CRISTIAN SECCHI

CURRICULUM VITAE

February 16, 2025

Professor of Robotics
Department of Sciences and Methods of Engineering
University of Modena and Reggio Emilia
via G. Amendola 2, 4122, Reggio Emilia
Phone: +39 0522 522235
Mobile: +39 3280462016
Fax: +39 0522 522606
Email: cristian.secchi@unimore.it

Biosketch

Cristian Secchi was born in Montecchio Emilia (RE) on February 4th, 1975. He graduated in Computer Science (with majors in Robotics and Automation) from the University of Bologna in 2000 and he received a Ph.D. in Information Engineering from the University of Modena and Reggio Emilia in 2004. He has been appointed as a Reasearch Associated in 2005, as Associate Professor in 2014 and as Full Professor in Robotics in 2019 at the University of Modena and Reggio Emlia. Currently he is the Chair of the Laurea Degree in Technologies for Smart Industries and he is the vice-president of the Council of the School of Engineering of the University of Modena and Reggio Emilia. His main research interests are related to

- **Robotic systems for the interaction with humans.** Design and implementation robotic systems capable of safely and effectively moving and interacting with the environment and with human operators. Teleoperation and shared control architectures, medical robotics, physical human robot interaction, collaborative robotics, multi-robot systems.
- **Advanced control design and applications.** Nonlinear automatic control strategies for the regulation of robotic system and automatic machines. Energy based control and energy based strategies for modeling physical systems (e.g. port-Hamiltonian systems).

He is author or co-author of more than 300 scientific articles published on conference proceedings and on international journals. He is author of one book on energy based control for interactive robotic system and he contributed to nine books on robotics and automation. He is inventor of three international patents, two on robotics and the other on automatic machines. In 2006 his Ph.D. thesis on interactive robotic interfaces has been selected as one of the three finalists for the Euron Georges Giralt PhD Award for the best PhD thesis on robotics in Europe. In terms of bibliometric indexes, On February 16, 2025, Google Scholar reports 10170 citations (5684 since 2020), with indices h=49 (37 since 2020) and i10=174 (117 since 2020). At the same date, Scopus reports 268 documents, 7046 citations and h=41 .

He coordinated and participated to several national and European projects and to several research activities funded by industries. He contributed to the project both from a theoretical and from a techological point of view. The research project CROW (Coordination of AGVs in Automatic Warehouses) project has been selected as a finalist for the 2010 EUROP/EURON Technology Transfer Award for the best Technology transfer project in Europe. He is one of the founders and Director of the ARSControl lab, the Automation, Robotics and Systems Control laboratory of the University of Modena and Reggio Emilia where researches on robotics and control systems have been and are actively carried on. In particular, several teleoperation systems have been implemented, fixed and mobile base collaborative manipulators prototypes have been designed and prototyped, collaborative medical robotic systems have been developed and tested by surgeons, multi-robot systems have been deployed and tested in several application fields (e.g. agricultural, search and rescue). Furthermore, several applications have been developed in collaboration with industrial partners.

He has served as an Associate Editor of IEEE the Robotics and Automation Magazine (2005-2008), for the IEEE Transactions on Robotics (2012-2017) and for the IEEE Robotics and Automation Letters (2015-2017), International Journal of Robotics Research (2023-).

He is Senior Editor of the IEEE Ubiquitous Robots Conference from 2019. He served as Associated Editor in the program Committee of the main robotic conferences (ICRA, IROS, RSS) and of the main conference on energy based modeling and control (LHMNLC).

He founded and chaired the IEEE-RAS Technical Committee on Telerobotics. He is a member of the IEEE-RAS Technical Committee on Multi-Robot Systems, IEEE-RAS Technical Committee on Collaborative Automation for Flexible Manufacturing and IEEE Technical Committee on Control. He is an IEEE Senior member for the IEEE Robotics and Automation Society and for the IEEE Control Systems Society.

Education

04/2004. Ph.D in Information Engineering, University of Modena and Reggio Emilia. Title of the thesis: "Control of Interactive Robotic Interfaces: a port-Hamiltonian Approach".

05/2001. Professional Degree Certificate

07/2000. Laurea Degree in Computer Engineering with majors in robotics and automation, University of Bologna.

Positions

University Employment

12/2019-. Full Professor of Robotics and Automatic Control, Department of Sciences and Methods of Engineering, University fo Modena and Reggio Emilia

12/2018 -. Chair of the Laurea course in Smart Industrial Engineering.

2018-. Coordinator of ROBOMORE, the multidisciplinary robotic group that joins all the robotics labs at the University of Modena and Reggio Emilia.

11/2014-11/2019. Associate Professor of Robotics and Automatic Control, Department of Sciences and Methods of Engineering, University fo Modena and Reggio Emilia

01/2008 - 10/2014. Tenured Research Associate, Department of Sciences and Methods of Engineering, University fo Modena and Reggio Emilia

01/2005 - 12/2007. Research Associate, Department of Sciences and Methods of Engineering, University of Modena and Reggio Emilia.

05/2004-12/2004. Post-doctoral Researcher, Department of Sciences and Methods of Engineering, University fo Modena and Reggio Emilia.

01/2001 - 12/2003. Ph.D. student at the Department of Information Engineerinrg of the University of Modena and Reggio Emilia.

Other Employments

12/2014. Visiting Scientist at Deutsches Zentrum fü r Luft- und Raumfahrt (DLR, Oberpfaffenhofen, Germany) invited by Dr. Jordi Artigas. Research target: comparative evaluation of bilateral teleoperation system.

06/2010. Visiting Scientist at Max Planck Institute for Biological Cybernetics (Tuebingen, Germany) invited by Dr. Paolo Robuffo Giordano. Research target: Shared control for a group of quadrotor.

04/2005. Visiting Scientist at the Control Engineering Group, Twente University (Enschede, The Netherlands) invited by Prof. Stefano Stramigioli and by Prof. Arjan van der Schaft. Research target: Dirac structures and contact geometry for position error compensation in bilateral teleoperation systems.

12/2001 - 03/2002. Visiting Scientist at the Control Engineering Group, Twente University (Enschede, The Netherlands) invited by Prof. Stefano Stramigioli and by Prof. Arjan van der Schaft. Research target: sampled port-Hamitonian systems with applications to haptic interfaces.

09/2000 - 12/2000. Visiting Scientist at the Control Engineering Group, Delft University of Technology (Delf, The Netherlands) invited by Prof. Stefano Stramigioli. Research Target: Intrinsically passive control of complex bilateral teleoperation systems.

Academic Committees

2023-. Member of the Steering Committee of the Industrial Innovation Engineering Doctoral School of the University of Modena and Reggio Emilia.

2023-. Vice-President of the School of Engineering Council of the University of Modena and Reggio Emilia.

2022-. Member of the Enrollment Committee of the Department of Sciences and Methods for Engineering, University of Modena and Reggio Emilia.

2022. Member of the selection committee for an Associate Researcher (junior) position at the University of Bologna.

2022. Member of the National Resarch Doctorate in Robotics and Intelligent Machines.

2022. Member of the School of Engineering Council of the University of Modena and Reggio Emilia.

2021-. Member of the University School for Technical Formation (SUPER) for coordinating the activities of applied science formation in the Emilia-Romagna Region.

Membro della Scuola Universitaria per le Professioni Tecniche (SUPER) per il coordinamento delle attivitÃ delle lauree professionalizzanti nella regione Emilia-Romagna.

2021. Member of the selection committee for a Full Professor in Automatic Control position at the University of Genova.

2020. Member of the selection committee for an Associate Researcher (Junior) position at the University of Pisa.

2021. Member of the committee “Polo Digitale” for the institution of a master degree in digital technologies at the University of Modena and Reggio Emilia.

2020 -. Member of the Emilia-Romagna working group on ”Lauree professionalizzanti-ITS meccatronica”.

2020. Member of the working group for the institution of a university bachelor degree on “Bioengineering for systems and devices for people” in collaboration with the University of Verona, the University of Trento and the University of Modena and Reggio Emilia.

2020. Member of the committee for revision of the bachelor’s degrees at the Department of Sciences and Methods for Engineering.

2020. Member of the selection committee for an Associate Researcher (Senior) position at the University of Verona.

2017-2018. Chair of the Committee for the opening ceremony of the courses.

2018. Member of the Research Doctorate on Industrial Innovation Engineering Admission Committee of the University of Modena and Reggio Emilia.

2016. Member of the Committee for the opening ceremony of the courses.

2014 - 2021. Tutor for the Mechatronics Engineering course.

2011,2012,2015. Expert member of the committee for the Engineer professional qualification at the University of Modena and Reggio Emilia.

2011 -2014. Member of the Committee for the italian language test for foreign students at the School of Engineering, University of Modena and Reggio Emilia.

2006 -. Member of the Council of the Research Doctorate School in Industrial Innovation Engineering of the University of Modena and Reggio Emilia.

2005-2011. Member of the Committee for the placement test for the school of Engineering, University of Modena and Reggio Emilia.

Teaching Activity

2022-. "Industrial and Collaborative Robotics", MSc course in Digital Automation Engineering, University of Modena and Reggio Emilia.

2021- . "Collaborative Robotics Laboratory", BSc course in Engineering for Smart Industries, University of Modena and Reggio Emilia.

2021. - "Control of Industrial Robotic Systems" MSc course in Mechatronics Engineering, University of Modena and Reggio Emilia.

2014-2021. "Automatic Control" BSc course in Management Engineering, University of Modena and Reggio Emilia.

2018. "Robotics" for the "Master on Integrated Services Design and Management" at the University of Modena and Reggio Emilia.

2018. "Control Systems" for the "Master on Automotive" at the University of Modena and Reggio Emilia.

2016. "Control Systems" for the "Master on Automotive" at the University of Modena and Reggio Emilia.

2015. "Motion Control for Automatic Machines" for the "Master on Adaptive Manufacturing" at the University of Modena and Reggio Emilia.

2004 - 2020. "Control of Industrial Robots" MSc course in Mechatronics Engineering, University of Modena and Reggio Emilia.

2005-2011. "Automatic Control" BsC course in Industrial Managemenet and e-Business Engineeering, University of Modena and Reggio Emilia.

2009-2011. "Digital Control" MSc course in Mechatronics Engineering, University of Modena and Reggio Emilia.

2006-2008. "Control Systems" MSc course in Automotive Engineering and Mechanic Engineering, Univerisity of Modena and Reggio Emilia.

2005-2009. "Engineering and Technologies for Control Systems", MSc course in Mechatronics Engineering, University of Modena and Reggio Emilia.

2003-2004 "Systems Theory", MSc course in Mechatronics Engineering, University of Modena and Reggio Emilia.

Scientific Activity

Publications

Cristian Secchi is Author of 296 scientific publications of which 77 articles on journals, 181 peer reviewed papers presented at international conferences, 9 chapters in a book and 18 papers presented at national conferences. He is author of one book on energy based control for interactive robotic system and he contributed to 9 books on robotics and automation. He is inventor of 2 international patents, one on collaborative robotics and the other on automatic machines. On February 16, 2025, Google Scholar reports 10170 citations (5684 since 2020), with indices h= 49 (37 since 2020) and i10= 174 (117 since 2020). At the same date, Scopus reports 268 documents, 7046 citations and h= 41 .

Honours and Awards

08/2024. The paper "A constraint based control architecture for Urban Autonomous Vehicles" by Filippo Bernabei and Cristian Secchi has been awarded with the Roman Kaszynski Award for Young Author Best Paper at the 28th Internationa Conference on Methods and Models in Automation and Robotics (MMAR).

07/2024. The paper "Selective Clamping for Robot-Assisted Surgical Procedures" by Gabriele Furnari, Marco Minelli, Stefano Puliatti, Salvatore Micali, Cristian Secchi and, Federica Ferraguti has been awarded with the Best Student Paper Award for the 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society.

12/2023. The paper "Sequence-Based Imitation Learning for Robot-Assisted Surgical Operations" by Gabriele Furnari, Cristian Secchi and Federica Ferraguti has been selected among the six best papers presnetd at the conference 2023 Orsi Innotech Surgical AI day.

12/2023. The project "Design and validation of a MPC algrothm based on energy tanks for the control of collaborative robotis" developed by Diletta Sacerdoti under my supervision, has been awarded with the UCIMU Prize 2023 - Intelligent factory category. UCIMU (Italian Association of Constructor of Automatic Machines) awards every year the best projects on various application sectors.

12/ 2022. The project "Safe and efficient control architecture for mobile collaborative robots in complex industrial enviroment" developed by my PhD student Andrea Pupa has been awarded by the Italian Prize on Mechatronics, that awards the best industrial research projects on mechatronics.

10/2021. The paper "A Human-Centered Dynamic Task Planning Approach for Human-Robot Collaboration" by Andrea Pupa and Cristian Secchi, has been selected as a finalist for the best paper award at the 2021 I-RIM 3D conference

12/2020. The paper "Constrained Control for Optimal Collaborative Applications" by Federico Benzi and Cristian Secchi, has been selected as a finalist for the best paper on Planning and Control for Robotic Systems at the 2020 I-RIM 3D conference

03/2020 The PhD thesis "Energy-based Control for Simulation of Multi-body Dynamics using Robotic Facilities" by my PhD student Marco De Stefano has been selected for Georges Giralt Ph.D. Award (finalist), awarding the best Ph.D. thesis on robotics in Europe published in 2019.

10/2019. The paper "Adaptive admittance control for a safe and efficient human-robot interaction" by Federica Ferraguti, Chiara Talignani Landi, Lorenzo Sabattini, Marcello Bonfé, Cesare Fantuzzi and Cristian Secchi has been selected as a finalist for the best interactive presentation at the 2019 I-RIM 3D conference.

05/2019. The paper "Energy-shared two-layer bilateral teleoperation architecture" by M. Minelli, F. Ferraguti, N. Piccinelli, R. Muradore and C. Secchi has been one of the two recipients of the best poster award in the workshop "Next Generation Surgery: Seamless integration of Robotics, Machine Learning and Knowledge Representation within the operating rooms", held during the 2019 IEEE International Conference on Robotics and Automation.

08/2017. Federica Ferraguti has been awarded with the I-RAS "Fabrizio Flacco Young Author Best Paper Award" with the paper "An Energy Tank-Based Interactive Control Architecture for Autonomous and Teleoperated Robotic Surgery" written during her PhD and co-authored by myself.

06/2017. Elevated to the grade of IEEE Senior Member.

2017. The project "SOSTINNOVI - Sustainability and innovation in the wine growing field", has been selected as a finalist for the prize "Io penso Circolare" organized by the national newspaper "La Stampa".

2014. Best Reviewer Award for the International conference Robotics: Science and Systems 2014 (RSS2014)

2013. The Experiment "Traffic Control of AGVs in Automatic Warehouses" (TRAFCON) that I have coordinated has been selected among the best 15 experiments funded by the research program "European Clearing House for Open Robotics Development" (ECHORD), FP7-GA 231143

2011. Best Paper Award (finalist) , Automatica.it 2011 National Conference (Pisa, 2011), for the paper "Decentralized and Passivity based Teleoperation of a Group of UAVs with Time-Varying Topology" by C. Secchi, P. Robuffo Giordano and A. Franchi.

2010. 2010 EURON/EUROP Technology Transfer Award (finalist) for the best technology transfer project in Europe with the project "Coordination of AGVs in Automatic Warehouses" together with Cesare Fantuzzi, Roberto Olmi and Elettric80 s.p.a.

2006. Best paper Award at the IFAC Symposium on Robot Control (SYROCO), for the work "Variable delay in scaled port-Hamiltonian telemanipulation" by C. Secchi, S. Stramigioli and C. Fantuzzi.

2006. Georges Giralt Ph.D. Award (finalist), awarding the best Ph.D. thesis on robotics in Europe published in 2004.

2005. Best paper award (nominated), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), for the work "Transparency in port-Hamiltonian based Telemanipulation" by C. Secchi, S. Stramigioli and C. Fantuzzi.

Research Projects

2023-2025. Principal Investigator for the project "Mobile multi-robot systems for the manipulation of deformable object" (SiMOD), PR-FESR EMILIA ROMAGNA,. Budget: 697.125 kEUR, Local: 128.050 kEUR

2022-2025. Principal Investigator in the project "Ecosystem for sustainable transition in Emilia-Romagna - Spoke3: Green manufacturing for a sustainable economy", National Recovery and Resilience Plan (NRRP), Mission 4, Component 2 Investment 1.4, funded from the European Union - NextGenerationEU. Budget: 12.013 MEUR (overall), Local: 1.848 MEUR (local).

2022-2023. Coordinator of the project "IMplementation of a data-driven robotic production line" (MINION), FAR - University of Modena and Reggio Emilia. Budget: 15 kEUR.

2018-2022. Technical Coordinator the European Project " RObot enhanced SenSing, INtelligence and actuation to Improve job quality in manufacturing" (ROSSINI), H2020 RIA FoF-818087. Budget: 7.978 MEUR (overall), 626.2 kEUR (local)

2018-2021. Principal investigatore in the european project "Smart Autonomous Robotic Assistant Surgeon" (SARAS), H2020 RIA ICT-779813. Budget: 4.225 MEUR (overall), 447.5 kEUR (local)

2018-2019. Principal Investigator of the Experiment "COllaborative robot aMPLifying and Extending huMAN capabiliTies" (COMPLEMANT), funded within the project "Smart integrated Robotics system for SMEs controlled by Internet of Things based on dynamic manufacturing processes" (HORSE), H2020 IA FoF-198773. Budget: 199 kEUR (overall), 46.2 kEUR (local).

2016-2018. Coordinator of the robotics research in the project "SOSTINNOVI - Sustainability and innovation in the wine growing field", POR-FESR 2014-2020 ASSE 1 - Emilia Romagna Region. Budget: 50 kEUR

2015-2017. Coordinator of the Experiment "TIREBOT - A TIRE workshop roBOTic assistant", "European Clearing House for Open Robotics Development" (ECHORD++), EU-FP7 ICT-601116. Budget: 501 kEUR (overall), 227 kEUR (local).

2011-2014. Principal Investigator in the project "ISUR - Intelligent Surgical Robotics", EU-FP7 STREP ICT-270396. Budget (local): 99 kEUR.

2010-2012. Coordinator of the Experiment "TRAFCON - Traffic Control of AGVs in Automatic Warehouses","European Clearing House for Open Robotics Development Plus Plus" (ECHORD, EU-FP7 ICT-231143). Budget: 451 kEUR (overall), 288 kEUR (local).

2015-2017. Researcher in the project "SYMPLEXITY - Symbiotic Human-Robot Solutions for Complex Surface Finishing Operations", EU H2020-EU.2.1.5 - Advanced manufacturing and processing.

2013-2015. Researcher in the project "ADAPTIVE - Adaptive approaches for the digiral factory", Cluster Fabbrica Intelligente, MIUR.

2012-2015. Researcher in the project "PAN-ROBOTS - Plug and navigate robots for smart factories", EU-FP7 STREP NMP-314193.

2011-2012. Researcher in the project "DIRO - Mobile Robotics District", Emilia Romagna Region.

2005-2007. Researcher in the project "MOOM - Object-Oriented Methods for Mechatronic Systems", PRIN 2005, MIUR.

2003-2005. Researcher in the project "OASYS - Open Source Software for the Automation adn the Distributed systems", PRIN 2003, MIUR

Industrial Research Project

2024. Coordinatore of the project "Modeling and Control for Agricultural Systems" funded by TOPCON (Concordia sul Secchia, Italy).

2023. Coordinatore of the project "Dynamic modeling of Agricultural Tractors" funded by TOPCON (Concordia sul Secchia, Italy).

2017. Coordinator of the project "Development of a robotic application for visual servoing for the manipulation of hospital waste" funded by I-TI (Reggio Emilia, Italy).

2017-2019. Coordinator of the project "ATLAS - E'Cosi AuTonomous cLeAning System", funded by E' COSI' (Forli, Italy)

2017. Coordinator of the project "ROBOTeach: Design of a teach by demonstration programming strategy" funded by I-TI (Reggio Emilia, Italy).

2012-2013. Coordinator of the project "REMOCAL - Development of a robotic calibration system for the R.E.M.O. device" funded by CORGHI s.p.a. (Correggio, Italy)

2007-2009. Coordinator of the project "CROW - CooRdinatiOn of AGVs in Automatic Warehouses" funded by Elettric80 s.p.a. (Viano, Italy)

2020. Researcher for the project "Atelier CNA HUB 4.0: companies towards Industry 4.0", coordinated by CNA Reggio Emilia, Italy.

2010-2012. Researcher in the project "Development of a methodology for teh desing of an automatic machine by SysML" funded by Tetra Pak Carton Ambient s.p.a. (Modena, Italy)

2008-2010. Researcher in the project "Modeling and control of a system for paper unwrapping in an automatic machine for packaging" funded by Tetra Pak Carton Ambient s.p.a. (Modena, Italy)

2007-2012. Researcher in the project "Development of a preemptive maintenance system for an automatic machine for packaging" funded by Tetra Pak Carton Ambient s.p.a. (Modena, Italy)

2006-2007. Researcher in the project "Analysis and development of a robotic systems for composing mosaics", funded by the Tecno Effe s.n.c. (Fiorano, Italy)

2005. Researcher in the project "Analysis and simulation of an automated production line" funded by Tetra Pak Carton Ambient s.p.a. (Modena, Italy)

2005. Researcher in the project "Analysis and simulation of an automated production line" funded by Tetra Pak Carton Ambient s.p.a. (Modena, Italy)

Editorial Activities, Service and Conference Organization

Editorial Activity

2022-2024. Program Chair of the 2024 European Robotics Forum, March 13-15, 2024, Rimini, Italy.

2022-. Associate Editor for the International Journal of Robotics Research.

2015 - 2017. Associate Editor for the IEEE Robotics and Automation Letters.

2012 - 2017. Associate Editor per la IEEE Transactions on Robotics.

2005 - 2008. Associate Editor per the IEEE Robotics & Automation Magazine

2018. Guest Editor of the Special Issue "From research to industry: Safety in collaborative robotics and human-robot interaction", published on Robotics and Computer Integrated Manufacturing (August 2019).

2013. Guest Editor of the "Special Issue on Lagrangian and Hamiltonian Methods for Nonlinear Control", published on the European Journal of Control (number 6, volume 19, December 2013).

2010. Guest editor of the "Special Issue on Design and Control Methodologies in Telerobotics" published on the Elsevier Mechatronics journal (number 7, volume 20, October 2010).

2025. Senior Editor del Conference Editorial Board for the IEEE Ubiquitous Robots (UR) 2025.

2024-2027. Member of the International Program Committee (IPC) for the 9th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), 2027

2024. Senior Editor del Conference Editorial Board for the IEEE Ubiquitous Robots (UR) 2024.

2023. Member of the International Program Committee (IPC) for the 8th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), 2024

2023. Senior Editor del Conference Editorial Board for the IEEE Ubiquitous Robots (UR) 2023.

2022. Member of the Program Committee of the SIDRA 2022 Conference.

2022. Senior Editor del Conference Editorial Board for the IEEE Ubiquitous Robots (UR) 2022.

2021. Senior Editor del Conference Editorial Board for the IEEE Ubiquitous Robots (UR) 2021.

2020. Senior Editor of the Conference Editorial Board for the IEEE Ubiquitous Robots (UR) 2020.

2024. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2025.

2023. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2024.

2022. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2023.

2021. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2022.

2021. Member of the Program Committee of the SIDRA 2021 Conference.

2021. Associate Editor for the 6th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), 2021

2021. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2021.

2020. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2020.

2020. Member of the Program Committee of the SIDRA 2020 Conference.

2018. Associate Editor for the 6th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), 2018

2018. Member of the International Program Committee (IPC) for the 5th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), 2018

2015. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2015.

2015. Member of the Program Committee (PC) for the conference Robotics: Science and Systems (RSS) 2015.

2014. Member of the Program Committee (PC) for the conference Robotics Science and Systems (RSS) 2014.

2013. Associate Editor of the Conference Editorial Board of the IEEE International Conference on Robotics and Automation (ICRA) 2013.

2012. Associate Editor for the 'IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2012.

2012. Associate Editor for the 4th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), 2012

2010. Member of the International Program Committee (IPC) of the 1st International Conference on Applied Bionics and Biomechanics (ICABB), 2010

Scientific Associations

2019-. Member of the Italian Instituto for Robotics and Intelligent Machines (I-RIM)

2017-. Member of the IEEE-RAS Technical Committee on Multi-robot systems.

2017-. Member of the IEEE-RAS Technical Committee on Collaborative Automation for Flexible Manufacturing.

2007-. Member of the IEEE-RAS Technical Committee on Telerobotics.

2006-. Member of the 'IFAC Technical Committee on Human Machine System.

2000-. Member of the IEEE

2000-. Member of the IEEE Robotics and Automation Society

2000-. Member of the IEEE Control Systems Society

Service

2019. Member of the Young Author Best Paper Award Committee of the Italian chapter of the IEEE Robotics and Automation Society

2018. Member of the Young Author Best Paper Award Committee of the Italian chapter of the IEEE Robotics and Automation Society

2018. Member of the Technical and Scientific Committeee for the Robotics Innovation Prize organized by the international fair MECSPE and by the italian journal "Automazione Integrata"

2017. Organizer and member of the Award Committee of the first "Robotics Made in Italy" Video Contest" of the IEEE Robotics & Automation Society Italian Chapter

2016. Member of the Young Author Best Paper Award Committee of the Italian chapter of the IEEE Robotics and Automation Society

2007-2012. Founder and chair of the IEEE Technical Committee on Telerobotics.

2015. Member of the Best Student Paper Award Committee of the IEEE International Conference on Robotics and Automation (ICRA) 2015.

2022-. Member of the working group on Robotics 4.0 for I-RIM, the Italian Institute for Robotics and Intelligent Machines.

2016-. Coordinator of the Scientific and Technical Committee "GTTS6: Evolutionary and Adaptive Production Systems" of the Italian Cluster for the Intelligent Factory.

2018-. Member of the regional working group for the development of the AI&HMI topic for the european S3 platform on Industrial Modernization

Conference organization

2024. Organizer and co-chair of the Workshop "Robot Safety in Times of AI: Data, Decision, and Multimodal Interaction ", held in correspondance of the IEEE International Conference on Intelligent Robots and Systems (IROS, Abu Dhabi (United Arab Emirates), October 2024.

2021. Organizer and co-chair of the Workshop "Embodied AI in robotic surgery: Outcomes of the EU funded SARAS project", held in correspondance of the IEEE International Conference on Advanced Robotics (ICAR), Lubljana (Slovenia), December 2021.

2019. Organizer and co-chair of the Workshop "Next Generation Surgery: Seamless integration of Robotics, Machine Learning and Knowledge Representation within the operating rooms", held in correspondance of the IEEE International Conference on Robotics and Automation (ICRA), Montreal (CA), May 2019

2017. Organizer of the "Passivity and port-Hamiltonian" Track at the "2017 SIDRA Summer School", July 6-8, 2017, Bertinoro (Italy).

2015. Organizer and co-chair of the Workshop "Cooperative vehicles and robotic systems for industrial applications" held in correspondance of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Hamburg (Germany), September 2015

2014. Organizer and co-chair of the Workshop "Advanced Robotics for Industrial Logistics" held in correspondance of the European Robotics Forum, Rovereto (Italy), March 12-14, 2014

2012. Member of the National Organizing Committee (NOC) of the 4th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), 2012

2012. Organizer and co-chair of the "Workshop on Haptic Teleoperation of Mobile Robots: Theory, Applications and Perspectives",held in correspondance of the the IEEE International Conference on Robotics and Automation (ICRA), St. Paul (MN, USA), May 2012

2011. Organizer and co-chair of the "Symposium on Telerobotics" held in correspondance of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Francisco (CA, USA), May 2011

2011. Organizer of the Tutorial "Control Issues in Haptic Teleoperation" h in correspondance of the WorldHaptics Symposium, Instanbul (Turkey), June 2011

2010. Organizer and co-chair of the invited session "Advanced teleoperation control architectures" at the 'IEEE/RSJ International Conference on Intelligent Systems and Robots (IROS), Taipei (Taiwan), Ocyober 2010

2010. Organizer of the "Telerobotics Summer School", Munich (Germany), July 26-30, 2010.

2008. Organizer and co-chair of the invited session "Port- and energy-based methods in robotics. Modelling, simulation and control"'IFAC World Congress, Seoul (South Korea), July 2008.

2008. Organizer and co-chair of the Workshop "New Vistas and Challenges in Telerobotics" held in correspondance of the IEEE International Conference on Robotics and Automation (ICRA), Pasadena (CA, USA), May 2008.

Research Evaluation

Project Evaluation

2022. Project Reviewer for the Starting Grant Programme of the European Research Council (ERC)

2022. Project Reviewer for the Swiss National Science Foundation.

2019. Sicentific Experts for "Basic Research" and "Competitive Industrial Research and Social Innovation Research". Registered to REPRISE (list of the scientific experts at MIUR, the italian ministry for university and research).

2019 Project Reviewer for the Czech Science Foundation.

2017. Project Reviewer for the Austrian Ministry for Transport, Innovation and Technology (BMVIT) and the Federal Ministry of Science, Research and Economy (BMWFW)

2015-. Reviewer for the Robotics books proposed to Elsevier

2014. Project Reviewer for the Helmoltz Associations' Junior Research Group Program per il Deutsches Zentrum für Luft- und Raumfhart (DLR) - Germany

2014. Project Reviewer for the Consolidate Programme of the European Research Council (ERC)

Reviewer for Journals and Conferences

Cristian Secchi has been a reviewer for major conferences and journals about robotics and automation among which:

IEEE Transactions on Robotics

IEEE Transactions on Automation Science and Engineering

IEEE Transactions on Control of Network Systems

Elsevier Mechatronics

IEEE Transactions on Control Systems and Technology

Elsevier Automatica

IEEE Transactions on Automatic Control

IEEE Transactions on Industrial Electronics

IEEE International Conference on Robotics and Automation (ICRA)

IEEE/RSJ International Conference Intelligent Robots and Systems (IROS)

IEEE International Conference on Decision and Control (CDC)

IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)

IFAC World Congress

IEEE American Control Conference (ACC)

PhD Committee

2024. Member of the PhD Committee for the thesis "Data-Driven Model Predictive Control with Reinforcement Learning Algorithms" by Hoomaan MoradiMaryamnegari, PhD candidate at the University of Bolzano under the supervision of Prof. Angelika Peer.

2024. Member of the PhD Committee for the thesis "Exploiting flexible links in surgical applications: from interaction control to needle insertion" by Chiara Zandona', PhD candidate at the University of Verona under the supervision of Prof. Andrea Calanca.

2024. Member of the PhD Committee for the thesis "Advancing Loco-Manipulation and Interaction of Quadruped Manipulators: Integrating Control, Perception, and Planning" by Mattia Risiglione, PhD Candidate at the Italian Institute of Technology (IIT) under the supervision of Dr. Claudio Semini adn of Dr. Victor Barasuol.

2023. Member of the PhD Committee for the thesis "Geometric methods for designing optimal filters on Lie groups" by Damiano Rigo, PhD candidate at the University of Verona under the supervision of Prof. Riccardo Muradore.

2023. Member of the PhD Committe for the thesis "Robust Trajectory Planning Algorithms for Robotic Tasks with Pa- rametric Uncertainties" by Pascal Brault, PhD candidate at the University of Rennes (France) under the supervision of Dr. Paolo Robuffo Giordano..

2022. Chair of the PhD Committe in Industrial Innovation Engineering of the University of Modena and Reggio Emilia (Italy) for the evaluation of the PhD theses of the PhD candidates graduating in 2022.

2020. Chair of the PhD Committe in Information Technology of the University of Parma (Italy) for the evaluation of the PhD theses of the PhD candidates graduating in 2020.

2019. Member of the PhD Committe for the thesis "Grasping and Manipulation with Soft Robotic Hands" by Maria Pozzi, PhD candidate at the University of Siena (Italy) under the supervision of Prof. Domenico Prattichizzo.

2019. Member of the PhD Committe for the thesis "A general Framework for Shared Control in Robot Teleoperation with Froce and Visual Feedback" by Davide Nicolis, PhD candidate at the Politecnico di Milano (Italy) under the supervision of Prof. Paolo Rocco.

2017. Member of the PhD Committe for the thesis "A game theoretic approach for multi-robot coordination to guarantee security in critical scenarios From theory to real applications" by Simone Nardi, PhD candidate at the University of Pisa (Italy) under the supervision of Prof. Lucia Pallottino.

2017. Member of the PhD Committe in Automation and Operation Research of the University of Bologna (Italy) for the evaluation of the PhD theses of the PhD candidates graduating in 2017.

2016. Member of the PhD Committe for the thesis "Towards a safe interaction between humans and industrial robots through perceptuoin algorithms and control strategies" by Matteo Ragaglia, PhD candidate at the Politecnico di Milano (Italy) under the supervision of Prof. Paolo Rocco.

2016. Member of the PhD Committe for the thesis "Online Coordination and Composition of Robotic Skills: Formal Models for Context-aware Task Scheduling" by Enea Scioni, candidate for a joint PhD title between the University of Ferrara (Italy) and the Katholieke Univesiteit Leuven (Belgium), supervised by Prof. Marcello BonfÃ¨ and by Prof. Herman Bruyninckx.

2015. Member of the PhD Committe for the thesis "Consensus Control in Robot Networks and Cooperative Teleoperation: An Operational Space Approach" by Carlos Iván Aldana López, PhD candidate at Universidat Politécnica de Catalunya, supervised by Prof. Luis Basañez and by Prof. Emmanuel Nuño Ortega.

2014. Member of the PhD Committe for the thesis "Planning and Control for Robotic Tasks with a Human-in-the-Loop" by Carlo Masone, PhD candidate at the Stuttgart University (Germany), supervised by Prof. Frank Allgower.

2012-2015 Member of the supervisory committe of Enea Scioni,candidate for a joint PhD title between the University of Ferrara (Italy) and the Katholieke Univesiteit Leuven (Belgium), supervised by Prof. Marcello BonfÃ¨ and by Prof. Herman Bruyninckx.

2008. Member of the PhD Committe for the thesis "Nonlinear bilateral control of teleoperators with transmission time delays" by Emmanuel Nuño Ortega, PhD candidate atUniversitat Politecnica de Catalunya, supervised by Prof. Luis Basañez.

2008. Member of the PhD Committe for the thesis "Frictional Contact in Interactive Deformable Environments" by Davide Zerbato, PhD candidate at the University of Verona, supervised byl Prof. Paolo Fiorini.

2008. Member of the PhD Committe for the thesis "Perception-motivated parallel algorithms for haptics" by Stefano Galvan, PhD candidate at the University of Verona, supervised byl Prof. Paolo Fiorini.

2023. Reviewer of the PhD Thesis "Geometric methods for designing optimal filters on Lie groups" by Damiano Rigo, PhD candidate at the University of Verona under the supervision of Prof. Riccardo Muradore.

2023. Reviewer of the PhD thesis "A ROS-based software architecture for a versatile collaborative dual-armed autonomous mobile robot for the manufacturing industry" by Simone Comari, PhD candidate at the University of Bologna under the supervision of Prof. Marco Carricato.

2022. Reviewer of the PhD thesis "The Three-Dimensional Single-Bin-Size Bin Packing Problem: Combining Metaheuristic and Machine Learning Approaches" by Gabriele Ancora, PhD candidate at the University of Bologna under the supervision of Prof. Claudio Melchiorri.

2021. Reviewer of the PhD thesis "Control Methodologies for Assistive Robots operated via Brain Computer Interface" by Giuseppe Gillini, PhD candidate at the University of Cassino and of Southern Lazio (Italy) under the supervision of Prof. Filippo Arrichiello.

2018. Reviewer of the PhD thesis "Repetitive Control Systems: Stability and Periodic Tracking beyond the Linear Case" by Davide Chiaravalli, PhD candidate at the University of Bologna under the supervision of Prof. Claudio Melchiorri.

2018. Reviewer of the PhD thesis "Haptic control of mobile manipulators interacting with the environment" by Davide Chiaravalli, PhD candidate at the University of Bologna under the supervision of Prof. Claudio Melchiorri.

2018. Reviewer of the PhD thesis "A Predictive Approach to Online Trajectory Planning of Robot Manipulators" by Marco Faroni, PhD candidate at the University of Brescia under the supervision of Prof. Antonio Visioli.

2014. Reviewer of the PhD thesis "Time Domain Passivity Control for Delayed Teleoperation" by Jordi Artigas Esclusa, PhD candidate at Universidad Politecnica de Madrid, supervised by Prof. Rafael Aracil Sandoia and by Prof. Gerd Hirzinger

2011. Reviewer of the PhD Committe for the thesis "Control Architecture for Multifingered Haptic Devices Applied to Advanced Manipulation" by Jorge Barrio, pHd candidate at the Universidad Politecnica di Madrid, supevised by Prof. Manuel Ferre.

Supervision

M.Sc. and B.Sc. Students

Critian Secchi supervised around more than 200 M.Sc. and B.Sc theses (starting from January 2005) of students graduating in Mechatronics and Management Engineering at the University of Modena and Reggio Emilia. Around half of the theses have been in cooperation with industries.

Ph.D. Students

2024-. Andrea Pioli. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Research topic: "Non linear control for human robot interaction".

2024-. Italo Almirante. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Research topic: " Control of multi-robot systems for manipulation and transportation"

2023-. Filippo Bernabei. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Research topic: " Control of Connected Autonomous Vehicle ".

2021-2024. Davide Ferrari. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Research topic: "Physical and non-Physical Communication in Human Robot Collaboration".

2019-2922. Federico Benzi. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Research topic: "Control and interaction with a mobile collaborative robot".

2019-.2022 Andrea Pupa. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Research topic:: "Safety aware control architecture for human robot collaboration".

2018-2021. Marco Minelli. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Research topic: "Autonomous Robotic Surgery".

2016-2019.: Chiara Talignani Landi. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Title of the thesis: "Towards Safe and Efficient Human-Robot Collaboration for Industrial Applications".

2016-2019.: Giuseppe Riggio. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Title of the thesis: "Communication and Interaction for Mobile Robots: from Lab to Industry".

2015-2018.: Nicola Battilani. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Title of the thesis: "Human-Machine cooperation: applications to robotics and industrial automation".

2015-2018.: Marco De Stefano. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Title of the thesis: "Energy-based Control for Simulation of Multi-body Dynamics using Robotic Facilities".

2013-2016.: Dr. Valerio Digani. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Title of the thesis: "Traffic Coordination for AGV Systems: an Ensemble Modeling Approach".

2012-2015.: Dr. Federica Ferraguti. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Title of the thesis: "Interaction Control for Autonomous Robotic Surgery".

2011-2014.: Dr. Alessio Levratti. Doctorate School in Industrial Innovation Engineering at the University of Modena and Reggio Emilia. Title of the thesis: "New Estimation and Control Techniques for Real World Mobile Robots".

2008-2011.: Dr. Roberto Olmi, co-supervised with Marcello BonfÃ©. Doctorate in Science of Engineering at the University of Ferrara (I). Title of the thesis: "Traffic Management of Automated Guided Vehicles in Flexible Manufacturing Systems".

Research Associate and Post-docs

2024. Dr. Andrea Pioli, research associate at the University of Modena and Reggio Emilia. Research topic: "Study and design of robotic manipulation strategies for deformable objects within the SIMOD project".

2024. Dr. Italo Almirante, research associate at the University of Modena and Reggio Emilia. Research topic: "Study and design for interaction control strategies for human-robot collaboration in complex scenarios within the project ROSSINI".

2024. Dr. Andrea Pupa, post-doc at the University of Modena and Reggio Emilia. Research topic: "Collaborative Robotics for Sustainable Manufacturing".

2024. Dr. Marco Minelli, post-doc at the University of Modena and Reggio Emilia. Research topic: "Robotic Systems for the Interaction".

2023. Dr. Diletta Sacerdoti, research associate at the University of Modena and Reggio Emilia. Research topic: "Advanced interaction control for collaborative robotic systems"

2023-2024. Dr. Marco Minelli, post-doc at the University of Modena and Reggio Emilia. Research topic: "Control of Robotic System for Sustainable Manufacturing"

2023. Dr. Andrea Pupa, post-doc at the University of Modena and Reggio Emilia. Research topic: "Collaborative Robotics for Sustainable Manufacturing"

2022-2023. Dr. Marco Minelli, post-doc at the University of Modena and Reggio Emilia. Research topic: "Development of an autonomous surgical assistant"

2021. Dr. Guglielmo Gabrielli, research associate at the University of Modena and Reggio Emilia. Research topic: "Machine learning techniques for an efficient collaborative robotics"

2020-2021. Dr. Mattia Galli, research associate at the University of Modena and Reggio Emilia. Research topic: "Development of a robotic system for assisting the surgeon in medical applications"

2020, Dr. Davide Ferrari, research associate a at the University of Modena and Reggio Emilia. Research topic: "Visual servoing for a collaborative robot on a mobile platform"

2019 Dr. Andrea Pupa, research associate at the University of Modena and Reggio Emilia. Research topic: "Smart Autonomous Robotic Assistant Surgeon"

2018. Dr. Marco Minelli, research associate at the University of Modena and Reggio Emilia. Research Topic: "Smart Autonomous Robotic Assistant Surgeon"

2018-2021. Dr. Filippo Bertoncelli, research associate at the University of Modena and Reggio Emilia. Research topic: "Multi robot coordination strategies for robotic surgery"

2018-2019. Dr. Claudio Santo Longo, post-doc at the University of Modena and Reggio Emilia. Research topic:: "Development of a control architecture for the safe interaction between human and robot in collaborative applications"

2018-2019. Dr. Mattia Bertuletti, post-doc at the University of Modena and Reggio Emilia. Research topic:: "Fault detection and diagnosis for collaborative robots "

2017-2018. Dr. Damjan Miklic, post-doc at the University of Modena and Reggio Emilia. Research topic: "Control of an AGV system for automatic warehouses".

2017-2018. Dr. Andrea Jacopo Ronga, post-doc at the University of Modena and Reggio Emilia. Research topic:: "Multi-robot systems for agriculture".

2015-2016. Dr. Mehran Zareh, post-doc at the University of Modena and Reggio Emilia. Research topic: "Decentralized techniques for maximizing the robustness in multi-agent systems"

2015-2016. Dr. Alessio Levratti, post-doc at the University of Modena and Reggio Emilia. Research topic: "Development of a robotic assistant for tire workshops"

2011-2012. Dr. Dino Giuseffi, research associate at the University of Modena and Reggio Emilia. Research Topic: "Experimental evaluation of a traffic control strategy for AGVs in automatic warehouses"

2012. Dr. Lorenzo Sabattini, research associate at the University of Modena and Reggio Emilia. Research topic: "Open systems for tractor autonomous operations"

2010-2011. Dr. Davide Ronzoni, research associate at the University of Modena and Reggio Emilia. Research topic: "SLAM for laser guided vehicles in automated warehouses"

Invited Talks

2024. "Energy Based Control for a robustly stable and flexible interaction", Plenary Talk at the 8th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control, BesanÃ§on (F), June 10th, 2024.

2023. "Energy Based Control for a robustly stable and flexible interaction", invited Talk for the workshop "Perception Unleashed: Achieving Safety, Efficiency, and Awareness in Human-Robot Collaboration" held in correspondance of the IRIM-3D conference, organized by the Italian Institute of Robotics and Intelligent Machines (IRIM), Rome, October 21st, 2023

2023. "Energy Based Control for a robustly stable and flexible interaction", University of Rennes, April 26th, 2023

2021. "A robustly stable and efficient teleoperation architecture for tele-surgery" invited talk for the Workshop on "Embodied AI in robotic surgery: Outcomes of the EU funded SARAS project" held in correspondance of the IEEE International Conference on Advanced Robotics (ICAR), December 7th, 2021.

2020. "Control Techniques for Human-Robot Interaction" , invited talk for the "Workshop on tactile integration for humans and artificial systems" held in correspondance of the IEEE International Conference on Robot and Human Interactive Communication (ROMAN), September 2nd, 2020

2020. "Shared control for human-robot interaction: an energy based perspective." , invited talk for the "Workshop on Shared Autonomy: Learning and Control" held in correspondance of the IEEE International Conference on Robotics and Automation (ICRA), June 4th, 2020.

2020. "Robotics for manufaturing at the time of COVID-19" , invited talk for the online Workshop online "Arrivano i nostri... robot" organized by the italian chapter of the IEEE Robotics and Automation Society, 28 Maggio 2020

2019. "Collaborative Robotics: New synergies between man and robot in the factory of the future", Reggio Emilia Chamber of Commerce, October 30th, 2019

2019. "Flexible and Safe interaction control: an energy-based approach", University of Siena, April 18th, 2019

2019. "From Robotic Awareness to the ROSSINI Architecture: A path towards an effective human robot collaboration", one of the Entrepreneurs Talks of the 'ITKAM Colloquium on Artificial Intelligence - Key Driver of Economic Development, organized by the Italian Trade Organization for Germany at the Hannover Messe, Hannover (D), April 2nd, 2019.

2018. "On the Use of Energy Tanks for Multi-Robot Interconnection ", invited Talk for the workshop "Robotics for logistics in warehouses and environments shared with humans" held in correspondence of the 'IEEE/RSJ International Conference on intelligent Robots and Systems (IROS), Madrid (E), October 5th, 2018

2018. "Energy-based shared control for multi-robot systems", invited Talk for the workshop "Haptic-Enabled Shared Control of Robotic Systems: A Compromise Between Teleoperation and Autonomy" held in correspondence of the 'IEEE/RSJ International Conference on intelligent Robots and Systems (IROS), Madrid (E), October 1st, 2018

2018. "New Synergy between man and robot for the factory of the future", invited talk for the Workshop "Co-bots for industry 4.0 and beyond", held in correspondence of the International Robotics Festival, September 29th, 2018, Pisa.

2018. "Collaborative Robotics - From research to industrial applications", invited talk during the worlshop"Collaborative Robots (in italian: Robot Collaborativi)" organized by the Modena Industrial Assciation, September 19th, 2018, Modena

2018. "Collaborative Robotics: applications and lessons learned", invited talk during the congress "Assembly 4.0 and Collaborative Robotics (in italian: Assemblaggio 4.0 e Robotica Collaborativa)" organized by Tecniche Nuovem, September 18th, 2018, Milano.

2018. "A variable admittance control strategy for stable physical human robot interaction", University of Technology of Sydney, Sydney, May 18th 2018.

2018. "Collaborative Robotics: State of the art and future challenges (in italian: Robotica Collaborativa: Stato attuale e sfide future)", invited talk during the workshop "The man and the enabling technologies (in italian: L'uomo e le Tecnologie Abilitanti)" held in correspondence of the MECSPE Fair, March 23rd, 2018 Parma (Italy).

2018. "Touching the Untouchable: Bilateral Teleoperation Systems", Invited Talk for the PhD course "Human-Robot Collaboration for Professionals and Daily Life" organized by the Politecnico di Milano, March 21st, 2018

2017. "Playing with Energy: Disembodied passivity based control for robotic interaction", University of Pisa (I), December 5, 2017.

2017. "Beyond motion: Passivity and port-Hamiltonian for robot interaction control", Invited Talk during the Summer School "SIDRA 2015 Summer School" organized by the italian society of Automatica (SIDRA). July 6-8, 2017, Bertinoro (I).

2016. "Between cooperation and co-existence: new paradigms of cooperative robotics (in italian "Tra cooperazione e coesistenza: nuovi paradigmi di robotica collaborativa")", invited talk during the conference "Connection Space: Innovation (in italian, "Spazio di Connessione INNOVAZIONE")" , September 28th 2016, Forli (I).

2016. "TIREBOT: A TIRE workshop roBOTic assistant: PR and IP management", invited talk at the second Kick-off meeting of the ECHORD++ project, May 4th, 2016, Palma de Mallorca (ES).

2016. "Human-robot Interaction: between co-existence and cooperation (in italian "Interazione Uomo-Robot: tra coesistenza e cooperazione")", invited talk during the conference "Factory 4.0 - the relation between man and machine (in italian, " Fabbrica 4.0 - Il rapporto uomo macchina")", organized by BPR Group s.p.a., April 8th 2016, Bondanello (I).

2016. "Cooperative robotics for inspection and manipulation", invited talk at the Robot Forum, MECSPE international fair. March 16th 2016, Parma (I).

2016. "Cooperative Robots for Factory 4.0 (in italian, "Robot Cooperativi per la Fabbrica 4.0")", invited talk for the conference "Factory 4.0" organized by the Reggio Emilia Industrial Association. March 8th, 2016, Reggio Emilia (I).

2015. "Cooperative Assembly: between cooperation and co-existence (in italian "Assemblaggio cooperativo: tra cooperazione e coesistenza")", invited talk at the conference "Cooperative Robotics in the Factory (in italian "LA ROBOTICA COLLABORATIVA IN AZIENDA")", organized by T2I. October 30th, 2015, Schiavon (I).

2015. "Control of multiple robots via passivity and graph theory: Multi-Robot Teleoperation", Invited Talk during the Summer School "SIDRA 2015 Summer School" organized by the italian society of Automatica (SIDRA). July 13-17, 2015, Bertinoro (I).

2015. "Tele-operated control of robots: Passivity based strategies", Invited Talk during the Summer School "SIDRA 2015 Summer School" organized by the italian society of Automatica (SIDRA). July 13-17, 2015, Bertinoro (I).

2015. "Shared control in semi-autonomous surgery: A two layer approach", invited Talk at the workshop "Cognitive Surgical Robotics". Hamlyn Symposium on Medical Robotics 2015, June 20th, 2015, London (UK).

2015. "Decentralized connectivity maintenance for asymmetrically connected multi robot systems", invited talk at the workshop "Taxonomies of interconnected systems : Asymmetric interactions in distributed robotics". IEEE International Conference on Robotics and Automation (ICRA) 2015, May 26th 2015, Seattle (WA, USA).

2015. "TIREBOT: A TIRE workshop roBOTic assistant", invited talk at the Peccioli RIF Opening, February 9th 2015, Peccioli (I).

2014. "Disembodying passivity in bilateral teleoperation", Institute talk at the German Aerospace Center (DLR). December 2nd, 2014, Oberpfaffenhofen (Germany).

2014. "Conducting multi-robot systems: gestures for the passive teleoperation of multiple slaves", Invited talk at the workshop "Telerobotics for Real-Life Applications: Opportunities, Challenges, and New Developments". IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2014, September 18th, 2014, Chicago (USA).

2014. "Passivity Based Teleoperation of Multi-Robot Systems with Time Varying Topology", Invited talk at the workshop "Crossing the Reality Gap: Control, Human Interaction and Cloud Technology for Multi- and Many- Robot Systems". IEEE International Conference of Robotics and Automation (ICRA) 2014, June 1st, 2014, Hong Kong (PRC).

2013. "Fluid Slaves: Passivity based teleoperation of a group fo UAVs with variable topology", Invited Talk during the "Summer School on Telerobotics" organized by the IEEE RAS Technical Committee on Telerobotics. July 8-12, 2013, Tokyo (Japan).

2013. "A port-based approach for telerobotics", Invited Talk during the "Summer School on Telerobotics" organized by the IEEE RAS Technical Committee on Telerobotics. July 8-12, 2013, Tokyo (Japan).

2012. "Passivity based teleoperation of a group of UAVs with variable topology", Invited Talk at the "Workshop on Haptic Teleoperation of Mobile Robots: Theory, Applications and Perspectives", IEEE International Conference of Robotics and Automation (ICRA) 2012. May 14th, 2012, Saint Paul (MN, USA).

2010. "Telerobotics: Extending Action and Perception", Invited talk at the University Roma Tre. December 2nd, 2010, Rome (Italy).

2010. "A port-Hamiltonian approach to bilateral teleoperation ", Invited Talk during the "Summer School on Telerobotics" organized by the IEEE RAS Technical Committee on Telerobotics. July 26-30, 2010, Munich (Germany).

2010. "Being there without being there: the challenge of telerobotics", Invited talk at the Max Planck Institue for Biological Cybernetics. June 23rd, 2010, Tuebingen (Germany).

2008. "Modeling and Control of Bilateral Teleoperation Systems through the port-Hamiltonian approach", invited talk at the Institute of Automatic Control Engineering of the Technische Universitat di Monaco di Baviera (TUM). December 18th, 2008, Munich (Germany).

2004. "Sampled Data Systems Passivity and Applications to Haptics Interfaces", invited talk at the Department of Computer Science, University of Verona. November 9th, 2004, Verona (Italy).

2000. "Geometric Grasping and Telemanipulation", Invited talk at the Department of Electronics, Computer Science and Systems (DEIS), University of Bologna. December 14th, 2000, Bologna (Italy) Dipartimento di Elettronica Informatica e Sistemistica (DEIS), UniversitÃ degli Studi di Bologna, il 14 Dicembre 2000

2000. "Geometric Grasping and Telemanipulation", invited talk at the Delft University of Technology. November 30th, 2000, Delft (NL).

Publications

Books

[B1] C. Secchi, S. Stramigioli, C. Fantuzzi, "Control of Interactive Robotic Interfaces: a port-Hamiltonian approach", Springer Tracts in Advanced Robotics (STAR), Springer, ISBN:3540497129, Marzo 2007

[B2] C. Secchi and L. Marconi (Editors), "European Robotics Forum 2024: ERF - 15th European Robotics Forum - Volume 1", Springer Proceedings in Advanced Robotics, ISBN: 978-3-031-76423-3, January 2025

[B3] C. Secchi and L. Marconi (Editors), "European Robotics Forum 2024: ERF - 15th European Robotics Forum - Volume 2", Springer Proceedings in Advanced Robotics, Springer, ISBN: 978-3-031-76427-1, Springer Proceedings in Advanced Robotics, Springer, January 2025

Patents

[P1] M. Cocconcelli, L. Bassi, D. Borghi, R. Rubini, C. Secchi, "Predictive Rolling Bearing Maintenance", International Patent number WO 2010100253 (A1), September 10th, 2010

[P2] C. Fantuzzi, C. Secchi, F. Ferraguti, C. Talignani Landi, M. Nolli, "A Method for the superficial treatment of an artefact", Italian Patent Number 102016000097482(A1), September 2016. International Paper Number WO2018060925(A1), September 2018

[P3] F. Ferraguti, C. Secchi, S. Puliatti, G. Bianchi, "A method for controlling the spatial position of a surgical needle", Patent Number 102024000010648, May 10th, 2024

Journals

[J1] S. Stramigioli, C. Secchi, A. J. van der Schaft, C. Fantuzzi, "Sampled Data Systems Passivity and Sampled port-Hamiltonian Systems", IEEE Transactions on Robotics, 21(4):574-587, August 2005

[J2] C. Secchi, M. Bonfé, C. Fantuzzi, "On the use of UML for modeling mechatronic systems", IEEE Transactions on Automation Science and Engineering, 4(1):105-113, January 2007

[J3] M. Bonfé, C. Fantuzzi, C. Secchi, "Behavioral inheritance in object-oriented models for mechatronic system", International Journal on Manufacturing Research, 1(4):421-441, February 2007

[J4] M. Bonf; C. Fantuzzi, C. Secchi, S. Simani, "Modelli orientati agli oggetti per sistemi con dinamiche ibride", Automazione e Strumentazione, Anno LV, n. 4, VNU Businness Publication, April 2007

[J5] C. Secchi, M. Bonfé, C. Fantuzzi, R. Borsari, D. Borghi, "Object-Oriented Modeling of Complex Mechatronic Components for the Manufacturing Industry", IEEE/ASME Transactions on Mechatronics, 12(6):696-702, December 2007

[J6] C. Secchi, S. Stramigioli, "Discussion on "On preserving passivity in sampled-data linear systems"", European Journal of Control, 13(6), December 2007

[J7] C. Secchi, Bonfé M., C. Fantuzzi, Borsari R., Borghi D., Authors' reply to "Comments on Object-Oriented Modeling of Complex Mechatronic Components for the Manufacturing Industry", IEEE/ASME Transactions on Mechatronics, 13(4):487-489, August 2008

[J8] C. Secchi, S. Stramigioli, C. Fantuzzi, "Transparency in port-Hamiltonian based Telemanipulation, IEEE Transactions on Robotics", 24(4):903-910, August 2008

[J9] C. Secchi, S. Stramigioli, C. Fantuzzi, "Variable Delay in Scaled Port-Hamiltonian Telemanipulation", Elsevier Mechatronics, 18(7):357-363, Settembre 2008

[J10] D. Botturi, M. Vicentini, M. Righele, C. Secchi, "Perception-centric Force Scaling in Bilateral Teleoperation, Special Issue on Design and Control Methodologies in Telerobotics", Elsevier Mechatronics, 20(7):802-811, October 2010.

[J11] R. Olmi, C. Secchi, C. Fantuzzi, "Coordination of Industrial AGVs, International Journal of Vehicle Autonomous Systems", 9(1/2):5-25, January 2011

[J12] L. Sabattini, C. Secchi, C. Fantuzzi, "Arbitrary shaped formations of mobile robots: Artificial Potential fields and coordinate transformation", Autonomous Robots 30(4):385-397, May 2011

[J13] M. Franken, S. Stramigioli, S. Misra, C. Secchi, A. Macchelli, "Bilateral Telemanipulation with time delays: A two-layer approach combining passivity and transparency", IEEE Transactions on Robotics 27(4):741-756, August 2011.

[J14] L. Bassi, C. Secchi, C. Fantuzzi, M. Bonfé, "A SysML based methodology for manufacturing system modeling and design", IEEE Transactions on Mechatronics 16(6):1049-1069, December 2011.

[J15] M. Cocconcelli, L. Bassi, C. Secchi, R. Rubini, C. Fantuzzi, "An algorithm to diagnose ball bearing faults in servomotors running arbitrary motion profiles", Mechanical Systems and Signal Processing, 27:667-682, February 2012

[J16] A. Franchi, C. Secchi, M. Ryll, H.H. Buelthoff, P. Robuffo Giordano, " Shared Control: Balancing Autonomy and Human Assistance with a Group of UAVs", Special Issue on Aerial Robotics and the Quadrotor platform, Robotics and Automation Magazine, 19(3):57-68, September 2012.

[J17] A. Franchi, C. Secchi, H.I. Son, H.H. Buelthoff, P. Robuffo Giordano, "Bilateral Teleoperation of Groups of Mobile Robots with Time-Varying Topology", IEEE Transactions on Robotics, 28(5):1019-1033, October 2012

[J18] C. Fantuzzi, R. Rubini, M. Cocconcelli, C. Secchi, M. Cotogno, G. Prata, "Prognostica e Manutenzione Preventiva", Automazione Integrata, n.6, pp. 58-59, 2012

[J19] P. Robuffo Giordano, A. Franchi, C. Secchi, H.H. Buelthoff, "A Passivity based Decentralized Strategy for Generalized Connectivity Maintenance", International Journal of Robotic Research, 32(3):299-323, March 2013

[J20] L. Sabattini, C. Secchi, C. Fantuzzi, "Closed-Curve Trajectory Tracking for Decentralized Systems of Multiple Mobile Robots", Journal of Intelligent & Robotic Systems,71(1):109-123, July 2013

[J21] L. Sabattini, N. Chopra, C. Secchi, "Decentralized connectivity maintenance for cooperative control of mobile robotic systems", International Journal of Robotic Research, 32(12):1411-1423, October 2013

[J22] M. Bonfé, C. Fantuzzi, C. Secchi,"Design Patterns for Model-Based Automation Software Design and Implementation", Control Engineering Practice, 21(12):1608-1619, November 2013

[J23] L. Sabattini, C. Secchi, N. Chopra, A. Gasparri, "Distributed Control of Multi-Robot Systems with Global Connectivity Maintenance", IEEE Transactions on Robotics, 29(5):1326-1332, November 2013

[J24] C. Secchi, L. Sabattini, C. Fantuzzi, "Decentralized Global Connectivity Maintenance for Interconnected Lagrangian Systems in the Presence of Data Corruption", European Journal of Control, 19(6):461-468, December 2013

[J25] A. Macchelli, C. Secchi, A. J. van der Schaft, "Guest Editorial for the Special Issue on Lagrangian and Hamiltonian methods for modelling and control", European Journal of Control, 19(6):437, December 2013

[J26] L. Sabattini, C. Secchi, N. Chopra, "Decentralized Connectivity Maintenance for Networked Lagrangian Dynamical Systems with Collision Avoidance", Asian Journal of Control, 17(1):111-123, January 2015

[J27] Falconi R., Sabattini L., Secchi C., Fantuzzi C., Melchiorri C., "Edge-Weighted Consensus Based Formation Control Strategy With Collision Avoidance", Robotica, 33(2):332-347 February 2015.

[J28] P. Fiorini, R. Muradore, G. Akgun, D.E. Barkana, M. Bonfé, F. Boriero, G. De Rossi, R. Dodi, O.J. Elle, F. Ferraguti, L. Gasperotti, R. Gassert, K. Mathiassen, D. Handini, O. Lambercy, L. Li, M. Kruusmaa, A.O. Manurung, G. Meruzzi, P. Nguyen, N. Preda, A. Ristolainen, A. Sanna, C. Secchi, A. E. Yantac, "Development of a cognitive robotic system for simple surgical tasks", Invited Feature Article, Internationa Journal of Advanced Robotic Systems, 12, April 2015

[J29] V. Digani, L. Sabattini, C. Secchi, C. Fantuzzi, "Ensemble Coordination Approach in Multi-AGV Systems Applied to Industrial Warehouses", IEEE Transactions on Automation Science and Engineering. 12(3):922-934, July 2015

[J30] L. Sabattini, C. Secchi, M. Cocetti, A. Levratti, C. Fantuzzi, "Implementation of Coordinated Complex Dynamic Behaviors in Multi-Robot Systems", IEEE Transactions on Robotics, 31(4):1018-1032, August 2015

[J31] L. Sabattini, C. Secchi, N. Chopra, "Decentralized Estimation and Control for Preserving the Strong Connectivit of Directed Graphs", IEEE Transactions on Cybernetics, 45(10):2273-2286, October 2015

[J32] F. Ferraguti, N. Preda, A. Manurung, M. Bonfé, O. Lambercy, R. Gassert, R. Muradore, P. Fiorini, C. Secchi, "An Energy Tank-Based Interactive Control Architecture for Autonomous and Teleoperated Robotic Surgery", IEEE Transactions on Robotics, 31(5):1073-1088, October 2015

[J33] V. Digani, L. Sabattini, C. Secchi, "A Probabilistic Eulerian Traffic Model for the Coordination of Multiple AGVs in Automatic Warehouses", IEEE Robotics and Automation Letters, 1(1):26-32, January 2016.

[J34] N. Preda, F. Ferraguti, G. De Rossi, C. Secchi, R. Muradore, P. Fiorini, M. Bonfé, "A Cognitive Robot Control Architecture for Autonomous Execution of Surgical Tasks", Journal on Medical Robotics Research, 1(4): 1650008, August 2016

[J35] L. Sabattini, C. Secchi, C. Fantuzzi, "Coordinated Dynamic Behaviors for Multi-Robot Systems with Collision Avoidance", IEEE Transactions on Cybernetics, 47(12):4062-4073, December 2017

[J36] P. Beinschob, M. Meyer, C. Reinke, V. Digani, C. Secchi, L. Sabattini, "Semi-Automated Map Creation for Fast Deployment of AGV Fleets in Modern Logistics", Robotics and Autonomous Systems, vol. 87:281-295, January 2017

[J37] L. Sabattini, C. Secchi, C. Fantuzzi, "Collision Avoidance for Multiple Lagrangian Dynamical Systems with Gyroscopic Forces", Invited Feature Article, Internationa Journal of Advanced Robotic Systems, 14(1), January 2017

[J38] S. Farsoni, C. Talignani Landi, F. Ferraguti, C. Secchi, M. Bonfé, "Compensation of Load Dynamics for Admittance Controlled Interactive Industrial Robots using a Quaternion-based Kalman Filter", IEEE Robotics and Automation Letters, 2(2):672-679, April 2017.

[J39] V. Villani, L. Sabattini, G. Riggio, C. Secchi, M. Minelli, C. Fantuzzi, "A Natural Infrastructure-Less Human-Robot Interaction System", IEEE Robotics and Automation Letters, 2(3):1640-1647, July 2017.

[J40] F. Ferraguti, C. Talignani Landi, C. Secchi, M. Nolli, M. Pesamosca and C. Fantuzzi, "Walk-through programming for industrial applications", Procedia Manufacturing, Special Issue "27th International Conference on Flexible Automation and Intelligent Manufacturing, FAIM2017", 11:31-38, 2017

[J41] E. Cardarelli, V. Digani, L. Sabattini, C. Secchi, C. Fantuzzi, "Cooperative Cloud Robotics Architecture for the Coordination of Multi-AGV Systems in Industrial Warehouses", Mechatronics,45:1-13, August 2017.

[J42] L. Sabattini, C. Secchi, C. Fantuzzi, "Multi-Robot Systems Implementing Complex Behaviors under TIme-Varying Topologies", European Journal of Control, 38:73-87, November 2017.

[J43] L. Sabattini, M. Aikio, P. Beinschob, M. Boehning, E. Cardarelli, V.Digani, A. Krengel, M. Magnani, S. Mandici, F. Oleari, C. Reinke, D. Ronzoni, C. Stimming, R. Varga, A. Vatavu, S. Castells Lopez, C. Fantuzzi, A. Mäyrä, S.Nedevschi, C. Secchi, K. Fuerstenberg, "Advanced AGV systems for industrial logistics: the PAN-Robots project", IEEE Robotics and Automation Magazine, 25(1):55-64, March 2018

[J44] L. Sabattini, C. Secchi, B. Capelli, C. Fantuzzi, "Passivity Preserving Force Scaling for Enhanced Teleoperation of Multi-Robot Systems", Robotics and Automation Letters (RA-L), 3(3):1925-1932, July 2018

[J45] C. Talignani Landi, V. Villani, F. Ferraguti, L. Sabattini, C. Secchi, C. Fantuzzi, "Relieving Operators' Workload: Towards Affective Robotics In Industrial Scenarios", Mechatronics, 54:144-154, October 2018

[J46] V. Villani, F. Pini, F. Leali, C. Secchi, "Survey Human-Robot Collaboration in Industrial Settings: Safety, Intuitive Interfaces and Applications", Elsevier Mechatronics, 55:248-266, November 2018.

[J47] F. Boem, L. Sabattini, C. Secchi, "Decentralized State Estimation for the Control of Network Systems", Journal of the Franklin Institute, 356(2):860-882, January 2019.

[J48] M. De Stefano, H. Mishra, R. Balachandran, R. Lampariello, C. Ott, C. Secchi, "Multi-rate Tracking Control for a Space Robot on a Controlled Satellite: a Passivity-based Strategy", Robotics and Automation Letters (RA-L), 4(2):1319-1326, January 2019

[J49] V. Digani, M. A. Hsieh, L. Sabattini, C. Secchi, "Coordination of multiple AGVs: a Quadratic Optimization Method", Autonomous Robots, 43(2):539-555, March 2019

[J50] B. Yuksel, C. Secchi, H.H. Buelthoff, A. Franchi, "Aerial Physical Interaction via IDA-PBC", International Journal of Robotics Research, 38(4):403-421, March 2019

[J51] C. Talignani Landi, F. Ferraguti, C. Secchi, C. Fantuzzi, "A Passivity-Based Strategy for Manual Corrections in Human-Robot Coaching", Electronics, 2019, Electronics, 8(3):1-16, March 2019.

[J52] F. Ferraguti, C. Talignani Landi, L. Sabattini, M. Bonfé, C. Fantuzzi, C. Secchi, "A variable admittance control strategy for stable physical human-robot interaction", International Journal of Robotics Research, 38(6):747-765, April 2019

[J53] A. Levratti, G. Riggio, C. Fantuzzi, A. De Vuono, C. Secchi, "TIREBOT: a Collaborative Robot for the Tire Workshop", Robotics and Computer Integrated Manufactiring, 57:129-137, June 2019.

[J54] F. Ferraguti, R. Villa, C. Talignani Landi, A. M. Zanchettin, P. Rocco, C. Secchi, "A Unified Architecture for Physical and Ergonomic Human-Robot Collaboration", Robotica, 38(4), 669-683, 2020

[J55] M. De Stefano, R. Balachandran, C. Secchi, "A Passivity-based Approach for Simulating Satellite Dynamics with Robots: Time Delay and Discretization Effects", IEEE Transactions on Robotics, 36(1):189-203, February 2020.

[J56] V. Villani, B. Capelli, C. Secchi, C. Fantuzzi, L. Sabattini, "Humans interacting with multi-robot systems: a natural affect-based approach", Autonomous Robots, 44: 601-616, 2020.

[J57] F. Ferraguti, C. Talignani Landi, S. Costi, M. Bonfé, S. Farsoni, C. Secchi, C. Fantuzzi, "Safety Barrier Functions and Multi-Camera Tracking for Human-Robot Shared Environment", 124, Robotics and Autonomous Systems, 2020.

[J58] S. Borgia, C. Secchi, "Digitalizzazione e Robotica Collaborativa", Automazione Integrata, 20-22, Febbraio 2020

[J59] A. Leporini, E. Oleari, C. Landolfo, A. Sanna, A. Larcher, G. Gandaglia, N. Fossati, F. Muttin, U. Capitanio, F. Montorsi, A. Salonia, M. Minelli, F. Ferraguti, C. Secchi, S. Farsoni, A. Sozzi, M. Bonfé, N. Sayols, A. Hernansanz, A. Casals, S. Hertle, F. Cuzzolin, A. Dennison, A. Melzer, G. Kronreif, S. Siracusano, F. Falezza, F. Setti, R. Muradore, "Technical and Functional Validation of a Teleoperated Multirobots Platform for Minimally Invasive Surgery", IEEE Transactions on Medical Robotics and Bionics, 2(2):148-156, May 2020

[J60] A. Bettoni, E. Montini, M. Righi, V. Villani, R. Tsvetanov, S. Borgia, C. Secchi, E. Carpanzano, "Mutualistic and Adaptive Human-Machine Collaboration Based on Machine Learning in an Injection Moulding Manufacturing Line", Procedia CIRP, 93:395-400, 2020.

[J61] F. Ferraguti, M. Minelli, S. Farsoni, S. Bazzani, M. Bonfé, A. Vandanjon, S. Puliatti, G. . Bianchi, C. Secchi, "Augmented Reality and Robotic-Assistance for Percutaneous Nephrolithotomy", Robotics and Automation Letters (RA-L), 5(3):4556-4563, July 2020.

[J62] V. Villani, M. Righi, L. Sabattini, C. Secchi, "Wearable devices for the assessment of cognitive effort for human-robot interaction", IEEE Sensors Journal, 20(21):13047-13056, November 2020.

[J63] F. Ferraguti, M. Bertuletti, C. Talignani Landi, M. Bonfé, C. Fantuzzi, C. Secchi, "A control barrier function approach for maximizing performance while fulfilling to ISO/TS 15066 regulations", Robotics and Automation Letters (RA-L), 5(4):5921-5928, October 2020.

[J64] F. Ferraguti, M. Bonfé, C. Fantuzzi, C. Secchi, "Optimized power modulation in wave based bilateral teleoperation", IEEE/ASME Transactions on Mechatronics (T-MECH), 26(1):276-287, February 2021.

[J65] S. Puliatti, M. Amato, F. Ferraguti, M. Minelli, S. Farsoni, A. Eissa, M. Rizzo, L. Bevilacqua, M.C. Sighinolfi, C. Secchi, S. Micali, B. Rocco, G. Bianchi, "A combined augmented reality and robotic system for assistance in percutaneous nephrolithotomy procedures", European Urology Open Science, Volume 20, Supplement 2, 2020.

[J66] R. Masiero, C. Secchi, H. Miroslav, F. Filzi, A. Carapia, G. Di Bari, M. Zanaroli, "Enabling safe and efficient human-robot collaboration across Europe with the ROSSINI project", EnginSoft, 17(4), 2020

[J67] A. Pupa, W. van Dijk, C. Secchi, "A Human-Centered Dynamic Scheduling Architecture for Collaborative Application", Robotics and Automation Letters (RA-L), 6(3):4736-4743, July 2021.

[J68] A. Pupa, M. Arrfou, G. Andreoni, C. Secchi, "A Safety-Aware Kinodynamic Architecture for Human-Robot Collaboration", Robotics and Automation Letters (RA-L), 6(3):4465-4471, July 2021.

[J69] M. Amato, A. Eissa, S. Puliatti, C. Secchi, F. Ferraguti, M. Minelli, A. Meneghini, I. Landi, G. Guarino, M. C. Sighinolfi, B. Rocco, G. Bianchi, S. Micali, "Feasibility of a telementoring approach as a practical training for transurethral enucleation of the benign prostatic hyperplasia using bipolar energy: a pilot study", Springer Nature World Journal of Urology, 2021:1-7.

[J70] G. De Rossi, M. Minelli, S. Roin, F. Falezza, A. Sozzi, F. Ferraguti, F. Setti, M. Bonfé, C. Secchi, R. Muradore, "A First Evaluation of a Multi-Modal Learning System to Control Surgical Assistant Robots via Action Segmentation" , IEEE Transactions on Medical Robotics and Bionics, 3(3):714-724, August 2021,

[J71] B. Capelli, C. Secchi, L. Sabattini, "Passivity and Control Barrier Functions: Optimizing the Use of Energy", IEEE Robotics and Automation Letters, 7(2):1356-1363, April 2022, 2022

[J72] F. Ferraguti, C. Talignani Landi, A. Singletary, H. -C. Lin, A. Ames, C. Secchi, M. Bonfé, "Safety and Efficiency in Robotics: the Control Barrier Functions Approach", IEEE Robotics and Automation Magazine, 29(3):139-151, September 2022

[J73] F. Benzi, F. Ferraguti, G. Riggio, C. Secchi, "An Energy based Control Architecture for Shared Autonomy", IEEE Transactions on Robotics, 38(6):3917-3935, December 2022.

[J74] F. Benzi, M. Brunner, M. Tognon, C. Secchi, R. Siegwart, "Adaptive Tank-based Control for Aerial Physical Interaction with Uncertain Dynamic Environments with Energy-task Estimation", Special Issue: Variable Impedance Control and Learning In Complex Interaction Scenarios: Challenges and Opportunities, IEEE Robotics and Automation Letters (RA-L), 7(4): 9129-9136, October 2022.

[J75] A. Pupa, W. Van Dijk, C. Brekelmans, C. Secchi, "A Resilient and Effective Task Scheduling Approach For Industrial Human-Robot Collaboration", Special Issue on Human-Robot Collaborations in Industrial Automation, MDPI Sensors, 22(13) - 2022.

[J76] V. Villani, C. Secchi, M. Lippi, L. Sabattini, "A General Pipeline for Online Gesture Recognition in Human-Robot Interaction", IEEE Transactions on Human-Machine Systems, 53:2:315-324, April 2023, in press.

[J77] M. Minelli, N. Piccinelli, F. Falezza, F. Ferraguti, R. Muradore, C. Secchi, "Two-layer Based Multi-Arms Bilateral Teleoperation Architecture", IEEE Transactions on Control Systems Technology, 31(3): 1266-1279, May 2023.

[J78] D. Sacerdoti, M. Strozzi, C. Secchi, "A comparison of signal analysis techniques for the diagnostics of IMS rolling element bearing dataset", Applied Sciences, 13(10):5977, May 2023

[J79] V. Villani, G. Fenech, M. Fabbricatore, C. Secchi, "Wrist vibration feedback to improve operator awareness in collaborative robotics", Journal of Intelligent and Robotic, October 2023.

[J80] F. Benzi, C. Secchi, "Unified Power and Admittance Adaptation for Safe and Effective Physical Interaction with Unmodelled Dynamic Environments", Special Issue: Variable Impedance Control and Learning In Complex Interaction Scenarios: Challenges and Opportunities, IEEE Robotics and Automation Letters (RA-L), 8(12):8279-8286, December 2023.

[J81] A. Pupa, M. Minelli, C. Secchi, " A Dynamic Planner for Safe and Predictable Human Robot Collaboration", IEEE Robotics and Automation Letters (RA-L), 9(1):507-514, January 2024.

[J82] G. Furnari, C. Secchi, F. Ferraguti, " Sequence-Based Imitation Learning for Robot-Assisted Surgical Operations", Special Issue on Computer Vision Applications in Minimally Invasive Surgery, Artificial Intelligence Surgery, 2025, in press

Book Chapters

[BC1] C. Secchi, S. Stramigioli, C. Fantuzzi, "(Power scaling in port-Hamiltonian telemanipulation over packet switched networks", in "Advances in Telerobotics" (M. Ferre, M.Buss, R.Aracil, C. Melchiorri Eds.), Springer Tracts in Advanced Robotics (STAR) Series, Vol. 31, pp.233-256, ISBN: 978-3-540-71363-0, Springer, July 2007

[BC2] C. Secchi, S. Stramigioli, C. Fantuzzi, " Kinematic Compensation in Port-Hamiltonian Telemanipulation", in "Lagrangian and Hamiltonian Methods for Nonlinear Control 2006" (F. Bullo, K. Fujimoto Eds.), Lecture Notes in Control and Information Sciences (LNCIS), Vol. 366, pp.99-110, ISBN: 978-3-540-73889-3, Springer, 2007

[BC3] G. Lefemine, G. Pedrini, C. Secchi, F. Tesauri, S. Marzani, "Virtual Fixtures for Secondary Tasks", in "Human-Computer Interaction Symposium", Springer Boston, pp. 67-81, ISBN: 978-0-387-09677-3, 2008

[BC4] C. Secchi, C. Fantuzzi, "Formation Control over Delayed Communication Networks", in "Modeling, Estimation and Control of Networked Control Systems", Collana Understanding Complex Systems, Springer, pp. 59-74, ISBN: 978-3642031984, 2009

[BC5] M. Franken, S. Stramigioli, R. Reilink, C. Secchi, A. Macchelli, "Bridging the gap between passivity and transparency", in "Robotics: Science and Systems V", MIT Press, ISBN: 978-0-262-51463-7, October 2010

[BC6] C. Secchi, R. Olmi, C. Fantuzzi, M. Casarini, "TRAFCON - Traffic Control of AGVs in Automatic Warehouses", in "Gearing up and accelerating cross-fertilization between academic and industrial robotics research in Europe - Technology transfer experiments from the ECHORD project", Springer Tracts on Advance Robotics (STAR), Springer, pp. 85-105, ISBN: 978-3-319-02933-7, 2014

[BC7] Sabattini L., Cardarelli E., Digani V., Secchi C., Fantuzzi C., "Multi AGV Systems in Shared Industrial Environments: Advanced Sensing and Control Techniques for Enhanced Safety and Improved Efficiency", in "STP1594 - Autonomous Industrial Vehicles: From the Laboratory to the Factory Floor", ASTM, April 2016

[BC8] Sabattini L., Secchi C., Melchiorri C., "Network Robotics", in "Mechatronics and Robotics: New Trends and Challenges", CRC Press, ISBN: 9780367366582, 2020

[BC9] A. Pupa, M. Arrfou, G. Andreoni, C. Secchi, "A Human-Centered Dynamic Task Scheduling and Safe Task Execution Approach for Human-Robot Collaboration Scenarios", in "Human-Robot Collaboration: Unlocking the potential for industrial applications", IET, 2023.

[BC10] C. Secchi, F. Golinelli, L. Semeraro, P. Benatti, E. Gilioli, M. Macchi, G. Bosi, S. Salmoiraghi, L. Tomesani, "Strategic Action Line LI6: Evolving and Resilient Production", in "The Future of Manufacturing: The Italian Roadmap", Springer Tracts in Mechanical Engineering, Rosanna Fornasiero and Tullio A. M. Tolio (Eds), Springer, 2024

[BC11] R. Zanella, F. Califano, C. Secchi, S. Stramigioli, "Learning Passive Policies" in "European Robotics Forum 2024: ERF - 15th European Robotics", Springer Proceedings in Advanced Robotics, Cristian Secchi and Lorenzo Marconi (Eds), Springer 2024

[BC12] D. Ferrari, C. Secchi, "The Critical Role of Effective Communication in Human-Robot Collaborative Assembly" in "European Robotics Forum 2024: ERF - 15th European Robotics Forum", Springer Proceedings in Advanced Robotics, Cristian Secchi and Lorenzo Marconi (Eds), Springer 2024

[BC13] A. Pupa, M. Minelli, G. Battiato, C. Secchi, "An Efficient Architecture Fulfilling Safety" in "European Robotics Forum 2024: ERF - 15th European Robotics Forum", Springer Proceedings in Advanced Robotics, Cristian Secchi and Lorenzo Marconi (Eds), Springer 2024

International Conferences

Invited Papers

[CI1] C. Secchi, C. Fantuzzi, M. Bonfé, "On the use of UML for modeling physical system", Proceedings of the International Conference on Robotics and Automation (ICRA), April 2005, Barcelona, Spain. Invited paper in the session entitled "Object-oriented modelling and formal validation methodologies in manufacturing and automation"

[CI2] C. Secchi, S. Stramigioli, C. Fantuzzi, "The problem of packets loss in scaled digital port-Hamiltonian based bilateral telemanipulation", Proceedings of the IEEE International Conference on Control Applications (CCA), 322-327, August 2005, Toronto, Canada. Invited paper in the session entitled "Control of Telerobotic Systems".

[CI3] M. Bonfé, C. Fantuzzi, C. Secchi, "Verification of Fault Tolerance of Discrete-Event Object-Oriented Models using Model Checking", Proceedings of the IFAC World Congress, July 2008, Seoul, South Korea. Invited paper in the session entitled "Dependable Control of Discrete Event Systems".

[CI4] C. Secchi, S. Stramigioli, C. Fantuzzi, "Compensation of position errors in passivity based teleoperation over packet switched communication networks", Proceedings of the IFAC World Congress, July 2008, Seoul, South Korea. Invited paper in the session entitled "Putting Energy back in Robotics".

[CI5] C. Fantuzzi, M. Bonfé, C. Secchi, "A Design Pattern for Model Based Software Development for Automatic Machinery", Proceedings of the 13th IFAC Symposium on Information Control Problems in Manufacturing, June 2009, Moscow, Russia. Invited paper in the session entitled "Advanced Software Engineering in Industrial Automation".

[CI6] C. Fantuzzi, F. Fanfoni, C. Secchi, M. Bonfé, "An engineering process for the mechatronic development of industrial automation systems", Proceedings of the IEEE International Conference on Industrial Informatics (INDIN), July 2010, Osaka, Japan. Invited paper in the session entitled "Advanced Software Engineering in Industrial Informatics and Factory Automation".

[CI7] C. Fantuzzi, M. Bonfé, F. Fanfoni, C. Secchi, "A Design Pattern for translating UML software models into IEC 61131-3 Programming Languages" Proceedings of the IFAC World Congress, Milano (Italy), September 2011. Invited paper in the session entitled "Model Based Engineering in Industrial Plant Automation"

[CI8] P. Robuffo Giordano, A. Franchi, C. Secchi, H. H. Buelthoff, "Experiments of Passivity-Based Bilateral Aerial Teleoperation of a Group of UAVs with Decentralized Velocity Synchronization", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Francisco, USA, September 2011. Invited paper in the Symposium on Telerobotics.

[CI9] C. Secchi, "Traffic Control of AGVs in Automatic Warehouses: the TRAFCON Experiment", Workshop on European Efforts in Strengthening the Academia-Industry Collaboration in correspondence of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 2011, San Francisco (CA, USA)

Regular Papers

[C1] C. Secchi, S. Stramigioli, C. Melchiorri, "Geometric Grasping and Telemanipulation", Proceedings of the IEEE/RSJ Conference on Intelligent Robots and Systems (IROS), October 2001, Maui (HI, USA)

[C2] S. Stramigioli, C. Secchi, A.J. van der Schaft, C. Fantuzzi, "A Novel Theory for Sample Data Systems", Proceedings of the IEEE/RSJ Conference on Intelligent Robots and Systems (IROS), September 2002, Lausanne (Switzerland)

[C3] C. Secchi, S. Stramigioli, C. Fantuzzi, "Digital Passive Geometric Telemanipulation", Proceedings of the International Conference on Robotics and Automation (ICRA), September 2003, Taipei (Taiwan).

[C4] C. Fantuzzi, C. Secchi, A. Visioli, "On the Fault Detection and Isolation of Industrial Robot Manipulators", Proceedings of the 7th International IFAC Symposium on Robot Control (SYROCO), September 2003, Wroclaw (Poland)

[C5] A. Macchelli, C. Melchiorri, C. Secchi, C. Fantuzzi, "A Variable Structure Approach to Energy Shaping", Proceedings of the European Control Conference (ECC), September 2003, Cambridge (United Kingdom)

[C6] C. Secchi, S. Stramigioli, C. Fantuzzi, "Delayed Virtual Environments: a port-Hamiltonian Approach", Proceedings of the IEEE/RSJ Conference on Intelligent Robots and Systems (IROS), Ovtober 2003, Las Vegas(NV, USA)

[C7] C. Secchi, S. Stramigioli, C. Fantuzzi, "Dealing with Unreliabilities in Digital Passive Geometric Telemanipulation", Proceedings of the IEEE/RSJ Conference on Intelligent Robots and Systems (IROS), October 2003, Las Vegas (NV, USA)

[C8] C. Secchi, C. Fantuzzi, A. Gianotti, "Control of an Industrial Robot Using RTAI Linux", Proceedings of the fifth Real-time Linux Workshop, November 2003, Valencia (Spain)

[C9] C. Fantuzzi, C. Secchi, "Energetic Approach to Parametric Fault detection and Isolation", Proceedings of the American Control Conference (ACC), July 2004, Boston, Massachusetts (USA)

[C10] C. Secchi, C. Fantuzzi, M. Bonfé, "Unified modeling of control software and physical plants", Proceedings of the 16th IFAC World Congress, July 2005, Praha (Czech Republic)

[C11] M. Bonfé, C. Fantuzzi, C. Secchi, "Inheritance of Behavior in Object-Oriented Designs for industrial control systems", Proceedings of the 16th IFAC World Congress, July 2005, Praha (Czech Republic)

[C12] M. Bonfé, C. Fantuzzi, C. Secchi, "Verification of Behavioral Substitutability in Object-oriented Models for Industrial Controllers", Proceedings of the International Conference on Robotics and Automation (ICRA), April 2005, Barcelona(Spain)

[C13] M. Bonfé, C. Fantuzzi, C. Secchi, "Object-Oriented Modeling of Multi-Domain Systems", Proceedings of the Conference on Automation Science and Engineering (CASE), August 2005, Edmonton (Canada)

[C14] C. Secchi, S. Stramigioli, C. Fantuzzi, "Power Scaling in port-Hamiltonian based Telemanipulation", Proceedings of the IEEE-RSJ International Conference on Intelligent Robots and Systems (IROS), August 2005, Edmonton (Canada)

[C15] C. Secchi, S. Stramigioli, C. Fantuzzi, “Transparency in port-Hamiltonian based Telemanipulation”, Proceedings of the IEEE-RSJ International Conference on Intelligent Robots and Systems (IROS), August 2005, Edmonton (Canada)

[C16] M. Bonfé, C. Fantuzzi, C. Secchi, “Unified Modeling and Verification of Logic Controllers for Physical Systems”, Proceedings of the IEEE International Conference on Decision and Control (CDC), December 2005, Seville (Spain)

[C17] M. Bonfé, C. Fantuzzi, C. Secchi, “UML come linguaggio di modellazione unificato per sistemi meccatronici”, Convegno ANIPLA su Automazione per lo sviluppo e la competitivitÃ delle PMI, Novembre 2005, Napoli (Italy)

[C18] C. Landi, A. Prati, C. Secchi, “Image analysis and automatic composition of ceramic mosaics”, VIII Congresso SIMAI, May 2006, Ragusa (Italy)

[C19] C. Secchi, S. Stramigioli, C. Fantuzzi, “Kinematic Compensation in Port-Hamiltonian Telemanipulation” , Proceedings of the IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control (LHMNLC), July 2006, Nagoya (Japan)

[C20] C. Fantuzzi, M. Ruggeri, S. Marzani, C. Secchi, “A Distributed Embedded Control System for Agricultural Machines” , Proceedings of the 4th IEEE International Conference on Industrial Informatics, August 2006, Singapore

[C21] C. Secchi, S. Stramigioli, C. Fantuzzi, “Variable delay in scaled port-Hamiltonian telemanipulation” , Proceedings of the IFAC Symposium on Robot Control (SYROCO), September 2006, Bologna (Italy)

[C22] C. Secchi, M. Bonfé, C. Fantuzzi, “A coalgebraic approach to behavioral inheritance in Dynamical Systems”, Proceedings of the International Symposium on Nonlinear Theory and its Applications (NOLTA), September 2006, Bologna (Italy)

[C23] C. Secchi, S. Stramigioli, C. Fantuzzi, “Intrinsically Passive Force Scaling in Haptic Interfaces” , Proceedings of the IEEE-RSJ International Conference on Intelligent Robots and Systems (IROS), October 2006, Beijing (China)

[C24] C. Secchi, S. Stramigioli, C. Fantuzzi, “Position Drift Compensation in port-Hamiltonian Telemanipulation” , Proceedings of the IEEE-RSJ International Conference on Intelligent Robots and Systems (IROS), October 2006, Beijing (China)

[C25] L. Bassi, C. Secchi, C. Fantuzzi, M. Bonfé, “An object-oriented approach to manufacturing systems modeling”, Proceedings of the IEEE Conference on Automation Science and Engineering (CASE), October 2006, Shangai (China)

[C26] C. Secchi, C. Fantuzzi, “Inheritance for Dynamical Systems”, Proceedings of the International Congress ANIPLA 2006, November 2006, Rome (Italy)

[C27] D. Zanichelli, C. Secchi, R. Rubini, C. Fantuzzi, M. Bonfé, D. Borghi, R. Borsari, E. Sacchetti, “Towards Object-Oriented Modeling of Complex Mechatronic Systems for the Manufacturing Industry”, Proceedings of the ASME International Mechanical Engineering Congress and Exposition, November 2006, Chicago (IL, USA)

[C28] C. Secchi, M. Bonfé, C. Fantuzzi, “Design by Extension and Inheritance of behavior in Dynamical Systems”, Proceedings of the IEEE Conference on Decision and Control (CDC), December 2006, San Diego (CA, USA)

[C29] C. Secchi, S. Stramigioli, C. Fantuzzi, “Port-contact systems in bilateral telemanipulation” , Proceedings of the 7th IFAC Symposium on Nonlinear Control Systems (NOLCOS 2007), pp. 485-490, August 2007, Pretoria (South Africa)

[C30] C. Secchi, C. Fantuzzi, "Energy Shaping over Networks for Mechanical Systems", Proceedings of the IEEE International Conference on Decision and Control (CDC), December 2007, New Orleans (FL, USA)

[C31] C. Secchi, C. Fantuzzi, "Formation Control Over Delayed Communication Networks", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2008, Pasadena (CA, USA)

[C32] R. Olmi, C. Secchi, C. Fantuzzi, "Coordination of Multiple AGVs in an Industrial Application", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2008, Pasadena (CA, USA)

[C33] E. Gebennini, A. Grassi, C. Secchi, C. Fantuzzi, "An Analytical Model for Automated Packaging Lines Design", Proceedings of the American Control Conference, June 2008, Seattle (WA, USA)

[C34] D. Botturi, S. Galvan, C. Secchi, "A Force Dependent Scaling for Improving the Human Perception in Bilateral Teleoperation", Workshop on New Vistas and Challenges in Telerobotics, Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2008, Pasadena (CA, USA)

[C35] M. Cocconcelli, C. Secchi, R. Rubini, C. Fantuzzi, L. Bassi, "Predictive maintenance of ball bearings for machines rotating with arbitrary velocity profiles", ISMA2008 International Conference on Noise and Vibration Engineering, September 2008, Leuven (Belgium)

[C36] M. Cocconcelli, C. Secchi, R. Rubini, C. Fantuzzi, L. Bassi, "Comparison Between Time-Frequency Techniques to Predict Ball Bearing Fault in Drives Executing Arbitrary Motion Profiles", Proceedings of the ASME International Mechanical Engineering Congress & Exposition (IMECE08), November 2008, Boston (MA, USA)

[C37] D. Botturi, S. Galvan, M. Vicentini, C. Secchi, "Perception-Centric Force Scaling Function for Stable Bilateral Interaction", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2009, Kobe (Japan)

[C38] M. Franken, S. Stramigioli, R. Reilink, C. Secchi, A. Macchelli, "Bridging the gap between passivity and transparency", Proceedings of the 2009 Robotics: Science and Systems Conference (RSS09), July 2009, Seattle (WA, USA)

[C39] R. Olmi, C. Secchi, C. Fantuzzi, "A Coordination Technique for Automatic Guided Vehicles in an Industrial Application", Proceedings of the 9th International IFAC Symposium on Robot Control (SYROCO), September 2009, Gifu (Japan)

[C40] C. Fantuzzi, G. Perrica, C. Secchi, "A way to reduce model complexity for Non Linear System Approximators", Proceedings of the 4th International Conference on Physics and Control (PhysCon2009), September 2009, Catania (Italy)

[C41] L. Sabattini, C. Secchi, C. Fantuzzi, "Potential Based Control Strategy for Arbitrary Shape Formations of Mobile Robots", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 2009, Saint Louis (MO, USA)

[C42] R. Olmi, C. Secchi, C. Fantuzzi, "Coordinating the motion of multiple AGVs in automatic warehouses", Workshop on Robotics and Intelligent Transportation Systems, Proceedings of the IEEE International Conference on Robotics and Automation, May 2010, Anchorage (AK, USA)

[C43] R. Olmi, C. Secchi, C. Fantuzzi, "Coordinating multiple robots with assigned paths", Proceedings of the 7th IFAC Symposium on Intelligent Autonomous Vehicles 2010, September 2010, Lecce (Italy)

[C44] M. Bonfé, E. Piccinini, C. Secchi, "SaBot: A scalable architecture for Web-enabled Mobile Robots", Proceedings of the 7th IFAC Symposium on Intelligent Autonomous Vehicles 2010, September 2010, Lecce (Italy)

[C45] L. Sabattini, C. Secchi, C. Fantuzzi, A. Stefani, "Bird's - Eye View Image for the Localization of a Mobile Robot by Means of Trilateration", Proceedings of the 7th IFAC Symposium on Intelligent Autonomous Vehicles 2010, September 2010, Lecce (Italy)

[C46] L. Bassi, M. Cocconcelli, C. Secchi, R. Rubini, C. Fantuzzi, "An algorithm to diagnose ball bearings faults in servomotors running arbitrary motion profiles", Proceedings of the ISMA2010 International Conference on Noise and Vibration Engineering, September 2010, Leuven (Belgium)

[C47] L. Sabattini, C. Secchi, C. Fantuzzi, D. de Macedo Possamai, "Tracking of Closed-Curve Trajectories for Multi-Robot Systems", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, October 2010, Taipei (Taiwan)

[C48] M. Bonfé, C. Secchi, "Online Smooth Trajectory Planning for Mobile Robots by Means of Nonlinear Filters", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, October 2010, Taipei, (Taiwan)

[C49] P. Robuffo Giordano, A. Franchi, H.I. Son, C. Secchi, D.J. Lee, H.H. Buelthoff, "Towards Bilateral Teleoperation of Multi-Robot Systems", Proceedings of the 3rd Workshop for Young Researchers on Human-Friendly Robotics, October 2010, Tuebingen (Germany)

[C50] A. Franchi, P. Robuffo Giordano, C. Secchi, H.I. Son, H.H. Buelthoff, "A Passivity-Based Decentralized Approach for the Bilateral Teleoperation of a Group of UAVs with Switching Topology", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2011, Shanghai (China)

[C51] D. Ronzoni, R. Olmi, C. Secchi, C. Fantuzzi, "AGV Global Localization Using Indistinguishable Artificial Landmarks", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2011, Shanghai (China)

[C52] R. Falconi, L. Sabattini, C. Secchi, C. Melchiorri, C. Fantuzzi, "A Graph-Based Collision-Free Distributed Formation Control Strategy", Proceedings of the IFAC World Congress, September 2011, Milano (Italy)

[C53] P. Robuffo Giordano, A. Franchi, C. Secchi, H.H. Buelthoff, "Passivity-Based Decentralized Connectivity Maintenance in the Bilateral Teleoperation of Multiple UAVs", Proceedings of the Robotics: Science and Systems Conference, June 2011, Los Angeles (CA, USA)

[C54] R. Olmi, C. Secchi, C. Fantuzzi, "An Efficient Control Strategy for the Traffic Coordination of AGVs", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 2011, San Francisco (CA, USA)

[C55] L. Sabattini, N. Chopra, C. Secchi, "Distributed Control of Multi-Robot Systems with Global Connectivity Maintenance", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 2011, San Francisco (CA, USA)

[C56] L. Sabattini, N. Chopra, C. Secchi, "On Decentralized Connectivity Maintenance for Mobile Robotic Systems", Proceedings of the IEEE International Conference on Decision and Control (CDC), December 2011, Orlando (FL,USA)

[C57] L. Sabattini, C. Secchi, N. Chopra, "Decentralized Connectivity Maintenance for Networked Lagrangian Dynamical Systems", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2012, St. Paul (MN, USA)

[C58] C. Secchi, A. Franchi, H.H. Buelthoff, P. Robuffo Giordano, "Bilateral Teleoperation of a Group of UAVs with Communication Delays and Switching Topology", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 2012, St. Paul (MN, USA)

[C59] M. Bonfé, F. Boriero, R. Dodi, P. Fiorini, A. Morandi, R. Muradore, L. Pasquale, A. Sanna, C. Secchi, "Towards Automated Surgical Robotics: a Requirements Engineering Approach", Proceedings of the 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob2012), June 2012, Rome (Italy)

[C60] A. Levratti, M. Bonaiuti, C. Secchi, C. Fantuzzi, "A Novel Inertial/RFID Based Localization Method for Autonomous Lawnmowers", Proceedings of the IFAC Symposium on Robot Control (SYROCO2012), September 2012, Dubrovnik(Croatia)

[C61] M. Bonfé, C. Secchi, E. Scioni, "Online Trajectory Generation for Mobile Robots with Kinodynamic Constraints and Embedded Control Systems", Proceedings of the IFAC Symposium on Robot Control (SYROCO2012), September 2012, Dubrovnik (Croatia)

[C62] L. Sabattini, A. Gasparri, C. Secchi, N. Chopra, "Enhanced Connectivity Maintenance for Multi-Robot Systems", Proceedings of the IFAC Symposium on Robot Control (SYROCO2012), September 2012, Dubrovnik (Croatia)

[C63] C. Secchi, L. Sabattini, C. Fantuzzi, "Decentralized Global Connectivity Maintenance for Interconnected Lagrangian Systems with Communication Delays", Proceedings of the 4th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC12), August 2012, Bertinoro (Italy)

[C64] L. Sabattini, A. Levratti, F. Venturi, E. Amplo, C. Fantuzzi, C. Secchi, "Experimental comparison of 3D vision sensors for mobile robot localization for industrial application: stereo-camera and RGB-D sensor", Proceedings of the 12th International Conference on Control, Automation, Robotics and Vision (ICARCV), December 2012, Guangzhou (China)

[C65] M. Bonfé C. Secchi, E. Scioni, "Online Kinodynamic Trajectory Generation using nonlinear Filters: a Multi-dimensional Space Approach", Workshop on Real-Time Motion Planning: Online, Reactive and in Real-Time, Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 2012, Vila Moura (Portugal)

[C66] C. Secchi, A. Franchi, H. H. Buelthoff, P. Robuffo Giordano, "Bilateral Control of the Degree of Connectivity in Multiple Mobile-robot Teleoperation", Proceedings of the IEEE International Conference on Robotics and Automation, May 2013, Karlsruhe (Germany)

[C67] F. Ferraguti, C. Secchi, C. Fantuzzi, "A Tank-Based Approach to Impedance Control with Variable Stiffness", Proceedings of the IEEE International Conference on Robotics and Automation, May 2013, Karlsruhe (Germany)

[C68] L. Sabattini, C. Secchi, C. Fantuzzi, "Collision Avoidance Using Gyroscopic Forces for Cooperative Lagrangian Dynamical Systems", Proceedings of the IEEE International Conference on Robotics and Automation, May 2013, Karlsruhe (Germany)

[C69] L. Sabattini, C. Secchi, M. Cocetti, C. Fantuzzi, "Implementation of Cooperative Dynamic Behaviors in Networked Systems with Controllability Preservation", Proceedings of the Workshop "Towards Fully Decentralized Multi-Robot Systems: Hardware, Software and Integration" held in conjuction with IEEE International Conference on Robotics and Automation (ICRA), May 2013, Karlsruhe (Germany)

[C70] A. Levratti, C. Secchi, C. Fantuzzi, "A low cost localization algorithm for an autonomous lawnmower", Proceedings of the 9th International Workshop on Robot Motion and Control, July 2013, Wasowo Palace (Poland)

[C71] M. Torricelli, F. Ferraguti, C. Secchi, "An Algorithm for Planning the Number and the Pose of the Iceballs in Cryoablation", Proceedings of the 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'13), July 2013, Osaka (Japan)

[C72] L. Sabattini, C. Secchi, N. Chopra, "Decentralized Control for Maintenance of Strong Connectivity for Directed Graphs", Proceedings of the 21st Mediterranean Conference on Control and Automation (MED13), June 2013, Chania (Greece)

[C73] F. Ferraguti, N. Golinelli, C. Secchi, N. Preda, M. Bonfé, "A Component-Based Software Architecture for Control and Simulation of Robotic Manipulators", Proceedings of the IEEE International Conference on Emerging Technology and Factory Automation (ETFA13), September 2013, Cagliari (Italy)

[C74] M. Bonfé, N. Preda, C. Secchi, F. Ferraguti, R. Muradore, L. Repele, G. Lorenzi, L. Gasperotti, P. Fiorini, "Automated Surgical Task Execution: the Next Step in Robotic Surgery", 3rd Joint Workshop on New Technologies for Computer/Robot Assisted Surgery, September 2013, Verona (Italy)

[C75] M. Cocetti, L. Sabattini, C. Secchi, C. Fantuzzi, "Decentralized Control Strategy for the Implementation of Cooperative Dynamic Behaviors in Networked Systems", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS13), November 2013, Tokyo (Japan)

[C76] V. Digani, L. Sabattini, C. Secchi, C. Fantuzzi, "Hierarchical Traffic Control for Partially Decentralized Coordination of Multi AGV Systems in Industrial Environments", 5th Workshop on Planning, Perception and Navigation for Intelligent Vehicles, Proceedings of the IEEE/RSJ RSJ International Conference on Intelligent Robots and Systems (IROS13), November 2013, Tokyo (Japan)

[C77] V. Digani, L. Sabattini, C. Secchi, C. Fantuzzi, "Towards Decentralized Coordination of Multi Robot Systems in Industrial Environments: a Hierarchical Traffic Control Strategy", Proceedings of the IEEE International Conference on Intelligent Computer Communication and Processing, September 2013, Cluj-Napoca (Romania)

[C78] L. Sabattini, V. Digani, C. Secchi, G. Cotena, D. Ronzoni, M. Foppoli, F. Oleari, "Technological Roadmap to Boost the Introduction of AGVs in Industrial Applications", Proceedings of the IEEE International Conference on Intelligent Computer Communication and Processing, September 2013, Cluj-Napoca (Romania)

[C79] R. Dodi, F. Ferraguti, A. Ristolainen, C. Secchi, A. Sanna, "Planning and Simulation of Percutaneous Cryoablation", Proceedings of the 2nd AASRI Conference on Computational Intelligence and Bioinformatics, December 2013, Jeju Island (South Korea)

[C80] L. Sabattini, C. Secchi, M. Cocetti, C. Fantuzzi, "Implementation of Arbitrary Periodic Dynamic Behaviors in Networked Systems", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), June 2014, Hong Kong (China)

[C81] V. Digani, L. Sabattini, C. Secchi, C. Fantuzzi, "Hierarchical Traffic Control for Partially Decentralized Coordination of Multi AGV Systems in Industrial Environments", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), June 2014, Hong Kong (China)

[C82] V. Digani, L. Sabattini, C. Secchi, C. Fantuzzi, "Decentralized coordination enhanced by centralized information: multiple AGVs in industrial application", Workshop "On the centrality of decentralization in multi-robot systems: holy grail or false idol?" Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), June 2014, Hong Kong (China)

[C83] B. Yuksel, C. Secchi, H. H. Buelthoff, A. Franchi, "Reshaping the Physical Properties of a Quadrotor through IDA-PBC and its Application to Aerial Physical Interaction", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), June 2014, Hong Kong (China)

[C84] B. Yuksel, C. Secchi, H. H. Buelthoff, A. Franchi, "Reshaping the Physical Properties of a Quadrotor through IDA-PBC and its Application to Aerial Physical Interaction", Workshop on "Aerial Robots Physically Interacting with the Environment", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), June 2014, Hong Kong (China)

[C85] B. Yuksel, C. Secchi, H. H. Buelthoff, A. Franchi, "Aerial Physical Interaction via Reshaping of the Physical Properties: Passivity-based Control Methods and Nonlinear Force Observers", Proceedings of the IEEE/ASME International Conference on Advanced Intelligent Mechatronics, July 2014, Besancon (France)

[C86] M. Bonfé, N. Preda, C. Secchi, F. Ferraguti, R. Muradore, L. Repele, G. Lorenzi, P. Fiorini, "Distributed Control Architecture for Automated Surgical Task Execution with Coordinated Robot Arms", accepted for publication in the Proceedings of the IFAC World Congress, August 2014, Cape Town (South Africa)

[C87] L. Sabattini, C. Secchi, C. Fantuzzi, "Controllability and Observability Preservation for Networked Systems with Time Varying Topologies", accepted for publication in the Proceedings of the IFAC World Congress, August 2014, Cape Town (South Africa)

[C88] L. Sabattini, C. Secchi, C. Fantuzzi, "Cooperative Dynamic Behaviors in Networked Systems with Decentralized State Estimation", accepted for publication in the Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 2014, Chicago (IL, USA)

[C89] V. Digani, L. Sabattini, C. Secchi, C. Fantuzzi, "An Automatic Approach for the Generation of the Roadmap for Multi-AGV Systems in an Industrial Environment", accepted for publication in the Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 2014, Chicago (IL, USA)

[C90] C. Secchi, L. Sabattini, C. Fantuzzi, "Multimodal passivity based teleoperation of multiple slaves", Workshop on Telerobotics for Real-Life Applications: Opportunities, Challenges, and New Developments, Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 14-18 2014, Chicago (IL), USA

[C91] E. Cardarelli, L. Sabattini, C. Secchi, C. Fantuzzi, "Multisensor Data Fusion for Obstacle Detection in Automated Factory Logistics", Proceedings of the 2014 International Conference on Intelligent Computer Communication adn Processing (ICCP14), September 4-6 2014, Cluj-Napoca, Romania

[C92] V. Digani, F. Caramaschi, L. Sabattini, C. Secchi, C. Fantuzzi, "Obstacle Avoidance for Industrial AGVs", Proceedings of the 2014 International Conference on Intelligent Computer Communication adn Processing (ICCP14), September 4-6 2014, Cluj-Napoca, Romania

[C93] C. Secchi, R. Olmi, F. Rocchi, C. Fantuzzi, "A Dynamic Routing Strategy for the Traffic Control of AGVs in Automatic Warehouses", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 26-30 2015, Seattle (WA), USA

[C94] B. Yuksel, S. Mahboubi, C. Secchi, H. H. Buelthoff, A. Franchi, "Design, Identification and Experimental Testing of a Light-Weight Flexible-joint Arm for Aerial Physical Interaction", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 26-30 2015, Seattle (WA), USA

[C95] L. Sabattini, E. Cardarelli, V. Digani, C. Secchi, C. Fantuzzi, "Multi AGV Systems in Shared Industrial Environments: Advanced Sensing and Control Techniques for Enhanced Safety and Improved Efficiency", Workshop on "Autonomous Industrial Vehicles: From the Laboratory to the Factory Floor", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 26-30 2015, Seattle (WA), USA

[C96] B. Yuksel, N. Staub, C. Secchi, C. Fantuzzi "Aerial Physical Interaction: Design, Control, Identification and Estimation", Workshop on Aerial Robotics Manipulation and Load Transportation of the IEEE International Conference on Robotics and Automation (ICRA), May 26 - 30 2015, Seattle (WA), USA

[C97] F. Ferraguti, N. Preda, G. De Rossi, M. Bonfé, R. Muradore, P. Fiorini, C. Secchi, "A Two Layer Approach for Shared Control in Semi-Autonomous Robotic Surgery", Proceedings of the European Control Conference (ECC), July 15-17 2015, Linz (Austria)

[C98] C. Secchi, L. Sabattini, C. Fantuzzi. "Port-Hamiltonian based teleoperation of a multi-robot system on periodic trajectories", 5th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control (LHMNLC), July 4-7 2015, Lyon, France.

[C99] C. Secchi, F. Ferraguti, M. Bonfé, N. Preda, R. Muradore, L. Repele, G. Lorenzi, L. Gasperotti, P. Fiorini "Autonomous Execution of Surgical Tasks: the Next Step in Robotic Surgery", Proceedings of the Hamlyn Symposium on Medical Robotics, June 20-23, London, UK.

[C100] V. Digani, M. A. Hsieh, L. Sabattini, C. Secchi, "A Quadratic Programming Framework for Coordinating Multi-AGV Systems", Proceedings of the IEEE International Conference on Automation Science and Engineering (CASE), August 24-28 2015, Gothenburg, Sweden

[C101] L. Sabattini, E. Cardarelli, V. Digani, C. Secchi, C. Fantuzzi, K. Furstenberg, "Advanced Sensing and Control Techniques for Multi AGV Systems in Shared Industrial Environments", Proceedings of the 20th IEEE International Conference on Emerging Technologies for Factory Automation (ETFA), September 8-11 2015, Luxembourg.

[C102] L. Sabattini, V. Digani, M. Lucchi, C. Secchi, C. Fantuzzi, "Mission Assignment for Multi-Vehicle Systems in Industrial Environments", Proceedings of the 11th IFAC Symposium on Robot Control (SYROCO), August 26th-28th 2015, Salvador (BA), Brazil.

[C103] L. Sabattini, C. Secchi, A. Levratti, C. Fantuzzi, "Decentralized Control of Cooperative Robotic Systems for Arbitrary Setpoint Tracking while Avoiding Collisions", Proceedings of the 11th IFAC Symposium on Robot Control (SYROCO), August 26th-28th 2015, Salvador (BA), Brazil.

[C104] C. Ghedini, C. Secchi, C. H. Costa Ribeiro, L. Sabattini, "Improving robustness in multi-robot networks", Proceedings of the 11th IFAC Symposium on Robot Control (SYROCO), August 26th-28th 2015, Salvador (BA), Brazil.

[C105] E. Cardarelli, L. Sabattini, C. Secchi, C. Fantuzzi, "Cloud Robotics Paradigm for Enhanced Navigation of Autonomous Vehicles in Real World Industrial Applications", Proceedings of the 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 28th - October 2nd 2015, Hamburg, Germany

[C106] C. Secchi, L. Sabattini, C. Fantuzzi, "Conducting multi-robot systems: gestures for the passive teleoperation of multiple slaves", Proceedings of the 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 28th - October 2nd 2015, Hamburg, Germany

[C107] F. Ferraguti, N. Preda, M. Bonfé, C. Secchi, "Bilateral Teleoperation of a Dual Arms Surgical Robot with Passive Virtual Fixtures Generation", Proceedings of the 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 28th - October 2nd 2015, Hamburg, Germany

[C108] E. Cardarelli, L. Sabattini, V. Digani, C. Secchi, C. Fantuzzi, "Interacting with a Multi AGV System", Proceedings of the 2015 International Conference on Intelligent Computer Communication adn Processing (ICCP15), September 3-5 2015, Cluj-Napoca, Romania

[C109] F. Oleari, M. Magnani, D. Ronzoni, L. Sabattini, E. Cardarelli, V. Digani, C. Secchi, C. Fantuzzi, "Improving AGV Systems: Integration of Advanced Sensing and Control Technologies", Proceedings of the 2015 International Conference on Intelligent Computer Communication adn Processing (ICCP15), September 3-5 2015, Cluj-Napoca, Romania

[C110] L. Sabattini, C. Secchi, A. Levratti, M. Cocetti, C. Fantuzzi, "Coordinated Dynamic Behaviors in Multi-Robot Systems with Time-Varying Topologies", Proceedings of the 54th IEEE Conference on Decision and Control (CDC15), December 15-18, Osaka (Japan)

[C111] F. Boem, L. Sabattini, C. Secchi, "Decentralized State Estimation for Heterogeneous Multi-Agent Systems", Proceedings of the 54th IEEE Conference on Decision and Control (CDC15), December 15-18, Osaka (Japan)

[C112] L. Sabattini, C. Secchi, C. Fantuzzi, "Eigenvalue Placement for Asymptotic Stability in Piecewise Linear Switched Systems", Proceedings of the 54th IEEE Conference on Decision and Control (CDC15), December 15-18, Osaka (Japan)

[C113] L. Sabattini, C. Secchi, M. Lotti, C. Fantuzzi, "Coordinated Motion for Multi-Robot Systems Under Time Varying Communication Topologies", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 16-21, Stockholm (Sweden)

[C114] C. Secchi, F. Ferraguti, C. Fantuzzi, "Catching the wave: a transparency oriented wave based teleoperation architecture", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 16-21, Stockholm (Sweden)

[C115] A. Levratti, A. De Vuono, C. Fantuzzi, C. Secchi, "TIREBOT: a Novel Tire Workshop Assistant Robot", Proceedings of the 2016 IEEE International Conference on Advanced Intelligent Mechatronics (AIM), July 12-15, 2016, Banff (Canada).

[C116] F. Boem, L. Sabattini, C. Secchi, "Decentralized Fault Diagnosis for Heterogeneous Multi-Agent Systems", Proceedings of the 3rd International Conference on Control and Fault-Tolerant Systems (SysTol'16), September 7-9, 2016, Barcelona (Spain).

[C117] C. Talignani Landi, F. Ferraguti, C. Secchi, C. Fantuzzi, "Tool Compensation and Force Password Identification on Admittance-Controlled Robots in Walk-Through Programming", Proceedings of the 9th International Workshop on Human-Friendly Robotics, September 29-30, 2016, Genova (Italy).

[C118] F. Ferraguti, C. Talignani Landi, C. Secchi, C. Fantuzzi, "Tool compensation in walk-through programming for admittance-controlled robots", Proceedings of the 42nd IEEE Industrial Electronics Conference (IECON), October 24-27, 2016, Firenze (Italy).

[C119] L. Sabattini, V. Digani, C. Secchi, C. Fantuzzi, "Hierarchical Coordination Strategy for Multi-AGV Systems Based on Dynamic Geodesic Environment Partitioning", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 9-14, 2016, Daejeon (South Korea)

[C120] F. Ferraguti, C. Fantuzzi, C. Secchi, "Optimizing the use of power in wave based bilateral teleoperation", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 9-14, 2016, Daejeon (South Korea)

[C121] M. De Stefano, J. Artigas, C. Secchi, "An optimized passivity based method for simulating satellite dynamics on a position controlled robot in presence of latencies", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 9-14, 2016, Daejeon (South Korea)

[C122] M. Zareh Eshghdoust, L. Sabattini, C. Secchi, "Distributed Laplacian Eigenvalue and Eigenvector Estimation in Multi-Robot Systems", Proceedings of the 13th International Symposium on Distributed Autonomous Robotic Systems (DARS16), November 7-9, 2016, London, United Kingdom

[C123] M. Zareh Eshghdoust, C. Secchi, L. Sabattini, "Decentralized biconnectivity conditions in multi-robot systems", Proceedings of the 55th IEEE Conference on Decision and Control (CDC), December 12-14, 2016, Las Vegas (NV), USA

[C124] M. Zareh Eshghdoust, C. Secchi, L. Sabattini, "Enforcing biconnectivity in multi-robot systems", Proceedings of the 55th IEEE Conference on Decision and Control (CDC), December 12-14, 2016, Las Vegas (NV), USA

[C125] A. Levratti, G. Riggio, A. De Vuono, C. Fantuzzi, C. Secchi, "Safe Navigation and Experimental Evaluation of a Novel Tire Workshop Assistant Robot", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 29th - June 3rd 2017, Singapore

[C126] L. Sabattini, C. Secchi, C. Fantuzzi, "Achieving the Desired Dynamic Behavior in Multi-Robot Systems Interacting with the Environment", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 29th - June 3rd 2017, Singapore

[C127] M. De Stefano, R. Balachandran, J. Artigas, C. Secchi, "A Passive Explicit Discrete Integrator for Reproducing Physical Dynamics with Hardware in the Loop Simulators", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 29th - June 3rd 2017, Singapore

[C128] C. Talignani Landi, F. Ferraguti, L. Sabattini, C. Secchi, C. Fantuzzi, "Admittance Control Parameter Adaptation for Physical Human-Robot Interaction", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 29th - June 3rd 2017, Singapore

[C129] V. Villani, L. Sabattini, G. Riggio, A. Levratti, C. Secchi, C. Fantuzzi, "Interacting With a Mobile Robot with a Natural Infrastructure-Less Interface", Proceedings of the IFAC World Congress, July 9-14 2017, Toulouse, France.

[C130] L. Sabattini, V. Digani, C. Secchi, C. Fantuzzi, "Optimized Simultaneous Conflict-Free Task Assignment and Path Planning for Multi-AGV Systems", Proceedings of the 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems, September 24-28, 2017, Vancouver (Canada)

[C131] M. De Stefano, J. Artigas, C. Secchi, "A Passive Integration Strategy for Rendering Rotational Rigid-body Dynamics on a Robotic Simulator", Proceedings of the 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems, September 24-28, 2017, Vancouver (Canada)

[C132] N. Battilani, R. Spica, P. Robuffo Giordano, C. Secchi, "An Assisted Bilateral Control Strategy for 3D Pose Estimation of Visual Features", Proceedings of the 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems, September 24-28, 2017, Vancouver (Canada)

[C133] C. Talignani Landi, F. Ferraguti, L. Sabattini, C. Secchi, M. BonfÃ©, C. Fantuzzi, "Variable Admittance Control Preventing Undesired Oscillating Behaviors in Physical Human-Robot Interaction", Proceedings of the 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems, September 24-28, 2017, Vancouver (Canada)

[C134] L. Sabattini, V. Villani, C. Secchi and C. Fantuzzi, "A General Approach to Natural Human-Robot Interaction", Proceedings of the 10th International Workshop on Human-Friendly Robotics, November 6-7, 2017, Napoli (Italy).

[C135] V. Villani, L. Sabattini, C. Secchi, C. Fantuzzi, "Natural Interaction Based on Affective Robotics for Multi-Robot Systems", Proceedings of the 1st International Symposium on Multi-Robot and Multi-Agent Systems, December 4-5, 2017, Los Angeles, CA, USA

[C136] C. Schenk, B. Yuksel, C. Secchi, H. H. Buelthoff, "Port Hamiltonian Modeling of a Cable-Driven Parallel Robot", Proceedings of the 6th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control (LHMNLC), May 1-4 2018, Valparaiso, Chile

[C137] L. Sabattini, C. Fantuzzi, C. Secchi, "Shaping the Force Feedback by Dynamic Scaling in the Teleoperation of Multi-Robot Systems", Proceedings of the 6th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control (LHMNLC), May 1-4 2018, Valparaiso, Chile

[C138] C. Talignani Landi, F. Ferraguti, C. Fantuzzi, C. Secchi, "A Passivity-Based Strategy for Coaching in Human-Robot Interaction", Proceedings of the IEEE International Conference on Robotics and Automatio (ICRA), May 21-25, 2018, Brisbane, Australia

[C139] G. Riggio, C. Fantuzzi, C. Secchi, "A Low-Cost Navigation Strategy for Yield Estimation in Vineyards", Proceedings of the IEEE International Conference on Robotics and Automatio (ICRA), May 21-25, 2018, Brisbane, Australia

[C140] S. Farsoni, C. Talignani Landi, F. Ferraguti, C. Secchi, M. BonfÃ©, "Real-Time Identification of Robot Payload using a Multirate Quaternion-based Kalman Filter and Recursive Total Least-Squares", Proceedings of the IEEE International Conference on Robotics and Automatio (ICRA), May 21-25, 2018, Brisbane, Australia

[C141] L. Sabattini, C. Secchi, C. Fantuzzi, "Controlling the Interaction of a Multi-Robot System with External Entities", Proceedings of the IEEE International Conference on Robotics and Automatio (ICRA), May 21-25, 2018, Brisbane, Australia

[C142] M. De Stefano, R. Balachandran, A. M. Giordano, C. Secchi, "An Energy-based Approach for the Multi-Rate Control of a Manipulator on an Actuated Base", Proceedings of the IEEE International Conference on Robotics and Automatio (ICRA), May 21-25, 2018, Brisbane, Australia

[C143] V. Villani, F. Pini, F. Leali, C. Secchi, C. Fantuzzi, "Survey on Human-Robot Interaction for Robot Programming in Industrial Applications", Proceedings of the 16th IFAC Symposium on Information Control Problems in Manufacturing (INCOM), June 11-13, 2018, Bergamo, Italy

[C144] V. Villani, L. Sabattini, C. Secchi, C. Fantuzzi, "A Framework for Affect-Based Natural Human-Robot Interaction", Proceedings of the 27th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), August 27-31, 2018, NanJing- Tai'An, China.

[C145] G. Riggio, C. Fantuzzi, C. Secchi, "On the Use of Energy Tanks for Multi-Robot Interconnection", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 1-5, 2018, Madrid, Spain.

[C146] L. Sabattini, C. Fantuzzi, C. Secchi, "Teleoperation of a Multi-Robot System with Adjustable Dynamic Parameters", Proceedings of the International Symposium on Distributed Autonomous Robotic Systems (DARS), October 15-17, 2018, Boulder (CO), USA

[C147] F. Ferraguti, A. Pertosa, C. Secchi, C. Fantuzzi, M. BonfÃ©, "A methodology for comparative analysis of collaborative robots for Industry 4.0", Proceedings of Design, Automation and Test in Europe (DATE19), March 25th-29th, 2019, Firenze, Italy.

[C148] M. Minelli, F. Ferraguti, N. Piccinelli, R. Muradore, C. Secchi, "An energy-shared two-layer approach for multi-master-multi-slave bilateral teleoperation systems", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 20th-24th 2019, Montreal (Canada)

[C149] C. Secchi, F. Ferraguti, "Energy Optimization for a Robust and Flexible Interaction Control", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 20th-24th 2019, Montreal (Canada)

[C150] E. Sartori, C. Tadiello, C. Secchi, R. Muradore, "Tele-Echography using a Two-Layer Teleoperation Algorithm with Energy Scaling", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 20th-24th 2019, Montreal (Canada)

[C151] C. Talignani Landi, F. Ferraguti, S. Costi, M. Bonfé, C. Secchi, "Safety Barrier Functions for Human-Robot Interaction with Industrial Manipulators", Proceedings of the 2019 European Control Conference, June 25-28 2019, Napoli (Italy)

[C152] B. Capelli, C. Secchi, L. Sabattini, "Communication Through Motion: Legibility of Multi-Robot Systems", Proceedings of the 2019 International Symposium on Multi-Robot and Multi-Agent Systems (MRS), August 22-23 2019, New Brunswick, NJ, USA

[C153] B. Capelli, V. Villani, C. Secchi, L. Sabattini, "Understanding Multi-Robot Systems: on the Concept of Legibility", Proceedings of the 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), November 4-8 2019, Macau, China

[C154] M. De Stefano, L. Vezzadini, C. Secchi, "Time-delay Compensation Using Energy Tank for Satellite Dynamics Robotic Simulators", Proceedings of the 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), November 4-8 2019, Macau, China

[C155] G. De Rossi, M. Minelli, A. Sozzi, N. Piccinelli, F. Ferraguti, F. Setti, M. Bonfé, C. Secchi, R. Muradore, "Cognitive Robotic Architecture for Semi-Autonomuos Execution of Manipulation Tasks in a Surgical Environment", Proceedings of the 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), November 4-8 2019, Macau, China

[C156] C. Talignani Landi, Y. Cheng, F. Ferraguti, M. Bonfé, C. Secchi, M. Tomizuka, "Prediction of Human Arm Target for Robot Reaching Movements", Proceedings of the 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), November 4-8 2019, Macau, China

[C157] M. Righi, V. Villani, L. Sabattini, C. Secchi, "Towards affective robotics: wearable devices for the assessment of cognitive effort", Proceedings of the 3rd International Symposium on Human Mental Workload: Models and Applications (H-WORKLOAD 2019), November 14-15 2019, Rome, Italy.

[C158] M. Righi, V. Villani, L. Sabattini and C. Secchi, "Towards affective robotics: wearable devices for the assessment of cognitive effort", Proceedings of the 1st Workshop on Socio-Affective Technologies: an interdisciplinary approach (SAT19), October 6th, 2019, Bari (Italy)

[C159] L. Sabattini, B. Capelli, C. Fantuzzi, C. Secchi, "Teleoperation of Multi-Robot Systems to Relax Topological Constraints", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 31st-June 4th, 2020, Paris, France (virtual)

[C160] R. Balachandran, H. Mishra, M. Cappelli, B. Weber, C. Secchi, C. Ott, A. Albu-Schaffer, "Adaptive Authority Allocation in Shared Control of Robots Using Bayesian Filters", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 31st-June 4th, 2020, Paris, France (virtual)

[C161] G. Notomista, S. Mayya, M. Selvaggio, M. Santos, C. Secchi, "A set-theoretic approach to multi-task execution and prioritization", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 31st-June 4th, 2020, Paris, France (virtual)

[C162] M. Minelli, A. Sozzi, G. De Rossi, F. Ferraguti, F. Setti, R. Muradore, M. Bonfé, C. Secchi, "Integrating Model Predictive Control and Dynamic Waypoints Generation for Motion Planning in Surgical Scenario", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 25-30, 2020, Las Vegas, USA. (virtual)

[C163] A. Pupa, C. Talignani Landi, M. Bertolani and C. Secchi, "A dynamic architecture for task assignment and scheduling for collaborative robotic cells", Proceedings of the 13th International Workshop on Human-Friendly Robotics, October 22 - 23, 2020, Innsbruck, Austria (virtual)

[C164] F. Benzi, C. Secchi, "An Optimization Approach for a Robust and Flexible Control in Collaborative Applications", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 30 - June 5, 2021, Xi'an, China (hybrid).

[C165] F. Loschi, N. Piccinelli, D. Dall'Alba, R. Muradore, P. Fiorini, C. Secchi, "An Optimized Two-Layer Approach for Efficient and Robustly Stable Bilateral Teleoperation", Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), May 30 - June 5, 2021, Xi'an, China (hybrid).

[C166] M. Minelli, C. Secchi, "Dynamic-based RCM Torque Controller for Robotic-Assisted Minimally Invasive Surgery", Proceedings of the 2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 27th - October 1st, 2021, Prague, Czech Republic (online).

[C167] A. Pupa, C. Secchi, "A Safety-Aware Architecture for Task Scheduling and Execution for Human-Robot Collaboration", Proceedings of the 2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), September 27th-October 1st, 2021, Prague, Czech Republic (online).

[C168] M. Minelli, F. Loschi, F. Ferraguti, C. Secchi, "A Two-Layer Trilateral Teleoperation Architecture for Mentoring in Surgical Training", 7th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control, Berlin (Germany), October 11-13, 2021.

[C169] R. Masiero, E. Bongiovanni, G. Di Bari, N. Raule, C. Secchi, M. Zanaroli, "Il Project Management nei progetti Europei e la gestione dei rischi nel contesto pandemico: l'alchimia del caso Rossini" , Project Management Forum 2021, Lugano (CH), September 30th - October 1st, 2021

[C170] A. Pupa, C. Secchi, "A Human-Centered Dynamic Task Planning Approach for Human-Robot Collaboration", Proceedings of the 3rd I-RIM Conference, Roma (Italy), October 8th-10th, 2021.

[C171] G. Gabrielli, C. Secchi, "An actor-critic strategy for a safe and efficient human robot collaboration", Proceedings of the 20th International Conference on Advanced Robotics (ICAR), Ljubljana (Slovenia), December 6-10, 2021.

[C172] D. Ferrari, F. Benzi, C. Secchi, "Bidirectional Communication Control for Human-Robot Collaboration", Proceedings of the 2022 IEEE International Conference on Robotics and Automation (ICRA), Philadelphia (PA, USA), May 23-27, 2022.

[C173] S. Farsoni, A. Sozzi, M. Minelli, C. Secchi, M. Bonfé, "Improving the feasibility of DS-based collision avoidance using non-linear model", Proceedings of the 2022 IEEE International Conference on Robotics and Automation (ICRA), Philadelphia (PA, USA), May 23-27, 2022.

[C174] A. Pupa, C. Secchi, "An Integrated Safe Task Planning Approach for Human-Robot Collaboration", Workshop on Collaborative Robots and the Work of the Future held in correspondence of the 2022 IEEE International Conference on Robotics and Automation (ICRA), Philadelphia (PA, USA), May 23-27, 2022.

[C175] F. Benzi, C. Secchi, "A Null-space based Approach for a Safe and Effective Human-Robot Collaboration", Proceedings of the 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Kyoto (Japan), October 23-27, 2022.

[C176] M. Minelli, C. Secchi, "A Torque Controlled Approach for Virtual Remote Centre of Motion Implementation", Proceedings of the 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Kyoto (Japan), October 23-27, 2022.

[C177] M. Minelli, A. Sozzi, G. De Rossi, F. Ferraguti, S. Farsoni, F. Setti, R. Muradore, M. Bonfé, C. Secchi, "Linear MPC-based Motion Planning for Autonomous Surgery", Proceedings of the 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Kyoto (Japan), October 23-27, 2022.

[C178] F. Benzi, C. Mancus, C. Secchi, "Whole-Body Control of a Mobile Manipulator for Passive Collaborative Transportation", 13th IFAC Symposium on Robot Control, October 17-20, 2022, online.

[C179] F. Califano, R. Rashad, C. Secchi, S. Stramigioli, "On the use of energy tanks for robotic systems", Proceedings of the 15th Workshop for Young Researchers on Human-Friendly Robotics, Delft, The Netherlands, September 22-23, 2022.

[C180] A. Pupa, F. Breveglieri, C. Secchi, "An Optimal Human-Based Control Approach for Mobile Human-Robot Collaboration", Proceedings of the 15th Workshop for Young Researchers on Human-Friendly Robotics, Delft, The Netherlands, September 22-23, 2022.

[C181] A. Pupa, W. Van Dijk, C. Brekelmans, C. Secchi, "Towards An Effective Human-Robot Team Collaboration - A Resilient Task Scheduling Approach For Real Industrial Scenarios", Proceedings of the 4rd I-RIM Conference, Milano (Italy), October 13, 2022.

[C182] F. Benzi, F. Ferraguti, C. Secchi, "Energy Tank-based Control Framework for Satisfying the ISO/TS 15066 Constraint", IFAC World Congress 2023, July 9-14, Yokohama, Japan

[C183] A. Pupa, P. Robuffo Giordano, C. Secchi, "Optimal Energy Tank Initialization for Minimum Sensitivity to Model Uncertainties", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 1-5, Detroit, MI (USA)

[C184] A. Pupa, R. Varrecchia, C. Secchi, "Emotion-Aware Control Framework for HRC", 16th International Workshop on Human-Friendly Robotics (HFR 2023), Munich (Germany), September 20-21, 2023

[C185] D. Ferrari, A. Pupa, C. Secchi, "Safe Multimodal Communication in Human-Robot Collaboration", 16th International Workshop on Human-Friendly Robotics (HFR 2023), Munich (Germany), September 20-21, 2023

[C186] D. Ferrari and C. Secchi, "Facilitating human robot collaboration through natural vocal conversations", in 2023 I-RIM Conference, I-RIM, 2023, pp. 46-48, doi:10.5281/zenodo.10722448

[C187] A. Pupa, C. Secchi, "Efficient ISO/TS 15066 Compliance through Model Predictive Control", Proceedings of the 2024 IEEE International Conference on Robotics and Automation (ICRA), May 13-17, 2024, Yokohama, Japan

[C188] A. Pupa, M. Minelli, C. Secchi, "A Time-Optimal Energy Planner for Safe Human-Robot Collaboration", Proceedings of the 2024 IEEE International Conference on Robotics and Automation (ICRA), May 13-17, 2024, Yokohama, Japan

[C189] D. Sacerdoti, F. Benzi, C. Secchi, "A Reinforcement Learning-based Control Strategy for Robust Interaction of Robotic Systems with Uncertain Environments", Proceedings of the 2024 IEEE International Conference on Robotics and Automation (ICRA), May 13-17, 2024, Yokohama, Japan

[C190] G. Furnari, M. Minelli, S. Puliatti, S. Micali, C. Secchi, F. Ferraguti, "Selective Clamping for Robot-Assisted Surgical Procedures", 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, July 15-19, 2024, Orlando (FL), USA

[C191] F. Bernabei, C. Secchi, "A constraint based control architecture for Urban Autonomous Vehicles", Proceedings of the 28th International Conference on Methods and Models in Automation and Robotics, August 27-30, 2024, Miedzyzdroje, Poland.

[C192] A. Coppari, S. Proia, A. Ruo, F. Favali, L. Sabattini, C. Secchi, V. Villani, M. Piazzola and L. Capra, "A Large Language Model-Based Motion Planning for Human-Robot Interaction: An Experimental Case Study", Proceedings of the 17th International Workshop on Human-Friendly Robotics (HFR 2024), September 30th- October 1st, 2024, Lugano, Switzerland.

[C193] D. Ferrari, A. Pupa, C. Secchi, "Compliant Blind Handover Control for Human-Robot Collaboration", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 14-18, 2024, Abu Dhabi (UAE)

[C194] D. Ferrari, A. Pupa, C. Secchi, "Collaborative Conversation in Safe Multimodal Human-Robot Collaboration", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 14-18, 2024, Abu Dhabi (UAE)

National Conferences

[CN1] C. Secchi, C. Fantuzzi, "An Energetic Approach to Fault Detection and Isolation", CIRA National Conference, September 2002, Perugia (Italy).

[CN2] C. Secchi, "Intrinsically passive control of telemanipulation systems", CIRA National Conference, September 2003, Modena (Italy)

[CN3] C. Secchi, "Transparency in bilateral telemanipulation", CIRA National Conference, September 2004, Cagliari (Italy)

[CN4] C. Secchi, S. Stramigioli, C. Fantuzzi, "Position drift compensation in port-Hamiltonian telemanipulation", CIRA National Conference, September 2006, Milano (Italy)

[CN5] C. Fantuzzi, C. Secchi, "Inheritance in Object-Oriented Modeling of Dynamical Systems", CIRA National Conference, September 2006, Milano (Italy)

[CN6] C. Secchi, S. Stramigioli, C. Fantuzzi, "On the compensation of position errors in passivity based teleoperation", SIDRA National Conference, September 2007, Genova (Italy)

[CN7] C. Secchi, C. Fantuzzi, "On the Use of UML for Modeling Mechatronic Systems", SIDRA National Conference, September 2007, Genova (Italy)

[CN8] L. Sabattini, C. Secchi, "Formation Control and Obstacle Avoidance", Convegno Nazionale SIDRA, September 2008, Vicenza (Italia)

[CN9] C. Secchi, C. Fantuzzi, "Formation Control over Delayed Communication Networks", Convegno Nazionale SIDRA, September 2008, Vicenza (Italia)

[CN10] C. Secchi, C. Fantuzzi, S. Stramigioli, "Compensation of position errors in passivity based teleoperation over packet switched communication networks", Convegno Nazionale SIDRA, September 2008, Vicenza (Italia)

[CN11] R. Olmi, C. Secchi, C. Fantuzzi, "Multiple AGVs Coordination", Convegno Nazionale SIDRA, September 2008, Vicenza (Italia)

[CN12] R. Olmi, C. Secchi, C. Fantuzzi, "A Coordination Technique for Automatic Guided Vehicles in an Industrial Application", Convegno Nazionale SIDRA, September 2009, Siracusa (Italy)

[CN13] L. Sabattini, C. Secchi, C. Fantuzzi, "Potential Based Control Strategy for Arbitrary Shape Formations of Mobile Robots", Convegno Nazionale SIDRA, September 2009, Siracusa (Italy)

[CN14] C. Secchi, P. Robuffo Giordano, A. Franchi, "Decentralized and Passivity based Teleoperation of a Group of UAVs with Time-Varying Topology", AUTOMATICA IT 2011 conference, September 2011, Pisa (Italy)

[CN15] C. Secchi, C. Fantuzzi, R. Olmi, M. Casarini, TRAFCON-Traffic Control of AGVs in Automatic Warehouses, AUTOMATICA IT 2011 conference, September 2011, Pisa (Italy)

[CN16] L. Sabattini, C. Secchi, C. Fantuzzi, N. Chopra, A. Gasparri, "Distributed Global Connectivity Maintenance for Multi-Robot Systems", AUTOMATICA.IT 2012 Conference, Benevento, Italy, September 2012

[CN17] L. Sabattini, C. Secchi, C. Fantuzzi, "Tracking of Complex Trajectories for Leader-Follower Multi-Robot Systems", AUTOMATICA.IT 2014 Conference, Bergamo, Italy, September 2014.

[CN18] G. De Rossi, M. Minelli, S. Roin, F. Falezza, A. Sozzi, F. Ferraguti, F. Setti, M. Bonfé, C. Secchi and R. Muradore, "A Multi-Modal Learning System for Action Segmentation to Control Surgical Robots", AUTOMATICA.IT 2020 Conference, Online.

Reggio Emilia, February 16, 2025

Cristian Secchi