.H.C. Krueger, M. Egli, and F. Ille. An integrative approach for model driven computation of treatments in reproductive medicine. In *Proceedings of the 15th International Symposium on Mathematical and Computational Biology (BIOMAT 2015), Rorkee, India*, 2015.

[24] T. Mancini, F. Mari, A. Massini, I. Melatti, and E. Tronci. Sylvaas: System level formal verification as a service. In *Proceedings of the 23rd Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP 2015), special session on Formal Approaches to Parallel and Distributed Systems (4PAD)*, 2015.

[25] T. Mancini, F. Mari, A. Massini, I. Melatti, and E. Tronci. Simulator semantics for system level formal verification. In Javier Esparza and Enrico Tronci, editors, *Proceedings Sixth International Symposium on Games, Automata, Logics and Formal Verification (GandALF 2015)*, volume 193 of *EPTCS*, pages 86–99, 2015.

[26] T. Mancini, E. Tronci, I. Salvo, F. Mari, A. Massini, and I. Melatti. Computing biological model parameters by parallel statistical model checking. In Francisco M. Ortuño Guzman and Ignacio Rojas, editors, *Bioinformatics and Biomedical Engineering - Third International Conference, IWBBIO 2015, Granada, Spain, April 15-17, 2015. Proceedings, Part II*, volume 9044 of *Lecture Notes in Computer Science*, pages 542–554. Springer, 2015.

[27] T. Mancini, F. Mari, I. Melatti, I. Salvo, E. Tronci, J.K. Gruber, B. Hayes, M. Prodanovic, and L. Elmegaard. User flexibility aware price policy synthesis for smart grids. In *Digital System Design (DSD), 2015 Euromicro Conference on*, pages 478–485, 2015.

[28] T. Mancini, F. Mari, A. Massini, I. Melatti, and E. Tronci. System level formal verification via distributed multi-core hardware in the loop simulation. In *22nd Euromicro International Conference on Parallel, Distributed, and Network-Based Processing, PDP 2014, Torino, Italy, February 12-14, 2014*, pages 734–742. IEEE Computer Society, 2014.

[29] T. Mancini, F. Mari, A. Massini, I. Melatti, and E. Tronci. Anytime system level verification via random exhaustive hardware in the loop simulation. In *In Proceedings of 17th EuroMicro Conference on Digital System Design (DSD 2014)*, 2014.

[30] E. Tronci, T. Mancini, F. Mari, I. Melatti, R. H. Jacobsen, E. Ebeid, S. A. Mikkelsen, M. Prodanovic, J. K. Gruber, and B. Hayes. Smarthg: Energy demand aware open services for smart grid intelligent automation. In *Proceedings of the Work in Progress Session of SEAA/DSD 2014*, 2014.

[31] E. Tronci, T. Mancini, I. Salvo, F. Mari, I. Melatti, A. Massini, S. Sinisi, F. Davì, T. Dierkes, R. Ehrig, S. Röblitz, B. Leeners, T. Krüger, M. Egli, and F. Ille. Patient-

specific models from inter-patient biological models and clinical records. In *Formal Methods in Computer-Aided Design (FMCAD)*, 2014.

[32] E. Tronci, T. Mancini, F. Mari, I. Melatti, I. Salvo, M. Prodanovic, J. K. Gruber, B. Hayes, and L. Elmegaard. Demand-aware price policy synthesis and verification services for smart grids. In *Proceedings of Smart Grid Communications (SmartGridComm), 2014 IEEE International Conference On*, 2014.

[33] V. Alimguzhin, F. Mari, I. Melatti, I. Salvo, and E. Tronci. On-the-fly control software synthesis. In *Proc. of International SPIN Symposium on Model Checking of Software (SPIN 2013)*, volume 7976 of *Lecture Notes in Computer Science*, pages 61–80. Springer - Verlag, 2013.

[34] V. Alimguzhin, F. Mari, I. Melatti, I. Salvo, and E. Tronci. A map-reduce parallel approach to automatic synthesis of control software. In *Proc. of International SPIN Symposium on Model Checking of Software (SPIN 2013)*, volume 7976 of *Lecture Notes in Computer Science*, pages 43–60. Springer - Verlag, 2013.

[35] T. Mancini, F. Mari, A. Massini, I. Melatti, F. Merli, and E. Tronci. System level formal verification via model checking driven simulation. In Natasha Sharygina and Helmut Veith, editors, *Computer Aided Verification - 25th International Conference, CAV 2013, Saint Petersburg, Russia, July 13-19, 2013. Proceedings*, volume 8044 of *Lecture Notes in Computer Science*, pages 296–312. Springer - Verlag, 2013.

[36] V. Alimguzhin, F. Mari, I. Melatti, I. Salvo, and E. Tronci. Automatic control software synthesis for quantized discrete time hybrid systems. In *Proceedings of the 51th IEEE Conference on Decision and Control, CDC 2012, December 10-13, 2012, Maui, HI, USA*, pages 6120–6125. IEEE, 2012.

[37] V. Alimguzhin, F. Mari, I. Melatti, I. Salvo, and E. Tronci. On model based synthesis of embedded control software. In Ahmed Jerraya, Luca P. Carloni, Florence Maraninchi, and John Regehr, editors, *Proceedings of the 12th International Conference on Embedded Software, EMSOFT 2012, part of the Eighth Embedded Systems Week, ESWeek 2012, Tampere, Finland, October 7-12, 2012*, pages 227–236. ACM, 2012.

[38] F. Mari, I. Melatti, I. Salvo, and E. Tronci. Linear constraints as a modeling language for discrete time hybrid systems. In *Proceedings of ICSEA 2012, The Seventh International Conference on Software Engineering Advances*, pages 664–671. ThinkMind, 2012.

[39] F. Mari, I. Melatti, I. Salvo, and E. Tronci. Undecidability of quantized state feedback control for discrete time linear hybrid systems. In A. Roychoudhury and M. D'Souza, editors, *Theoretical Aspects of Computing (ICTAC 2012)*, volume 7521 of *Lecture Notes in Computer Science*, pages 243–258. Springer Berlin Heidelberg, 2012.

[40] F. Mari, I. Melatti, I. Salvo, and E. Tronci. Control software visualization. In *Proceedings of INFOCOMP 2012, The Second International Conference on Advanced Communications and Computation*, pages 15–20. ThinkMind, 2012.

[41] G. Verzino, F. Cavaliere, F. Mari, I. Melatti, G. Minei, I. Salvo, Y. Yushtein, and E. Tronci. Model checking driven simulation of sat procedures. In *Proc. of 12th International Conference on Space Operations (SpaceOps 2012)*, 2012.

[42] F. Cavaliere, F. Mari, I. Melatti, G. Minei, I. Salvo, E. Tronci, G. Verzino, and Y. Yushtein. Model checking satellite operational procedures. In *DAta Systems In Aerospace (DASIA), Org. EuroSpace, Canadian Space Agency, CNES, ESA, EUMETSAT. San Anton, Malta, EuroSpace.*, 2011.

[43] F. Mari, I. Melatti, I. Salvo, and E. Tronci. From boolean relations to control software. In *Proceedings of ICSEA 2011, The Sixth International Conference on Software Engineering Advances*, pages 528–533. ThinkMind, 2011. **Best Paper Award**.

[44] F. Mari, I. Melatti, I. Salvo, and E. Tronci. Synthesis of quantized feedback control software for discrete time linear hybrid systems. In T. Touili, B. Cook, and P. Jackson, editors, *Computer Aided Verification, 22nd International Conference, CAV 2010, Edinburgh, UK, July 15-19, 2010. Proceedings*, volume 6174 of *Lecture Notes in Computer Science*, pages 180–195. Springer Berlin / Heidelberg, 2010.

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