FONDAZIONE
BRUNO KESSLER

Trento, lì 17 settembre 2018

Oggetto: nomina della Commissione tecnica nella procedura negoziata per il servizio di redazione di schede di specifica relative a classi di logica per sistemi ferroviari ACC

IL DIRETTORE DEL CENTRO ICT

- **PREMESSO** che con Determinazione a contrarre Prot. n. 16/reg. det. di data 10 agosto 2018 si è dato avvio alla procedura negoziata per il servizio di redazione di schede di specifica relative a classi di logica per sistemi ferroviari ACC con applicazione del criterio dell'offerta economicamente più vantaggiosa individuata sulla base del miglior rapporto qualità/prezzo, ai sensi degli artt. dell'art. 60 e 95 del D.Lgs. 18 aprile 2016, n. 50 e degli art. 16 e 17 della L.P. 9 marzo 2016 n. 2;
- **PRESO ATTO** che la procedura di affidamento in oggetto è finalizzata all'affidamento in subappalto delle attività in oggetto previste nel contratto sottoscritto in data 28 giugno 2018 tra RFI e FBK in applicazione di un accordo quadro avente ad oggetto i servizi di ricerca per "Servizi di ricerca per Piattaforme RFI – Sviluppo delle Logiche ACC/ACCM: definizione del formato di Specifica dei Requisiti Funzionali (SRF) - Raccolta e analisi di requisiti di impianti di terra per il segnalamento ferroviario";
- **CONSIDERATO** che l'art. 77 del D.Lvo 50/2016 prevede che per i settori ordinari, quando il criterio di aggiudicazione è quello dell'offerta economicamente più vantaggiosa, la valutazione delle offerte dal punto di vista tecnico ed economico è affidata ad una commissione giudicatrice;
- **CONSIDERATO** che il termine per la presentazione delle offerte è scaduto in data 10 settembre 2018 alle ore 12.00 e che, pertanto, è possibile procedere alla nomina dei commissari e alla costituzione della commissione;
- **PRESO ATTO** che gli operatori economici partecipanti alla gara sono i seguenti:
  - Marchesis sas Via Mamiani 3760044 Fabriano AN;
  - TE.SI.FER. s.r.l. Via Giovanni del Pian dei Carpini n. 11250127 Firenze;
- **PRESO ATTO** che la commissione deve essere composta da un numero dispari di componenti, in numero massimo di cinque, esperti nello specifico settore cui si riferisce l'oggetto del contratto (articolo 77, comma 2, del D.Lgs. 18 aprile 2016, n. 50);
- **RITENUTO** di selezionare i commissari tra il personale interno della Fondazione e quindi di nominare quali componenti della commissione i dipendenti di seguito indicati, muniti di qualificazione, funzioni e ruoli che ben giustificano la partecipazione alla Commissione stessa: Stefano Tonetta, Alberto Griggio e Alberto Debiasi dell'High Impact Initiative Smart Digital Industry;
- **CONSIDERATO che**, qualora taluno dei suddetti componenti della commissione tecnica sia impossibilitato a presenziare alla stessa, il Presidente della Commissione provvederà a surrogarlo all'apertura della seduta disponendo menzione in calce al

verbale di gara;

- **RITENUTO** di dover allegare al presente atto i *curricula* dei componenti la Commissione per la pubblicazione del presente atto nella sezione "Amministrazione trasparente", ai sensi dell'art. 29 comma 1 del D.Lgs. 18 aprile 2016, n. 50 e con l'applicazione delle disposizioni di cui al D.Lgs. 14 marzo 2013, n. 33;
- **STABILITO che**, per l'espletamento dell'incarico, non è previsto alcun compenso aggiuntivo per i componenti della suddetta Commissione;

DETERMINA

1. che la premessa forma parte integrante e sostanziale del presente provvedimento;

2. di nominare la Commissione di gara per l'affidamento del servizio di elaborazione delle retribuzioni, consulenza adempimenti correlati per i dipendenti e collaboratori della Fondazione Bruno Kessler secondo quanto definito nei documenti di gara, nelle persone di:

   - **Stefano Tonetta**: **Presidente**
   - **Alberto Griggio: Componente**
   - **Alberto Debiasi: Componente**

3. di demandare alla Commissione lo svolgimento di tutte le operazioni valutazione delle offerte tecniche;

4. di dare atto che, per l'espletamento dell'incarico, non è previsto alcun compenso aggiuntivo per i componenti della suddetta Commissione;

5. di disporre la pubblicazione del presente atto e dei *curricula* dei componenti la Commissione nella sezione "Amministrazione trasparente" del sito della Fondazione in adempimento all'art. 29 del vigente Codice dei Contratti.

Il Direttore del Centro ICT
Ing. Paolo Traverso
(F.to in originale)

PERSONAL INFORMATION

Alberto Debiasi

Via Circonvallazione 5, Rovereto (TN), Italy , 38068

0464 871378 +39 3488992661

debiasi.alberto@gmail.com

Sex Male | Date of birth 12/01/1985 | Nationality Italy

WORK EXPERIENCE

January 2017 - Present

Technologist

Embedded System Unit of Fondazione Bruno Kessler, Via Sommarive, 18 38123 Povo (TN), Italy

Developer of the AMASS Tool Platform, within the AMASS project. AMASS (Architecture-driven, Multi-concern and Seamless Assurance and Certification of Cyber-Physical Systems) will create and consolidate the de-facto European-wide open tool platform, ecosystem, and self-sustainable community for assurance and certification of Cyber-Physical Systems (CPS) in the largest industrial vertical markets including automotive, railway, aerospace, space, and energy. The ultimate goal of AMASS is to lower certification costs for CPS in face of rapidly changing features and market needs.

October 2016 - December 2016

Coordinator

Fondazione GraphiTech, Via alla Cascata, 56/c 38123 Povo (TN), Italy

Coordinator of C-Space Project, within the FP7 European Union Funding for Research & Innovation. It proposes a framework for real-time 4D reconstructions, affective computing, compression and streaming of 3D geometry, and projected and augmented reality.

June 2013 - December 2016

Project Manager

Fondazione GraphiTech, Via alla Cascata, 56/c 38123 Povo (TN), Italy

Project manager from the GraphiTech side in LIFE+IMAGINE, a project co-funded by the LIFE+ Programme Environmental Policy and Governance in the framework of the objective “strategic approaches”. The project implements an infrastructure based on web services for environmental analysis, integrating in its own architecture multi-source data, including those from the European initiative for Global Monitoring Copernicus. GraphiTech is responsible of the development of the infrastructure of both server and client side.

June 2010 - June 2013

Analyst & Developer

Fondazione GraphiTech, Via alla Cascata, 56/c 38123 Povo (TN), Italy

Analyst & Developer in BRISEIDE – BRIdging SErvices, Information and Data for Europe (www.briseide.eu), within the Competitiveness and Innovation Framework Programme - ICT Policy Support Programme (ICT PSP). The project involved EU 14 partners on the development of spatio-temporal web processes for geospatial application. GraphiTech was the coordinating partner and it was responsible for the development of geoprocessing services as well as for the development of a 3D interactive viewer.

Analyst & Developer in GEPSUS - Geographical Information Processing for Environmental Pollution-Related Security within Urban Scale Environments. The project involved 5 partners from Italy, Slovenia, Montenegro and Israel. The grant, funded by NATO-OTAN (North Atlantic Treaty Organization) within the Science for Peace and Security Programme, delivered a feasibility study to develop an integrated system to simulate, monitor and forecast air pollution accidents at urban scale. GraphiTech was engaged as Nato Partner Country director on issue related to environmental security and use of GeoVisual Analytics technologies.

2009 (3 months)

Internship

Fondazione GraphiTech, Via alla Cascata, 56/c 38123 Povo (TN), Italy

- Development of technologies for the interactive access of geographic data through mobile devices

EDUCATION AND TRAINING

December 2011 - March 2016

PhD in Information and Communication Technology

Università degli Studi di Trento

Topics: Information Visualization, Computer Graphics, GeoVisualization

- Thesis: "Study of Visual Clutter in Geographic Node-Link Diagrams"

August - October 2014

Visiting PhD Student

Hasso Plattner Institute, Potsdam, Germany

- Study and implementation of geographic visualizations using the shading language"

2008 - 2010

Master's Degree in "Data, Media and Knowledge" 109/110

Università degli Studi di Trento

- Topics: Operating Systems, Programming Languages, Mathematics, Software engineering, Databases
- Thesis: "A Seamless Interface For Geoinformation In Augmented Reality"

2004 - 2008

Bachelor's Degree in Computer Science

Università degli Studi di Trento

- Topics: Programming languages, Statistics, Machine Learning, Mathematics
- Thesis: "Studio delle Proprietà delle reti di Petri"

2004

Diploma Perito Informatico

Istituto Tecnico Industriale Statale "G. Marconi" Rovereto

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Communication skills

Ability to work in-group gained in multicultural environments where collaboration between different professionals was essential. Furthermore, my social-communicative skills were improved, highlighted and expanded through the development of project proposals.

Organisational / managerial skills

Experience in managing small teams of researchers and developers in the context of European research and industrial projects. Ability to work in stressful situations, especially related to the deadlines of commercial and EU projects.

Digital competence

Knowledge of: Programming, Model-based design, Continuous integration, V-model, Computer Graphics, Augmented Reality, SOA paradigm, Software engineering, elaboration of geographic data, GIS data model.
Main programming languages:

- Java - Low level OpenGL programming and back-end
- JS - Client side web development (Web GL)
- Objective C - In the context of iOS Apps
- SQL

Model-based design tools: PolarSys CHESS, ANSYS SCADE suite, Dymola
Revision control systems: git, Apache Subversion (svn)
Build Websites/ Web Applications: HTML, Javascript, Jsp, WSDL, OGC Standards.
Numerical Computing Environments: Matlab, Maple, R
Mapservers: Openlayer, Geoserver, Geonetwork, ArcGIS server,
GIS: ArcGis, Qgis, Udig, Grass
Graphics APIs: OpenGL, Jogl
Other Softwares: XText, WorldWind, Eclipse Rich Client

Driving licence

B

ADDITIONAL INFORMATION

Awards

1* place at Nasa World Wind Europa Challenge 2013 with the project “Visual Analytics Tool for Urban Traffic Simulation”

Professional Activities

Session Chair at IVAPP 2016, Rome Italy
PolarSys CHESS Committer, 2018 - present

Certificates

Certificate of Participation at the following courses:

- Dymola e Modelica, Trento 2018
- Model-Based Design with SCADE Suite, Milan 2017
- Grafik Week 2015, Trento (Photoshop Course)

CEFR level B2, Lake School of English Oxford, May 2010

I hereby allow the treatment of my personal data under the Italian law n° 196, 30th June 2003.

CURRICULUM VITAE

Stefano Tonetta

Researcher
Fondazione Bruno Kessler
via Sommarive, 18
38123 Trento, Italy
Email: tonettas@fbk.eu

Education and Professional Career

- (08/2010-) Researcher at Fondazione Bruno Kessler, Trento, Italy.
- (04/2017-) National scientific qualification (Abilitazione Scientifica Nazionale) to function as Associate Professor in the area 09/H1 (Sistemi di Elaborazione delle Informazioni) and 01/B1 (Informatica)
- (08/2007-07/2010) Post-doctoral researcher at the Fondazione Bruno Kessler and responsible of the project "ANACONDA" funded by the Provincia Autonoma of Trento
- (04/2006-07/2007) Post-doctoral researcher at the Faculty of Informatics at the University of Lugano
- (11/2001-03/2006) PhD at the International Graduate School in Information and Communication Technologies (ICT) of the "Università degli Studi di Trento". Thesis: "A new hybrid approach for efficient LTL model checking." Advisor: Prof. **Roberto Sebastiani**. Co-advisor: Prof. **Moshe Y. Vardi**.
- (10/2004-10/2004) Stage visiting Rice University at Houston, TX. Supervised by Prof. Moshe Y. Vardi.
- (09/2003-01/2004) Stage visiting Rice University at Houston, TX. Supervised by Prof. Moshe Y. Vardi.
- (09/1996-07/2001) M.S. degree in Mathematics at the University of Trento Final mark: 110/110 cum Laude.
  Thesis: "Aspetti computazionali della Logica Classica." ("Computational aspects of Classical Logic") Advisor: Prof. Andrea Masini.

Research topics

Formal verification techniques, mainly based on *Model Checking*, their integration in the development process of embedded systems, hardware and software components:

- *Formal methods for requirements validation*: extension of temporal logics with first-order constraints and hybrid aspects, and their satisfiability problem.
- *Verification of hybrid systems*: SMT-based techniques for the verification of network of hybrid systems.
- *Verification modulo theory*: verification techniques for infinite-state transition systems based on SMT: predicate abstraction, bounded model checking, k-induction, interpolation-based.
- *Compositional verification methods*: compositional methods for the verification of complex embedded systems exploiting assume-guarantee reasoning and contract-based specifications.

Publications

[1] Alessandro Cimatti, Ramiro Demasi, and Stefano Tonetta. Tightening the contract refinements of a system architecture. *Formal Methods in System Design*, 52(1):88–116, 2018.

[2] Alessandro Cimatti, Ivan Stojic, and Stefano Tonetta. Formal specification and verification of dynamic parametrized architectures. In *Formal Methods - 22nd International Symposium, FM 2018, Held as Part of the Federated Logic Conference, FloC 2018, Oxford, UK, July 15-17, 2018, Proceedings*, pages 625–644, 2018.

[3] Alessandro Cimatti, Rance DeLong, Ivan Stojic, and Stefano Tonetta. Towards adaptive MILS system: Model- based design, verification and run-time adaptation: Slides. In *International Workshop on MILS: Architecture and Assurance for Secure Systems, MILS@HiPEAC 2018, Luxembourg, June 25, 2018.*, 2018.

[4] Davide Fauri, Daniel Ricardo dos Santos, Elisa Costante, Jerry den Hartog, Sandro Etalle, and Stefano Tonetta. From system specification to anomaly detection (and back). In *Proceedings of the 2017 Workshop on Cyber-Physical Systems Security and PrivaCy, Dallas, TX, USA, November 3, 2017*, pages 13–24, 2017.

[5] Stefano Tonetta. Linear-time temporal logic with event freezing functions. In *Proceedings Eighth International Symposium on Games, Automata, Logics and Formal Verification, GandALF 2017, Roma, Italy, 20-22 September 2017.*, pages 195–209, 2017.

[6] Stefano Tonetta, Erwin Schoitsch, and Friedemann Bitsch, editors. *Computer Safety, Reliability, and Security - 36th International Conference, SAFECOMP 2017, Trento, Italy, September 13-15, 2017, Proceedings*, volume 10488 of *Lecture Notes in Computer Science*. Springer, 2017.

[7] Stefano Tonetta, Erwin Schoitsch, and Friedemann Bitsch, editors. *Computer Safety, Reliability, and Security - SAFECOMP 2017 Workshops, ASSURE, DECSoS, SASSUR, TELERISE, and TIPS, Trento, Italy, September 12, 2017, Proceedings*, volume 10489 of *Lecture Notes in Computer Science*. Springer, 2017.

[8] Alessandro Cimatti, Alberto Griggio, Sergio Mover, and Stefano Tonetta. Infinite-state invariant checking with IC3 and predicate abstraction. *Formal Methods in System Design*, 49(3):190–218, 2016.

[9] Alessandro Cimatti, Marco Gario, and Stefano Tonetta. A lazy approach to temporal epistemic logic model checking. In *Proceedings of the 2016 International Conference on Autonomous Agents & Multiagent Systems, Singapore, May 9-13, 2016*, pages 1218–1226, 2016.

[10] Marco Gario, Alessandro Cimatti, Cristian Mattarei, Stefano Tonetta, and Kristin Yvonne Rozier. Model checking at scale: Automated air traffic control design space exploration. In *Computer Aided Verification - 28th International Conference, CAV 2016, Toronto, ON, Canada, July 17-23, 2016, Proceedings, Part II*, pages 3–22, 2016.

[11] Jakub Daniel, Alessandro Cimatti, Alberto Griggio, Stefano Tonetta, and Sergio Mover. Infinite-state liveness-to-safety via implicit abstraction and well-founded relations. In *Computer Aided Verification - 28th International Conference, CAV 2016, Toronto, ON, Canada, July 17-23, 2016, Proceedings, Part I*, pages 271–291, 2016.

[12] Roberto Cavada, Alessandro Cimatti, Luigi Crema, Mattia Roccabruna, and Stefano Tonetta. Model-based design of an energy-system embedded controller using taste. In *FM 2016: Formal Methods - 21st International Symposium, Limassol, Cyprus, November 9-11, 2016, Proceedings*, pages 741–747, 2016.

[13] Christophe Limbrée, Quentin Cappart, Charles Pecheur, and Stefano Tonetta. Verification of railway interlocking - compositional approach with OCRA. In *Reliability, Safety, and Security of Railway Systems. Modelling, Analysis, Verification, and Certification - First International Conference, RSSRail 2016, Paris, France, June 28-30, 2016, Proceedings*, pages 134–149, 2016.

[14] Victor Bos, Harold Bruintjes, and Stefano Tonetta. Catalogue of system and software properties. In *Computer Safety, Reliability, and Security - 35th International Conference, SAFECOMP 2016, Trondheim, Norway, September 21-23, 2016, Proceedings*, pages 88–101, 2016.

[15] Alessandro Cimatti, Ramiro Demasi, and Stefano Tonetta. Tightening a contract refinement. In *Software Engineering and Formal Methods - 14th International Conference, SEFM 2016, Held as Part of STAF 2016, Vienna, Austria, July 4-8, 2016, Proceedings*, pages 386–402, 2016.

[16] Marco Bozzano, Alessandro Cimatti, Marco Gario, and Stefano Tonetta. Formal design of asynchronous fault detection and identification components using temporal epistemic logic. *Logical Methods in Computer Science*, 11(4), 2015.

[17] Alessandro Cimatti, Marco Roveri, and Stefano Tonetta. HRELTL: A temporal logic for hybrid systems. *Inf. Comput.*, 245:54–71, 2015.

[18] Alessandro Cimatti and Stefano Tonetta. Contracts-refinement proof system for component-based embedded systems. *Sci. Comput. Program.*, 97:333–348, 2015.

[19] Marco Bozzano, Alessandro Cimatti, Oleg Lisagor, Cristian Mattarei, Sergio Mover, Marco Roveri, and Stefano Tonetta. Safety assessment of altarica models via symbolic model checking. *Sci. Comput. Program.*, 98:464–483, 2015.

[20] Marco Bozzano, Alessandro Cimatti, Anthony Fernandes Pires, D. Jones, G. Kimberly, T. Petri, R. Robinson, and Stefano Tonetta. Formal design and safety analysis of AIR6110 wheel brake system. In *Computer Aided Verification - 27th International Conference, CAV 2015, San Francisco, CA, USA, July 18-24, 2015, Proceedings, Part I*, pages 518–535, 2015.

[21] Cristian Mattarei, Alessandro Cimatti, Marco Gario, Stefano Tonetta, and Kristin Y. Rozier. Comparing different functional allocations in automated air traffic control design. In *Formal Methods in Computer-Aided Design, FMCAD 2015, Austin, Texas, USA, September 27-30, 2015.*, pages 112–119, 2015.

[22] Harald Rueß and Stefano Tonetta. Distributed MILS (D-MILS) specification, analysis, deployment, and assurance of distributed critical systems. In *International Workshop on MILS: Architecture and Assurance for Secure Systems, MILS@HiPEAC 2015, Amsterdam, The Netherlands, January 20, 2015.*, 2015.

[23] Thomas Arts and Stefano Tonetta. Safely using the AUTOSAR end-to-end protection library. In *Computer Safety, Reliability, and Security - 34th International Conference, SAFECOMP 2015 Delft, The Netherlands, September 23-25, 2015. Proceedings*, pages 74–89, 2015.

[24] Alessandro Cimatti, Rance DeLong, Davide Marcantonio, and Stefano Tonetta. Combining MILS with contract-based design for safety and security requirements. In *Computer Safety, Reliability, and Security - SAFECOMP 2015 Workshops, ASSURE, DECSoS, ISSE, ReSA4CI, and SASSUR, Delft, The Netherlands, September 22, 2015, Proceedings*, pages 264–276, 2015.

[25] Alessandro Cimatti, Alberto Griggio, Sergio Mover, and Stefano Tonetta. Parameter synthesis with IC3 (informal presentation). In *2nd International Workshop on Synthesis of Complex Parameters, SynCoP 2015, April 11, 2015, London, United Kingdom*, pages 106–107, 2015.

[26] Alessandro Cimatti, Alberto Griggio, Sergio Mover, and Stefano Tonetta. Hycomp: An smt-based model checker for hybrid systems. In *Tools and Algorithms for the Construction and Analysis of Systems - 21st International Conference, TACAS 2015, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2015, London, UK, April 11-18, 2015. Proceedings*, pages 52–67, 2015.

[27] Alessandro Cimatti, Sergio Mover, and Stefano Tonetta. Quantifier-free encoding of invariants for hybrid systems. *Formal Methods in System Design*, 45(2):165–188, 2014.

[28] Marco Bozzano, Alessandro Cimatti, Cristian Mattarei, and Stefano Tonetta. Formal safety assessment via contract-based design. In *Automated Technology for Verification and Analysis - 12th International Symposium, ATVA 2014, Sydney, NSW, Australia, November 3-7, 2014, Proceedings*, pages 81–97, 2014.

[29] Roberto Cavada, Alessandro Cimatti, Michele Dorigatti, Alberto Griggio, Alessandro Mariotti, Andrea Micheli, Sergio Mover, Marco Roveri, and Stefano Tonetta. The nuxmv symbolic model checker. In *Computer Aided Verification - 26th International Conference, CAV 2014, Held as Part of the Vienna Summer of Logic, VSL 2014, Vienna, Austria, July 18-22, 2014. Proceedings*, pages 334–342, 2014.

[30] Alessandro Cimatti, Alberto Griggio, Sergio Mover, and Stefano Tonetta. Verifying LTL properties of hybrid systems with k-liveness. In *Computer Aided Verification - 26th International Conference, CAV 2014, Held as Part of the Vienna Summer of Logic, VSL 2014, Vienna, Austria, July 18-22, 2014. Proceedings*, pages 424–440, 2014.

[31] Thomas Arts, Michele Dorigatti, and Stefano Tonetta. Making implicit safety requirements explicit - an AUTOSAR safety case. In *Computer Safety, Reliability, and Security - 33rd International Conference, SAFECOMP 2014, Florence, Italy, September 10-12, 2014. Proceedings*, pages 81–92, 2014.

[32] Alessandro Cimatti, Alberto Griggio, Sergio Mover, and Stefano Tonetta. IC3 modulo theories via implicit predicate abstraction. In *Tools and Algorithms for the Construction and Analysis of Systems - 20th International Conference, TACAS 2014, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2014, Grenoble, France, April 5-13, 2014. Proceedings*, pages 46–61, 2014.

[33] Marco Bozzano, Alessandro Cimatti, Marco Gario, and Stefano Tonetta. Formal design of fault detection and identification components using temporal epistemic logic. In *Tools and Algorithms for the Construction and Analysis of Systems - 20th International Conference, TACAS 2014, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2014, Grenoble, France, April 5-13, 2014. Proceedings*, pages 326–340, 2014.

[34] Alessandro Cimatti, Sergio Mover, and Stefano Tonetta. Smt-based scenario verification for hybrid systems. *Formal Methods in System Design*, 42(1):46–66, 2013.

[35] Daniel Kroening, Natasha Sharygina, Stefano Tonetta, Aliaksei Tsitovich, and Christoph M. Wintersteiger. Loop summarization using state and transition invariants. *Formal Methods in System Design*, 42(3):221–261, 2013.

[36] Marco Bozzano, Alessandro Cimatti, Marco Gario, and Stefano Tonetta. A formal framework for the specification, verification and synthesis of diagnosers. In *Late-Breaking Developments in the Field of Artificial Intelligence, Bellevue, Washington, USA, July 14-18, 2013*, 2013.

[37] Sergio Mover, Alessandro Cimatti, Ashish Tiwari, and Stefano Tonetta. Time-aware relational abstractions for hybrid systems. In *Proceedings of the International Conference on Embedded Software, EMSOFT 2013, Montreal, QC, Canada, September 29 - Oct. 4, 2013*, pages 14:1–14:10, 2013.

[38] Alessandro Cimatti, Alberto Griggio, Sergio Mover, and Stefano Tonetta. Parameter synthesis with IC3. In *Formal Methods in Computer-Aided Design, FMCAD 2013, Portland, OR, USA, October 20-23, 2013*, pages 165–168, 2013.

[39] Alessandro Cimatti, Michele Dorigatti, and Stefano Tonetta. OCRA: A tool for checking the refinement of temporal contracts. In *2013 28th IEEE/ACM International Conference*

on Automated Software Engineering, ASE 2013, Silicon Valley, CA, USA, November 11-15, 2013, pages 702–705, 2013.

[40] Natasha Sharygina, Stefano Tonetta, and Aliaksei Tsitovich. An abstraction refinement approach combining precise and approximated techniques. *STTT*, 14(1):1–14, 2012.

[41] Alessandro Cimatti, Marco Roveri, Angelo Susi, and Stefano Tonetta. Validation of requirements for hybrid systems: A formal approach. *ACM Trans. Softw. Eng. Methodol.*, 21(4):22:1–22:34, 2012.

[42] Alessandro Cimatti, Sergio Mover, and Stefano Tonetta. Smt-based verification of hybrid systems. In *Proceedings of the Twenty-Sixth AAAI Conference on Artificial Intelligence, July 22-26, 2012, Toronto, Ontario, Canada.*, 2012.

[43] Alessandro Cimatti and Stefano Tonetta. A property-based proof system for contract-based design. In *38th Euromicro Conference on Software Engineering and Advanced Applications, SEAA 2012, Cesme, Izmir, Turkey, September 5-8, 2012*, pages 21–28, 2012.

[44] Alessandro Cimatti, Sergio Mover, and Stefano Tonetta. A quantifier-free SMT encoding of non-linear hybrid automata. In *Formal Methods in Computer-Aided Design, FMCAD 2012, Cambridge, UK, October 22-25, 2012*, pages 187–195, 2012.

[45] Marco Bozzano, Alessandro Cimatti, Oleg Lisagor, Cristian Mattarei, Sergio Mover, Marco Roveri, and Stefano Tonetta. Symbolic model checking and safety assessment of altarica models. *ECEASST*, 46, 2011.

[46] Alessandro Cimatti, Marco Roveri, Angelo Susi, and Stefano Tonetta. Formalizing requirements with object models and temporal constraints. *Software and System Modeling*, 10(2):147–160, 2011.

[47] Roberto Sebastiani, Stefano Tonetta, and Moshe Y. Vardi. Symbolic systems, explicit properties: on hybrid approaches for LTL symbolic model checking. *STTT*, 13(4):319–335, 2011.

[48] Alessandro Cimatti, Sergio Mover, and Stefano Tonetta. Efficient scenario verification for hybrid automata. In *Computer Aided Verification - 23rd International Conference, CAV 2011, Snowbird, UT, USA, July 14-20, 2011. Proceedings*, pages 317–332, 2011.

[49] Alessandro Cimatti, Sergio Mover, and Stefano Tonetta. Hydi: A language for symbolic hybrid systems with discrete interaction. In *37th EUROMICRO Conference on Software Engineering and Advanced Applications, SEAA 2011, Oulu, Finland, August 30 - September 2, 2011*, pages 275–278, 2011.

[50] Alessandro Cimatti, Sergio Mover, and Stefano Tonetta. Proving and explaining the unfeasibility of message sequence charts for hybrid systems. In *International Conference on Formal Methods in Computer-Aided Design, FMCAD '11, Austin, TX, USA, October 30 - November 02, 2011*, pages 54–62, 2011.

[51] Roberto Cavada, Alessandro Cimatti, Andrea Micheli, Marco Roveri, Angelo Susi, and Stefano Tonetta. Othelloplay: a plug-in based tool for requirement formalization and validation. In *Proceedings of the 1st Workshop on Developing Tools as Plug-ins, TOPI 2011, Waikiki, Honolulu, HI, USA, May 28, 2011*, page 59, 2011.

[52] Daniel Kroening, Natasha Sharygina, Stefano Tonetta, Aliaksei Tsitovich, and Christoph M. Wintersteiger. Loopfrog - loop summarization for static analysis. In *Second International Workshop on Invariant Generation, WING 2009, York, UK, March 29, 2009 and Third International Workshop on Invariant Generation, WING 2010, Edinburgh, UK, July 21, 2010*, pages 130–131, 2010.

[53] Lei Bu, Alessandro Cimatti, Xuandong Li, Sergio Mover, and Stefano Tonetta. Model checking of hybrid systems using shallow synchronization. In *Formal Techniques for Distributed Systems, Joint 12th IFIP WG 6.1 International Conference, FMOODS 2010 and 30th IFIP WG 6.1 International Conference, FORTE 2010, Amsterdam, The Netherlands, June 7-9, 2010. Proceedings*, pages 155–169, 2010.

[54] Angelo Chiappini, Alessandro Cimatti, Luca Macchi, Oscar Rebollo, Marco Roveri, Angelo Susi, Stefano Tonetta, and Berardino Vittorini. Formalization and validation of a subset of the european train control system. In *Proceedings of the 32nd ACM/IEEE International Conference on Software Engineering - Volume 2, ICSE 2010, Cape Town, South Africa, 1-8 May 2010*, pages 109–118, 2010.

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[62] Alessandro Cimatti, Marco Roveri, Angelo Susi, and Stefano Tonetta. Formalization and validation of safety-critical requirements. In *Proceedings FM-09 Workshop on Formal Methods for Aerospace, FMA 2009, Eindhoven, The Netherlands, 3rd November 2009.*, pages 68–75, 2009.

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[66] Alessandro Cimatti, Marco Roveri, Angelo Susi, and Stefano Tonetta. Object models with temporal constraints. In *Sixth IEEE International Conference on Software Engineering and Formal Methods, SEFM 2008, Cape Town, South Africa, 10-14 November 2008*, pages 249–258, 2008.

[67] Roberto Sebastiani, Eli Singerman, Stefano Tonetta, and Moshe Y. Vardi. GSTE is partitioned model checking. *Formal Methods in System Design*, 31(2):177–196, 2007.

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[71] Alessandro Cimatti, Marco Roveri, Simone Semprini, and Stefano Tonetta. From PSL to NBA: a modular symbolic encoding. In *Formal Methods in Computer-Aided Design, 6th International Conference, FMCAD 2006, San Jose, California, USA, November 12-16, 2006, Proceedings*, pages 125–133, 2006.

[72] Roberto Sebastiani, Stefano Tonetta, and Moshe Y. Vardi. Symbolic systems, explicit properties: On hybrid approaches for LTL symbolic model checking. In *Computer Aided Verification, 17th International Conference, CAV 2005, Edinburgh, Scotland, UK, July 6-10, 2005, Proceedings*, pages 350–363, 2005.

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Tesi

- Stefano Tonetta *A new hybrid approach for efficient LTL model checking.* PhD Thesis, March 2006. Contents: the thesis tackles the LTL model checking problem and includes 1) a new approach to LTL compilation and new LTL compiler, 2) a new technique for state-space representation, referred to as *property-driven partitioning* (PDP), based on a hybrid (explicit/symbolic) representation of property automaton and system, 3) an analysis of Generalized Symbolic Trajectory Evaluation, with insights on its relation with model checking algorithms and PDP, 4) a new abstraction technique combining PDP with predicate abstraction, and 5) a deep experimental evaluation.
- Stefano Tonetta *Aspetti computazionali della Logica Classica.* Tesi di Laurea, Luglio 2001. Contents of the thesis: Analysis of some computational aspects of the Classical Logic, such as non-confluence (with a proof of the confluence of Prawitz's system) and expressive power; analysis of the $\lambda\mu$-calculus and of the λ^{Sym}_{Prop}-calculus (with a translation of the former into the latter), both of which encode proofs of Classical Logic.

Teaching

Teacher of the course "Formal Verification of Programs", PhD course at the University of Trento, accademic year 2008/2009.

T.A. of the course "Software Verification", PhD course at the University of Lugano, accademic year 2007/2008, teacher: Natasha Sharygina.

T.A. of the course "Software Verification", PhD course at the University of Trento, accademic year 2007/2008, teacher: Natasha Sharygina.

T.A. of the course "Theory of Computation", c.d.l. in "Informatica" at the Faculty of Informatics of University of Lugano, accademic year 2006/2007, teacher: Natasha Sharygina.

T.A. of the course "Metodi Formali", c.d.l. in "Informatica" at the Faculty of "Scienze MM.FF.NN." of "Università degli Studi di Trento", accademic year 2005/2006, teacher: Roberto Sebastiani.

T.A. of the course "Programmazione 1", c.d.l. in "Informatica" at the Faculty of "Scienze MM.FF.NN." of "Università degli Studi di Trento", accademic year 2005/2006, teacher: Roberto Sebastiani.

T.A. of the course "Metodi Formali", c.d.l. in "Informatica" at the Faculty of "Scienze MM.FF.NN." of "Università degli Studi di Trento", accademic year 2004/2005, teacher: Roberto Sebastiani.

T.A. of the course "Programmazione 1", c.d.l. in "Informatica" at the Faculty of "Scienze MM.FF.NN." of "Università degli Studi di Trento", accademic year 2004/2005, teacher: Roberto Sebastiani.

T.A. of the course "Laboratorio di Informatica: Programmazione 1", c.d.l. in "Informatica" at the Faculty of "Scienze MM.FF.NN." of "Università degli Studi di Trento", accademic year 2002/2003, teacher: Roberto Sebastiani.

T.A. of the course "Laboratorio di Informatica: Programmazione 1", c.d.l. in "Informatica" at the Faculty of "Scienze MM.FF.NN." of "Università degli Studi di Trento", accademic year 2001/2002, teacher: Roberto Sebastiani.

Awards

- FBK 2010 Luigi Stringa award.
- Microsoft Research SEIF 2010 award.

Curriculum Vitae

Personal Data

Name	Alberto Griggio
e-mail address	griggio@fbk.eu
Birth date	19 May 1980
Place of birth	Padova (PD) - Italy
Nationality	Italian
Web page	http://es.fbk.eu/people/griggio/

Education

October 2005 - December 2009 PhD student in Computer Science, ICT International Doctorate School, Università degli studi di Trento. Supervisor: prof. Roberto Sebastiani. Topic: Satisfiability Modulo Theories (SMT) and its applications to Formal Verification. Thesis title: "An Effective SMT Engine for Formal Verification".

2003 - 2005 Student of Computer Science ("Laurea Specialistica in Informatica") at the University of Bologna, faculty of Mathematical, Physical and Natural Sciences. Thesis topic: integration between automated theorem provers and interactive proof assistants. Supervisor: prof. Andrea Asperti. Thesis title: "Progettazione e realizzazione di una tattica di dimostrazione automatica basata su paramodulazione per il proof-assistant Matita". Rating: 110/110 *cum laude*.

1999 - 2003 Student of Computer Science ("Laurea di Primo Livello in Informatica") at the University of Padova, faculty of Mathematical, Physical and Natural Sciences. Thesis title: "A control flow analysis for the π-calculus with application to security". Supervisor: prof. Gilberto Filè. Rating: 110/110 *cum laude*.

1994 - 1999 Diploma "Diploma di Stato nell'indirizzo scientifico", at Liceo Scientifico Statale "Enrico Fermi", Padova. Rating: 100/100.

Current Position

2013 - present Junior Researcher at Embedded Systems Unit, Fondazione Bruno Kessler, Trento, Italy.

Previous Positions

2010 - 2013 Post-doctoral Researcher at Embedded Systems Unit, Fondazione Bruno Kessler, Trento, Italy, under Marie Curie research grant (PCOFUND-GA-2008-226070 "progetto Trentino"), co-funded by Provincia Autonoma di Trento and the European Community's FP7/2007-2013. Project acronym: ADAPTATION.

Organisation of Scientific Meetings

2018 Workshop Chair at the 9TH International Joint Conference on Automated Reasoning (IJCAR 2018), part of FloC 2018. http://ijcar2018.org/

2017 4th International Workshop on Horn Clauses for Verification and Synthesis (HCVS 2017), co-located with the CADE-26 conference. http://software.imdea.org/Conferences/hcvs17/

2017 Publicity Chair at the 15th International Conference on Software Engineering and Formal Methods (SEFM 2017). http://sefm17.fbk.eu/

2013 11th International Workshop on Satisfiability Modulo Theories (SMT 2013), co-located with the SAT 2013 conference. http://smt2013.fbk.eu/

2013 Alpine Verification Meeting 2013. https://es.fbk.eu/events/avm2013/index.html

2012 Second International SAT/SMT Summer School, Trento, Italy, co-located with the SAT 2012 conference. http://satsmtschool2012.fbk.eu/

2011, 2012 7th and 8th International Satisfiability Modulo Theories Competition, SMT-COMP, affiliated with the CAV 2011 and IJCAR 2012 conferences. http://smtcomp.sourceforge.net/2011/ http://smtcomp.sourceforge.net/2012/

Invited Presentations

- Invited Lecturer at the International Summer School on Satisfiability, Satisfiability Modulo Theories, and Automated Reasoning, July 2018. http://ssa-school-2018.cs.manchester.ac.uk/
- Invited Observer at the 2018 meeting of the IFIP Working Group 2.3 on Programming Methodology, May 2018. https://ifip-tc2-wg23.paluno.uni-due.de/?page_id=386
- Invited Lecturer at the CAV 2017 Verification Mentoring Workshop, July 2017. http://cavconference.org/2017/verification-mentoring-workshop/
- Invited Lecturer at the First Indian SAT/SMT School, December 2016. https://indico.tifr.res.in/indico/conferenceDisplay.py?confId=5062
- Invited Lecturer at the 2015 edition of International Summer School on Verification Technology, Systems and Applications (VTSA'15), August 2015. http://resources.mpi-inf.mpg.de/departments/rg1/conferences/vtsa15/
- Invited Lecturer at the 5th International SAT/SMT Summer School, July 2015. http://smt2015.csl.sri.com/school/
- Invited Lecturer at the 4th International SAT/SMT Summer School, July 2014. http://satsmt2014.forsyte.at/
- Invited Talk "Effective Word-Level Interpolation for Software Verification" at the Rich Model Toolkit 2011 Meeting, October 2011. https://sites.google.com/site/torino2011ic0901/

Program Commitee Service

2018 Guest editor of the special issue on *Recent topics in SMT* of Formal Methods in System Design https://link.springer.com/journal/10703/51/3/page/1.
CAV 2018 http://cavconference.org/2018/,
IJCAR 2018 http://ijcar2018.org/,
NFM 2018 https://shemesh.larc.nasa.gov/NFM2018/,
FMCAD 2018 http://www.cs.utexas.edu/users/hunt/FMCAD/FMCAD18/.

2017 DATE 2017 https://www.date-conference.com/,
NFM 2017 https://ti.arc.nasa.gov/events/nfm-2017/,
LPAR 21 http://easychair.org/smart-program/LPAR-21/,
SMT 2017 http://smt-workshop.cs.uiowa.edu/2017/,
SC^2 workshop 2017 http://www.sc-square.org/CSA/workshop2.html.

2016 PAAR 2016 http://cs.ru.nl/paar16/,
SMT 2016 http://smt-workshop.cs.uiowa.edu/2016/,
SC^2 workshop 2016 http://www.sc-square.org/CSA/workshop1.html.

2015 HVC 2015 http://www.research.ibm.com/haifa/conferences/hvc2015/,
DIFTS 2015 http://www.faculty.ece.vt.edu/chaowang/difts2015/,
SMT 2015 http://smt2015.csl.sri.com/.

2013 – 2017 Steering Committee of the International Workshop on Satisfiability Modulo Theories. http://smt-workshop.org/

2014 PAAR-2014 http://www.easychair.org/smart-program/VSL2014/PAAR-index.html,
SMT 2014 http://smt2014.it.uu.se/,
DIFTS 2014 http://fmgroup.polito.it/cabodi/difts2014/

2013 FMCAD 2013 http://www.cs.utexas.edu/users/hunt/FMCAD/FMCAD13/index.shtml,
LPAR-19 http://www.lpar-19.info/,
SMT 2013 (co-chair) http://smt2013.fbk.eu/.

2012 COMPARE 2012 http://compare2012.verifythis.org/,
PAAR-2012 http://www.eprover.org/EVENTS/PAAR-2012.html.

Major Collaborations

2015 Visiting Researcher at Microsoft Research Cambridge, UK. Collaboration with dr. Andrey Rybalchenko on formal verification of infinite-state systems.

2012-2014 prof. Daniel Kroening, CS department, Oxford Univerisity, UK. Topic: decision procedures for floating-point logic. Combination of decision procedures and Abstract Interpretation.

2008 prof. Dirk Beyer, Simon Fraser University, Canada. Topic: SMT-based Software Model Checking.

Publications

Current h-index (source: Google Scholar, September 2018): 24

In international peer-reviewed journals

1. Incremental Linearization for Satisfiability and Verification Modulo Nonlinear Arithmetic and Transcendental Functions. With A. Cimatti, A. Irfan, M. Roveri, R. Sebastiani. To appear in *ACM Transactions on Computational Logic (TOCL)*, 2018.
2. Infinite-state invariant checking with IC3 and predicate abstraction. With A. Cimatti, S. Mover, S. Tonetta. In *Formal Methods in System Design*, 2016.
3. Comparing Different Variants of the IC3 Algorithm for Hardware Model Checking. With M. Roveri. In *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2015.
4. Deciding Floating-Point Logic with Abstract Conflict Driven Clause Learning. With M. Brain, V. D'Silva, L. Haller, D. Kroening. In *Formal Methods in System Design 45(2)*, 2014.
5. A Practical Approach to Satisfiability Modulo Linear Integer Arithmetic. In *Journal on Satisfiability, Boolean Modeling and Computation (JSAT)*, 2012.
6. Efficient Interpolant Generation in Satisfiability Modulo Linear Integer Arithmetic. With T. T. H. Le, R. Sebastiani. In *Logical Methods in Computer Science, Volume 8, Issue 3*, 2012.
7. Computing Small Unsatisfiable Cores in Satisfiability Modulo Theories. With A. Cimatti, R. Sebastiani. In *Journal of Artificial Intelligence Research (JAIR), Volume 40*, 2011.
8. Efficient Generation of Craig Interpolants in Satisfiability Modulo Theories. With A. Cimatti, R. Sebastiani. In *ACM Transactions on Computational Logic (TOCL) 12(1)*, 2010.
9. Delayed Theory Combination vs. Nelson-Oppen for Satisfiability Modulo Theories: a Comparative Analysis. With R. Bruttomesso, A. Cimatti, A. Franzén, R. Sebastiani. In *Annals of Mathematics and Artificial Intelligence 55(1-2)*, 2009.

In international peer-reviewed conference proceedings

1. Certifying Proofs for LTL Model Checking. With M. Roveri, S. Tonetta. To appear in *Proceedings of FMCAD*, 2018.
2. Symbolic Execution with Existential Second-Order Constraints. With S. Mechtaev, A. Cimatti, A. Roychoudhury. To appear in *Proceedings of ESEC/FSE*, 2018.
3. Experimenting on Solving Nonlinear Integer Arithmetic with Incremental Linearization. With A. Cimatti, A. Irfan, M. Roveri, R. Sebastiani. In *Proceedings of SAT*, 2018.

4. Satisfiability Modulo Transcendental Functions via Incremental Linearization. With A. Cimatti, A. Irfan, M. Roveri, R. Sebastiani. In *Proceedings of CADE*, 2017.
5. Invariant Checking of NRA Transition Systems via Incremental Reduction to LRA with EUF. With A. Cimatti, A. Irfan, M. Roveri, R. Sebastiani. In *Proceedings of TACAS*, 2017.
6. SC^2: Satisfiability Checking Meets Symbolic Computation - (Project Paper). With E. Abraham, J. Abbott, B. Becker, A. Bigatti, M. Brain, B. Buchberger, A. Cimatti, J. Davenport, M. England, P. Fontaine, S. Forrest, D. Kroening, W. Seiler, T. Sturm. In *Proceedings of CICM*, 2016.
7. Infinite-state liveness-to-safety via implicit abstraction and well-founded relations. With J. Daniel, A. Cimatti, S. Tonetta, S. Mover. In *Proceedings of CAV*, 2016.
8. Verilog2SMV: A tool for word-level verification. With A. Irfan, A. Cimatti, M. Roveri, R. Sebastiani. In *Proceedings of DATE*, 2016.
9. The xSAP Safety Analysis Platform. With B. Bittner, M. Bozzano, R. Cavada, A. Cimatti, M. Gario, C. Mattarei, A. Micheli, G. Zampedri. In *Proceedings of TACAS*, 2016.
10. Efficient Anytime Techniques for Model-Based Safety Analysis. With M. Bozzano, A. Cimatti, C. Mattarei. In *Proceedings of CAV*, 2015.
11. HyCOMP: an SMT-based Model Checker for Hybrid Systems. With A. Cimatti, S. Mover, S. Tonetta. To Appear in *Proceedings of TACAS*, 2015.
12. Towards Pareto-Optimal Parameter Synthesis for Monotonic Cost Functions. With B. Bittner, M. Bozzano, A. Cimatti, M. Gario. In *Proceedings of FMCAD*, 2014.
13. Verifying LTL properties of hybrid systems with K-liveness. With A. Cimatti, S. Mover, S. Tonetta. In *Proceedings of CAV*, 2014.
14. The nuXmv Symbolic Model Checker. With R. Cavada, A. Cimatti, M. Dorigatti, A. Mariotti, A. Micheli, S. Mover, M. Roveri, S. Tonetta. In *Proceedings of CAV*, 2014.
15. IC3 Modulo Theories via Implicit Predicate Abstraction. With A. Cimatti, S. Mover, S. Tonetta. In *Proceedings of TACAS*, 2014.
16. Parameter Synthesis with IC3. With A. Cimatti, S. Mover, S. Tonetta. In *Proceedings of FMCAD*, 2013.
17. The MathSAT5 SMT Solver. With A. Cimatti, B. Schaafsma, R. Sebastiani. In *Proceedings of TACAS*, 2013.
18. A Modular Approach to MaxSAT Modulo Theories. With A. Cimatti, B. Schaafsma, R. Sebastiani. In *Proceedings of SAT*, 2013.
19. Interpolation-Based Verification of Floating-Point Programs with Abstract CDCL. With M. Brain, V. D'Silva, L. Haller, D. Kroening. In *Proceedings of SAS*, 2013.
20. An Abstract Interpretation of DPLL(T). With M. Brain, V. D'Silva, L. Haller, D. Kroening. In *Proceedings of VMCAI*, 2013.
21. Deciding Floating-Point Logic with Systematic Abstraction. With M. Brain, L. Haller, D. Kroening. In *Proceedings of FMCAD*, 2012.
22. Software Model Checking via IC3. With A. Cimatti. In *Proceedings of CAV*, 2012.
23. Optimizing Monitoring Requirements in Self-Adaptive Systems. With R. Ali, A. Griggio, A. Franzen, A. Dalpiaz, P. Giorgini. In *Proceedings of EMMSAD/EuroSymposium*, 2012.
24. Effective Word-Level Interpolation for Software Verification. In *Proceedings of FMCAD*, 2011.
25. Stochastic Local Search for SMT: Combining Theory Solvers with WalkSAT. With Q.-S. Phan, R. Sebastiani, S. Tomasi. In *Proceedings of FroCos*, 2011.
26. Kratos - a Software Model Checker for SystemC. With A. Cimatti, A. Micheli, I. Narasamdya, M. Roveri. In *Proceedings of CAV*, 2011.
27. Efficient Interpolant Generation in Satisfiability Modulo Linear Integer Arithmetic. With T.T.H. Le, R. Sebastiani. In *Proceedings of TACAS*, 2011.
28. Satisfiability Modulo the Theory of Costs: Foundations and Applications. With A. Cimatti, A. Franzén, R. Sebastiani, C. Stenico. In *Proceedings of TACAS*, 2010.
29. Tighter Integration of BDD and SMT for Predicate Abstraction. With A. Cimatti, A. Franzén, K. Kalyanasundaram, M. Roveri. In *Proceedings of DATE*, 2010.
30. Software Model Checking via Large-Block Encoding. With D. Beyer, A. Cimatti, E. Keremoglu, R. Sebastiani. In *Proceedings of FMCAD*, 2009.
31. Interpolant Generation for UTVPI. With A. Cimatti, R. Sebastiani. In *Proceedings of CADE-22*, 2009.

32. The MathSAT 4 SMT Solver. With R. Bruttomesso, A. Cimatti, A. Franzén, R. Sebastiani. In *Proceedings of CAV*, 2008.
33. Efficient Interpolant Generation in Satisfiability Modulo Theories. With A. Cimatti, R. Sebastiani. In *Proceedings of TACAS*, 2008.
34. A Lazy and Layered SMT(BV) Solver for Hard Industrial Verification Problems. With R. Bruttomesso, A. Cimatti, A. Franzén, Z. Hanna, A. Nadel, A. Palti, R. Sebastiani. In *Proceedings of CAV*, 2007.
35. A Simple and Flexible Way of Computing Small Unsatisfiable Cores in SAT Modulo Theories. With A. Cimatti, R. Sebastiani. In *Proceedings of SAT*, 2007.
36. Delayed Theory Combination vs Nelson-Oppen for Satisfiability Modulo Theories: a Comparative Analysis. With R. Bruttomesso, A. Cimatti, A. Franzén, R. Sebastiani. In *Proceedings of LPAR*, 2006.
37. To Ackermann-ize or not to Ackermann-ize? On Efficiently Handling Uninterpreted Function Symbols in SMT(EUF+T). With R. Bruttomesso, A. Cimatti, A. Franzén, A. Santuari, R. Sebastiani. In *Proceedings of LPAR*, 2006.
38. Precise Analysis of pi-calculus in Cubic Time. With L. Colussi, G. Filè. In *Proceedings of TCS*, 2004.

Prizes and Awards

2015 nuXmv wins one 1^{st} prize and two 2^{nd} prizez in the International Hardware Model Checking Competition `http://fmv.jku.at/hwmcc15/`

May 2010 - May 2013 Marie Curie research grant (PCOFUND-GA-2008-226070 "progetto Trentino"), co-funded by Provincia Autonoma di Trento and the European Community's FP7/2007-2013. Project acronym: ADAPTATION. Funding Amount: € 150,000.

2014 nuXmv wins two 3^{rd} prizes in the International Hardware Model Checking Competition `http://fmv.jku.at/hwmcc14cav/`

2009 - 2012 MathSAT wins several 1^{st} prizes in the International SMT-COMP `http://smtcomp.org`

2002 - 2003 Scholarship from University of Padova. Topic: Computer Security.

Software

1. MathSAT 5 – an efficient SMT Solver. Role: main author. `http://mathsat.fbk.eu`
2. MathSAT 4 – the predecessor of MathSAT 5. Role: co-author. `http://mathsat4.disi.unitn.it`
3. nuXmv – a Symbolic Model Checker for finite- and infinite-state systems. Role: main author of the backend engines. `http://nuxmv.fbk.eu`
4. HyComp – a Symbolic Model Checker for Hybrid Systems. Role: co-author of the backend engines. `https://es-static.fbk.eu/tools/hycomp/`
5. xSAP – a tool for safety assessment of synchronous finite-state and infinite-state systems. Role: co-author of the Fault Tree analysis engine. `https://es-static.fbk.eu/tools/xsap/`
6. Kratos – a Software Model Checker. Role: co-developer. `http://es.fbk.eu/tools/kratos/`.
7. CPAChecker – a Software Model Checker. Role: implementation of the "Large Block Encoding" analysis and the abstraction refinement framework. `http://cpachecker.sosy-lab.org/`.
8. Matita – an Interactive Theorem Prover. Role: implementation of an automatic tactic based on paramodulation. `http://matita.cs.unibo.it`.
9. Tools for running SMT-COMP. Role: developer. `http://smtcomp.sourceforge.net/2012/tools.shtml`

Teaching Activities

Academic Years 2006-2007, 2007-2008 and 2008-2009 Teaching Assistant for the courses of "Programmazione 1", Laurea Triennale in Informatica (undergraduate level), and "Formali Methods", Laurea Specialistica in Informatica (graduate level), at the University of Trento (teacher: prof. Roberto Sebastiani).