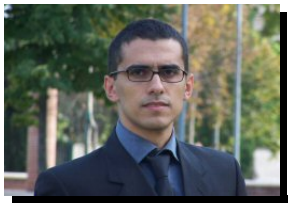
Curriculum Vitae: Prof. Tommaso Cucinotta

Personal data



Birth date and place: April 1974, Potenza (Italy)

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E-mail: tommaso.cucinotta@gmail.com *Home page*: http://retis.santannapisa.it/~tommaso

Current status

Dec 2015 to date: *Associate Professor* at the Real-Time Systems Laboratory (ReTiS) of Scuola Superiore Sant'Anna

Research topics & Competencies

- Real-time and reliable NoSQL Database systems for cloud services
- Adaptive resource management and scheduling in Cloud Computing & Network Function Virtualization infrastructures
- Artificial Intelligence and Machine Learning to support Data Center Operations in Cloud & NFV infrastructures
- Platforms for real-time data streaming and analytics
- Quality of service control for adaptive soft real-time applications, including multimedia and IMS systems
- Operating Systems for real-time and embedded applications and many-core and massively distributed systems
- Trusted computing and confidentiality in cloud computing
- Smart-cards: interoperability, protocols and architectures
- Digital signatures, biometrics identification, multicast security

Experience highlights (details below)

- **7 Granted and 25 Filed EU and US Patents** in the areas of security, resource management and scheduling
- **25 International Journal Publications**, including IEEE Transaction on Computers, IEEE Transaction on Industrial Informatics and ACM Transactions on Embedded and Computing Systems
- **65 International Conference and Workshop Peer-reviewed Publications and 13 Book Chapters**
- **3 EU Projects scientific responsibility** (overall, raised and managed funds for ~900K EUR), made significant **contributions to 8 EU Projects** and other national research projects
- **Co-Chair** of 6 international workshops, **program committee member** of 35 international conferences and workshops
- **Guest editor** of 3 special issues of international journals; reviewed several papers for international journals
- **Mentored** 6 PhD students, 13 under-graduate students for their MSc thesis and 3 Bell Labs interns
- **35 teaching assignments**
- **2 years Software Engineer in AWS**, improving performance and scalability of **DynamoDB**
- 5 consultancy assignments by external companies for production-quality software (in the areas of embedded systems, multimedia applications and Linux kernel)
- **14 open-source projects** created and/or contributed
- Long-standing experience in low-level programming since age of 12, including: development of 100% Assembler applications (text, image, music editors, demos on Commodore 64 and Amiga 500) with direct access to hardware and interrupt registers; writing of malwares propagating through disk boot sector infection; hacking into object code of Windows applications for breaking license verification code

Awards and recognitions

- **April 2018**: Best Paper Award for co-authored paper at ICN 2018
- **April 2014**: Selected as featured researcher profile in highlight on the Bell Labs website
- **December 2013**: Declared eligible as associate professor (Abilitazione Scientifica Nazionale da professore associato)
- **October 2013**: IEEE Senior Member grade elevation
- **December 2010**: Best-paper award for co-authored paper at IEEE SOCA 2010

PhD Board Membership

- **2017/18, 2018/19, 2019/20**: **Board Member** of the PhD in Data Science, jointly organized at Scuola Superiore Sant'Anna, Scuola Normale Superiore, University of Pisa, National Research Council and Scuola IMT Lucca
- **2016/17: Board Member** of the PhD in Emerging Digital Technologies at Scuola Superiore Sant'Anna

Scientific peer-reviewed events co-chairing and organization of special issues of peer-reviewed journals

- **Program Co-Chair** of the 10th International Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2020)
- **Program Co-Chair** of the 23rd IEEE International Symposium on Real-Time Distributed Computing (ISORC 2020), May 12-14 2019, Nashville, USA
- **General Co-Chair** of the 2nd International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), April 16-18 2018, Pisa (Italy)
- **General Co-Chair** of the 1st International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), April 3-4 2017, Pisa (Italy)
- **General Co-Chair** of the 9th International Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2014), August 25-29 2014, Porto, Portugal, co-located with Euro-Par 2014
- **General Co-Chair** of the 2nd International Workshop on Real-Time and Distributed Computing in Emerging Applications (REACTION 2013), December 2013, Vancouver, Canada, co-located with IEEE RTSS 2013
- **Guest Editor** of the Special Issue on Real-time and distributed computing in emerging applications (REACTION) of the Elsevier Journal of Systems Architecture (JSA), Vol. 61, Issue 5-6, May 2015
- **General Co-Chair** of the 4th International Workshop on Analysis Tools and Methodologies for Embedded and Real-time Systems (WATERS 2013), July 2013, Paris, France, co-located with ECRTS 2013
- **General Co-Chair** of the International Workshop on Real-Time and Distributed Computing in Emerging Applications (REACTION 2012), December 2012, San Juan, Puerto Rico, co-located with IEEE RTSS 2012
- **General Co-Chair** of the 3rd International Workshop on Analysis Tools and Methodologies for Embedded and Real-time Systems (WATERS 2012), July 2012, Pisa, Italy, co-located with ECRTS 2012
- **Guest Editor** of two Special Issues on Analysis Tools and Methodologies for Embedded and Real-time Systems (WATERS) of the Elsevier Journal of Systems Architecture (JSA), 2012-2014
- **General Co-Chair** of the 2nd International Workshop on Analysis Tools and Methodologies for Embedded and Real-time Systems (WATERS 2011), July 2011, Porto, Portugal, co-located with ECRTS 2011
- **Program Co-Chair** of the Fourth IEEE International Workshop on Real-Time Service-Oriented Architecture and Applications (RTSOAA 2011), December 2011, Irvine, CA, co-located with IEEE SOCA 2011.
- **General Co-Chair** of the 1st International Workshop on Analysis Tools and Methodologies for Embedded and Real-time Systems (WATERS 2010), July 2010, Brussels, Belgium, co-located with ECRTS 2010

Research grants

- **Jan 2020 – Dec 2022: Head** of the research unit at Scuola Superiore Sant'Anna within the AMPERE European Project (H2020 ICT 871669)
- **Feb 2008 – Feb 2011**: **Head** of the research unit at Scuola Superiore Sant'Anna within the IRMOS European Project (FP7 ICT 214777)
- **Feb 2010 – Jan 2012**: **Head** of the research unit at Scuola Superiore Sant'Anna within the S(o)OS European Project (FP7 FET 248465)

Peer-review service for international conferences, workshops and journals

- **Review Committee Member** for the 2014 EuroSys Roger Needham PhD Award
- **Program Committee member** of IEEE RTAS 2018, IEEE ICPS 2018, IEEE INDIN 2018, CLOSER 2018, IEEE ETFA 2017, SOCNE 2017, EwiLi 2017, IEEE ETFA 2017, ACM CF 2017, REACTION 2017, SeaClouds 2014
- **Program Committee member** of IEEE RTAS 2012, 2013, IEEE SIES 2013, IEEE ETFA 2012, RTLWS 2012, OPODIS 2011, IEEE/IFIP EUC 2011, IEEE ICESS 2011, IEEE SOCNE 2011-2012, CLOSER 2011-2013, CSPNA 2011, IEEE SOCA 2010-2012, VHPC 2010-2012, SOMRES 2011, the Workshop on trends, issues and challenges in future high-end computing, AHM 2010, CDC, DATE
- **Reviewer** for: IEEE Transactions on Computers, on Cloud Computing, on Industrial Informatics, on Parallel and Distributed Systems, on Mobile Computing; Springer Journal on Real-Time Systems, on Service Oriented Computing and Applications; Wiley Software Practice & Experience; Elsevier Journal on Systems and Software, on System Architecture, on Computer and Systems, on Parallel and Distributed Computing.

Professional experience

- **Jul 2014 to Feb 2016**: Senior Software Development Engineer at **Amazon DataBase Services**, Dublin (Ireland), working on aspects related to the real-time performance of AWS DynamoDB.
- **Jan 2012 – Jun 2014:** Researcher (Member of Technical Staff) at Bell Labs, Alcatel-Lucent, Dublin (Ireland).
- **Oct 2011 – Jan 2012**: Research Associate at the Real-Time Systems Laboratory (RETIS) of Scuola Superiore Sant'Anna (SSSA), Pisa (Italy).
- **Oct 2005 – Sep 2011**: Assistant Professor at the Real-Time Systems Laboratory (RETIS) of Scuola Superiore Sant'Anna (SSSA), Pisa (Italy).
- **Feb 2009**: Consultant for Evidence s.r.l., Pisa: development of a G.729 codec for a VoIP gateway – in production
- **Nov 2008 – Jan 2009**: Collaboration for the design and realization of a security mechanism for distributed control applications, European Project CHAT INFSO-ICT-224428 , University of Trento, Italy.
- **Jan 2008**: Collaboration within the European Project INTEREST IST-33661, Evidence s.r.l., Pisa (Italy).
- **Oct 2007**: Collaboration for "Development of the RT-Druid tool", Evidence s.r.l., Pisa (Italy).
- **Jan 2007**: Collaboration for the "Requirements analysis of the RT-Druid tool", Evidence s.r.l., Pisa (Italy).
- **Oct 2004 – Jan 2005**: Collaboration within the OCERA FP5 European Research Project IST-2001-35102, SSSA.
- **May – Aug 2005**: Collaboration on "Performance analysis techniques for control systems with computing resources constraints", European Project RECSYS IST-2001-37170, SSSA.
- **Feb – Mar 2005**: Collaboration within the OCERA FP5 Euroepan Research Project IST-2001-35102, SSSA.
- **May – Jun 2004**: Collaboration on Experimentation on Embedded platforms for Multimedia Applications, SSSA.
- **Jan – Apr 2004**: Collaboration to the activities of the FABRIC Research Project IST-2001-37167, SSSA.
- **Jul – Dec 2003:** Collaboration to the activities of the European Research Project ARTIST IST-2001-34820, SSSA.
- **Jun – Jul 2003**: Collaboration for using digital signatures in internal processes, Link Research Project, SSSA.
- **Jul – Aug 2002**: Collaboration on "Support for experimenting with digital signatures in the internal processes", Project Link "Piano di Potenziamento della Rete di Ricerca e di Sviluppo nel Territorio", SSSA.
- **Oct 2001**: Technological evaluation of an investiment proposal within the "Startech Sviluppo Italia" Program, on the issue of verifying printed digital signatures, Technodeal s.r.l., Pisa (Italy).
- **Aug – Oct 2001**: *Internship in Schlumberger Smart Cards, Austin (TX)*: Design and implementation of an open-source middleware for smart cards. Software currently available in most Linux distributions.
- **Jan – Jun 2001**: Design of an advanced document object model for a *digital library* and implementation within the *Dienst* software by means of the *OLP Protocol*. Project developed in collaboration with "Consorzio Nazionale delle Ricerche, Istituto di Elaborazione dell'Informazione / CNR-IEI".
- **Mar – Apr 2001**: Design and realization of a web-based *content management framework* for sharing digital documents. Implemented within the Zope application server. Currently online at http://link.sssup.it.
- **Jul – Sep 2001**: Design of a web-based *Electronic Registry System* compliant with the Italian national laws and implementation within the *Zope application server*. Project committed to SSSA by the Authority for Information Technologies in Public Administrations (AIPA).
- **Jul – Dec 2000**: Realization of a software tool for digital signatures, within the "Project for electronic document security and digital signatures", SSSA.

PhD and MSc students I acted as supervisor, examiner or defense opponent for

- **Sep 2017 to date**: supervisor of Francesco de Gioia for a MSc thesis at University of Pisa, focusing on "testing in development tool-chains for RISC-V architectures," carried out as an internship at Gaisler Research (Sweden)
- **Jul 2017 to date**: supervisor of Alessio Balsini for his PhD in Emerging Digital Technologies at Scuola Sant'Anna, focusing on heterogeneous and power-aware real-time scheduling in the Linux kernel
- **Nov 2016 to date**: supervisor of Federico Civerchia in his PhD in Emerging Digital Technologies at Scuola Sant'Anna, focusing on Internet of Things
- **Mar – Jun 2014**: supervisor of Andrea Meroni during his internship at Bell Labs Ireland about "On-Demand State Migration Protocol for Elastic IMS Cloud Components", work submitted as MSc thesis at University of Pavia (Italy)
- **2010-2016**: co-tutor of Juri Lelli for the PhD in Computer Engineering about "Multiprocessor Real-Time Scheduling on General Purpose Operating Systems" at Scuola Superiore Sant'Anna, Pisa (Italy)
- **Feb – May 2013**: supervisor of Aram Santogidis during his internship at Bell Labs Ireland about "Simulation of Real-Time Cloud Computing Applications"

- **Jul – Sep 2012:** supervisor of Nilo Redini during his intership at Bell Labs Ireland about “Access control models for a novel Internet-scale file-system”, project submitted as MSc thesis at University of Pisa (Italy)
- **Jun 2012**: external opponent of Mikael Åsberg for the licensiate thesis defense in Comp. Science and Engineering on “Development of Hierarchical Real-Time Systems” at the Mälardalen University, Västerås (Sweden)
- **2006-2010**: co-tutor of Fabio Checconi for the PhD in Computer Engineering on “Proportional Share Scheduling in General Purpose Operating Systems: Theory and Practice” at Scuola Superiore Sant’Anna, Pisa (Italy)
- **2008-2011**: supervisor of Gaetano Anastasi for the PhD in Computer Engineering focusing on “Quality of Service Management in Service Oriented Architectures” at Scuola Superiore Sant’Anna, Pisa (Italy)
- **2011**: external examiner for the Degree of Master of Information Systems and Technology by Research of Zhe Sun, with a thesis on “Research on a New Peer to Cloud and Peer Model and a Deduplication Storage System” at the University of Wollongong
- **2010**: supervisor of Giacomo Bagnoli for the MSc thesis in Computer Engineering on “Design and development of a mechanism for low-latency real time audio processing on Linux” at the University of Pisa (Italy)
- **2009**: supervisor of Andrea Angella for the MSc thesis in Computer Engineering on “SCOTT: un’architettura modulare per il testing di soluzioni basate su smartcard ” at the University of Pisa (Italy)
- **2009**: supervisor of Emanuele Gringeri for the MSc thesis in Computer Engineering on “Improving security and memory management in the MUSCLE card framework ” at the University of Pisa (Italy)
- **2008**: supervisor of Alberto Donadoni for the MSc thesis in Computer Engineering on “Progetto e realizzazione di un'architettura software modulare ed estendibile per il monitoraggio e la gestione dei parametri di esecuzione di applicazioni soft real-time” at the University of Pisa (Italy)
- **2006**: supervisor of Riccardo Bresciani for the BSc thesis in Computer Engineering on “Crittografia a Curve Ellittiche su FPGA Altera Cyclone II” at the Scuola Superiore Sant'Anna, Pisa (Italy)
- **2003**: supervisor of Alessandro Pieroni for the MSc thesis in Computer Engineering on “Realizzazione di un'API crittografica per smart-card in Java” at the University of Pisa (Italy)
- **2003-2004**: co-tutor of Riccardo Brigo for the PhD in Computer Engineering on Fingerprint Matching on Programmable Smart-Cards at Scuola Superiore Sant’Anna, Pisa (Italy)
- **2002**: supervisor of Riccardo Brigo for the MSc thesis in Computer Engineering on “Sviluppo di un sistema di protezione per smart-card basato su algoritmi di verifica biometrica on-board” at the University of Pisa
- **2002**: supervisor of Paolo Grimaccia and Matteo Ferrari for the MSc thesis in Computer Engineering on “Progetto e realizzazione di un emulatore Java Card” at the University of Pisa (Italy)

Teaching experience

- **Yearly, from a.a. 2016/2017 to date**: Course on “Component-Based Software Design,” MSc degree in Embedded Computing Systems jointly organized by Scuola Sant’Anna and University of Pisa. Course language: English
- **March 2016**: Course “From Classical Distributed Systems to Cloud Computing” - external lecturer for PhD students at the Computer Engineering Dept. of University of Pisa. Course Language: English
- **Yearly, from 2006 to 2011**: Course on “Design of Embedded System”, Faculty of Engineering, University of Siena
- **Yearly, from 2002 to 2011**: International Master on Information Technology and Software Engineering – Module “*System Security and Cryptography*”, SSSA. Course language: English.
- **Yearly, from 2006 to 2011**: International Master on Communication Networks Engineering – Module “*System Security and Cryptography*”, SSSA. Course language: English.
- **Jun 2008**: Course on “Real-time operating systems”, SSSA “UNI-NORGE Project”, Ericsson, Rome.
- **Jun 2006**: Lecture on “Digital Signatures: t*echnological and juridical framework*”, Specialization course “*Codice dell'Amministrazione Digitale D. Lgs. n.82/2005*”, LiderLab, SSSA.
- **Mar 2006**: Lecture on “Technologies for e-Health Security”, Master on European Procurement and Transplantation Programs Management, SSSA
- **Nov 2005**: Lecture on “Informatics Basics”, Master on Innovation Management, SSSA
- **Oct – Nov 2005**: International Master on Information Technology and Communication Networks Engineering – Module “Java”, SSSA. Course language: English
- **Oct 2005 – Sep 2006**: Course on Industrial Informatics, Faculty of Engineering, University of Siena.
- **Oct – Dec 2005**: Professor assistant for a course on “Java Programming”, Faculty of Engineering, Pisa University.
- **Oct – Nov 2005**: Course on “Computer Architectures I”, Faculty of Engineering, University of Siena.

- **Oct 2005**: Specialization course "*Codice dell'Amministrazione Digitale D. Lgs. n.82/2005*" -- Lecture on "*Digital Signature: a technological viewpoint*", LiderLab, SSSA.
- **May – Jul 2005**: Course on Industrial Informatics, Faculty of Engineering, University of Siena.
- **Apr 2004**: Course on "*e-commerce: technological issues related to authentication, security and privacy*" within the 2004 Edition of the Specialization Course "*Marketing e Distribuzione di Prodotti Assicurativi*", SSSA.
- **Oct – Dec 2004**: Professor assistant for a course on "Informatics", Faculty of Engineering, Pisa University.
- **Feb – May 2004**: Professor assistant for a course on "Informatics", Faculty of Engineering, Pisa University.
- **Apr – May 2001**: Specialization course "*The Electronic Registry: specialistic knowledge for experts*", SSSA.
- **May 2001**: Seminar "*Technologies for innovating the Public Administration – Technologies and tools for ICT security*", SSSA.

Education

- **Jan 2001 – Jul 2004**: PhD in Computer Engineering, Scuola Superiore Sant'Anna University, Pisa (Italy), with *maximum marks* ("*100/100 summa cum laude*"). PhD research title: "*Workflow and digital signature systems for Public Administration and enterprises*".
- **Sep 1992 – May 2000**: Master Degree in Computer Engineering ("Laurea in Ingegneria Informatica"), University of Pisa (Italy) with *maximum marks* ("*110/110 summa cum laude"*).
- **Sep 1988 – Jun 1992**: Senior High School specializing in Science Education.

Post-degree studies

- **June 2004 – May 2005**: **Research assistant** at the Real-Time Systems Laboratory (RETIS) of SSSA, for research activities in the European Project ARTIST
- **July 2001**: 13th International School for Computer Science Researchers "Foundations of Wide Area Network Programming", Lipari, Messina (Italy).
- **Aug 2001**: Course on "Technologies and Innovation for improving the Public Administration internal processes", modules "Digital signature systems" and "Organizational models for the PA innovations", SSSA.
- **Nov 2002 – Jan 2003**: Course on "Management of internal innovation and external development processes" (with a module about "Team interaction and project management skills"), SSSA.

Patents

1. **T. Cucinotta**. "*Method of preventing access to sensitive data of a computing device*," US Patent **Grant** US10410004B2, Sep 10th, 2019 (application EP20130305396, March 28th, 2013).
2. **T. Cucinotta**, Stéphane Betgé-Brezetz. "*Method and system for controlling the exchange of Privacy-Sensitive Information*," US Patent **Grant** US10237057B2, March 2019 (application EP20130360029, September 2013).
3. E. Jul, D. Cherubini, **T. Cucinotta**. "*Secure Data Processing*," EU Patent **Grant** EP2827276B1, July 3rd, 2019 (application EP20130306038, July 2013).
4. **T. Cucinotta**, Marcel Karnstedt. "*Method for Performing Load Balancing, Distributed Computing Environment and Computer Program Product*," EU Patent Grant EP2940580B1, March 28th, 2018 (application EP20140305650, April 30th, 2014)
5. E. Jul, D. Cherubini, **T. Cucinotta**, D. Lugones. "*Method for Balancing a Load, a System, an Elasticity Manager and a Computer Program Product*," US Patent **Grant** US9891941B2, February 2018 (application EP20140306301, October 2014).
6. **T. Cucinotta**, F. Chang, R. Viswanathan. "*Exploiting Probabilistic Latency Expressions For Placing Cloud Applications*," US Patent **Grant** US9722930 B2, August 2017 (application 14/075727, November 2013).
7. **T. Cucinotta**, D. Cherubini, E. Jul. "Apparatus and method for s*ecure data processing*." EU Patent **Grant** EP2672673B1, May 2016 (application 20120360045, June 2012).

Filed patents

8. **T. Cucinotta**, M. Vannucci, A. Ritacco, G. Lanciano, A. Artale, J. Barata, E. Sposato. "*Metodo per predire l'evoluzione temporale di una pluralità di dati relativi ad un'infrastruttura telefonica per la network function virtualization*," Filed IT Patent 102019000014262, August 2019.

9. **T. Cucinotta**, M. Vannucci, A. Ritacco, G. Lanciano, A. Artale, J. Barata, E. Sposato. "*Metodo per identificare e classificare le modalità comportamentali di una pluralità di dati relativi ad un'infrastruttura telefonica per la network function virtualization*," Filed IT Patent 102019000014241, August 2019.
10. **T. Cucinotta**, D. Cherubini, E. Jul. *"Secure Data Processing,"* Filed US Patent 14/405894. December 2014.
11. **T. Cucinotta**, D. Cherubini, E. Jul. *"Secure Data Processing,"* Filed US Patent 14/399372. November 2014.
12. **T. Cucinotta**, A. Meroni, V. Hilt. *"State Migration for Elastic Virtualized Components,"* Filed US Patent 14/338502. July 2014.
13. **T. Cucinotta**. "Method for Managing User Requests in a Distributed Computing Environment and Computer Program Product," Filed EU Patent 14305652. April 2014.
14. **T. Cucinotta**. *"Method For Virtual Machine Instantiation, Scalable Computing System, Virtual Machine And Computer Program Product,"* Filed EU Patent 14305558. April 2014.
15. **T. Cucinotta**, I. Bedini. "*Method, Processing Framework, Aggregator And Computer Program Product For Processing Data*," Filed EU Patent 13360033. October 2013.
16. **T. Cucinotta.** "*Method and System for Graphical User Interface Layout Generation, Computer Program Product*," Filed EU Patent 13360015. August 2013.
17. **T. Cucinotta**, A. Sala. "*Methods and Devices for Protecting Private Data*," Filed US Patent 13/944964. July 2013.
18. **T. Cucinotta**, "*Methods and Devices for Controlling Access to Distributed Resources*," Filed US Patent 13/926832. June 2013.
19. **T. Cucinotta**, I. Bedini. "*Method for Data Processing, Element to Process Data, Method for Monitoring Activity and Computer Program Product*," Filed EU Patent 13360010. May 2013.
20. **T. Cucinotta.** "*Scheduling*," Filed EU Patent 20130305397. March 2013.
21. I. Bedini, **T. Cucinotta**, A. Sala, B. Theeten. "*Systems And Methods For Self-Adaptive Distributed Systems*," Filed US Patent 13/853533. March 2013.
22. **T. Cucinotta**, D. Cherubini, E. Jul. "*Collaborative Uses of a Cloud Computing Confidential Domain of Execution*," Filed US Patent 13/622007. September 2012.
23. D. Cherubini, **T. Cucinotta**. "*System Control*," Filed EU Patent 20120360068. September 2012, and Filed US Patent 14/423967
24. **T. Cucinotta**, D. Cherubini, E. Jul. "*Secure Data Processing*." Filed EU Patent 20120360044. June 2012
25. **T. Cucinotta**, "*Task Scheduling*." Filed EU Patent 20120360037. May 2012

Publications

Articles in international peer-reviewed scientific journals

1. A. Balsini, **T. Cucinotta**, L. Abeni, J. Fernandes, P. Burk, P. Bellasi, M. Rasmussen. "*Energy-Efficient Low-latency Audio on Android*," Elsevier Journal of Systems and Software (JSS), Vol. 152, pp. 182-195, June 2019
2. **T. Cucinotta**, L. Abeni, J. Lelli, G. Lipari. "*Improving Responsiveness of Time-Sensitive Applications by Exploiting Dynamic Task Dependencies*," Software: Practice and Experience, Vol. 48, Issue 4, pp. 820-841. April 2018. Wiley.
3. M. Garcia-Valls, **T. Cucinotta**, C. Lu. *"Challenges in Real-Time Virtualization and Predictable Cloud Computing,"* Journal of Systems Architecture, Vol. 60, Issue 9, Oct. 2014, pp. 726-740. Elsevier. DOI 10.1016/j.sysarc.2014.07.004.
4. K. Konstanteli, **T. Cucinotta**, K. Psychas, T. A. Varvarigou. *"Elastic Admission Control for Federated Cloud Services,"* IEEE Transactions on Cloud Computing, Vol. 2, Issue 3, July-Sept. 1 2014, DOI 10.1109/TCC.2014.2325034, ISSN 2168-7161.
5. B. Theeten, I. Bedini, P. Cogan, A. Sala, **T. Cucinotta**, *"Towards the Optimization of a Parallel Streaming Engine for Telco Applications,"* Bell Labs Technical Journal, Vol. 18, Issue 4, March 2014
6. **T. Cucinotta**, F. Checconi, L. Abeni, L. Palopoli, "*Adaptive Real-Time Scheduling for Legacy Multimedia Applications*," Transactions on Embedded Computing Systems, Special Section on Embedded Systems for Real-Time Multimedia, Vol.11, No.4, December 2012. ACM
7. D. Faggioli, G. Lipari, **T. Cucinotta**, "*Analysis and implementation of the multiprocessor bandwidth inheritance protocol*," Real-Time Systems Journal, Vol. 48, Issue 6, November 2012. Springer.

8. J. Lelli, D. Faggioli, **T. Cucinotta**, G. Lipari. "*An Experimental Comparison of Different Real-Time Schedulers on Multicore Systems*," Journal of Systems and Software (JSS), Vol. 85, Issue 10, pp. 2405-2416. October 2012. Elsevier
9. R. Santos, G. Lipari, E. Bini, **T. Cucinotta**. "*On-line schedulability tests for adaptive reservations in fixed priority scheduling*," Real-Time Systems Journal, Vol. 48, Issue 5, pp. 601-634. September 2012. Springer
10. **T. Cucinotta**, F. Checconi, G. Kousiouris, K. Konstanteli, S. Gogouvitis, D. Kyriazis, T. Varvarigou, A. Mazzetti, Z. Zlatev, J. Papay, M. Boniface, S. Berger, D. Lamp, T. Voith, M. Stein. "*Virtualised e-Learning on the IRMOS Real-time Cloud*," Service Oriented Computing and Applications, Vol. 6, No. 2, June 2012. Springer
11. **T. Cucinotta** et al. "*The IRMOS/ISONI Real-Time Cloud Infrastructure: a Virtualised e-Learning Case-Study*," Multimedia Communications Technical Committee (COMSOC MMTC) E-Letter, Special Issue On Multimedia Sensor Networks In Sustainable Systems, Vol. 6, No. 12, December 2011. IEEE Communications Society
12. **T. Cucinotta** and D. Faggioli, "*Handling Timing Constraints Violations in Soft Real-Time Applications as Exceptions*," Journal of Systems and Software (JSS), Vol. 85, Issue 4, April 2012. Elsevier
13. R. Asaula, **T. Cucinotta**, G. Dini, L. Palopoli. "*Trading security for control performance in distributed robotic applications*," International Transactions on Systems Science and Applications (ITSSA), Vol. 7, No. 1/2, pp. 26-39, November 2011
14. **T. Cucinotta**, L. Abeni, L. Palopoli, G. Lipari, "*A robust mechanism for adaptive scheduling of multimedia applications*," Transactions on Embedded Computing Systems, Vol. 10, No. 4, November 2011. ACM
15. G. Kousiouris, **T. Cucinotta**, T. Varvarigou. "*The Effects of Scheduling, Workload Type and Consolidation Scenarios on Virtual Machine Performance and their Prediction through Optimized Artificial Neural Networks*," Journal of Systems & Software (JSS). 2011. Elsevier
16. M. Sojka, P. Pisa, D. Faggioli, **T. Cucinotta**, F. Checconi, Z. Hanzalek, G. Lipari, "*Modular Software Architecture for Flexible Reservation Mechanisms on Heterogeneous Resources*," Journal of Systems Architecture (JSA), Vol. 57, Issue 4, pp. 366–382, April 2011. Elsevier
17. D. Kyriazis, A. Menychtas, G. Kousiouris, K. Oberle, T. Voith, M. Boniface, E. Oliveros, **T. Cucinotta**, S. Berger, "*A Real-time Service Oriented Infrastructure*," GSTF International Journal on Computing, Vol. 1, No. 2, ISSN 2010-2283, February 2011.
18. K. Konstanteli, **T. Cucinotta**, T. Varvarigou, "*Optimum Allocation of Distributed Service Workflows with Probabilistic Real-Time Guarantees*," Service Oriented Computing and Applications, Vol. 4, No. 4, pp. 229-243, December 2010. Springer
19. **T. Cucinotta**, L. Palopoli, L. Abeni, D. Faggioli, G. Lipari, "*On the integration of application level and resource level QoS control for real-time applications*," Transactions on Industrial Informatics, Vol. 6, Issue 4, pp. 479–491, November 2010. IEEE
20. **T. Cucinotta**, L. Palopoli, "*QoS Control for Pipelines of Tasks Using Multiple Resources*," Transactions on Computers, Vol. 53, No. 3, pp. 416--430, March 2010, IEEE Computer Society Digital Library
21. **T. Cucinotta**, A. Mancina, G. Anastasi, G. Lipari, L. Mangeruca, R. Checcozzo, F. Rusinà, "*A Real-time Service-Oriented Architecture for Industrial Automation*," Transactions on Industrial Informatics, Vol. 5, n. 3, August 2009. IEEE
22. L. Palopoli, T**. Cucinotta**, L. Marzario, G. Lipari, "*AQuoSA - Adaptive Quality of Service Architecture"*, Software: Practice and Experience, April 2008, Wiley. doi 10.1002/spe.883
23. **T. Cucinotta**, L. Abeni, G. Lipari, L. Marzario, L. Palopoli, "*QoS Management through adaptive reservations*", Real-Time Systems Journal, Vol. 29, Issue 2-3, March 2005, ISSN:0922-6443, Springer. Kluwer Academic
24. **T. Cucinotta**, M. Di Natale, D. Corcoran, "*An open middleware for smart-cards*", Computer Science Software Engineering (CSSE) Journal, Vol. 20, No. 6, November 2005
25. **T. Cucinotta**, R. Brigo, M. Di Natale, "*A fingerprint matching algorithm for programmable smart cards*", Information Security Bulletin Journal, Vol. 10, Issue 9, November 2005

ARTICLES IN PROCEEDINGS OF INTERNATIONAL PEER-REVIEWED CONFERENCES AND WORKSHOPS

1. A. Mascitti, **T. Cucinotta**, M. Marinoni. "*An adaptive, utilization-based approach to schedule real-time tasks for ARM big.LITTLE architectures*," in Proceedings of the International Workshop on Embedded Operating Systems (EWILI 2019), October 17th, 2019, New York, USA.
2. Daniel B. De Oliveira, T. Cucinotta, Romulo S. De Oliveira. "Efficient formal verification for the Linux kernel," 17th International Conference on Software Engineering and Formal Methods (SEFM 2019), September 16-20th, 2019, Oslo, Norway.
3. G. Ara, L. Abeni, **T. Cucinotta**, C. Vitucci. "*On the use of kernel bypass mechanisms for high-performance inter-container communications*," in Proceedings of the 14th Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2019), International Supercomputing Conference - High Performance (ISC 2019), June 20th, 2019, Frankfurt, Germany.
4. T. Cucinotta, L. Abeni, M. Marinoni, A. Balsini, C. Vitucci. "Reducing Temporal Interference in Private Clouds through Real-Time Containers," in Proceedings of the 2019 IEEE International Conference on Edge Computing (IEEE EDGE 2019), July 8-13, 2019, Milan, Italy.
5. D. B. de Oliveira, R. S. de Oliveira, **T. Cucinotta**. "*Untangling the Intricacies of Thread Synchronization in the PREEMPT RT Linux Kernel*," in Proceedings of the 22nd IEEE International Symposium on Real-Time Distributed Computing (IEEE ISORC 2019), May 7-9, 2019, Valencia, Spain.
6. C. Vitucci, L. Abeni, **T. Cucinotta**, M. Marinoni. "*The Strategic Role of Inter-Container Communications in RAN Deployment Scenarios*," in Proceedings of the International Symposium on Advances in Software Defined Networking and Network Functions Virtualization (SOFTNETWORKING 2019), 18th International Conference on Networks (ICN 2019), March 24-28, 2019, Valencia, Spain. **Best Paper Award**
7. A. Balsini, L. Pannocchi, **T. Cucinotta**. "*Modeling and simulation of power consumption and execution times for real-time tasks on embedded heterogeneous architectures*," in Proceedings of the International Workshop on Embedded Operating Systems (EWILI 2018), October 10th, 2018, Torino, Italy.
8. D. B. de Oliveira, **T. Cucinotta**, R. S. de Oliveira. "*Modeling the Behavior of Threads in the PREEMPT_RT Linux Kernel Using Automata*," in Proceedings of the International Workshop on Embedded Operating Systems (EWILI 2018), October 10th, 2018, Torino, Italy.
9. L. Abeni, A. Balsini, **T. Cucinotta**. "*Container-Based Real-Time Scheduling in the Linux Kernel*," in Proceedings of the International Workshop on Embedded Operating Systems (EWILI 2018), October 10th, 2018, Torino, Italy.
10. **T. Cucinotta**, L. Abeni, M. Marinoni, A. Balsini and C. Vitucci. "*Virtual Network Functions as Real-Time Containers in Private Clouds,"* in Proceedings of the 11th IEEE International Conference on Cloud Computing (IEEE CLOUD 2018). July 2-7, 2018, San Francisco, CA, USA.
11. D. B. de Oliveira, D. Casini, R. S. de Oliveira, **T. Cucinotta**, A. Biondi and G. Buttazzo. "*Nested Locks in the Lock Implementation: The Real-Time Read-Write Semaphores on Linux,"* in Proceedings of the International Real-Time Scheduling Open Problems Seminar (RTSOPS 2018), co-located with the 30th Euromicro Conference on Real-Time Systems (ECRTS 2018). July 3, 2018, Barcelona, Spain.
12. M. Marinoni, **T. Cucinotta**, L. Abeni, C. Vitucci. "*Allocation and control of computing resources for real-time Virtual Network Functions*," in Proceedings of the International Symposium on Advances in Software Defined Networking and Network Functions Virtualization (SOFTNETWORKING 2018). April 22-26, 2018, Athens, Greece. **Best Paper Award**
13. **T. Cucinotta**, L. Abeni, M. Marinoni, C. Vitucci. "*The Importance of Being OS-aware - In Performance Aspects of Cloud Computing Research*," in Proceedings of the 8th International Conference on Cloud Computing and Services Science (CLOSER 2018), March 19-21, 2018, Funchal, Madeira, Portugal.
14. D. Casini, L. Abeni, A. Biondi, **T. Cucinotta**, G. Buttazzo. "*Constant Bandwidth Servers with Constrained Deadlines*," in Proceedings of the 25th International Conference on Real-Time Networks and Systems (RTNS 2017), October 4-6, 2017, Grenoble, France.
15. D. B. de Oliveira, R. S de Oliveira, **T. Cucinotta**, L. Abeni. "*Automata-Based Modeling of Interrupts in the Linux PREEMPT RT Kernel*," in Proceedings of the 22nd IEEE International Conference on Emerging Technologies And Factory Automation (ETFA 2017), September 12-15, 2017, Limassol, Cyprus.

16. **T. Cucinotta**, M. Marinoni, A. Melani, A. Parri, C. Vitucci. "*Temporal Isolation Among LTE/5G Network Functions by Real-time Scheduling*," in Proceedings of the 7th International Conference on Cloud Computing and Services Science (CLOSER 2017), April 26-26, 2017, Porto, Portugal.
17. **T. Cucinotta**, Diego Lugones, Davide Cherubini, Eric Jul. "Data Centre Optimisation Enhanced by Software Defined Networking," in Proceedings of 7th IEEE International Conference on Cloud Computing (IEEE CLOUD 2014), June 27 - July 2, 2014, Alaska, USA
18. **T. Cucinotta,** D. Cherubini, E. Jul. "*Confidential Execution of Cloud Services*," in Proceedings of the 4th International Conference on Cloud Computing and Services Science (CLOSER 2014), 3-5 April 2014, Barcelona, Spain
19. **T. Cucinotta**, D. Lugones, D. Cherubini, K. Oberle. "*Brokering SLAs for end-to-end QoS in Cloud Computing*," in Proceedings of the 4th International Conference on Cloud Computing and Services Science (CLOSER 2014), 3-5 April 2014, Barcelona, Spain
20. **T. Cucinotta**, K. Oberle, M. Stein, P. Domschitz, S. Mullender. "*Run-time Support for Real-Time Multimedia in the Cloud*," in Proceedings of the 2nd International Workshop on Real-Time and Distributed Computing in Emerging Applications (REACTION 2013), co-located with the 34th IEEE Real-Time Systems Symposium (RTSS 2013), December 3, 2013, Vancouver, Canada
21. K. Oberle, D. Cherubini, **T. Cucinotta**. "*End-to-End Service Quality for Cloud Applications*," in Proceedings of the 10th International Conference on Economics of Grids, Clouds, Systems and Services (GECON 2013), September 18-20, 2013, Zaragoza, Spain
22. **T. Cucinotta**. "*Priority Inheritance on Condition Variables*," in Proceedings of the 9th International Workshop on Operating Systems Platforms for Embedded Real-Time applications (OSPERT 2013), July 9th, 2013, Paris, France
23. **T. Cucinotta**, A. Santogidis. "CloudNetSim - Simulation of Real-Time Cloud Computing Applications," in Proceedings of the 4th International Workshop on Analysis Tools and Methodologies for Embedded and Real-time Systems (WATERS 2013), July 9th, 2013, Paris, France
24. **T. Cucinotta**, N. Redini. "*Access Control for the Pepys Internet-Wide File-System*," in Proceedings of the 7th International Workshop on Plan 9 (IWP9 2012), Dublin, Ireland, November 14-16 2012
25. K. Konstanteli, **T. Cucinotta**, K. Psychas, T. Varvarigou. "*Admission Control for Elastic Cloud Services*," in Proceedings of the 5th IEEE International Conference on Cloud Computing (IEEE CLOUD 2012), Honolulu, Hawaii, USA, June 2012
26. K. Konstanteli, **T.Cucinotta**, T.Varvarigou. "*Probabilistic Admission Control for Elastic Cloud Computing*," in Proceedings of the IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2011), Irvine, CA, December 2011
27. **T. Cucinotta**, G. Anastasi. "*A Heuristic for Optimum Allocation of Real-Time Service Workflows*," in Proceedings of the IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2011), Irvine, CA, December 2011
28. L. Abeni and **T. Cucinotta**, "*Efficient Virtualisation of Real-Time Activities*," in Proceedings of the IEEE International Workshop on Real-Time Service-Oriented Architecture and Applications (RTSOAA 2011), December 12-14 2011, Irvine, CA
29. G. F. Anastasi, **T. Cucinotta**, G. Lipari, M. Garcia-Valls, "*A QoS Registry for Adaptive Real-Time Service-Oriented Applications*," in Proceedings of the IEEE International Workshop on Real-Time Service-Oriented Architecture and Applications (RTSOAA 2011), December 12-14 2011, Irvine, CA
30. **T. Cucinotta** and V. Subramanian. "*Characterization and analysis of pipelined applications on the Intel SCC*," 4th MARC Symposium, Potsdam, Germany, December 2011
31. **T. Cucinotta**. "*Optimum Scalability Point for Parallelisable Real-Time Components*," in Proceedings of the International Workshop on Synthesis and Optimization Methods for Real-time and Embedded Systems (SOMRES 2011), co-located with the 32nd IEEE Real-Time Systems Symposium (RTSS 2011), Vienna, Austria, November 29 - December, 2011
32. **T. Cucinotta**, S. Gogouvitis, K. Konstanteli. "*SLAs in Virtualized Cloud Computing Infrastructures with QoS Assurance*," in Proceedings of the International Workshop on eContracting in the Clouds, co-located with the eChallenges 2011 Conference, Florence, Italy, October 2011

33. **T. Cucinotta**, F. Checconi, D. Giani, "*Improving Responsiveness for Virtualized Networking Under Intensive Computing Workloads*," in Proceedings of the 13th Real-Time Linux Workshop (RTLWS 2011), Prague, Czech Republic, October 2011
34. J. Lelli, G. Lipari, D. Faggioli, **T. Cucinotta**, "*An efficient and scalable implementation of global EDF in Linux*," in Proc. of the 7th International Workshop on Operating Systems Platforms for Embedded Real-Time Applications (OSPERT 2011), Porto, Portugal, July 2011
35. **T. Cucinotta**, D. Faggioli, G. Bagnoli, "*Low-Latency Audio on Linux by Means of Real-Time Scheduling*," in Proceedings of the Linux Audio Conference (LAC 2011), Maynooth, Ireland, May 2011
36. S. Kumar, **T. Cucinotta**, G. Lipari, "*A Latency Simulator for Many-core Systems*," in Proceedings of the 44th Annual Simulation Symposium (ANSS 2011), part of the Spring Simulation Multiconference (SpringSim'11), Boston, USA, April 2011
37. **T. Cucinotta**, F. Checconi, G. Kousiouris, D. Kyriazis, T. Varvarigou, A. Mazzetti, Z. Zlatev, J. Papay, M. Boniface, S. Berger, D. Lamp, T. Voith, M. Stein, "*Virtualised e-Learning with Real-Time Guarantees on the IRMOS Platform*," in Proceedings of the IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2010), Perth, Australia, December 2010. **Best Paper Award**
38. D. Kyriazis, A. Menychtas, G. Kousiouris, K. Oberle, T. Voith, M. Boniface, E. Oliveros, **T. Cucinotta,** S. Berger, "*A Real-time Service Oriented Infrastructure*," Proceedings of the Annual International Conference on Real-Time and Embedded Systems (RTES 2010), Singapore, November 2010
39. **T. Cucinotta**, D. Giani, D. Faggioli, F. Checconi, "*Effective Real-Time Computing on Linux*," in Proceedings of the 12th Real-Time Linux Workshop (RTLWS 2010), Nairobi, Kenya, October 2010
40. **T. Cucinotta**, D. Giani, D. Faggioli and Fabio Checconi, "*Providing Performance Guarantees to Virtual Machines using Real-Time Scheduling*," in Proceedings of the 5th Workshop on Virtualization and High-Performance Cloud Computing (VHPC 2010), Ischia (Naples), Italy, August 2010
41. **T. Cucinotta**, D. Faggioli, "*An Exception Based Approach to Timing Constraints Violations in Real-Time and Multimedia Applications*," in Proceedings of the IEEE Symposium on Industrial Embedded Systems (SIES 2010), Trento, Italy, July 2010
42. D. Faggioli, G. Lipari, **T. Cucinotta**, "*The Multiprocessor BandWidth Inheritance Protocol*," in Proceedings of the 22nd Euromicro Conference on Real-Time Systems (ECRTS 2010), Bruxelles, Belgium, July 2010
43. **T. Cucinotta**, F. Checconi, L. Abeni, L. Palopoli, "*Self-tuning Schedulers for Legacy Real-Time Applications*," in Proceedings of the 5th ACM European Conference on Computer Systems (EuroSys 2010), Paris, France, April 2010
44. **T. Cucinotta**, Konstanteli K., Varvarigou T., "*Advance Reservations for Distributed Real-TimeWorkflows with Probabilistic Service Guarantees*," in Proceedings of the IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2009), Taipei, Taiwan, December 2009
45. **T. Cucinotta**, L. Abeni, L. Palopoli, F. Checconi, "*The Wizard of OS: a Heartbeat for Legacy Multimedia Applications*," in Proceedings of the 7th IEEE Workshop on Embedded Systems for Real-Time Multimedia, Grenoble (ESTIMedia 2009), Grenoble, October 2009
46. **T. Cucinotta**, G. Lipari, L. Palopoli, L. Abeni, Santos R., "*Multi-level feedback control for Quality of Service Management*," in Proc. of the 14th IEEE International Conference on Emerging Technologies and Factory Automation, Palma de Mallorca (ETFA 2009), Spain, September 2009
47. F. Checconi, **T. Cucinotta**, M. Stein, "*Real-Time Issues in Live Migration of Virtual Machines*," in Proceedings of the 4th Workshop on Virtualization and High-Performance Cloud Computing (VHPC 2009), Delft, The Netherlands, August 2009
48. **T. Cucinotta**, G. Anastasi, L. Abeni, "*Respecting temporal constraints in virtualised services*," in Proc. of the 2nd IEEE International Workshop on Real-Time Service-Oriented Architecture and Applications (RTSOAA 2009), Seattle, Washington, July 2009
49. K. Konstanteli, D. Kyriazis, T. Varvarigou, **T. Cucinotta**, G. Anastasi, "*Real-time guarantees in flexible advance reservations*," in Proc. of the 2nd IEEE International Workshop on Real-Time Service-Oriented Architecture and Applications (RTSOAA 2009), Seattle, Washington, July 2009

50. F. Checconi, **T. Cucinotta**, D. Faggioli, G. Lipari, "*Hierarchical Multiprocessor CPU Reservations for the Linux Kernel*," in Proc. of the 5th International Workshop on Operating Systems Platforms for Embedded Real-Time Applications (OSPERT 2009), Dublin, Ireland, June 2009
51. **T. Cucinotta**, D. Faggioli, A. Evangelista, "*Exception-Based Management of Timing Constraints Violations for Soft Real-Time Applications*," in Proc. of the 5th International Workshop on Operating Systems Platforms for Embedded Real-Time Applications (OSPERT 2009), Dublin, Ireland, June 2009
52. **T. Cucinotta**, G. Anastasi, L. Abeni, "*Real-Time Virtual Machines*," in Proc. of the 29th Real-Time System Symposium (RTSS 2008) – Work in Progress Session, Barcelona, December 2008
53. **T. Cucinotta**, L. Abeni, S. K. Baruah, G. Lipari, L. Palopoli, *"Weighted Feedback Reclaiming for Multimedia Applications"*, in Proc. of the 6th IEEE Workshop on Embedded Systems for Real-Time Multimedia (ESTIMedia 2008), Atlanta, Georgia, United States, October 2008
54. **T. Cucinotta**, D. Faggioli, G. Lipari, *"An Efficient Implementation of the BandWidth Inheritance Protocol for Handling Hard and Soft Real-Time Applications in the Linux Kernel"*, in Proc. of the Fourth International Workshop on Operating Systems Platforms for Embedded Real-Time Applications (OSPERT 2008), Prague, Czech Republic, July, 2008
55. **T. Cucinotta**, "*Access Control for Adaptive Reservations on Multi-User Systems*", in Proc. of the 14th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2008), St. Louis (MO), USA, April 2008
56. **T. Cucinotta**, L. Palopoli, "*Feedback scheduling for pipelines of tasks*", in Proc. of the 10th International Conference on Hybrid Systems: Computation and Control (HSCC 2007), Pisa, Italy, April 2007
57. **T. Cucinotta**, L. Palopoli, L. Marzario, A. Mancina, P. Valente, "*A unified framework for managing different resources with QoS guarantees*", in Proc. of the 1st International Workshop on Operating System Platforms for Embedded Real-Time Applications (OSPERT 2005), Palma de Mallorca, Balearic Islands, Spain, July 2005
58. **T. Cucinotta**, M. Di Natale, D. Corcoran, "*Breaking down architectural gaps in smart-card middleware design*", in Proc. of the 1st International Conference on Trust and Privacy in Digital Business (TrustBus '04), Zaragoza (Spain), September 2004
59. **T. Cucinotta**, Brigo R., M. Di Natale, "*Hybrid fingerprint matching on programmable smart cards"*, in Proc. of the 1st International Conference on Trust and Privacy in Digital Business (TrustBus '04), Zaragoza (Spain), September 2004
60. **T. Cucinotta**, D. Corcoran, M. Di Natale, "*A protocol for programmable smart cards*", Trust and Privacy in Digital Business Workshop, Prague, Czech Republic. In Proc. of the 14th International Workshop on Database and Expert Systems Applications (DEXA 2003), September 2003.
61. **T. Cucinotta**, M. Di Natale, S. Kolachalam, "*A Modular Open Source Architecture for ICT Services in the Public Administration*", in Proc. of the 2nd EGOV Conference, Prague, Czech Republic, Lecture Notes in Computer Science Serires, Vol. 2739, September 2003
62. **T. Cucinotta**, G. Cecchetti, G. Ferraro, "*Adopting redundancy techniques for multicast stream authentication*", in Proc. of the 9th IEEE Workshop on Future Trends of Distributed Computing Systems (FTDCS 2003), Puerto Rico, May 2003. IEEE Computer Society
63. **T. Cucinotta**, L. Palopoli, L. Marzario, G. Lipari, L. Abeni, "*Adaptive reservations in a Linux environment*", in Proc. of the 10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS 2004), Toronto, Canada, May 2004
64. **T. Cucinotta**, L. Palopoli, L. Marzario, *"Stochastic feedback-based control of QoS in soft real-time systems",* in Proceedings of the 43rd IEEE Conference on Decision and Control (CDC 2004), Bahamas, December 2004
65. L. Palopoli, **T. Cucinotta**, A. Bicchi, "*Quality of service control for soft real-time applications*", in Proc. of the 42nd IEEE Conference on Decision and Control (CDC 2003), Hawaii, USA, Dec. 2003

Articles in proceedings of Italian conferences and workshops

66. M. Di Natale, **T. Cucinotta**, P. Ancilotti, "*Lo sviluppo di una architettura modulare open-source per i servizi della PA: considerazioni tecniche e organizzative*", in proceedings of SALPA: Sapere Aperto e Libero nella Pubblica Amministrazione, Marzo 2004, Pisa

Book Chapters

26. L. Schubert L., S. Wesner, D. R. Bonilla, **T. Cucinotta.** "*Autonomic Distribution and Adaptation*," Programming Multi-core and Many-Core Computing Systems. Wiley Interscience. February 2017. ISBN: 978-0-470-93690-0
27. **T. Cucinotta**, G. Lipari, L. Schubert. "*Operating System and Scheduling for Future Multi-core and Many-Core Platforms*," Programming Multi-core and Many-Core Computing Systems. Wiley Interscience. February 2017. ISBN: 978-0-470-93690-0
28. S. V. Gogouvitis, K. G. Konstanteli, D. P. Kyriazis, G. Katsaros, **T. Cucinotta**, M. Boniface. "*Workflow management systems in distributed environments,*" Enterprise Resource Planning: Concepts, Methodologies, Tools, and Applications, Management Association. Vol. 1-3, pp. 142-159, 2013. IGI Global, Hershey, PA. ISBN: 9781466641549, doi: 10.4018/978-1-4666-4153-2.ch009
29. **T. Cucinotta**, S. V. Gogouvitis. "*Real-Time Attributes in Operating Systems*," Achieving Real-Time in Distributed Computing: From Grids to Clouds. IGI Global, July 2011. DOI: 10.4018/978-1-60960-827-9
30. G. Katsaros, **T. Cucinotta**. "*Programming Interfaces for Realtime and Cloud-based Computing*," Achieving Real-Time in Distributed Computing: From Grids to Clouds. IGI Global, July 2011. DOI: 10.4018/978-1-60960-827-9
31. V. S. V. Gogouvitis, K. G. Konstanteli, D. Kyriazis, G. Katsaros, **T. Cucinotta**, M. Boniface. "*Workflow Management Systems in Distributed Environments*," Achieving Real-Time in Distributed Computing: From Grids to Clouds. IGI Global. July 2011. DOI: 10.4018/978-1-60960-827-9
32. E. Oliveros, **T. Cucinotta**, S. C. Phillips, X. Yang, T. Voith, S. Middleton. "*Monitoring and Metering in the Cloud*," Achieving Real-Time in Distributed Computing: From Grids to Clouds. IGI Global, July 2011. DOI: 10.4018/978-1-60960-827-9
33. S. Narasimhamurthy, M. Muggeridge, S. Waldschmidt, F. Checconi, **T. Cucinotta**. "*Data Storage in Cloud Based Real-Time Environments*," Achieving Real-Time in Distributed Computing: From Grids to Clouds. IGI Global, July 2011. DOI: 10.4018/978-1-60960-827-9
34. S. Berger, D. Lamp, M. Stein, T. Voith, **T. Cucinotta**, M. Bertogna. "*Execution & Resource Management in QoS-aware Virtualized Infrastructures*," Achieving Real-Time in Distributed Computing: From Grids to Clouds. IGI Global, July 2011. DOI: 10.4018/978-1-60960-827-9

Chapters in Italian books

1. **T. Cucinotta**. "*Regolamento UE/679/2016 e soluzioni tecnologiche: un cambio di prospettiva*," capitolo all'interno del volume "Manuale per il trattamento dei dati personali," a cura di G. Comande e G. Malgieri, pp. 123-127, Il Sole 24 Ore, Marzo 2018. ISBN: 9788832491326
2. **T. Cucinotta**. "*Privacy nell'era dei big-data e il cittadino «privato»*," capitolo all'interno del volume "Manuale per il trattamento dei dati personali," a cura di G. Comande e G. Malgieri, pp. 127-129, Il Sole 24 Ore, Marzo 2018. ISBN: 9788832491326
3. **T. Cucinotta**, "*Firma digitale e lavoro cooperativo: aspetti tecnologici*", I nuovi scenari del marketing assicurativo, IRSA, 2004
4. **T. Cucinotta**, "*Firma digitale e assicurazioni: aspetti tecnologici*", L'economia digitale e il settore assicurativo, DEA Quaderni di Impresa Assicurativa, Giuffrè Editore, 2003

Software development in open-source projects

- **2017**: patches to auto-connect ALSA midi inputs, both at start and at runtime, in the fluidsynth software synthesizer
- **2017:** bugfix in the real-time meter display code and speed-up of the audio processing pipeline of MuseScore
- **2016**: contributed patches to the **mainline Linux kernel** to speed-up heap operations within SCHED_DEADLINE, refactor the heap code and fix a wrap-around bug in deadline comparisons
- **2007 to date**: Active contributor to the LyX open-source project (C++): http://www.lyx.org
  Developed advanced format-aware find/replace, XMPP-based chat, external material management, bugfixes
- **2008-2010**: IRMOS real-time scheduler for the Linux kernel (C): http://lwn.net/Articles/398470/
  Contributed to the design of the main scheduler features
- **2012**: Contributed to the MuseScore open-source music notation editor (C++): http://www.musescore.org/
  Feature for automatic detection of repeating segments in scores and application of corresponding notation

- **2011**: Contributed to the Jack2 open-source low-latency audio infrastructure (C++): http://repo.or.cz/w/jack2.git
  Designed and contributed to the integration of Jack2 with the AQuoSA deadline-based scheduler on Linux
- **2011**: Creator of the MCoreSim network-on-a-chip simulator (OMNeT++): http://sourceforge.net/projects/mcoresim/
- **2010**: Contributed to the OWL open-source document management system (PHP)
  Tiny patch for faster access to the external link feature
- **2009-2012**: Contributed to the RTSim real-time systems simulator (C++): https://sourceforge.net/projects/rtsim/
- **2009-2010**: Creator of the Open Macro Library (OML): http://oml.sourceforge.net
- **2006-2010**: Adaptive Quality of Service Architecture (AQuoSA) for Linux kernel (C): http://aquosa.sourceforge.net
- **2006-2009**: Creator of the ARSim Adaptive Reservations simulator (C++): http://gna.org/projects/arsim/
- **2001**: MuscleCard, open-source smartcard middleware for Linux (JavaCard/C/C++): http://www.musclecard.com
- **2000-2006**: Creator of SmartSign: http://smartsign.sourceforge.net
- **2000-2001**: Designed/developed open-source registry for Public Administration (Python), in production for 6 years
- **2000**: Dienst digital library software (Perl):
  Design and implementation of an advanced document object model

Informal university assignments

- Semiformal design, using Unified Modeling Language (UML), of a *system for event based emulation of generic digital circuits.*
- Design and realization, using C++, of a command line *discrete event based emulator* for the *PIC16C84* microcontroller.
- Design and realization, using C, of a simplified *transport level network protocol* (OSI terminology).
- Implementation, using Matlab, of the *Simplex algorithm* for the resolution of Linear Programming optimization problems.
- Design and realization, using Visual C++, of a *program for the automatic generation of a web page (HTML/Javscript)* supporting students in the selection of the study plan.

Computer science background

Research topics with state-of-the-art knowledge

- Scheduling of soft real-time tasks and virtual machines for quality of service control
- Operating Systems for multi-core and many-core systems
- Secure processing architectures
- Protocols and architectures for smart-card interoperability
- Access control models: Role Based Access Control (RBAC) and its variants, Multi Level Security (MLS)
- Key management algorithms and protocols for secure data streaming
- Formal methods: Burrows, Abadi, Needham (BAN) logic of authentication and its variants

Security-specific standards, protocols, libraries and tools

- PKCS standards, ISO 7816 standards, PCSC Standards, X.509, S/MIME, XML-Signature
- Secure Socket Layer (SSL) protocol, Secure SHell (SSH) protocol
- Detailed knowledge of cryptosystems: RSA, DSA, DES, Rijaendel (AES), Elliptic Curve (EC)
- Biometrics recognition techniques, BioAPI, Biometrika FX2000 and FX3 SDK
- Microsoft CryptoAPI, Java Security Architecture (JSA) and API, JavaCard-2.x, Open Card Framework (OCF), OpenSSL, OpenSSH, Pretty Good Privacy (PGP), ModSSL for Apache
- Schlumberger Cyberflex Access Toolkit, CompEd DigitalSign and DigitalSign API

Embedded systems development and design

- Z-World: Rabbit Core Module 3000, Dynamic C
- Texas Instruments: TMS320C6711, Code Composer Studio
- Altera: Stratix EP1S40 FPGA, Nios II CPU Core, Quartus II, SOPC Builder, Nios II IDE, ModelSim
- Verilog Hardware Description Language (Verilog HDL), VHDL

Programming languages & Frameworks

- C/C++, Java 1.x and 5.0, Design Patterns, OpenMP, MPI, Storm
- gcc, gcov, gdb, Valgrind, advanced knowledge of GNU make, autotools (autoconf/automake)
- Standard Template Library (STL), Boost library, OpenGL, DirectX

- Assembler Intel 80x86, Assembler Motorola 68000
- Unix Bourn Again Shell (BASH) scripting, Regular Expressions
- Microsoft Visual C++ v5.0, Microsoft Visual Basic, Rational Rose ’98, Kdevelop, Eclipse
- Microsoft Windows API, Microsoft Foundation Classes (MFC)
- X Toolkit, Motif, Qt, KDE, Gtk, WxWindows
- JavaScript, JScript, Perl, Php, Python, Visual Basic and VBA, VBScript, Pascal, Basic
- Octave, Gnuplot, Matlab, GLPK, Symphony
- Intel Integrated Performance Primitives (IPP) library, SIP, Metaswitch Clearwater

Other languages

- XML, Dynamic HTML, Cascaded Style Sheets (CSS), LaTeX,Unified Modeling Language (UML) Notation
- Structured Query Language (SQL), CORBA Interface Description Language (IDL)
- Ontology Web Language (OWL), Protégé Ontology Editor

Operating systems

- Linux administration, kernel tuning and hacking (driver and scheduler development). Experienced with Solaris
- Android OS and programming
- Microsoft Windows 95/98/NT/ME/2000/XP, MS DOS

Various

- Z Object Publishing Environment (Zope)
- Microsoft Office (and MS Office Automation), Microsoft Front Page
- Italian law on digital signatures: “Codice [...]” (D. Lgs. 82/2005), “Testo Unico [...]” (DPR 445/2000)
- European Directive 1999/93/CE: “Community Framework for Electronic Signatures”

Foreign languages

- Excellent knowledge of both spoken and written *English*.
- Basic knowledge of *German*.

Personal interests

- Computer Security, Smart Cards, Biometrics Identification
- Hardware architectures for cryptographic accelerators and 3D accelerators
- 3D graphics and rendering engines
- Audio signal processing algorithms, audio signal and voice synthesis and recognition
- Neural networks, Artificial Intelligence, semantics-based computing