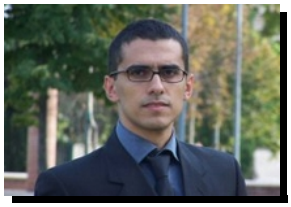
Curriculum Vitae: Tommaso Cucinotta

Personal data

Birth date and place: April'74, Potenza (Italy)
Phone: +39 (0)50 882 028
E-mail: tommaso.cucinotta@gmail.com
LinkedIn profile: tommasocucinotta
Github profile: *tomcucinotta*
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, SSD 09/H1, ING-INF/05 – GSD 09/IINF-05, IINF-05/A

July 2019 to date: *Coordinator* of the Cyber-Physical Research Area of Scuola Superiore Sant'Anna

Research topics & Competencies

- Real-time and reliable NoSQL Data Stores for Cloud services
- Adaptive resource management and scheduling in Cloud Computing & Network Function Virtualization
- 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)

- **12 Granted and 17 Filed EU/US Patents** in the areas of security, resource management, scheduling & AI for Telco
- **45 International Journal Publications**, including IEEE Transactions on Computers, IEEE Transactions on Cloud Computing, IEEE Transactions on Services Computing, IEEE Transactions on Industrial Informatics, and ACM Transactions on Embedded Computing Systems
- **128 International Conference and Workshop Peer-reviewed Publications and 14 Book Chapters**
- **Scientific Responsibility of 3 EU and 1 Swedish Research Projects** (overall, raised and managed funds for ~960K EUR)
- **Scientific Responsibility of 10 Research Projects with National and International Companies** (overall, raised and managed funds for ~300K EUR)
- **Significant contributions to 8 EU Research Projects** and other national research projects
- **General or program co-chair** of 21 international workshops or conferences
- **Guest editor** of 5 special issues of international journals; reviewed several papers for international journals
- **Program committee member** of more than 50 international conferences and workshops
- **Mentored** 10 PhD students, 14 under-graduate students for their MSc thesis and 3 Bell Labs interns
- **>50 teaching assignments**, including courses held at national and international universities (out of Sant'Anna)
- **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 to
- 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

- **Aug 2026**: **Keynote Speech** on "*Optimizing Execution of Real-Time Distributed Services in Cloud/Edge Infrastructures*," International Workshop on Robotic Systems in the Edge-Cloud Continuum (RISE) 2026, 32nd International European Conference on Parallel and Distributed Processing (Euro-Par 2026), August 24th, Pisa, Italy.

- **May 2026**: **Keynote speech** on "*Predictable and Energy-efficient Execution of Distributed Cloud Services: A 2-decades Research Overview*," 9th Workshop on Hot Topics in Cloud Computing Performance (HotCloudPerf 2026), 17th ACM/SPEC International Conference on Performance Engineering (ICPE 2026), May 5th, 2026, Florence, Italy.
- **July 2026**: Best Paper Award for co-authored paper at RT-CLOUD 2026, ECRTS 2026
- **May 2024**: Best Paper Award for co-authored paper at RAGE 2024, CPS-IoT Week 2024
- **Apr 2021:** Best Student Paper Award for co-authored paper at CLOSER 2021
- **May 2020**: Best Paper Award for co-authored paper at CLOSER 2020
- **Feb 2020**: Best Paper Award for co-authored paper at ICN 2020
- **Mar 2019**: Best Paper Award for co-authored paper at ICN 2019
- **Apr 2018**: Best Paper Award for co-authored paper at ICN 2018
- **2026 to date**: member of the IEEE Technical Committee on Real-Time Systems (TCRTS), Industry Outreach sub-committee
- **2025 to date**: member of the IEEE-IES Technical Committee on Factory Automation (TCFA)
- **Apr 2014**: Selected as featured researcher profile in highlight on the Bell Labs website
- **Jul 2018**: Eligibility as full professor in Computer Engineering (Abilitazione Scientifica Nazionale da professore di I Fascia nel SC 09/H1 – SSD ING-INF/05)
- **Nov 2020**: Eligibility as full professor in Computer Science (Abilitazione Scientifica Nazionale da professore di I Fascia nel SC 01/B1 – SSD INF/01)
- **Oct 2013**: IEEE Senior Member grade elevation
- **Dec 2010**: Best-paper award for co-authored paper at IEEE SOCA 2010

PhD Board Membership

- **a.y. 2021/22, 2022/23, 2023/24, 2024/25, 2025/26, 2026/27**: **Board Member** of the National PhD in Artificial Intelligence – AI & Society branch at Scuola Superiore Sant'Anna, jointly offered with University of Pisa, Politecnico di Torino, National Research Council and others
- **a.y. 2016/17, 2022/23, 2023/24, 2024/25, 2025/26, 2026/27: Board Member** of the PhD in Emerging Digital Technologies at Scuola Superiore Sant'Anna
- **a.y. 2017/18, 2018/19, 2019/20, 2020/21**: **Board Member** of the PhD in Data Science, joint program at Scuola Superiore Sant'Anna, Scuola Normale Superiore, University of Pisa, National Research Council and Scuola IMT Lucca

Editorial roles in peer-reviewed international journals

- **Associate Editor** for IEEE Transactions on Cloud Computing, Nov 2025 to date
- **Associate Editor** for IEEE Transactions on Services Computing, Oct 2023 to date
- **Guest Editor** of the Special Issue on Virtualization in High-Performance Cloud Computing of the Elsevier Journal of Systems Architecture (JSA), 2023
- **Guest Editor** of the Special Issue on the 2020 IEEE Symposium on Real-time Distributed Computing (ISORC '20) of the Elsevier Journal of Systems Architecture (JSA), 2022
- **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
- **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

Organization of international conferences and workshops

- **General Co-Chair** of the 32nd IEEE International Conference on Emerging Technologies and Factory Automation (IEEE ETFA 2027), September 7-10, 2027, Pisa, Italy
- **Industry Track Co-Chair** at the 17th ACM/SPEC International Conference on Performance Engineering (ICPE 2026), May 5th, 2026, Florence, Italy
- **General Co-Chair** of the 8th International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), April 14-16 2026, Cambridge (UK)
- **General Co-Chair** of the 7th International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), March 18-20 2025, Mühlhofen-Uhldingen (Germany)

- **General Co-Chair** of the 6th International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), May 31-31 2024, Toulouse (France)
- **General Co-Chair** of the 18th International Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2023), May 25th 2023, Hamburg, Germany, co-located with ISC-HighPerformance 2023
- **General Co-Chair** of the 5th International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), Apr 17-19 2023, Ancona (Italy)
- **General Co-Chair** of the 17th International Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2022), June 2nd 2022, Hamburg, Germany, co-located with ISC-HighPerformance 2022
- **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 4th International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), May 11-13 2020, Pisa (Italy)
- **General Co-Chair** of the 3rd International Workshop on Power Management and Scheduling in the Linux Kernel (OSPM Summit), May 20-22 2020, Pisa (Italy)
- **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
- **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
- **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

Grants from International Public Bodies

- **Sep 2024 – Aug 2025: Scientific Responsibility** of the Visiting Professorship project at *Mälardalen University, Västerås, Sweden*, funded by the Swedish Knowledge Foundation (KKS)
- **Jan 2020 – Dec 2022: Scientific Responsibility** of the research unit at Scuola Sant'Anna within the AMPERE European Project (H2020 ICT 871669)
- **Feb 2008 – Feb 2011**: **Scientific Responsibility** of the research unit at Scuola Sant'Anna within the IRMOS European Project (FP7 ICT 214777)
- **Feb 2010 – Jan 2012**: **Scientific Responsibility** of the research unit at Scuola Sant'Anna within the S(o)OS European Project (FP7 FET 248465)

Grants from National & International Companies

- **Nov 2024 – Oct 2025**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Vodafone Servizi e Tecnologie S.r.l., Milan, Italy*, on "User Interface for NFV based on Large Language Models"
- **Feb 2024 – Jan 2025**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Vodafone Italia S.p.A., Milan, Italy*, on "Artificial Intelligence and Large Language Models for monitoring and management of NFV Infrastructures"

- **Jan 2023 – Dec 2023**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Vodafone Italia S.p.A., Milan, Italy*, on "Artificial Intelligence for Real-Time Operations and Resource Management in NFV Infrastructures"
- **Jan 2020 – Dec 2020**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Ericsson AB, Stockholm, Sweden*, on "Semi-dynamic assignment of different technologies for inter-containers networking"
- **Mar 2019 – Feb 2020**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Vodafone Italia S.p.A., Milan, Italy*, on "Artificial Intelligence to support Planning of Virtualized Network Function II"
- **Apr 2018 – Mar 2019**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Vodafone Italia S.p.A., Milan, Italy*, on "Artificial Intelligence to support Planning of Virtualized Network Function"
- **Apr 2018 – Mar 2019**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Ericsson AB, Stockholm, Sweden*, on "Definition, design and optimization of inter-containers communication paths over a SDN-NFV environment"
- **Dec 2017 – Nov 2018**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Arm Limited, Cambridge, UK*, on "Linux SCHED_DEADLINE Improvements #2"
- **Mar 2017 – Feb 2018**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Ericsson AB, Stockholm, Sweden*, on "Virtualized LTE/GSM packet processing: performance modelling and control on Linux"
- **Nov 2016 – Oct 2017**: **Scientific Responsibility** of the research project between Scuola Sant'Anna and *Arm Limited, Cambridge, UK*, on "Linux SCHED_DEADLINE Improvements"

Peer-review for international journals, conferences, and workshops

- **Review Committee Member** for the 2014 EuroSys Roger Needham PhD Award
- **Program Committee member** of Euro-Par 2026, IEEE CCGRID 2026, IEEE IC2E 2025, 2024, IEEE RTSS 2024, IEEE SDN-NFV 2023, 2022, 2020 and 2018, SC 2022, IEEE IC2E 2021-2023, IEEE RTAS 2018, 2017, 2013 and 2012, IEEE ICPS 2018, IEEE INDIN 2018, CLOSER 2020, 2019, 2014 and 2013, IEEE ETFA 2021-2019, 2017, 2014 and 2013, IEEE SIES 2013
- **Technical Program Committee (TPC) member** of HotCloudPerf 2026, RT-Cloud 2025 and 2024, ACM EdgeSys 2024 and 2023, MobileServerless 2021, VHPC 2021-2018 and 2010-2012, IEEE SOCNE 2017, 2012 and 2011, EwiLi 2017, ACM CF 2017, REACTION 2017, SeaClouds 2014, RTLWS 2012, OPODIS 2011, IEEE/IFIP EUC 2011, IEEE ICESS 2011, CLOSER 2011-2013, CSPNA 2011, IEEE SOCA 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 Automatic Control, on Cloud Computing, on Services 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.

Research & professional experience

- **Sep 2024 – Aug 2025:** Visiting Professor at Mälardalen University, Västerås, Sweden (overall 3 months spent at MDU delivering on-site courses and seminars for PhD students, alongside 9 months of joint research remotely)
- **Jul 2014 – 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. This software has been made available on most Linux distributions for a decade.
- **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 defence opponent for

- **2025 to date**: supervisor of Jacopo Carlon for his PhD in Emerging Digital Technologies at Scuola Sant’Anna, focusing on kernel bypass techniques for high-performance networking
- **2023 to date**: co-supervisor of Praveen Bushipaka for his PhD in Artificial Intelligence at University of Pisa jointly with Scuola Sant’Anna, focusing on unlearning in large language models
- **2021 – 2025**: supervisor of Remo Andreoli for his PhD in Emerging Digital Technologies at Scuola Sant’Anna, focusing on time-critical services on Cloud and NFV infrastructures
- **2021**: co-supervisor of Remo Andreoli for his MSC thesis at University of Pisa, focusing on Real-Time NoSQL Data Stores
- **2020 – 2024**: co-supervisor of Filippo Galli for his PhD in Data Science at Scuola Normale Superiore jointly with Scuola Sant’Anna, focusing on differential privacy in federated learning
- **2019 – 2023**: co-supervisor of Giacomo Lanciano for his PhD in Data Science at Scuola Normale Superiore jointly with Scuola Sant’Anna, focusing on AI-enhanced operations of Cloud Computing infrastructures
- **2019 – 2023**: supervisor of Gabriele Ara for his PhD in Emerging Digital Technologies at Scuola Sant’Anna, focusing on power-aware real-time scheduling on heterogeneous platforms
- **2019**: co-supervisor of Gabriele Ara for his MSc thesis at University of Pisa, focusing on power-aware real-time scheduling on heterogeneous platforms
- **2018 – 2022**: supervisor of Agostino Mascitti for his PhD in Emerging Digital Technologies at Scuola Sant’Anna, focusing on power-aware real-time scheduling on heterogeneous platforms
- **2017 to date**: co-supervisor of Daniel Bristot de Oliveira for his joint PhD at Scuola Sant’Anna and Universidad Federal de Santa Caterina, focusing on automata-based run-time verification of the Linux kernel
- **Sep 2017 – Feb 2018**: 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 2018**: 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 2017**: 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**: co-tutor 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**: co-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**: co-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**: co-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**: co-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**: co-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**: co-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**: co-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**: co-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

Courses for under-graduate, PhD and Master students at Scuola Superiore Sant'Anna (SSSA)

- **Yearly, from a.y. 2016/17 to 2025/26**: Courses on "Cloud Computing and Big-Data" (30h) and "Cloud Computing and Big-Data Lab" (30h) in the PhD in Emerging Digital Technologies at SSSA, the PhD in Data Science at Scuola Normale Superiore of Pisa, and the Nation-wide International PhD in Artificial Intelligence at University of Pisa
- **a.y. 2025/26**: Concurrent Data Structures (30h), Course for Honor Students at SSSA
- **a.y. 2022/23, 2024/25**: Real-Time and High-Performance Computing on Linux (20h), Course for Honor Students at Scuola Superiore Sant'Anna
- **a.y. 2022/23**: Massively Parallel Programming (30h), Course for Honor Students at SSSA
- **a.y. 2021/22**: Real-Time and High-Performance Computing on Linux (20h), PhD in Emerging Digital Technologies at Scuola Superiore Sant'Anna
- **a.y. 2021/22, 2024/25**: Java Programming Fundamentals (30h), Course for Honor Students at SSSA
- **a.y. 2020/21, 2023/24**: Computer Security & Cryptography (30h), Course for Honor Students at SSSA
- **a.y. 2020/21, 2022/23, 2025/26**: Advanced Java Programming (30h), Course for Honor Students at SSSA
- **Yearly, from a.y. 2019/20 to 2025/26**: C/C++ Programming Foundations, Module on Object-oriented Programming in C++ (15h), Course for Honor Students at SSSA

- **Yearly, from a.y. 2016/17 to 2019/20**: Component-Based Software Design (90h), MSc degree in Embedded Computing Systems jointly organized by Scuola Sant'Anna and University of Pisa. Course language: English
- **Yearly, from 2002 to 2011**: International Master on Information Technology and Software Engineering – Module "*System Security and Cryptography*" (40h), SSSA. Course language: English.
- **Yearly, from 2006 to 2011**: International Master on Communication Networks Engineering – Module "*System Security and Cryptography*" (40h), SSSA. Course language: English.
- **Oct – Nov 2005**: International Master on Information Technology and Communication Networks Engineering – Module "Java" (30h), SSSA. Course language: English

Seminars at Scuola Superiore Sant'Anna (SSSA)

- **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 2005**: Specialization course "*Codice dell'Amministrazione Digitale D. Lgs. n.82/2005*" -- Lecture on "*Digital Signature: a technological viewpoint*", LiderLab, SSSA.
- **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.
- **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.

Courses & Seminars at Other and International Universities

- **Feb – Mar 2025**: *Real-Time & High-Performance Computing*" (30h), course for PhD students at Mälardalen University, Västerås, Sweden. Course Language: English
- **Aug – Sep 2025**: *Cloud Computing & Big-Data Lab*" (30h), course for PhD students at Mälardalen University, Västerås, Sweden. Course Language: English
- **March 2016**: *From Classical Distributed Systems to Cloud Computing* (20h) - external lecturer in course for PhD students at the Computer Engineering Dept. of University of Pisa. Course Language: English
- **Yearly, from 2006 to 2011**: *Design of Embedded Systems* (42h), Faculty of Engineering, University of Siena
- **Nov 2024**: *Building Real-Time Software on Linux using SCHED_DEADLINE*, seminar (2h) at Mälardalen University, Västerås, Sweden.
- **Mar 2023**: *Critical Computing Series: Building Real-Time Software on Linux using SCHED_DEADLINE*, seminar (2h) at the Department of Informatics Engineering (DEI) of the Engineering Institute of Porto (ISEP), Porto.
- **Jun 2008**: *Real-time operating systems*, UNI-NORGE Project, Ericsson, Rome.
- **Oct 2005 – Sep 2006**: *Industrial Informatics*, Faculty of Engineering, University of Siena.
- **Oct – Dec 2005**: Professor assistant for a course on "*Java Programming*", Faculty of Engineering, University of Pisa.
- **Oct – Nov 2005**: *Computer Architectures I*, undergraduate course, Faculty of Engineering, University of Siena.
- **May – Jul 2005**: *Industrial Informatics*, undergraduate course, Faculty of Engineering, University of Siena.
- **Oct – Dec 2004**: Professor assistant for a course on "*Informatics*", Faculty of Engineering, University of Pisa.
- **Feb – May 2004**: Professor assistant for a course on "*Informatics*", Faculty of Engineering, University of Pisa.

Additional university roles, orientation for undergraduates and public seminars to the general public

- **July 2019 to date:** *Coordinator* of the Cyber-Physical Research Area of Scuola Superiore Sant'Anna
- **2019 – 2024**: Representative of Scuola Sant'Anna within the CINI Directive Council (Consiglio Direttivo del CINI)
- **a.y. 2022/23 to date**: member of the didactive commission for defining the offered engineering courses at Sant'Anna.
- **a.y. 2020/21 to 2023/24**: member of the joint teacher-student commission (Commissione Paritetica) at Sant'Anna.
- **2023-2025**: yearly participation to the orientation meetings within the FuoriClasse initiative at Sant'Anna, with presentations on "*Informatics Frontiers: from Embedded Systems to Cloud Computing and Big-Data*" and "*Operating Systems in nowadays Informatics and the role of scheduling in controlling computing latencies*"
- **2019 to 2021**: yearly participation to the BRIGHT Researcher's night initiative.
- **2016 to 2019, and 2024**: yearly participation to the LinuxDay meetings in Pisa, as presenter.
- **2018, 2019 and 2021**: orientation meetings with high-school students at Sant'Anna.
- **2018**: presentation on "*Low-latency and power-efficient audio applications on Linux*", LinuxLab Conference, Florence

Roles in commissions at Sant'Anna and other universities

- **2026**: commission for evaluating the didactive and research activity of a "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at Scuola Sant'Anna (D.R. n. 427/2026)
- **2026**: commission for evaluating the didactive and research activity of a "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at University of Catania (D.R. n. 309/2026)
- **2024**: commission for the comparative evaluation of candidates for two positions as "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at Scuola Sant'Anna (D.R. n. 148/2024), for the project SERICS – Security and Rights in the Cyber Space
- **2023**: commission for the comparative evaluation of two positions as "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at University of Trento (D.R. n. 1326 December 21st 2022)
- **2021**: commission for the comparative evaluation of candidates for a position as "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at University of Catania (Prot. 0756737 October 4th 2021)
- **2021**: commission for the comparative evaluation of candidates for a position as "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at University of Pisa (D.R. n. 1258/2021 – Code RIC2021-8)
- **2020**: commission for evaluating the didactive and research activity of a "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at Scuola Sant'Anna (D.R. n. 412/2020)
- **2020**: commission for the comparative evaluation of candidates for a position as full-time technician (88.89%) within "categoria D – Area tecnica, tecnico-scientifica ed elaborazione dati" at Sant'Anna, for the TECIP (D.R. n. 290/2020)
- **2019**: commission for the comparative evaluation of candidates for a position as full-time technician within "categoria D – Area tecnica, tecnico-scientifica ed elaborazione dati" at Sant'Anna, for EMBEDS (D.R. n. 111/2019)
- **2017**: commission for the comparative evaluation of candidates for a position as "Ricercatore a Tempo Determinato – Tipo A" in Computer Engineering (09/H1 – ING-INF/05) at Scuola Sant'Anna (D.R. n. 523/2017)

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**, M. Vannucci, A. Ritacco, G. Lanciano, A. Artale, J. Barata, E. Sposato. "*A method of identifying and classifying the behavior modes of a plurality of data relative to a telephony infrastructure for Network Function Virtualization (Metodo per identificare e classificare le modalità comportamentali di una pluralità di dati relativi ad un'infrastruttura telefonica per la network function virtualization)*," EU Patent **Grant** EP3772833B1 May 3rd 2023, (application IT102019000014241 August 7th 2019).
2. **T. Cucinotta**, M. Vannucci, A. Ritacco, G. Lanciano, A. Artale, J. Barata, E. Sposato. "*A method of predicting the time course of a plurality of data relative to a telephony infrastructure for network function virtualization (Metodo per predire l'evoluzione temporale di una pluralità di dati relativi ad un'infrastruttura telefonica per la network function virtualization),*" EU Patent **Grant** EP3772834B1 May 17th 2023, (application IT102019000014262 August 7th 2019).
3. **T. Cucinotta**, E. Jul. *"Load-balancing and scaling of cloud resources by migrating a data session,"* EU Patent **Grant** EP3046028B1, February 19th 2020 (application EP15305031 January 15th 2015).

4. **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).
5. E. Jul, **T. Cucinotta**, D. Cherubini. "*Secure Data Processing*," EU Patent **Grant** EP2827276B1, July 3rd, 2019 (application EP20130306038, July 2013).
6. **T. Cucinotta**, S. Betgé-Brezetz. "*Method and system for controlling the exchange of Privacy-Sensitive Information*," US Patent **Grant** US10237057B2, March 2019 (application EP20130360029, September 2013).
7. **T. Cucinotta**, M. 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)
8. 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).
9. **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).
10. **T. Cucinotta**, D. Cherubini, E. Jul. "*Apparatus and method for secure data processing*." EU Patent **Grant** EP2672673B1, May 2016 (application 20120360045, June 2012).
11. **T. Cucinotta**, M. Vannucci, G. Lanciano, F. Galli, F. Brau, A. Artale, E. Sposato, L. N. P. Jorge. "Method of managing resources of an infrastructure for network function virtualization" ("*Metodo per la gestione di risorse di un'infrastruttura per la network function virtualization*"), Patent Grant EP4016963B1 Sep 10th 2025 (application EP4016963A1, IT102020000031034, December 16th 2020).
12. **T. Cucinotta**, A. Derstepanians, M. Vannucci, A. Artale, S. Fichera, S. Lahiri, K. S. Avhad. "Method for detecting anomalies in an infrastructure for network function virtualization" ("*Metodo per rilevare anomalie in un'infrastruttura per la network function virtualization*"), Patent Grant EP4440060B1, March 2026, (application EP4440060A1 March 27th 2024, IT application IT2023000006180, March 2023).

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1. H. Gustafsson, L. Abeni, J. Eker, **T. Cucinotta**, R. Mini. "*Methods and Systems for Fault Mitigation with Additional State Transitions in Cloud Systems*," Filed Patent PCT/IB2023/057199, July 13th 2023
2. **T. Cucinotta**, D. Cherubini, E. Jul. *"Secure Data Processing,"* Filed US Patent 14/405894. December 2014.
3. **T. Cucinotta**, D. Cherubini, E. Jul. *"Secure Data Processing,"* Filed US Patent 14/399372. November 2014.
4. **T. Cucinotta**, A. Meroni, V. Hilt. *"State Migration for Elastic Virtualized Components,"* Filed US Patent 14/338502. July 2014.
5. **T. Cucinotta**. "Method for Managing User Requests in a Distributed Computing Environment and Computer Program Product," Filed EU Patent 14305652. April 2014.
6. **T. Cucinotta**. *"Method For Virtual Machine Instantiation, Scalable Computing System, Virtual Machine And Computer Program Product,"* Filed EU Patent 14305558. April 2014.
7. **T. Cucinotta**, I. Bedini. "*Method, Processing Framework, Aggregator And Computer Program Product For Processing Data*," Filed EU Patent 13360033. October 2013.
8. **T. Cucinotta.** "*Method and System for Graphical User Interface Layout Generation, Computer Program Product*," Filed EU Patent 13360015. August 2013.
9. **T. Cucinotta**, A. Sala. "*Methods and Devices for Protecting Private Data*," Filed US Patent 13/944964. July 2013.
10. **T. Cucinotta**, "*Methods and Devices for Controlling Access to Distributed Resources*," Filed US Patent 13/926832. June 2013.
11. **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.
12. **T. Cucinotta.** "*Scheduling*," Filed EU Patent 20130305397. March 2013.
13. I. Bedini, **T. Cucinotta**, A. Sala, B. Theeten. "*Systems And Methods For Self-Adaptive Distributed Systems*," Filed US Patent 13/853533. March 2013.
14. **T. Cucinotta**, D. Cherubini, E. Jul. "*Collaborative Uses of a Cloud Computing Confidential Domain of Execution*," Filed US Patent 13/622007. September 2012.

15. D. Cherubini, **T. Cucinotta**. "*System Control*," Filed EU Patent 20120360068. September 2012, and Filed US Patent 14/423967
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17. **T. Cucinotta**, "*Task Scheduling*." Filed EU Patent 20120360037. May 2012

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2. H. Gustafsson, F. A. Svensson, R. Mini, L. Abeni, R. Andreoli, **T. Cucinotta**. "*RTilience: Fault-Tolerant Time-Critical Kubernetes*," IEEE Transactions on Services Computing, 2025.
3. A. Friebe, A. Marchetti-Spaccamela, **T. Cucinotta**, A. V. Papadopoulos, T. Nolte, S. Baruah. "*Resource Management For Stochastic Parallel Synchronous Tasks: Bandits To The Rescue*," Springer Real-Time Systems, 2025.
4. S. Mazzola, G. Ara, T. Benz, B. Forsberg, **T. Cucinotta**, L. Benini. "*Data-Driven Power Modeling and Monitoring via Hardware Performance Counter Tracking*," Elsevier Journal of Systems Architecture (JSA), Vol. 167, October 2025.
5. D. B. De Oliveira, D. Casini, J. Lelli, **T. Cucinotta**. "*Timerlat: Real-time Linux Scheduling Latency Measurements, Tracing, and Analysis*," IEEE Transactions on Computers, 2025.
6. R. Andreoli, R. Mini, P. Skarin, H. Gustafsson, J. Harmatos, L. Abeni, **T. Cucinotta**. "*A Multi-Domain Survey on Time-Criticality in Cloud Computing*," IEEE Transactions on Services Computing, 2025.
7. R. Andreoli, J. Zhao, **T. Cucinotta**, R. Buyya. "*CloudSim 7G: An Integrated Toolkit for Modeling and Simulation of Future Generation Cloud Computing Environments*," Wiley Software: Practice and Experience, Volume 55, Issue 6, June 2025.
8. L. Pannocchi, S. Lahiri, S. Fichera, A. Artale, **T. Cucinotta**. "*Datacenter Optimization Methods for Softwarized Network Services*," Elsevier Journal of Systems Architecture (JSA), Vol. 156, November 2024
9. F. Galli, K. Jung, S. Biswas, C. Palamidessi, **T. Cucinotta**. "*Advancing Personalized Federated Learning: Group Privacy, Fairness, and Beyond*," Springer Nature Computer Science, September 2023
10. G. Lanciano, R. Andreoli, **T. Cucinotta**, D. Bacciu, A. Passarella. "*A 2-phase Strategy For Intelligent Cloud Operations*," IEEE Access, September 2023
11. R. Andreoli, **T. Cucinotta**, D. B. de Oliveira. "*Priority-driven Differentiated Performance for NoSQL Database-as-a-Service*," IEEE Transactions on Cloud Computing, July 2023
12. G. Lanciano, F. Galli, **T. Cucinotta**, D. Bacciu, A. Passarella. "*Extending OpenStack Monasca for Predictive Elasticity Control*," Big-Data Mining and Analytics, Tsinghua University Press, 2023
13. **T. Cucinotta**, A. Amory, G. Ara, F. Paladino, M. Di Natale. "*Multi-Criteria Optimization of Real-Time DAGs on Heterogeneous Platforms under P-EDF*," ACM Transactions on Embedded Computing Systems, April 2023
14. D. B. de Oliveira, D. Casini, **T. Cucinotta**. "*Operating System Noise in the Linux Kernel*," IEEE Transactions on Computers, Vol. 72, Issue 1, January 2023 (pre-published June 2022)
15. **T. Cucinotta**, L. Abeni., M. Marinoni, R. Mancini and C. Vitucci. "*Strong Temporal Isolation among Containers in OpenStack for NFV Services*," IEEE Transactions on Cloud Computing, September 2021
16. A. Mascitti, **T. Cucinotta**, L. Abeni. "*Combining admission tests for heuristic partitioning of real-time tasks on ARM big.LITTLE multi-processor architectures*," Elsevier Journal of Systems Architecture (JSA), Vol. 119, October 2021
17. G. Serra, G. Ara, P. Fara, **T. Cucinotta**. "*ReTiF: A declarative real-time scheduling framework for POSIX systems*," Elsevier Journal of Systems Architecture (JSA), Vol. 118, September 2021
18. A. Mascitti, **T. Cucinotta**, M. Marinoni, L. Abeni. "Dynamic Partitioned Scheduling of Real-Time Tasks on ARM big.LITTLE Architectures," Elsevier Journal of Systems and Software (JSS), Vol. 173, March 2021
19. D. B. De Oliveira, R. S. De Oliveira, **T. Cucinotta**. "*A thread synchronization model for the PREEMPT_RT Linux kernel,*" Elsevier Journal of Systems Architecture (JSA), Vol. 107, August 2020
20. L. Abeni, **T. Cucinotta**. "*EDF scheduling of real-time tasks on multiple cores: adaptive partitioning vs. global scheduling*," ACM SIGAPP Applied Computing Review, Vol. 20, Issue 2 (June 2020), pp. 5-18, July 2020

21. 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
22. **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.
23. 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.
24. 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, 1 July-Sept. 2014, DOI 10.1109/TCC.2014.2325034, ISSN 2168-7161.
25. 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
26. **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
27. 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.
28. 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
29. 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
30. **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
31. **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
32. **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
33. 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
34. **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
35. 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
36. 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
37. 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.
38. 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

39. **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
40. **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
41. **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
42. 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
43. **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
44. **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
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Articles in proceedings of international peer-reviewed conferences and workshops

1. P. Bushipaka, A. D'Angelo, L. Passaro, **T. Cucinotta**. "*GRACE: Gradient-guided Coreset Selection for LLM Unlearning*," in Proceedings of the 2026 Conference on Empirical Methods in Natural Language Processing (EMNLP 2026), Findings, October 24-26, 2026, Budapest, Hungary.
2. Baptiste Escande, Federico Aromolo, **T. Cucinotta**. "*Evaluating the Impact of GPU Partitioning on Kernel Execution Time*," in Proceedings of the 31st IEEE International Conference on Emerging Technologies and Factory Automation (IEEE ETFA 2026), September 8-11, 2026, Västerås, Sweden.
3. L. Giacomossi, A. Ameri, H. Forsberg, I. Tomasic, B. Cürüklü, **T. Cucinotta**. "*Can Linux Fly a Drone? A Flight Control Evaluation for Unified UAV Architectures Using PREEMPT_RT Kernel*," in Proceedings of the 31st IEEE International Conference on Emerging Technologies and Factory Automation (IEEE ETFA 2026), September 8-11, 2026, Västerås, Sweden.
4. N. Mulè, J. Carlon, G. Lettieri, **T. Cucinotta**. "*A Kernel-Bypass Data Path for the DistWalk Distributed Workload Emulator*," in Proceedings of the 21st Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2026), 32nd International European Conference on Parallel and Distributed Processing (Euro-Par 2026), August 24th, 2026, Pisa, Italy.
5. H. Gustafsson, F. Svensson, L. Abeni, **T. Cucinotta**. "*State Synchronization for Fault-Tolerant Cloud RAN Scheduling: A Design Space Exploration*," in Proceedings of the 5th International Workshop on Real-Time and Cyber-Physical Cloud (RT-Cloud 2026), 38th European Conference on Real-Time Systems (ECRTS 2026), July 7th, 2026, Lund, Sweden. Best Paper Award
6. **T. Cucinotta**. "*Predictable and Energy-efficient Execution of Distributed Cloud Services: A 2-decades Research Overview*," in Proceedings of the 9th Workshop on Hot Topics in Cloud Computing Performance (HotCloudPerf 2026), May 5th, 2026, Florence, Italy.
7. L. Abeni, H. Gustafsson, F. A. Svensson, J. Ruuskanen, **T. Cucinotta**. "*Demonstrating a Cloud-Native applications Simulator for Real-Time Fault-Tolerant Clouds*," in the Companion Proceedings of the 17th ACM/SPEC International Conference on Performance Engineering (ACM/SPEC ICPE 2026), May 4-8, 2026, Florence, Italy.
8. L. Abeni, H. Gustafsson, F. A. Svensson, **T. Cucinotta**. "*State Management in Real-Time Cloud and NFV Services*," in Proceedings of the 11th IEEE Conference on Network Functions Virtualization and Software-Defined Networking (IEEE NFV-SDN 2025), November 10-12, 2025, Athens, Greece.
9. A. Derstepanians, A. Sahebrao, S. Lahiri, A. Artale, S. Fichera, **T. Cucinotta**. "*Near Real-Time Anomaly Detection in NFV Infrastructures II: From SM to AGMP*," in Proceedings of the 13th IEEE International Conference on Cloud Engineering (IEEE IC2E 2025), September 23-26, 2025, Rennes, France.

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11. P. Bushipaka, L. Passaro, **T. Cucinotta**. "*Standard vs. Modular Sampling: Best Practices for Reliable LLM Unlearning*," Workshop on Innovation, Privacy-preservation, and Evaluations of machine Unlearning Techniques (WIPE-OUT), held jointly with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2025), September 15th, 2025, Porto, Portugal.
12. B. Muscato, P. Bushipaka, G. Gezici, L. Passaro, F. Giannotti, **T. Cucinotta**. "*Embracing Diversity: A Multi-Perspective Approach with Soft Labels*," 4th International Conference on Hybrid Human-Artificial Intelligence (HHAI 2025), June 9-13, 2025, Pisa, Italy.
13. R. Andreoli, **T. Cucinotta**. "*DistWalk: a Distributed Workload Emulator*," in Proceedings of the 25th IEEE international Symposium on Cluster, Cloud and Internet Computing (IEEE CCGRID 2025), May 19-22, 2025, Tromsø, Norway.
14. **T. Cucinotta**, A. Amory, G. Ara, F. Paladino, M. Di Natale. "*Multi-Criteria Optimization of Real-Time DAGs on Heterogeneous Platforms under P-EDF*," ACM/SPEC 16th International Conference on Performance Engineering (ACM/SPEC ICPE 2025), Journal-First Track, May 5th-9th, 2025, Toronto, Canada
15. A. Friebe, **T. Cucinotta**, F. Markovic, A. V. Papadopoulos, T. Nolte. "*Nip It In The Bud: Job Acceptance Multi-Server*," 31st IEEE Real-Time and Embedded Technology and Applications Symposium (IEEE RTAS 2025), May 6-9, 2025, Ivine, USA.
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18. L. Abeni, H. Gustafsson, F. Svensson, **T. Cucinotta**. "*An Investigation of the Linux Virtual Networking Latencies*," in Proceedings of the 19th Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2024), 30th International European Conference on Parallel and Distributed Computing (Euro-Par 2024), August 27th, 2024, Madrid, Spain.
19. F. Galli, L. Melis, **T. Cucinotta**. "*Noisy Neighbors: Efficient membership inference attacks against LLMs*," in Proceedings of the 5th Workshop on Privacy in Natural Language Processing (PrivateNLP 2024), 62nd Annual Meeting of the Association for Computational Linguistics (ACL 2024), August 15th, 2024, Bangkok, Thailand.
20. L. Pannocchi, S. Lahiri, S. Fichera, A. Artale, **T. Cucinotta**. "*LLMs for Virtualized Networking Infrastructures: An Industrial Report*," in Proceedings of the 19th Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2024), 30th International European Conference on Parallel and Distributed Computing (Euro-Par 2024), August 27th, 2024, Madrid, Spain.
21. L. Abeni, **T. Cucinotta**, D. Casini. "*Period Estimation for Linux-based Edge Computing Virtualization with Strong Temporal Isolation*," in Proceedings of the 3rd Real-time And intelliGent Edge computing workshop (RAGE 2024), May 13, 2024, Hong Kong. Best Paper Award
22. R. Andreoli, S. Forti, L. Pannocchi, **T. Cucinotta**, A. Brogi. "*A logic programming approach to VM placement*," in Proceedings of the 14th International Conference on Cloud Computing and Services Science (CLOSER 2024), May 2-4, 2024, Angers, France.
23. F. Galli, C. Palamidessi, **T. Cucinotta**. "*Online Sensitivity Optimization in Differentially Private Learning*," in Proceedings of the 38th Annual AAAI Conference on Artificial Intelligence, February 20-27th, 2024, Vancouver, Canada
24. R. Andreoli, H. Gustafsson, L. Abeni, R. Mini, **T. Cucinotta**. "*Optimal Deployment of Cloud-native Applications with Fault-Tolerance and Time-Critical End-to-End Constraints*," in Proceedings of the 16th IEEE/ACM International Conference on Cloud Computing (IEEE/ACM UCC 2023), December 4-7th, 2023, Taormina (Messina), Italy.

25. R. Andreoli, **T. Cucinotta**. "*Towards a Holistic Cloud System with End-to-End Performance Guarantees*," in Proceedings of the 11th IEEE International Conference on Cloud Engineering (IC2E 2023), September 25-28, 2023, Boston, Massachussets, USA.
26. R. Andreoli, **T. Cucinotta**. "*Inducing Huge Tail Latency on a MongoDB deployment*," in Proceedings of the 11th IEEE International Conference on Cloud Engineering (IC2E 2023), September 25-28, 2023, Boston, Massachussets, USA.
27. R. Andreoli, H. Gustafsson, L. Abeni, R. Mini, **T. Cucinotta**. "*Design-time Analysis of Time-Critical and Fault-Tolerance Constraints in Cloud Services*," in Proceedings of the 16th IEEE International Conference on Cloud Computing (IEEE CLOUD 2023), July 2-8, 2023, Chicago, Illinois, USA.
28. S. Royuela, E. Quiñones, A. Munera, T. Carvalho, L. M. Pinho, M. Samadi, **T. Cucinotta**, G. Ara, F. Paladino, S. Mazzola, T. Benz. "*Multi-criteria analysis and optimisation in the AMPERE ecosystem,"* in Proceedings of the International Workshop on Challenges and New Approaches for Dependable and Cyber-Physical System Engineering (DeCPS 2023), co-located with the 27th Ada-Europe International Conference on Reliable Software Technologies (AEiC 2023), June 13-16, 2023, Lisboa, Portugal.
29. Y. Telila, **T. Cucinotta**, D. Bacciu. "*Automatic Music Transcription using Convolutional Neural Networks and Constant-Q Transform*," in Proceedings of the 3rd National CINI Conference on Artificial Intelligence (Ital-IA 2023), AI for Media & Games Workshop, May 29-31, 2023, Pisa, Italy.
30. S. Fichera, A. Artale, A. Derstepanians, L. Pannocchi, **T. Cucinotta**. "*Artificial Intelligence in virtualized networks: a journey*," in Proceedings of the 3rd National CINI Conference on Artificial Intelligence (Ital-IA 2023), AI for Industry Workshop, May 29-31, 2023, Pisa, Italy.
31. P. Bushipaka, D. Licari, G. Marino, G. Comandé, **T. Cucinotta**. "*AI-Assisted Legal Holding Extraction*," in Proceedings of the 3rd National CINI Conference on Artificial Intelligence (Ital-IA 2023), AI for Public Administration Workshop, May 29-31, 2023, Pisa, Italy.
32. G. Marino, D. Licari, P. Bushipaka, G. Comandé, **T. Cucinotta**. "*Automatic Rhetorical Roles Classification for Legal Documents using LEGAL-TransformerOverBERT*," in Proceedings of the International Workshop on Automated Semantic Analysis of Information in Legal Text (ASAIL 2023), co-located with the 19th International Conference on Artificial Intelligence and Law (ICAIL 2023), June 19-23, 2023, Braga, Portugal.
33. P. Bushipaka, D. Licari, G. Marino, G. Comandé and **T. Cucinotta**. "*Legal Holding Extraction from Italian Case Documents using Italian-LEGAL-BERT Text Summarization*," in Proceedings of the 19th International Conference on Artificial Intelligence and Law (ICAIL 2023), June 19-23, 2023, Braga, Portugal.
34. L. Abeni, R. Andreoli, H. Gustafsson, R. Mini, **T. Cucinotta**. "*Fault Tolerance in Real-Time Cloud Computing*," in Proceedings of the 26th International Symposium on Real-Time Distributed Computing (IEEE ISORC 2023), May 23-25, 2023, Nashville, Tennessee, USA.
35. G. Lanciano, M. Stein, V. Hilt, **T. Cucinotta**. "*Analyzing Declarative Deployment Code with Large Language Models*," in Proceedings of the 13th International Conference on Cloud Computing and Services Science (CLOSER 2023), April 26-28, 2023, Prague, Czech Republic.
36. F. Galli, S. Biswas, K. Jung, **T. Cucinotta**, C. Palamidessi. "*Group Privacy for Personalized Federated Learning*," in Proceedings of the 9th International Conference on Information Systems Security and Privacy (ICISSP 2023), February 22-24, 2023, Lisbon, Portugal
37. A. Derstepanians, M. Vannucci, **T. Cucinotta**, A. K. Sahebrao, S. Lahiri, A. Artale, S. Fichera. "*Near Real-Time Anomaly Detection in NFV Infrastructures*," in Proceedings of the 8th IEEE Conference on Network Functions Virtualization and Software-Defined Networking (IEEE NFV-SDN 2022), November 14-16, 2022, Chandler, AZ, USA.
38. **T. Cucinotta**, L. Pannocchi, F. Galli, S. Fichera, S. Lahiri, A. Artale. "*Optimum VM Placement for NFV Infrastructures*," in Proceedings of the 10th IEEE International Conference on Cloud Engineering (IC2E 2022), September 26-30, 2022, Pacific Grove, CA, USA.
39. L. Abeni, **T. Cucinotta**, B. Pinczel, P. Matray, M. Srinivasan, T. Lindquist. "*On the use of Linux Real-Time Features for RAN Packet Processing in Cloud Environments*," in Proceedings of the 17th Workshop on Virtualization in High-

Performance Cloud Computing (VHPC 2022), International Supercomputing Conference - High Performance (ISC 2022), June 2nd, 2022, Hamburg, Germany.

40. S. Fiori, L. Abeni, **T. Cucinotta**. "*RT-Kubernetes - Containerized Real-Time Cloud Computing*," in Proceedings of the 37th ACM/SIGAPP International Symposium on Applied Compputing (ACM SAC 2022), April 25-29, 2022, Brno, Czech Republic.
41. G. Ara, **T. Cucinotta**, A. Mascitti. "*Simulating Execution Time and Power Consumption of Real-Time Tasks on Embedded Platform*s," in Proceedings of the 37th ACM/SIGAPP International Symposium on Applied Compputing (ACM SAC 2022), April 25-29, 2022, Brno, Czech Republic.
42. G. Lanciano, F. Galli, **T. Cucinotta**, D. Bacciu, A. Passarella. "*Predictive Auto-scaling with OpenStack Monasc*a," in Proceedings of the 14th IEEE/ACM International Conference on Cloud Computing (IEEE/ACM UCC 2021), December 6-9th, 2021, Leicester, UK.
43. L. Lai, G. Ara, **T. Cucinotta**, K. Kondepu, L. Valcarenghi. "*Ultra-low Latency NFV Services Using DPD*K," in Proceedings of the 7th IEEE Conference on Network Functions Virtualization and Software-Defined Networking (IEEE NFV-SDN 2021), November 9-11th, 2021, Heraklion, Greece.
44. R. Andreoli, **T. Cucinotta**. "*Differentiated performance in NoSQL database access for Cloud HPC workload*s," in Proceedings of the 16th Workshop on Virtualization in High-Performance Cloud Computing (VHPC 2021), International Supercomputing Conference - High Performance (ISC 2021), July 2nd, 2021, Frankfurt, Germany.
45. A. Stevanato, **T. Cucinotta**, L. Abeni, D. B. de Oliveira. "*An Evaluation of Adaptive Partitioning of Real-Time Workloads on Linu*x," in Proceedings of the 24th IEEE International Symposium on Real-Time Distributed Computing (IEEE ISORC 2021), June 1-3, 2021, Daegu, South Korea.
46. **T. Cucinotta**, G. Lanciano, A. Ritacco, F. Brau, F. Galli, V. Iannino, M. Vannucci, A. Artale, J. Barata, E. Sposato. "*Forecasting Operation Metrics for Virtualized Network Function*s," in Proceedings of the 21st IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (IEEE CCGRID 2021), May 10-13, 2021, Melbourne, Victoria, Australia.
47. R. Andreoli, **T. Cucinotta**, D. Pedreschi. "*RT-MongoDB: a NoSQL database with differentiated performanc*e," in Proceedings of the 11th International Conference on Cloud Computing and Services Science (CLOSER 2021), April 28-30, 2021, Prague, Czech Republic. **Best Student Paper Award**
48. **T. Cucinotta**, L. Abeni. "*Migrating Constant Bandwidth Servers on Multi-Core*s," in Proceedings of the 29th International Conference on Real-Time Networks and Systems (RTNS 2021), April 7-9, 2021, Nantes, France.
49. A. Mascitti, **T. Cucinotta**. *"Dynamic Partitioned Scheduling of Real-Time DAG Tasks on ARM big.LITTLE Architecture*s," in Proceedings of the 29th International Conference on Real-Time Networks and Systems (RTNS 2021), April 7-9, 2021, Nantes, France.
50. R. Mancini, A. Ritacco, G. Lanciano, **T. Cucinotta**. "*XPySom: High-Performance Self-Organizing Map*s," in Proceedings of the 32nd IEEE International Symposium on Computer Architecture and High Performance Computing (IEEE SBAC-PAD 2020), September 8-11, 2020. Porto, Portugal.
51. D. B. de Oliveira, D. Casini, R. S. de Oliveira, **T. Cucinotta**. "*Demystifying the Real-Time Linux Scheduling Latenc*y," in Proceedings of the 32nd Euromicro Conference on Real-Time Systems (ECRTS 2020), July 7-10, 2020, Modena, Italy.
52. E. Quiñones, S. Royuela, C. Scordino, P. Gai, L. M. Pinho, L. Nogueira, J. Rollo, **T. Cucinotta**, A. Biondi, A. Hamann, D. Ziegenbein, H. Saoud, R. Soulat, B. Forsberg, L. Benini, G. Mando, L. Rucher. "*The AMPERE Project: A Model-driven development framework for highly Parallel and EneRgy-Efficient computation supporting multi-criteria optimizatio*n," in Proceedings of the 23rd IEEE International Symposium on Real-Time Distributed Computing (IEEE ISORC 2020), May 19-21, 2020, Nashville, Tennessee, USA.
53. A. Mascitti, **T. Cucinotta**, L. Abeni. "*Heuristic partitioning of real-time tasks on multi-processor*s," in Proceedings of the 23rd IEEE International Symposium on Real-Time Distributed Computing (IEEE ISORC 2020), May 19-21, 2020, Nashville, Tennessee, USA.
54. G. Serra, G. Ara, P. Fara, **T. Cucinotta**. "*An Architecture for Declarative Real-Time Scheduling on Linu*x," in Proceedings of the 23rd IEEE International Symposium on Real-Time Distributed Computing (IEEE ISORC 2020), May 19-21, 2020, Nashville, Tennessee, USA.

55. R. Mancini, **T. Cucinotta**, L. Abeni. "*Performance Modeling in Predictable Cloud Computing*," in Proceedings of the 10th International Conference on Cloud Computing and Services Science (CLOSER 2020), May 7-9, 2020, Prague, Czech Republic.
56. G. Ara, L. Lai, **T. Cucinotta**, L. Abeni, C. Vitucci. "*A Framework for Comparative Evaluation of High-Performance Virtualized Networking Mechanisms*," in 10th International Conference on Cloud Computing and Services Science (CLOSER 2020), Communications in Computer and Information Science (CCIS), Vol. 1399, Springer, Cham.
57. G. Ara, **T. Cucinotta**, L. Abeni, C. Vitucci. "*Comparative Evaluation of Kernel Bypass Mechanisms for High-Performance Inter-Container Communications*," in Proceedings of the 10th International Conference on Cloud Computing and Services Science (CLOSER 2020), May 7-9, 2020, Prague, Czech Republic. **Best Paper Award**
58. G. Lanciano, A. Ritacco, F. Brau, **T. Cucinotta**, M. Vannucci, A. Artale, J. Barata, E. Sposato. "*Using Self-Organizing Maps for the Behavioral Analysis of Virtualized Network Functions*," in 10th International Conference on Cloud Computing and Services Science (CLOSER 2020), Communications in Computer and Information Science (CCIS), Vol. 1399, Springer, Cham.
59. **T. Cucinotta**, G. Lanciano, A. Ritacco, M. Vannucci, A. Artale, J. Barata, E. Sposato, L. Basili. "*Behavioral analysis for Virtualized Network Functions: a SOM-based approach,*" in Proceedings of the 10th International Conference on Cloud Computing and Services Science (CLOSER 2020), May 7-9, 2020, Prague, Czech Republic.
60. G. Lanciano, A. Ritacco, **T. Cucinotta**, M. Vannucci, A. Artale, L. Basili, E. Sposato. "*SOM-based behavioral analysis for virtualized network functions*," in Proceedings of the 35th ACM/SIGAPP Symposium On Applied Computing (ACM SAC 2020), March 30th, 2020, Brno, Czech Republic.
61. L. Abeni, **T. Cucinotta**. "*Adaptive Partitioning of Real-Time Tasks on Multiple Processors*," in Proceedings of the 35th ACM/SIGAPP Symposium On Applied Computing (ACM SAC 2020), March 30th, 2020, Brno, Czech Republic.
62. C. Vitucci, **T. Cucinotta**, R. Mancini, L. Abeni. "*Implementation and Deployment of a Server at the Edge Using OpenStack Components*," in Proceedings of the International Symposium on Advances in Software Defined Networking and Network Functions Virtualization (SOFTNETWORKING 2020), 19th International Conference on Networks (ICN 2020), February 23-27, 2020, Lisbon, Portugal.
63. R. Mancini, S. Tuli, **T. Cucinotta**, R. Buyya. "*iGateLink: A Gateway Library for Linking IoT, Edge, Fog and Cloud Computing Environments*," in Proceedings of the International Conference on Intelligent and Cloud Computing (ICICC 2019), December 16-17, 2019, Bhubaneswar, India.
64. 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.
65. Daniel B. De Oliveira, T. Cucinotta, Romulo S. De Oliveira. "*Efficient formal verification for the Linux kernel*," in Proceedings of the 17th International Conference on Software Engineering and Formal Methods (SEFM 2019), September 16-20th, 2019, Oslo, Norway.
66. 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.
67. **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.
68. 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.
69. 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**

70. 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.
71. 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.
72. 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.
73. **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.
74. 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.
75. 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**
76. **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.
77. 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.
78. 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.
79. **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.
80. **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
81. **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
82. **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
83. **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
84. 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
85. **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

86. **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
87. **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
88. 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
89. 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
90. **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
91. 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
92. 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
93. **T. Cucinotta** and V. Subramanian. "*Characterization and analysis of pipelined applications on the Intel SCC*," 4th MARC Symposium, Potsdam, Germany, December 2011
94. **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
95. **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
96. **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
97. 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
98. **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
99. 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
100. **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**
101. 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
102. **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

103. **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
104. **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
105. 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
106. **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
107. **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
108. **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
109. **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
110. 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
111. **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
112. 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
113. 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
114. **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
115. **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
116. **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
117. **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
118. **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
119. **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

120. **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
121. **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
122. **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
123. **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.
124. **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
125. **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
126. **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
127. **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
128. 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 peer-reviewed conferences and workshops

129. 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

46. **T. Cucinotta**. "*Cybersecurity (in Distributed Computing Systems),*" Encyclopedia of Law and Data Science, pp. 92-97, ed. G. Comandé, Edward Elgar Publishing, February 2022. ISBN: 978-1-83910-458-9
47. 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
48. **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
49. 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
50. **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
51. 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
52. 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
53. 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

54. 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
55. 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

56. **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
57. **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
58. **T. Cucinotta**, "*Firma digitale e lavoro cooperativo: aspetti tecnologici*", I nuovi scenari del marketing assicurativo, IRSA, 2004
59. **T. Cucinotta**, "*Firma digitale e assicurazioni: aspetti tecnologici*", L'economia digitale e il settore assicurativo, DEA Quaderni di Impresa Assicurativa, Giuffrè Editore, 2003

Attendance to international conferences and workshops as speaker/presenter

AdaEurope 2026, IEEE CCGRID 2025, Ital-IA 2023, CLOSER 2021, EWILI 2018, IEEE CLOUD 2018, CCW (2025, 2016), IEEE ETFA (2026, 2025, 2022, 2009, 2017), ANSS/SpringSim 2011, AHM 2010, ESTImedia (2009, 2008), HiPEAC 2022, ACM/SPEC ICPE (2026, 2025), IEEE IC2E (2025, 2023), IEEE ISORC (2021, 2019), IEEE NFV-SDN 2025, LAC 2011, LPC (2024, 2010), OSPM (2026, 2025, 2023), RTAS (2018, 2008), RTLWS (2011, 2010), RTNS 2021, IEEE SIES 2010, IEEE SOCA (2011, 2010, 2009), VHPC (2026, 2024, 2023, 2022, 2021, 2019, 2010), WATERS (2011, 2010), DEXA 2004.

Software development in open-source projects

- **2025**: patches accepted to the **mainline Linux kernel** to add reporting of runtime left & absolute deadline to sched_getattr() for DEADLINE tasks within SCHED_DEADLINE, and document the new feature
- **2022**: patches accepted to Gnuplot for adding the cubic root function, and fixing a bug in handling covariance fitting variables
- **2020-2026**: creator of the distwalk distributed processing benchmark: https://github.com/tomcucinotta/distwalk
- **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**: patches accepted 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
- **2007-2016**: 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/
- **2009-2023**: Creator of the Open Macro Library (OML): https://github.com/tomcucinotta/oml
- **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 the open-source SmartSign project: 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 projects

- 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

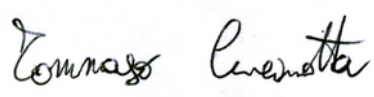
- Z Object Publishing Environment (Zope)
- Microsoft Office (and MS Office Automation), Microsoft Front Page
- Italian law on digital signatures: “Codice [...]” (D. Lgs. 82/2005), “Testo Unico [...]” (DPR 445/2000)
- European Directive 1999/93/CE: “Community Framework for Electronic Signatures”

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

The undersigned, Tommaso Cucinotta, declares under his own responsibility that every information enclosed in this document is truthful, in accordance with the Italian laws about substitute declarations, as from art. 46 and subsequent ones of the D.P.R. 445/2000.

Pisa, September 12th 2026