Curriculum Vitæ

Enrico Bini

October 13, 2024

Contents

Current and Past Positions

Oct 2016–today Associate professor at Computer Science Department, University of Turin, Italy.

10/04/2017 Eligible as **full professor** in Italian universities, in the area 01/B1 "Informatica" (Computer Science).

23/01/2015 Youngest researcher eligible as **full professor** in Italian universities, in the area 09/H1 "Sistemi di elaborazione delle informazioni" (Computer Engineering).

2015.12.24–2016.03.31 Paternity leave (in accordance to D.L. 151 26/03/2001 "Testo unico delle disposizioni delle disposizioni legislative in materia di tutela e sostegno della maternità e della paternità")

Apr 2007–Sep 2016 Assistant professor at Scuola Superiore Sant'Anna, Pisa, Italy.

Mar 2012–Feb 2014 Marie-Curie fellow at Lund University (on leave from Scuola Superiore Sant'Anna).

Sep 2005–Aug 2006 Post-doc at the Scuola Superiore Sant'Anna.

Education

Jan 2010 Diploma di Laurea Specialistica (Master) in Mathematics from Università di Pisa (grade: **110/110 e lode**), achieved on January 29th, 2010. Thesis title: "*Design of Optimal Control Systems*".

Oct 2004 PhD degree in Computer Engineering from Scuola Superiore Sant'Anna (grade: **100/100 e lode**), achieved on October 1st, 2004. Thesis title: "*The Design Domain of Real-Time Systems*".

Oct 2001 Diploma di Licenza from Scuola Superiore Sant'Anna (grade: **100/100 e lode**), achieved on October 26th, 2001. Thesis title: "*A method to perform time-variant load measure*".

Dec 2000 Diploma di Laurea (Bachelor+Master: five years degree) in Computer Engineering from Università di Pisa (grade: **110/110 e lode**), achieved on December 13th, 2000. Thesis title: "*Developing real-time applications on embedded systems: the microcontroller ST10*".

Nov 1995 Admitted to the undergraduate Engineering school of excellence Scuola Superiore Sant'Anna. Ranked **3rd among 331 participants** at national level.

May 1994 Admitted to the National Finals of the Mathematics Olympic Games.

Teaching

Undergraduate level

Nov 2023, Nov 2022, Nov 2021, Nov 2020, Nov 2019, Nov 2018, Nov 2017, Nov 2016 Teacher of the course **Basics of concurrent programming in Unix**, University of Turin. Hours of teaching: 60. Students: ∼150.

Sep 2023, Sep 2022, Sep 2021, Sep 2020, Sep 2019, Sep 2018, Sep 2017 Teacher of the course **C programming**, University of Turin, 60 hours of teaching. Hours of teaching: 60. Students: ∼150.

Mar 2017 Teacher of the course **Basics of Computer Science** (for non-CS students), University of Turin. Hours of teaching: 72. Students: ∼300.

Apr 2016 Teacher of the course **Basics of C Programming**, Scuola Superiore Sant'Anna. Hours of teaching: 30. Students: ∼20.

Sep 2004 Teacher of the course **Basics of Computer Architecture**, University of Siena. Hours of teaching: 72. Students: ∼100.

Sep 2004–May 2005 Teaching Assistant of the course **Mathematics**, University of Pisa. Hours of teaching: 40. Students: ∼150.

Master level

Mar 2016, Mar 2015 Teacher of the course **Component-based software design**, Scuola Superiore Sant'Anna. Hours of teaching: 30. Students: ∼10.

Mar 2011 Teacher of the course **Optimization Methods**, Scuola Superiore Sant'Anna and University of Trento. Hours of teaching: 48. Students: ∼10.

Mar 2010 Teacher of the course **Optimization Methods: discrete variables**, Scuola Superiore Sant'Anna and University of Trento. Hours of teaching: 30. Students: ∼10.

Jan 2010 Teacher of the course **Optimization Methods 1: continuous variables**, Scuola Superiore Sant'Anna and University of Trento. Hours of teaching: 30. Students: ∼10.

Oct 2007, Feb 2002 Teacher of the course **Optimization Methods**, Scuola Superiore Sant'Anna. Hours of teaching: 20. Students: ∼40.

Jan 2005 Teacher of the course **Design of Embedded Systems**, University of Siena. Hours of teaching: 60. Students: ∼10.

PhD/research level

May 2024, May 2019 Teacher of the course **Real-Time and Cyber-Physical Systems**, University of Turin. Hours of teaching: 24. Students: ∼5.

July 2015 Teacher of the lecture **Embedded Systems design and its Impact on Control**, within the course Design Flows for Control and Verification of Thermal Fluid Systems, University of Connecticut. Hours of teaching: 3. Students: ∼10.

May 2014, Mar 2008, Mar 2007 Teacher of the course **Real-Time Systems: an Optimal Design Approach**, Scuola Superiore Sant'Anna. Hours of teaching: 15. Students: ∼10.

Nov 2012 Teacher of the course **Advanced Real-Time Systems**, Lund University. Hours of teaching: 12. Students: ∼15.

Visits and invitations

Visiting Periods

Mar 2012–Feb 2014 Marie-Curie fellowship at Lund University, Sweden, hosted by Karl-Erik Årzén.

Feb–Mar 2009 Visiting researcher at **INRIA Rocquencourt**, France, project AOSTE, invited by Yves Sorel.

Mar–Dec 2003 Visiting PhD student at **University of North Carolina at Chapel Hill**, USA, Computer Science Department, invited by Sanjoy Baruah.

Aug 1999–Feb 2000 Visiting student at Technische Universiteit Delft (TUD), The Nederlands, through the **Erasmus** European exchange program.

Invited talks at events

Oct 2015 Keynote speaker at the CSI Symposium on Real-Time and Embedded Systems and Technologies, Tehran, Iran. Title of the talk: "Challenges in the Design of Resource Constrained Cyber Physical Systems". Invited by Mehdi Kargahi.

Mar 2015 Invited speaker at the ***Dagstuhl*** *Seminar on Mixed Criticality on Multicore/Manycore Platforms*, seminar number 15121, Dagstuhl, Germany. Invited by Sanjoy Baruah, Liliana Cucu-Grosjean, Robert Davis, Claire Maiza.

Dec 2011 Invited speaker at the LCCC Workshop on Control of Computing Systems, Lund, Sweden. Invited by Karl-Erik Årzén and Anton Cervin.

Nov 2011 Invited speaker at the Workshop on Synthesis and Optimization Methods for Real-Time Embedded Systems, co-located with the 32nd IEEE Real-Time Systems Symposium, Vienna, Austria. Invited by Marco Di Natale.

Feb 2010 Invited speaker at the ***Dagstuhl*** *Seminar on Scheduling*, seminar number 10071, Dagstuhl, Germany. Invited by Susanne Albers, Sanjoy K. Baruah, Rolf H. Möhring, and Kirk Pruhs.

Oct 2009 **Keynote speaker** at the 17-th International Conference on Real-Time and Network Systems, Paris, France, October 26–27, 2009. Title of the talk: "The design is an optimization problem: the real-time control system case". Invited by Laurent George.

Feb 2008 Invited speaker at the ***Dagstuhl*** *Seminar on Scheduling*, seminar number 08071, Dagstuhl, Germany. Invited by Jane W. S. Liu, Rolf H. Möhring, and Kirk Pruhs.

Sep 2007 Invited lecturer at the **French Summer School on Real-Time** 2007 in Nantes. Title of the presentation "Minimising Energy Consumption in Real-Time Systems". Invited by Nicolas Navet.

Awards

1. 2023 IEEE Transactions on Computers **Award for Editorial Service and Excellence**. Motivation: "For exemplary commitment in service as an Associate Editor on the Editorial Board to uphold the quality and reputation of IEEE Transactions on Computers"

2. **Real-Time Systems Test-of-Time award**[1] (youngest awardee ever), awarded in 2021 by the IEEE Technical Committee on Real-Time Systems for the paper: Enrico Bini and Giorgio C. Buttazzo. "Measuring the performance of schedulability tests" *Real-Time Systems*, 30(1–2):129–154, May 2005. Motivation of the award: "For the UuniFast workload generation algorithm, which helped establish a rigorous methodology for experimental evaluation of scheduling and schedulability analysis algorithms."

3. **Outstanding paper award** for the paper: Enrico Bini. "Cutting the Unnecessary Deadlines in EDF". In *Proceedings of the 25th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications*, Hangzhou, China, August 2019.

4. **Best paper award** for the paper: Victor Millnert, Johan Eker, Enrico Bini. "Dynamic control of NFV forwarding graphs with end-to-end deadline constraints". In *Proceedings of the IEEE International Conference on Communications*, Paris, France, May 2017.

5. **Best paper award** for the paper: Martina Maggio, Juri Lelli, Enrico Bini. "A Tool for Measuring Supply Functions of Execution Platforms". In *Proceedings of the 22nd IEEE International Conference on Embedded and Real-Time Computing Systems and Applications*, Daegu, South Korea, August 2016.

6. **Best paper award** for the paper: Enrico Bini, Giorgio C. Buttazzo, Marko Bertogna. "The Multi Supply Function Abstraction for Multiprocessors", In *Proceedings of the 15th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications*, Beijing, China, August 2009.

7. **Best paper award** for the paper: Enrico Bini, Sanjoy K. Baruah. "Efficient computation of response time bounds under fixed-priority scheduling". In *Proceedings of the 15th conference on Real-Time and Network Systems*, Nancy, France, March 2007.

8. In 2011, elevated to the grade of **IEEE Senior member** (only 8% IEEE members are with this grade.)

9. **Premio Spitali** for the best scientific PhD thesis at the Scuola Superiore Sant'Anna of the two academic years 2003/04 and 2004/05. Motivation of the award[2]: Dr. Bini's PhD dissertation "The Design Domain of Real-Time Systems" deserves the award for the significance and high impact of the results on the international scientific community. The thesis proposes a unifying methodology

[1] "Real-Time Systems Test-of-Time (ToT) Award recognizes papers that have had a sustained and significant impact on real-time systems research for at least one decade." (source: TCRTS website (`https://site.ieee.org/tcrts/`))

[2] translated from Italian

for the analysis and the design of real-time embedded systems. Next generation distributed embedded real-time systems will be much more complex in term of both application functionalities and number/type of computing nodes. Dr. Bini's proposed methodology has the potential to greatly simplify the analysis, hence being applicable to more complex interactions. Moreover, the thesis addresses in a holistic manner software engineering practices for system design, energy minimization, component-based analysis, and robustness of the analysis. The results are published over high impact conferences and journals including two publications on IEEE Transactions on Computers, two on Real-Time Systems, and one on Journal of Embedded Systems.

Student supervision

PhD students

Sep 2023–ongoing Supervisor od Michele Castrovilli, University of Turin. Research project: Runtime Verification of temporal properties in LInux.

Apr 2023–ongoing Co-supervisor of Francesco Paladino, Scuola Superiore Sant'Anna, Pisa. Research project: Optimization with end-to-end latency constraints in automotive.

May 2021–Sep 2023 Supervisor of Alessandro Druetto, University of Turin. Research project: Scheduling on single and parallel machines with constrainted resources: batching or shared memory environments.

Sep 2014–Sep 2019 Supervisor of Victor Millnert, Lund University. Research project: Temporal guarantees and resource adaptation for edge computing.

Sep 2014–Sep 2017 Supervisor of Andrea Parri, Scuola Superiore Sant'Anna. Research project: Scheduling real-time applications over virtualized multiprocessors.

May 2012–Jul 2016 Supervisor of Artem Burmyakov, Polytechnic Institute of Porto, Portugal. Research project: Design of compositional real-time framework over multicore architectures.

Nov 2009–Oct 2013 Supervisor of Giulio Mancuso, Scuola Superiore Sant'Anna, Pisa, Italy. Research project: Investigation of the effect of parallel execution platform over control systems.

Master students

2023.07.14 Silvestro Frisullo, Univ. of Turin: "Big Data Processing with Databricks ETL Pipelines". Today at NTT DATA

2023.06.13 Michele Castrovilli, Univ. of Turin: "Accounting of Time in Linux with Hyper-Threading Technology". Today PhD student at University of Turin

2022.07.14 Francesco Ciraolo, Univ. of Turin: "A new approach to B-Edge cover". Today PhD student at CS department, Boston University

2022.04.13 Damiano Gianotti, Univ. of Turin: "Remote and continuous, multi-parameter data analysis for critical assets". Today at Zensor

2020.12.21 Daniele Brun, Univ. of Turin: "Convolutional Neural Networks Optimization on Embedded Devices"

2020.10.20 Umberto Baldi, Univ. of Turin: "Different testing strategies for Arduino cores". Today at Arduino, Turin

2020.07.17 Andrea Loffreda, Univ. of Turin: "Aumentare la sicurezza di un veicolo connesso usando una PKI veicolare". Today at Spike Reply, Settimo Torinese, Italy

2016.12.02 Maria Vittoria Minniti, Scuola Superiore di Catania: "The optimal sampling pattern for linear control systems". Today PhD student, Robotic Systems Lab, ETH Zürich

2008.07.10 Stefano Fontanelli, Univ. di Pisa: "Vehicular Networks: Traffic Simulations and Communication Protocols". Today at Twilio, San Francisco

Undergraduate students

2024.07.16 Matteo Di Noia, Univ. of Turin: "An experimentation with `SCHED_EXT` Linux scheduling class"

2024.07.16 Federico Pitaccolo, Univ. of Turin: "EcoStruxure Automation Expert e Automazione Universale: Un Nuovo Approccio alla Programmazione Industriale secondo la Normativa IEC 61499"

2023.11.14 Lorenzo Beata, Univ. of Turin: "A lightweight client for communicating with the Crazyflie 2.1"

2023.11.14 Tommaso Cazzanelli, Univ. of Turin: "Understanding the Configuration Parameters of Crazyflie 2.1"

2023.07.14 Gatto Monticone Enrico, Univ. of Turin: "Interviewtool: sviluppo di una progressive-web-app per la gestione di quiz d'assunzione preliminari"

2023.07.14 Riccardo Maino, Univ. of Turin: "Monitoring and analysis of jobs execution times through ftrace"

2023.06.13 Daniele Di Palma, Univ. of Turin: "A software approach to determine thermal coupling in multi-core architectures"

2023.06.13 Alessandro Barracane, Univ. of Turin: "Impact of Resource Tuning on Delivered QoS for Crazyflie 2.1 AI Deck"

2022.11.18 Alessio Mana, Univ. of Turin: "Adding core scheduling support to rt-app and analyzing efficiency"

2022.11.18 Janneth Estefania Hoyos Rea, Univ. of Turin: "Speeding up the Analysis of Earliest Deadline First Schedulability"

2022.11.18 Giorgio Perna, Univ. of Turin: "An MPC Library for UAVs: Profiling and Experience with the Crazyflie"

2022.11.18 Marius Berinde, Univ. of Turin: "Extensive Profiling of a Library for UAV Navigation"

2022.11.18 Sasha Algisi, Univ. of Turin: "Adding the `SCHED_DEADLINE` Support in libvirt"

2022.11.18 Francesco Nicoletta Puzzillo, Univ. of Turin: "rt-zephyr: Generating Synthetic Workloads for the Zephyr RTOS"

2022.11.18 Enrico Pagliero, Univ. of Turin: "A Software Approach to Investigate Thermal Interactions between Cores"

2022.11.18 Mattia Carlino, Univ. of Turin: "Implementation of an IAC solution (Infrastructure As a Code) that allows the release of an infrastructure for DvOps environments"

2022.11.18 Cauda Giacomo, Univ. of Turin: "Object and Fire detection using Machine Learning"

2022.07.14 Marco Edoardo Santimaria, Univ. of Turin: "Investigating the Behavior and the Overhead of Core Scheduling in Linux"

2021.11.25 Lorenzo Dentis, Univ. of Turin: "Comparing KVM and XEN tracing overhead"

2021.11.25 Kim Marco Viberti, Univ. of Turin: "Designing software for autonomous Mars rover explorations"

2021.11.25 Giorgio Martinetto, Univ. of Turin: "Monitoring the schedule of automotive applications"

2021.11.25 Federico Serra, Univ. of Turin: "A study of Intel's Speed Shift power management technology"

2021.11.25 Giuseppe Catalano, Univ. of Turin: "Evaluating the schedutil frequency scaling governor in the Linux kernel"

2021.11.25 Stefano De Venuto, Univ. of Turin: "Synchronization accuracy of hypervisor and virtual machine traces"

2021.11.25 Stefan Amariei, Univ. of Turin: "IoT application development over FreeRTOS"

2021.11.25 Cesare Palermo, Univ. of Turin: "Combining containerization in IoT with cloud computing"

2021.07.16 Emilio Bruno, Univ. of Turin: "A comparison of Linux tracing techniques"

2021.06.11 Giuseppe Eletto, Univ. of Turin: "Development of a KernelShark Plugin for Xen Traces Analysis"

2020.12.21 Matteo Brunello, Univ. of Turin: "Using dynamic sampling to reduce battery consumption in IoT devices"

2020.12.21 Lorenzo Brescia, Univ. of Turin: "Coupling tracing over host and guest machines"

2020.11.20 Amedeo Di Gaetano, Univ. of Turin: "Exploring the Linux scheduler flags in the context of virtualization"

2020.07.17 Antonio Casoli, Univ. of Turin: "Linux scheduler internals: impact of load balancing flags"

2020.07.17 Francesco Ciraolo, Univ. of Turin: "A tool for testing scheduler domains' flags"

2020.04.08 Silvestro Frisullo, Univ. of Turin: "Microservices on Amazon Web Services"

2019.12.09 Andrea Rondinelli, Univ. of Turin: "Comparing different allocation policies in Linux"

2019.10.16 Cristian Monticone, Univ. of Turin: "Impact of virtualization layers onto scheduling policies"

2019.07.12 Marco Perronet, Univ. of Turin: "Linux Kernel: monitoring the scheduler by `trace_sched*` events"

2019.07.12 Stefano Chiavazza, Univ. of Turin: "Linux Scheduler Internals: Resource Management via `cgroups`"

2018.10.15 Umberto Baldi, Univ. of Turin: "IoT over Linux/Arduino platform: a smart intercom application"

2018.04.13 Alessandro Somma, Univ. of Turin: "Industry 4.0: Publishing and historicizing CNC data"

Grants

Competitive research grants

2024–2026 Principal Investigator of the project "Trustworthy Cyber-Physical Pipelines", funded by the Italian Ministry of Foreign Affairs and International Cooperation. Budget: 174 KEuro.

2017–2018 Awarded a FFABR grant (in Italian: "Fondo per il finanziamento delle attività base di ricerca") by the Italian Ministry of Education, University and Research. Budget: 3KEuro.

Mar 2012–Feb 2014 Principal Investigator of the Marie-Curie Intra-European Fellowship project ViCyPhySys (Virtual Cyber Phisical Systems). Ranked 18th in the Engineering panel of all European submissions (3327 overall submissions, 507 in the panel of Engineering) with score 91.6/100. Budget: 250 KEuro.

Nov 2012–Oct 2014 Principal Investigator of the project GESTI, (Management of failures in sensor networks for energy savings) funded by Regione Toscana, in liaison with Telecom Italia, call POR CRO FSE 2007-2013, Decreto 27/12/2011 n. 6076. Ranked 10th over 183 (score 82.7/100). Budget: 108 KEuro.

Private research grants

Dec 2020 Research grant by Huawei. Title of the project: "SW Architecture optimization for multicore Real-Time Systems". Budget: 70KEuro.

Services to the research community

Steering, advising committees

since 2022 Coordinator of the University of Turin node within the National CINI Laboratory on Embedded Systems & Smart Manufacturing

since 2015 Member of the Steering Committee of the CSI Symposium on Real-Time and Embedded Systems and Technologies

since 2022 Member of the Conference Planning sub-committee of the IEEE Technical Committee on Real-Time Systems (TCRTS).

2020–21 Chair of Diversity sub-committee of the IEEE Technical Committee on Real-Time Systems (TCRTS).

Project reviewer

2024 Agence Nationale de la Recherche (ANR), France

2023 Austrian Science Fund (FWF), Natural Sciences and Engineering

2022 Dutch Research Council (NWO), Applied and Engineering Sciences

2016 Israeli Science Foundation, Exact Sciences and Technology, Individual Research Grants

2013 Italian Ministry of University and Research, call "Futuro in Ricerca"

2011 European Commission, FP7 framework program, call ICT Future Emerging Technologies (FET)

Editorial service

2024–present Associate Editor for ACM Computing Surveys. ISSN: 0360-0300

2022 Guest Editor (together with Tam Chantem, Daniel Mossé, Bruce Childers) for Special Issue on Real-Time Systems on IEEE Transactions on Computers. ISSN: 0018-9340

2021–present Associate Editor for IEEE Transactions on Computers. ISSN: 0018-9340

2020–present Associate Editor for Springer's Real-Time Systems journal. Electronic ISSN: 1573-1383. Print ISSN: 0922-6443.

2019 Associate Editor of contributed papers for the 27th Mediterranean Conference on Control and Automation (MED) 2019.

2019 Guest Editor of Springer's Real-Time Systems journal. Special Issue on Real-Time Networks and Systems. In Volume 55, Issue 2, March 2019.

2011 Guest Editor of ACM SIGBED Review, Volume 8, Issue 3, September 2011, special issue on Work-in-Progress (WiP) session of the 23rd Euromicro Conference on Real-Time Systems (ECRTS),

2011 Guest Editor of ACM SIGBED Review, Volume 8, Issue 1, March 2011, special issue on 3rd Workshop on Compositional Theory and Technology for Real-Time Embedded Systems (CRTS),

2008 Member of the Guest Editorial Board of the special issue on Power-Aware Computing of the International Journal of Embedded Systems.

Leadership in conferences

- Conferences ranked "GGS Class 1" by the GII-GRIN-SCIE Conference Rating
  1. Program Chair of the 42nd IEEE Real-Time Systems Symposium (RTSS), Dortmund, Germany, December 2021.
  2. Workshops chair of the 33rd IEEE Real-Time Systems Symposium (RTSS) 2012, San Juan, Puerto Rico.
  3. Workshops chair of the 32nd IEEE Real-Time Systems Symposium (RTSS) 2011, Vienna, Austria.
- Conferences ranked "GGS Class 2" by the GII-GRIN-SCIE Conference Rating
  1. Chair of the Track "Embedded Software" of the 58th Design Automation Conference, July 2020, San Francisco, USA.
  2. Program chair of the Work-in-Progress session of the 23rd Euromicro Conference on Real-Time Systems (ECRTS) 2011, Porto, Portugal.
  3. Local Organization co-Chair of the Embedded Systems Week 2018 (ESWeek 2018), Turin, Italy.
- Conferences ranked "GGS Class 3" by the GII-GRIN-SCIE Conference Rating
  1. Chair of the Track "Real-Time Systems" of the 26th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, August 2020, Gangneung, Korea.
  2. Local Topic Chair of EuroPar 2018, Turin, Italy. Topic: Scheduling and Load Balancing
  3. Publicity chair (Europe) of the 17th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA) 2011, Toyama, Japan.
- Conferences or events not ranked by the GII-GRIN-SCIE Conference Rating

1. Organizer and Program Chair of the Workshop on Optimization for Embedded and Real-time systems (OPERA 2023), Taipei, Taiwan, December 2023.
2. Program co-Chair of the 25th International Conference on Real-Time Networks and Systems (RTNS 2017), Grenoble, France, October 2017.
3. Program co-chair of the 3rd Workshop on Compositional Theory and Technology for Real-Time Embedded Systems (CRTS), San Diego, CA, USA, 2010
4. Co-organizer of the Dagstuhl Seminar on Analysis, Design, and Control of Predictable Interconnected Systems, March 2019, Leibniz-Zentrum für Informatik, Germany.
5. Organizer and Program co-Chair of the 2nd Tutorial on Tools for Real-Time Systems (TuToR 2017) held during RTSS 2017, Paris, France.
6. Organizer and Program co-Chair of the 1st Tutorial on Tools for Real-Time Systems (TuToR 2016) held during CPSWeek 2016, Vienna, Austria.
7. Organizer and Program co-Chair of the Workshop on Real-Time Scheduling in the Linux Kernel (RTS-LIKE), June 2014, Pisa.
8. Program chair of the Workshop on Computation and Control (COMCO) held during CPSWeek 2013, Philadelphia, PA, USA.
9. Organizer of the Workshop on Emerging Problems in Real-Time Embedded Systems (EPRES), Pisa, Italy, July 2012.
10. Organizer of the Workshop on multicores: theory and practice, Kaiserslautern, Germany, October 2008, organized within the EU research project ACTORS.

Invitation in PhD committees abroad

Jul 2024 Member of the examination committee of Jacob Higgins's PhD defence. Title of the dissertation: "Occlusion-Aware Navigation of Autonomous Mobile Robots in Unknown, Unstructured and Dynamic Environments". Supervisor: Nicola Bezzo, The University of Virginia, Charlottesville, VA, USA.

Jun 2020 Opponent of Filip Marković's PhD defence. Title of the dissertation: "Preemption-Delay Aware Schedulability Analysis of Real-Time Systems". Supervisor: Jan Carlson, Mälardalen University, Västerås, Sweden.

Nov 2019 Member of the examination committee of Simin Cai's PhD defence. Title of the dissertation: "Systematic Design and Analysis of Customized Data Management for Real-Time Database Systems". Supervisor: Cristina Seceleanu, Mälardalen University, Västerås, Sweden.

Oct 2018 Member of the examination committee of Barbara Franci's PhD defence. Title of the dissertation: "Network Cooperative Models". Supervisor: Fabio Fagnani, Politecnico di Torino, Italy

Oct 2018 Member of the examination committee of Lorenzo Zino's PhD defence. Title of the dissertation: "Diffusion Processes on Networks". Supervisor: Fabio Fagnani, Politecnico di Torino, Italy

May 2018 Member of the examination committee of Javed Iqbal's PhD defence. Title of the dissertation: "Contactless Indoor Human Localization and Identification using capacitive Sensors for Smart Home Applications". Supervisor: Luciano Lavagno, Politecnico di Torino, Italy

Dec 2017 Member of the examination committee of Matthias Becker's PhD defence. Title of the dissertation: "Consolidating Automotive Real-Time Applications on Many-Core Platforms". Supervisor: Thomas Nolte, Mälardalen University, Västerås, Sweden.

Dec 2017 Opponent of Sara Afshar's PhD defence. Title of the dissertation: "Lock-Based Resource Sharing for Real-Time Multi-Processors". Supervisor: Moris Behnam, Mälardalen University, Västerås, Sweden.

Sep 2015 Member of the examination committee of Thomasz Kloda's PhD defence. Title of the dissertation: "Conditions d'ordonnanąbilité pour un langage dirigé par le temps". Supervisor: Bruno d'Ausbourg. Université de Toulouse, France.

Dec 2014 Member of the examination committee of Rafia Inam's PhD defence. Title of the dissertation: "Hierarchical scheduling in component based and multicore systems". Supervisor: Mikael Sjödin, Mälardalen University, Västerås, Sweden.

Apr 2014 Member of the examination committee of Martin Stigge's PhD defence. Title of the dissertation: "Real-Time Workload Models: Expressiveness vs. Analysis Efficiency". Supervisor: Wang Yi, Department of Information Technology, Uppsala Universitet, Sweden.

Mar 2013 Opponent of Martin Korsgaard's PhD defence. Title of the dissertation: "Process-Oriented Real-time Programming". Supervisor: Sverre Hendseth, Department of Engineering Cybernetics, Faculty of Information Technology, Mathematics and Electrical Engineering, Norwegian University of Science and Technology, Trondheim, Norway.

Oct 2012 Reviewer of Jan Kelbel's PhD thesis. Title of the dissertation: "Scheduling in manufacturing systems". Supervisor: Zdeněk Hanzélek, Dep. Control Engineering, Faculty of Electrical Engineering, Czech Technical University, Prague, Czech Republic.

Jun 2012 Opponent of Yue Lu's PhD defence. Title of the dissertation: "Pragmatic Approaches for Timing Analysis of Real-Time Embedded Systems". Supervisor: Thomas Nolte, Mälardalen University, Västerås, Sweden.

Program committees of conferences

Also, Enrico was invited in the Technical Program Committee (TPC) of 85 conferences and workshops. Listing below only 60 participations in conferences TPC, sorted according to the GII-GRIN-SCIE (GGS) Conference Rating

RTSS (GGS rating: A+) IEEE Real-Time Systems Symposium: 2023, 2022, 2019, 2018, 2017, 2015, 2014, 2010;

EMSOFT (GGS rating: A) ACM International Conference on Embedded Software: 2024, 2021, 2020, 2019, 2017, 2016, 2011;

RTAS (GGS rating: A) IEEE Real-Time and Embedded Technology and Applications Symposium: 2025, 2022, 2021, 2020, 2016, 2015, 2013, 2011, 2010, 2009;

ECRTS (GGS rating: A) Euromicro Conference on Real-Time Systems: 2024, 2023, 2021, 2012, 2011, 2010;

RTCSA (GGS rating: B) IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, Real-Time Systems track: 2024, 2023, 2019, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2007;

RTNS (not rated by GGS) International Conference on Real-Time and Network Systems: 2024, 2023, 2022, 2021, 2020, 2019, 2018, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007;

Reviewing work

He has served the research community by reviewing papers submitted to the following journals (grouped by publishers):

IEEE Transactions on Computers; Transactions on Automatic Control; Transactions on Control Systems Technology; Access; Transactions on Parallel and Distributed Systems; Transactions on Industrial Informatics; Transaction on Computer-Aided Design; Computer; Transactions on Software Engineering; Transactions on Robotics;

ACM Transaction on Embedded Computing Systems;

Springer Algorithmica; Journal of Scheduling; Cluster Computing; Real-Time Systems; Journal of Computer Science and Technology;

Elsevier Journal of Logical and Algebraic Methods in Programming; Automatica; Advances in Space Research; Systems & Control Letters; Information Processing Letters; Journal of Systems Architecture; Journal of Systems and Software; Life Sciences in Space Research; Sustainable Computing, Informatics and Systems;

Oxford Journals The Computer Journal, IMA Journal of Mathematical Control and Information.

Patents

- Marco Di Natale, Enrico Bini, Alessandro Druetto, Andrea Grosso, Silvio Bacci. "Software optimization method and device for NUMA architecture". Patent n. WO2023227187A1. Filing date: 2022.05.23.
- Johan Eker, Bengt Lindoff, Victor Millnert, Enrico Bini. "Interconnected Hardware Infrastructure Resource Control". Patent n. US20170250923. Filing date: 2016.07.07.

Publications

Publications in numbers Enrico published 107 papers: 32 on journals, 57 on conference proceedings, and 18 to minor events (workshops, work-in-progress sessions, etc.)

According to the Scimago Journal Rank (SJR), the 32 journal papers are classified in the following quartiles:

Q1 total of 16 papers: 1 Elsevier Journal of Systems Architecture, 1 Elsevier Journal of Systems and Software, 1 Elsevier Robotics and Autonomous Systems, 7 IEEE Transactions on Computers, 1 Elsevier Automatica, 2 IEEE Transactions on Industrial Informatics, 1 IEEE Transactions on Automatic Control, 1 IEEE Micro, 1 Springer Real-Time Systems;

Q2 total of 10 papers: 1 ACM Transactions on Embedded Computing Systems, 1 Springer Annals of Telecommunications, 7 Springer Real-Time Systems, 1 IEEE Transactions on Industrial Informatics;

Q3 total of 4 papers: 1 Springer Real-Time Systems, 1 ACM Transactions on Embedded Computing Systems, 1 Elsevier Journal of Systems Architecture, 1 Elsevier-ENTCS

Q4 total of 2 papers: 1 International Journal of Embedded Systems, 1 Journal of Embedded Computing.

In addition, he published 57 papers on conference proceedings. The publications on conference proceedings are classified according to the recent ranking by the GII-GRIN-SCIE:

- rated A+, "excellent, top notch conferences": 10 RTSS,
- rated A, "very good events": total of 22 papers: 11 ECRTS, 2 IPDPS, 3 DATE, 1 ICC, 3 RTAS, 2 CDC,
- rated A-, "very good events": 1 GLOBECOM, 1 CDC,
- rated B, "events of good quality": total of 7 papers: 5 RTCSA, 2 ETFA,
- rated B-, "events of good quality": 1 ECC,
- conference not rated by GII-GRIN-SCIE: 15 papers,

source	citations (inc. self-cit.)	H-index (inc. self-cit.)	citations (no self-cit. by any au.)	H-index (no self-cit. by any au.)
Google Scholar	5761	38	n/a	n/a
Scopus	3014	24	2574	24

Table 1: Summary of citations. (checked on 2024-09-03)

The number of my co-authors is 80, belonging to 33 different institutions in 15 countries.

The citations collected by these papers are reported in Table 1. In the columns we report the total number of citations and the H-index, with and without self-citations by any author, respectively. The first row reports the data extracted from Google Scholar, while the second one reports the data from Scopus. The ten most cited papers are: [J14], [C33], [J15], [J16], [C32], [J26], [C34], [J32], [C6], and [C31].

Journal papers: Q1

[J1]. Enrico Bini, Paolo Pazzaglia, Martina Maggio. "Zero-Jitter Chains of Periodic LET Tasks via Algebraic Rings", *IEEE Transactions on Computers* 72(11): 3057–3071, November 2023.
DOI: 10.1109/TC.2023.3283707

[J2]. Luca Abeni, Alessandro Biondi, Enrico Bini. "Partitioning real-time workloads on multi-core virtual machines", *Journal of Systems Architecture* Volume 131, October 2022.
DOI: 10.1016/j.sysarc.2022.102733

[J3]. Artem Burmyakov, Enrico Bini, Chang-Gun Lee. "Towards a Tractable Exact Test for Global Multiprocessor Fixed Priority Scheduling", *IEEE Transactions on Computers* 71(11): 2955–2967, January 2022.
DOI: 10.1109/TC.2022.3142540

[J4]. Luca Abeni, Alessandro Biondi, Enrico Bini. "Hierarchical scheduling of real-time tasks over Linux-based virtual machines", *Journal of Systems and Software* 149: 234–249, March 2019.
DOI: 10.1016/j.jss.2018.12.008

[J5]. Carmelo Di Franco, Mauro Marinoni, Enrico Bini, Giorgio C. Buttazzo. "Dynamic Multidimensional Scaling with anchors and height constraints for indoor localization of mobile nodes", *Robotics and Autonomous Systems* 108: 28–37, October 2018.
DOI: 10.1016/j.robot.2018.06.015

[J6]. Amir Aminifar, Enrico Bini, Petru Eles, Zebo Peng. "Analysis and Design of Real-Time Servers for Control Applications", *IEEE Transactions on Computers* 65(3): 834–846, March 2016.
DOI: 10.1109/TC.2015.2435789

[J7]. Georgios Chasparis, Martina Maggio, Enrico Bini, Karl-Erik Årzén. "Design and implementation of distributed resource management for time-sensitive applications", *Automatica* 64:44–53, February 2016.
DOI: 10.1016/j.automatica.2015.09.015

[J8]. Lucia Lo Bello, Enrico Bini, Gaetano Patti. "Priority-driven Swapping-based Scheduling of Aperiodic Real-Time Messages over EtherCAT Networks", *IEEE Transactions on Industrial Informatics* 11(3):741–751, June 2015.
DOI: 10.1109/TII.2014.2350832

[J9]. Enrico Bini. "The Quadratic Utilization Upper Bound for Arbitrary Deadline Real-Time Tasks" *IEEE Transactions on Computers*, 64(2):593–599, February 2015.
DOI: 10.1109/TC.2013.209

[J10]. Enrico Bini and Giuseppe Buttazzo. "The Optimal Sampling Pattern for Linear Control Systems" *IEEE Transactions on Automatic Control* 59(1):79–90, January 2014.
DOI: 10.1109/TAC.2013.2279913

[J11]. Enrico Bini, Giorgio Buttazzo, Johan Eker, Stefan Schorr, Raphael Guerra, Gerhard Fohler, Karl-Erik Årzén, Vanessa Romero, Claudio Scordino. "Resource Management on Multi-core Systems: the ACTORS approach" *IEEE Micro* 31(3):72–81, May–June 2011.
DOI: 10.1109/MM.2011.1

[J12]. Giorgio Buttazzo, Enrico Bini, Yifan Wu. "Partitioning real-time applications over multi-core reservations" *IEEE Transactions of Industrial Informatics* 7(2):302–315, May 2011.
DOI: 10.1109/TII.2011.2123902

[J13]. Enrico Bini, Thi Huyen Châu Nguyen, Pascal Richard, and Sanjoy Baruah. "A response time bound in fixed-priority scheduling with arbitrary deadlines" *IEEE Transactions on Computers*, 58(2):279–286, February 2009.
DOI: 10.1109/TC.2008.167
(11th most cited among the 138 papers appeared in IEEE TC 2009)

[J14]. Enrico Bini and Giorgio C. Buttazzo. "Measuring the performance of schedulability tests" *Real-Time Systems*, 30(1–2):129–154, May 2005.
DOI: 10.1007/s11241-005-0507-9
(**2nd most cited** among the 822 papers ever appeared in RTS since 1989)

[J15]. Enrico Bini and Giorgio C. Buttazzo. "Schedulability analysis of periodic fixed priority systems" *IEEE Transactions on Computers*, 53(11):1462–1473, November 2004.
DOI: 10.1109/TC.2004.103
(9th most cited among the 140 papers appeared in IEEE TC 2004)

[J16]. Enrico Bini, Giorgio C. Buttazzo, and Giuseppe M. Buttazzo. "Rate monotonic scheduling: The hyperbolic bound" *IEEE Transactions on Computers*, 52(7):933–942, July 2003.
DOI: 10.1109/TC.2003.1214341
(13th most cited among the 150 papers appeared in IEEE TC 2003)

Journal papers: Q2

[J17]. Alessandro Vittorio Papadopoulos, Kunal Agrawal, Enrico Bini, Sanjoy Baruah. "Feedback-based resource management for multi-threaded applications", *Real-Time Systems* 2022.
DOI: 10.1007/s11241-022-09386-7

[J18]. Victor Millnert, Enrico Bini, Johan Eker. "AutoSAC: automatic scaling and admission control of forwarding graphs", *Annals of Telecommunications* 73(3-4):193-204, April 2018.
DOI: 10.1007/s12243-017-0597-0

[J19]. Alessandro Vittorio Papadopoulos, Martina Maggio, Alberto Leva, Enrico Bini. "Hard Real-Time Guarantees in Feedback-based Resource Reservations", *Real-Time Systems* 51(3):221–246, June 2015.
DOI: 10.1007/s11241-015-9224-1

[J20]. Artem Burmyakov, Enrico Bini, Eduardo Tovar. "Compositional Multiprocessor Scheduling: the GMPR interface" *Real-Time Systems*, 50(3):342–376, May 2014.
DOI: 10.1007/s11241-013-9199-8

[J21]. Rodrigo Santos, Giuseppe Lipari, Enrico Bini and Tommaso Cucinotta. "On-line schedulability tests for adaptive reservations in fixed priority scheduling" *Real-Time Systems* 48(5):601–634, September 2012.
DOI: 10.1007/s11241-012-9156-y

[J22]. Yifan Wu, Giorgio Buttazzo, Enrico Bini, and Anton Cervin. "Parameter Selection for Real-time Controllers in Resource-Constrained Systems" *IEEE Transactions on Industrial Informatics* 6(4):610–620, November 2010.
DOI: 10.1109/TII.2010.2053378

[J23]. Thi Huyen Châu Nguyen, Pascal Richard, and Enrico Bini. "Approximation techniques for response-time analysis of static-priority tasks" *Real-Time Systems*, 43(2):147–176, October 2009.
DOI: 10.1007/s11241-009-9078-5

[J24]. Enrico Bini, Giorgio Buttazzo, and Giuseppe Lipari. "Minimizing CPU Energy in Real-Time Systems with Discrete Speed Management" *ACM Transactions on Embedded Computing Systems*, 8(4), July 2009.
DOI: 10.1145/1550987.1550994

[J25]. Enrico Bini and Giorgio C. Buttazzo. "The space of EDF deadlines: the exact region and a convex approximation" *Real-Time Systems*, 41(1):27–51, January 2009.
DOI: 10.1007/s11241-008-9060-7

[J26]. Enrico Bini, Marco Di Natale, and Giorgio C. Buttazzo. "Sensitivity analysis for fixed-priority real-time systems" *Real-Time Systems*, 39(1–3):5–30, August 2008.
DOI: 10.1007/s11241-006-9010-1

Journal papers: Q3

[J27]. Martina Maggio, Juri Lelli, Enrico Bini. "`rt-muse`: Measuring Real-Time Characteristics of Execution Platforms", *Real-Time Systems* 53(6):857–885, November 2017.
DOI: 10.1007/s11241-017-9284-5

[J28]. Victor Millnert, Johan Eker, Enrico Bini. "Feedback for increased robustness of forwarding graphs in the cloud", *Journal of Systems Architecture* 80:68–76, October 2017.
DOI: 10.1016/j.sysarc.2017.09.005

[J29]. Giulio M. Mancuso, Enrico Bini, Gabriele Pannocchia. "Optimal Priority Assignment to Control Tasks", *ACM Transactions in Embedded Computing Systems* 13(5s), September 2014.
DOI: 10.1145/2660496

[J30]. Giuseppe Lipari, Enrico Bini, and Gerhard Fohler. "A framework for composing real-time schedulers" *Electronic Notes in Theoretical Computer Science*, 82(6), April 2003.
DOI: 10.1016/S1571-0661(04)81032-6

Journal papers: Q4

[J31]. Enrico Bini and Claudio Scordino. "Optimal two-level speed assignment for real-time systems" *International Journal of Embedded Systems*, 4(2):101–111, July 2009.
DOI: 10.1504/IJES.2009.027935

[J32]. Giuseppe Lipari and Enrico Bini. "A methodology for designing hierarchical scheduling systems" *Journal of Embedded Computing*, 1(2):257–269, 2005.

Conference papers: conferences rated A+

[C1]. Giorgio Audrito, Ferruccio Damiani, Mirko Viroli, Enrico Bini. "Distributed Real-Time Shortest-Paths Computations with the Field Calculus", *Proceedings of the 39th IEEE Real-Time Systems Symposium*, Nashville, USA, December 2018. (acceptance 22.3%)
DOI: 10.1109/RTSS.2018.00013

[C2]. Enrico Bini, Andrea Parri, Giacomo Dossena. "A Quadratic-Time Response Time Upper Bound with a Tightness Property", *Proceedings of the 36th IEEE Real-Time Systems Symposium*, San Antonio, TX, USA, December 2015. (acceptance 22.5%)
DOI: 10.1109/RTSS.2015.9

[C3]. Amir Aminifar, Enrico Bini, Petru Eles, Zebo Peng. "Designing Bandwidth-Efficient Stabilizing Control Servers" *Proceedings of the 34th IEEE Real-Time Systems Symposium*, Vancouver, Canada, December 2013. (acceptance 22%)
DOI: 10.1109/RTSS.2013.37

[C4]. Giuseppe Lipari, Enrico Bini. "A framework for hierarchical scheduling on multiprocessors: from application requirements to run-time allocation" *Proceedings of the 31st IEEE Real-Time Systems Symposium*, San Diego, CA, USA, December 2010. (acceptance 25.4%)
DOI: 10.1109/RTSS.2010.12

[C5]. Enrico Bini, Marko Bertogna, Sanjoy Baruah. "Virtual Multiprocessor Platforms: Specification and Use" *Proceedings of the 30th IEEE Real-Time Systems Symposium*, Washington, DC, USA, December 2009. (acceptance 22.3%)
DOI: 10.1109/RTSS.2009.35

[C6]. Enrico Bini and Anton Cervin. "Delay-aware period assignment in control systems" *Proceedings of the 29th IEEE Real-Time Systems Symposium*, Barcelona, Spain, December 2008. (acceptance 23.2%)
DOI: 10.1109/RTSS.2008.45
(**most cited** paper among the 47 appeared at RTSS 2008)

[C7]. Manel Velasco, Pau Martí, and Enrico Bini. "Control-driven tasks: Modeling and analysis" *Proceedings of the 29th IEEE Real-Time Systems Symposium*, Barcelona, Spain, December 2008. (acceptance 23.2%)
DOI: 10.1109/RTSS.2008.29

[C8]. Giorgio C. Buttazzo and Enrico Bini. "Optimal dimensioning of a constant bandwidth server" *Proceedings of the 27th IEEE Real-Time Systems Symposium*, Rio de Janeiro, Brazil, December 2006. (acceptance 24.2%)
DOI: 10.1109/RTSS.2006.31

[C9]. Enrico Bini and Marco Di Natale. "Optimal task rate selection in fixed priority systems" *Proceedings of the 26th IEEE Real-Time Systems Symposium*, Miami, FL, USA, December 2005. (acceptance 21.0%)
DOI: 10.1109/RTSS.2005.32

[C10]. Enrico Bini and Giorgio C. Buttazzo. "The space of rate monotonic schedulability" *Proceedings of the 23rd IEEE Real-Time Systems Symposium*, Austin, TX, USA, December 2002.
DOI: 10.1109/REAL.2002.1181572

Conference papers: conferences rated A

[C11]. Michele Castrovilli, Enrico Bini. "SlackCheck: A Linux Kernel Module to Verify Temporal Properties of a Task Schedule" *Proceedings of the 36th Euromicro Conference on Real-Time Systems (ECRTS)*, Lille, France, July 2024.
DOI: 10.4230/LIPIcs.ECRTS.2024.2

[C12]. Francesco Paladino, Alessandro Biondi, Enrico Bini, Paolo Pazzaglia. "Optimizing Per-Core Priorities to Minimize End-To-End Latencies" *Proceedings of the 36th Euromicro Conference on Real-Time Systems (ECRTS)*, Lille, France, July 2024.
DOI: 10.4230/LIPIcs.ECRTS.2024.6

[C13]. Victor Millnert, Johan Eker, Enrico Bini. "End-to-end deadlines over dynamic topologies" *Proceedings of the 31st Euromicro Conference on Real-Time Systems (ECRTS)*, Stuttgart, Germany, July 2019.
DOI: 10.4230/LIPIcs.ECRTS.2019.10

[C14]. Alessandro Vittorio Papadopoulos, Enrico Bini, Sanjoy Baruah, Alan Burns. "AdaptMC: A control-theoretic approach for achieving resilience in mixed-criticality systems" *Proceedings of the 30th Euromicro Conference on Real-Time Systems (ECRTS)*, Barcelona, Spain, July 2018.
DOI: 10.4230/LIPIcs.ECRTS.2018.14

[C15]. Victor Millnert, Johan Eker, Enrico Bini "Dynamic control of NFV forwarding graphs with end-to-end deadline constraints" *Proceedings of the IEEE International Conference on Communications (ICC)*, Paris, France, May 2017. (acceptance 38%)
DOI: 10.1109/ICC.2017.7996596
(**best paper award** for the Selected Areas in Communication Symposium — Cloud Communications and Networking Track)

[C16]. Amir Aminifar, Enrico Bini. "Anomalies in Scheduling Control Applications and Design Complexity" *Design, Automation and Test in Europe (DATE)*, Lausanne, Switzerland, March 2017.
DOI: 10.23919/DATE.2017.7927247

[C17]. Amir Aminifar, Enrico Bini, Petru Eles, Zebo Peng. "Bandwidth-Efficient Controller-Server Co-Design with Stability Guarantees" *Design, Automation and Test in Europe (DATE) Conference*, Dresden, Germany, March 2014.
DOI: 10.7873/DATE2014.068

[C18]. Giorgio C. Buttazzo, Enrico Bini, Darren Buttle. "Rate-Adaptive Tasks: Model, Analysis, and Design Issues" *Design, Automation and Test in Europe (DATE) Conference*, Dresden, Germany, March 2014.
DOI: 10.7873/DATE2014.266

[C19]. Martina Maggio, Enrico Bini, Georgios C. Chasparis, Karl-Erik Årzén. "A Game-Theoretic Resource Manager for RT Applications" *Proceedings of the 25th Euromicro Conference on Real-Time Systems (ECRTS)*, Paris, France, July 2013. (acceptance 27.3%)
DOI: 10.1109/ECRTS.2013.17

[C20]. Manel Velasco, Pau Martí, José Yépez, Francisco J. Ruiz, Josep M. Fuertes and Enrico Bini. "Qualitative Analysis of a One-step Finite-Horizon Boundary for Event-driven Controllers" *Proceedings of the 50th IEEE Conference on Decision and Control (CDC)*, Orlando, FL, USA, December 2011.
DOI: 10.1109/CDC.2011.6161106

[C21]. Luca Santinelli, Giorgio Buttazzo, Enrico Bini. "Multi-Moded Resource Reservations" *Proceedings of the 17th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, Chicago, IL, USA, April, 2011.
DOI: 10.1109/RTAS.2011.12

[C22]. Nicola Serreli, Giuseppe Lipari, Enrico Bini. "The Demand Bound Function Interface of Distributed Sporadic Pipelines of Tasks Scheduled by EDF" *Proceedings of the 22nd Euromicro Conference on Real-Time Systems (ECRTS)*, Bruxelles, Belgium, July 2010.
DOI: 10.1109/ECRTS.2010.17

[C23]. Giorgio Buttazzo, Enrico Bini, Yifan Wu. "Partitioning parallel applications on multiprocessor reservations". *Proceedings of the 22nd Euromicro Conference on Real-Time Systems (ECRTS)*, Bruxelles, Belgium, July 2010.
DOI: 10.1109/ECRTS.2010.12

[C24]. Manel Velasco, Pau Martí, Enrico Bini. "On Lyapunov Sampling for Event-driven Controllers", *Proceedings of the 48th IEEE Conference on Decision and Control (CDC)*, Shanghai, China, December 2009.
DOI: 10.1109/CDC.2009.5400541
(14th most cited paper among 1428 appeared at CDC 2009)

[C25]. Rodrigo Santos, Giuseppe Lipari, and Enrico Bini. "Efficient on-line schedulability test for feedback scheduling of soft real-time tasks under fixed-priority" *Proceedings of the 14th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, St. Louis, MO, USA, April 2008.
DOI: 10.1109/RTAS.2008.26

[C26]. Enrico Bini and Giorgio C. Buttazzo. "The space of EDF feasible deadlines" *Proceedings of the 19th Euromicro Conference on Real-Time Systems (ECRTS)*, Pisa, Italy, July 2007.
DOI: 10.1109/ECRTS.2007.35

[C27]. Marco Di Natale and Enrico Bini. "Optimizing the FPGA implementation of HRT systems" *Proceedings of the 13th IEEE Real Time and Embedded Technology and Applications Symposium (RTAS)*, Bellevue, WA, USA, April 2007.
DOI: 10.1109/RTAS.2007.25

[C28]. Michele Cirinei, Enrico Bini, Giuseppe Lipari, and Alberto Ferrari. "A flexible scheme for scheduling fault-tolerant real-time tasks on multiprocessors" *Proceedings of the 21th IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, Long Beach, CA, USA, March 2007.
DOI: 10.1109/IPDPS.2007.370342

[C29]. Enrico Bini, Marco Di Natale, and Giorgio C. Buttazzo. "Sensitivity analysis for fixed-priority real-time systems" *Proceedings of the 18th Euromicro Conference on Real-Time Systems (ECRTS)*, Dresden, Germany, July 2006. (acceptance 25.2%)
DOI: 10.1109/ECRTS.2006.26
(**most cited** paper among the 27 appeared at ECRTS 2006)

[C30]. José L. Lorente, Giuseppe Lipari, and Enrico Bini. "A hierarchical scheduling model for component-based real-time systems" *Proceedings of the 20th IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, Rhodes Island, Greece, April 2006.
DOI: 10.1109/IPDPS.2006.1639405

[C31]. Enrico Bini, Giorgio C. Buttazzo, and Giuseppe Lipari. "Speed modulation in energy-aware real-time systems" *Proceedings of the 17th Euromicro Conference on Real-Time Systems (ECRTS)*, Palma de Mallorca, Spain, July 2005.
DOI: 10.1109/ECRTS.2005.29

[C32]. Enrico Bini and Giorgio C. Buttazzo. "Biasing effects in schedulability measures" *Proceedings of the 16th Euromicro Conference on Real-Time Systems (ECRTS)*, Catania, Italy, June 2004. (acceptance 25.2%)
DOI: 10.1109/EMRTS.2004.1311021
(**most cited** paper among the 27 appeared at ECRTS 2004)

[C33]. Giuseppe Lipari and Enrico Bini. "Resource partitioning among real-time applications" *Proceedings of the 15th Euromicro Conference on Real-Time Systems (ECRTS)*, Porto, Portugal, July 2003.
DOI: 10.1109/EMRTS.2003.1212738
(**most cited** paper among the 33 appeared in ECRTS 2003)

[C34]. Enrico Bini, Giorgio C. Buttazzo, and Giuseppe M. Buttazzo. "A hyperbolic bound for the rate monotonic algorithm" *Proceedings of the 13th Euromicro Conference on Real-Time Systems (ECRTS)*, Delft, The Nederlands, June 2001.
DOI: 10.1109/EMRTS.2001.934000
(3rd most cited paper among the 27 appeared at ECTRS 2001)

Conference papers: conferences rated A-

[C35]. Enrico Bini, Alessandro V. Papadopoulos, Jacob Higgins, Nicola Bezzo. "Optimal Reference Tracking for Sampled-Data Control Systems" *Proceedings of the 61st IEEE Conference on Decision and Control*, Cancun, Mexico, December 2022.
DOI: 10.1109/CDC51059.2022.9992462

[C36]. Victor Millnert, Johan Eker, Enrico Bini. "Achieving predictable and low end-to-end latency for a network of smart services" *Proceedings of the IEEE Global Communications Conference (GLOBECOM)*, Abu Dhabi, UAE, December 2018.
DOI: 10.1109/GLOCOM.2018.8647332

Conference papers: conferences rated B

[C37]. Enrico Bini. "Cutting the Unnecessary Deadlines in EDF" *Proceedings of the 25th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Hangzhou, China, August 2019.
DOI: 10.1109/RTCSA.2019.8864569
(**best paper nomination**)

[C38]. Martina Maggio, Juri Lelli, Enrico Bini. "A Tool for Measuring Supply Functions of Execution Platforms" *Proceedings of the 22nd IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Daegu, South Korea, August 2016.
DOI: 10.1109/RTCSA.2016.14
(**best paper award**)

[C39]. Yang Xu, Karl-Erik Årzén, Anton Cervin, Enrico Bini, Bogdan Tanasa, "Exploiting Job Response-Time Information in the Co-Design of Real-Time Control Systems", *Proceedings of the 21st IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Hong Kong, China, August, 2015.
DOI: 10.1109/RTCSA.2015.23

[C40]. Gaetano F. Anastasi, Enrico Bini, Antonio Romano, Giuseppe Lipari. "A Service-Oriented Architecture for QoS Configuration and Management of Wireless Sensor Networks". *Proceedings of the 15th IEEE International on Emerging Technologies and Factory Automation (ETFA)*, Bilbao, Spain, September 2010.
DOI: 10.1109/ETFA.2010.5641336

[C41]. Nicola Serreli, Giuseppe Lipari, Enrico Bini. "The Distributed Deadline Synchronization Protocol for Real-Time Systems Scheduled by EDF" *Proceedings of the 15th IEEE International on Emerging Technologies and Factory Automation (ETFA)*, Bilbao, Spain, September 2010.
DOI: 10.1109/ETFA.2010.5641357

[C42]. Enrico Bini, Giorgio C. Buttazzo, Marko Bertogna. "The Multi Supply Function Abstraction for Multiprocessors" *Proceedings of the 15th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Beijing, China, August 2009.
DOI: 10.1109/RTCSA.2009.39
(**best-paper award**)

[C43]. Yifan Wu, Enrico Bini, and Giorgio C. Buttazzo. "A framework for designing embedded real-time controllers", *Proceedings of the 14th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Kaohsiung, Taiwan, August 2008.
DOI: 10.1109/RTCSA.2008.22

Conference papers: conferences rated B-

[C44]. Manel Velasco, Pau Martí, Enrico Bini. "Equilibrium Sampling Interval Sequences for Event-driven Controllers" *Proceedings of the European Control Conference (ECC)*, Budapest, Hungary, August 2009.
DOI: 10.23919/ECC.2009.7074987

Conference papers: conferences not rated

[C45]. Jacob Higgins, Enrico Bini, Nicola Bezzo. "Offloaded Receding Horizon Planning for Environments with Variable Communication Delays", *Proceedings of the 6th Conference on Control Technology and Applications (CCTA)*, Trieste, Italy, August 2022.
DOI: 10.1109/CCTA49430.2022.9966022

[C46]. Yang Xu, Karl-Erik Årzén, Enrico Bini, Anton Cervin. "LQG-Based Control and Scheduling Co-Design", *Proceedings of the 19th World Congress of the International Federation of Automation Control (IFAC)*, Toulouse, France, July 2017.
DOI: 10.1016/j.ifacol.2017.08.1312

[C47]. Carmelo Di Franco, Enrico Bini, Mauro Marinoni, Giorgio C. Buttazzo. "Multidimensional Scaling Localization with Anchors", *Proceedings of the 17th International Conference on Autonomous Robot Systems and Competitions (ICARSC)*, Coimbra, Portugal, April 2017.
DOI: 10.1109/ICARSC.2017.7964051

[C48]. Enrico Bini. "Adaptive Fair Scheduler: Fairness in Presence of Disturbances" *Proceedings of the 24th International Conference on Real-Time and Network Systems*, Brest, France, October 2016.
DOI: 10.1145/2997465.2997468

[C49]. Artem Burmyakov, Enrico Bini, Eduardo Tovar. "An Exact Schedulability Test for Global FP Using State Space Pruning", *Proceedings of the 23rd International Conference on Real-Time Networks and Systems*, Lille, France, November 2015.
DOI: 10.1145/2834848.2834877

[C50]. Manel Velasco, Pau Martí, Enrico Bini. "Optimal-Sampling-inspired Self-Triggered Control", *Proceedings of the 1st IEEE International Conference on Event-Based Control, Communication, and Signal Processing*, Krakow, Poland, July 2015.
DOI: 10.1109/EBCCSP.2015.7300648

[C51]. Yang Xu, Karl-Erik Årzén, Enrico Bini, Anton Cervin. "Response Time Driven Design of Control Systems" *Proceedings of the 19th World Congress of the International Federation of Automation Control (IFAC)*, Cape Town, South Africa, August 2014.
DOI: 10.3182/20140824-6-ZA-1003.00289

[C52]. Georgios C. Chasparis, Martina Maggio, Karl-Erik Årzén, Enrico Bini. "Distributed Management of CPU Resources for Time-Sensitive Applications" *Proceedings of the American Control Conference*, Washington, DC, USA, June 2013.
DOI: 10.1109/ACC.2013.6580666

[C53]. Artem Burmyakov, Enrico Bini, Eduardo Tovar. "The Generalized Multiprocessor Periodic Resource Interface Model for Hierarchical Multiprocessor Scheduling" *Proceedings of the 20th International Conference on Real-Time and Network Systems*, Pont à Mousson, France, November 2012.
DOI: 10.1145/2392987.2393004

[C54]. Giulio M. Mancuso, Enrico Bini, Gabriele Pannocchia. "Optimal Computational Resource Allocation for Control Task under Fixed Priority Scheduling" *Proceedings of the The 18th World Congress of the International Federation of Automation Control*, Milano, Italy, August 2011.
DOI: 10.3182/20110828-6-IT-1002.01545

[C55]. Stefano Fontanelli, Enrico Bini, Paolo Santi. "Dynamic Route Planning in Vehicular Networks based on Future Travel Estimation" *Proceedings of the 2nd IEEE Vehicular Networking Conference*, Jersey City, NJ, USA, December 2010.
DOI: 10.1109/VNC.2010.5698247

[C56]. Enrico Bini. "Modeling Preemptive EDF and FP by Integer Variables". *Proceedings of the 4th Multidisciplinary International Scheduling Conference*, Dublin, Ireland, August 2009.

[C57]. Pau Martí, Manel Velasco, and Enrico Bini. "The Optimal Boundary and Regulator Design Problem for Event-Driven Controllers" *Proceedings of the 12th International Conference on Hybrid Systems: Computation and Control*, San Francisco, CA, April 2009.
DOI: 10.1007/978-3-642-00602-9_31

[C58]. Sanjoy Baruah and Enrico Bini. "Partitioned scheduling of sporadic task systems: an ILP-based approach" *Proceedings of the Conference on Design and Architectures for Signal and Image Processing*, Bruxelles, Belgium, November 2008.

[C59]. Thi Huyen Châu Nguyen, Pascal Richard, and Enrico Bini. "Improved approximate response time bounds for static-priority tasks" *Proceedings of the 16th International Conference on Real-Time and Network Systems*, Nantes, France, October 2008.

[C60]. Enrico Bini and Sanjoy K. Baruah. "Efficient computation of response time bounds under fixed-priority scheduling" *Proceedings of the 15th conference on Real-Time and Network Systems*, Nancy, France, March 2007.
(**best paper award**)

Workshop papers, minor events

[W1]. Michele Castrovilli, Enrico Bini. "Checking temporal constraints for any scheduling class", *6th Power Management and Scheduling in the Linux Kernel (OSPM)*, Toulouse, France, May 2024.

[W2]. Giuseppe Lipari and Enrico Bini. "On the Problem of Allocating Multicore Resources to Real-Time Task Pipelines", *4th Workshop on Compositional Theory and Technology for Real-Time Embedded Systems*, Vienna, Austria, November 2011.

[W3]. Enrico Bini. "Mapping real-time applications over multiprocessors" *10th Workshop on Models and Algorithms for Planning and Scheduling Problems*, Nymburk, Czech Republic, June 2011.

[W4]. Nicola Serreli, Giuseppe Lipari, Enrico Bini. "A tool for component-based schedulability analysis of distributed real-time pipelines" *3nd Workshop on Compositional Real-Time Systems*, San Diego, CA, USA, December, 2010.

[W5]. Enrico Bini, Marko Bertogna, Sanjoy K. Baruah. "The Parallel Supply Function Abstraction for a Virtual Multiprocessor" *Proceedings of Dagsthul Seminar on Scheduling*, Schloss Dagstuhl — Leibniz-Zentrum fuer Informatik, Germany, May 2010.

[W6]. Nicola Serreli, Giuseppe Lipari, Enrico Bini. "Deadline assignment for component-based analysis of real-time transactions" *2nd Workshop on Compositional Real-Time Systems*, DC, USA, December, 2009.

[W7]. Antonio Camacho, Pau Martí, Manel Velasco, and Enrico Bini, "Implementation of Self-triggered Controllers" *15th IEEE Real-Time and Embedded Technology and Applications Symposium (demo session)*, San Francisco, CA, April 2009.

[W8]. Claudio Scordino and Enrico Bini. "Optimal speed assignment for probabilistic execution times" *2nd Workshop on Power-Aware Real-Time Computing*, Jersey City, NJ, USA, September 2005.

[W9]. Cesare Bartolini, Enrico Bini, and Giuseppe Lipari. "Slack-based sensitivity analysis for EDF" *14th IEEE Real-Time and Embedded Technology and Applications Symposium, Work-in-Progress session*, St. Louis, MO, USA, April 2008.

[W10]. Enrico Bini. "Uniprocessor EDF feasibility is an integer problem" *Proceedings of Dagsthul Seminar on Scheduling*, Schloss Dagstuhl — Leibniz-Zentrum fuer Informatik, Germany, February 2008.

[W11]. Sanjoy Baruah, Enrico Bini, Thi Huyen Châu Nguyen, and Pascal Richard. "Continuity and approximability of response time bounds" *19th Euromicro Conference on Real-Time Systems, Work-in-Progress session*, Pisa, Italy, July 2007.

[W12]. Enrico Bini, Marco Di Natale, and Luigi Palopoli. "Optimizing application performance by rate selection in fixed-priority RT systems" *IEEE Real-Time and Embedded Technology and Applications Symposium, Work-in-Progress session*, Toronto, Canada, May 2004.

[W13]. Paolo Gai, Enrico Bini, Giuseppe Lipari, Marco Di Natale, and Luca Abeni. Architecture for a portable open source real-time kernel environment. In *Proceedings of the 2-nd Real-Time Linux Workshop*, Orlando, FL, USA, November 2000.

[W14]. Tullio Facchinetti, Enrico Bini, Marko Bertogna. "Reducing the Peak Power through Real-Time Scheduling Techniques in Cyber-Physical Energy Systems" *First International Workshop on Energy Aware Design and Analysis of Cyber Physical Systems*, Stockholm, April, 2010.

[W15]. Enrico Bini, Giuseppe Lipari, and Carlo Vitucci. "Modeling event-driven real-time applications using DAGs" *22nd IEEE Real-Time Systems Symposium, Work-in-Progress session*, London, UK, December 2001.

[W16]. Enrico Bini, Marco Di Natale. "Optimal Period Selection of a Real-Time Task Set" *Workshop on Combinatorial Optimization for Embedded System Design*, Bologna, Italy, June 2010.

[W17]. Giorgio Buttazzo, Enrico Bini, Yifan Wu. "Heuristics for Partitioning Parallel Applications on Virtual Multiprocessors" *Workshop on Adaptive Resource Management*, Stockholm, April, 2010.

[W18]. Enrico Bini, Giorgio Buttazzo, Yifan Wu. "Selecting the minimum consumed bandwidth of an EDF task set" *2nd Workshop on Compositional Real-Time Systems*, Washington, DC, USA, December, 2009.

[W19]. Enrico Bini. "Minimizing end-to-end response time in transactions", *Proceedings of the 1-st Workshop on Compositional Real-Time Systems*, Barcelona, Spain, November 2008.

Relevant institutional services

2022–today Leading University of Turin within the CINI Laboratory on Embedded Systems & Smart Manufacturing

2023–today Erasmus+ Coordinator at the Computer Science department, University of Turin, Italy

2018–today Member of department committee for allocating spaces, Computer Science department, University of Turin, Italy.

2020–21 President of the department committee for allocating spaces, Computer Science department, University of Turin, Italy.

2016–today Member of the PhD board of the Computer Science department, University of Turin, Italy.

2020–21 Elected representative of associate professors in the department board ("Giunta di Dipatimento"), University of Turin, Italy.

2016–2018 Elected member of the board for planning teaching appointments, Computer Science department, University of Turin, Italy.

2012–16 Member of the PhD board of the TeCIP department, Scuola Superiore Sant'Anna, Pisa, Italy.

2011–14 Elected representative of the researchers in the Ethical Committee of the Scuola Superiore Sant'Anna;

2002 Elected representative of the PhD students in the highest board of the Scuola Superiore Sant'Anna ("Consiglio Direttivo");

1998 Elected representative of the undergraduate students in the highest board of the Scuola Superiore Sant'Anna ("Consiglio Direttivo").

Volunteering

2019–today (Associazione ASAI) Teaching support to high school students from Turin suburbs.

2006–2007 (Associazione Dialogo) Teaching basics of office software, computer architecture and networking to inmates in Porto Azzurro prison.

2015 ("Programma il futuro", initiative by the Italian ministry) Teacher of basic principles of programming for primary school pupils.