

Europass Curriculum Vitae



Personal information

Surname(s) / First name(s)

Address(es)

Telephone(s)

Email(s)

Nationality(-ies)

Date of birth

Gender

Website

Sabattini Lorenzo

Short bio

Lorenzo Sabattini is an Associate Professor at the Department of Sciences and Methods for Engineering, University of Modena and Reggio Emilia, Italy. He received his B.Sc. and M.Sc. in Mechatronic Engineering from the University of Modena and Reggio Emilia (Italy) in 2005 and 2007 respectively, and his Ph.D. in Control Systems and Operational Research from the University of Bologna (Italy) in 2012. In 2010 he has been a Visiting Researcher at the University of Maryland, College Park, MD (USA). In 2012 he has been a Postdoctoral Researcher and, from 2012 to 2017, he has been an Assistant Professor, at the University of Modena and Reggio Emilia.

His main research interests include multi-robot systems, decentralized estimation and control, and human interaction with robots and multi-robot systems.

He is one of the founding co-chairs of the IEEE RAS Technical Committee on Multi-Robot Systems: he has served as the corresponding co-chair since its foundation, in 2014.

He has served as a Guest Editor for the Special Issue on Networked Cooperative Autonomous Systems of the IEEE Transactions on Automation Science and Engineering (T-ASE), in 2014. From 2014 to 2016, he has been serving as Associate Editor for IJARS (Topic: Mobile Robots and Multi-Robot Systems). Since 2015, he has been serving as Associate Editor for the IEEE Robotics and Automation Letters (RA-L). Since 2017, he has been serving as Associate Editor for the IEEE Robotics and Automation Magazine (RA-M). He has been a co-organizer of the International Symposium on Multi-Robot and Multi-Agent Systems (MRS) 2017 and 2019: he has served as Program Chair and Area Chair for the 2017 edition, and as Editor-in-chief for the 2019 edition.

Since 2019, he has been serving as Editor for IEEE ICRA. Since 2020, he has been serving as Editor for IEEE/RSJ IROS.

He has been serving as Associate Editor for IEEE ICRA 2015, 2016, and 2018, and IEEE/RSJ IROS 2015, 2016 and 2017. He has been member of the Program Committee of the IRMAS track of ACM/SIGAPP SAC 2015 and 2016, of RSS 2015 and 2017, and of DARS 2016 and 2018.

He co-organized workshops on Multi-Robot Systems at IEEE ICRA 2013, ICRA 2014, IROS 2014, RSS 2015, IROS 2015, IV 2016, ICRA 2016, ICRA 2017 and a workshop on Robotics and Logistics at ERF 2014. He also co-organized the 2016 IEEE RAS Summer School on Multi-Robot Systems.

Position

Dates	November 2018 – today
Position	Associate Professor
Main topics	Decentralized control of multi robot systems, and industrial applications of mobile robotics
Institution	<i>University of Modena and Reggio Emilia</i>

Teaching

Dates	2011– today
Course	Digital Control
Program	Master's Degree course in Mechatronic Engineering
Istitution	<i>Department of Engineering Sciences and Methods – DISMI (Reggio Emilia). University of Modena and Reggio Emilia</i>

Teaching

Dates	2019– today
Course	Automatic Control (Controlli Automatici e Sistemi Elettrici Lineari)
Program	Bachelor's Degree course in Mechatronic Engineering
Istitution	<i>Department of Engineering Sciences and Methods – DISMI (Reggio Emilia). University of Modena and Reggio Emilia</i>

Education, previous positions and other appointments

Dates	December 2017 – November 2018
Position	Research fellow (Assegnista di ricerca)
Main topics	Decentralized control of multi robot systems, and industrial applications of mobile robotics
Institution	<i>University of Modena and Reggio Emilia</i>

Dates	July 2017 – today
Position	Affiliated faculty advisor
Main topics	Advisor for the Beeclust Multi-Robot Systems Lab
Institution	<i>SRM University, Chennai, India</i>

Dates	December 2012 – November 2017
Position	Assistant Professor (Ricercatore)
Main topics	Decentralized control of multi robot systems, and industrial applications of mobile robotics
Institution	<i>University of Modena and Reggio Emilia</i>

Dates	April 2017
Certificate or diploma	Italian National Qualification (Abilitazione Scientifica Nazionale, ASN) for the position of Associate Professor

Dates	January 2012 – November 2012
Position	Post–doc research fellow

Main topics	Developments of control algorithms for multi robot systems
Institution	<i>University of Modena and Reggio Emilia</i>
Dates	January 2009 – April 2012
Certificate or diploma	PhD in Control Systems and Operational Research , (financed with scholarship)
Thesis	Nonlinear Control Strategies for Cooperative Control of Multi-Robot Systems
Main topics	Automation, mobile robotics, multi robot systems
Institution	Alma Mater Studiorum – <i>University of Bologna</i>
Dates	March 2010 – September 2010
Position	Visiting student
Main topics	Control of multi robot systems, development of distributed coordination algorithms. Supervisor: Dr. Nikhil Chopra
Institution	<i>University of Maryland, College Park (MD), USA</i>
Dates	April 2008 – December 2008
Position	Research fellow
Main topics	Developments of control algorithms for multi robot systems
Institution	<i>University of Modena and Reggio Emilia</i>
Dates	December 2007
Certificate or diploma	Engineering professional degree
Dates	October 2005 – October 2007
Certificate or diploma	Master's Degree in Mechatronic Engineering
Thesis	Development and experimental validation of algorithms for the formation control of mobile robots (in Italian: Sviluppo e verifica sperimentale di algoritmi di controllo di formazione per robot mobili)
Mark	110/110 summa cum laude
Institution	<i>University of Modena and Reggio Emilia</i>
Dates	October 2002 – October 2005
Certificate or diploma	Bachelor's Degree in Mechatronic Engineering
Thesis	Development of early warning algorithms to identify the actual gear ratio on board and recognition of faults in the related sensors (in Italian: Implementazione di algoritmi early warning di identificazione dei reali rapporti di trasmissione a bordo veicolo e riconoscimento malfunzionamenti della sensoristica relativa)
Mark	110/110 summa cum laude
Institution	<i>University of Modena and Reggio Emilia</i>

Editorial activity

Journals

Date	2017 - 2019
	Associate Editor for the IEEE Robotics and Automation Magazine (RA-M)
Date	2017 - 2019
	Guest Editor for the Special Issue on Multi-Robot and Multi-Agent Systems of Autonomous Robots (Springer)
Date	2015 - 2018

Date	Associate Editor for the IEEE Robotics and Automation Letters (RA-L) 2015 - today
Date	Review Editor for Frontiers in Robotics and AI 2014 - 2017
Date	Associate Editor for the International Journal of Advanced Robotic Systems (IJARS. Topic: Mobile Robots and Multi-Robot Systems) 2014 - 2015
	Lead Guest Editor for the Special Issue on Networked Cooperative Autonomous System of the IEEE Transactions on Automation Science and Engineering (T-ASE)
Conferences	
Date	2020 - today Editor for IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
Date	2019 - today Editor for IEEE International Conference on Robotics and Automation (ICRA)
Date	2019 Editor-in-chief for International Symposium on Multi-Robot and Multi-Agent Systems (MRS) 2019
Date	2018 Associate Editor for IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2018
Date	2017 Program Chair and Area Chair for International Symposium on Multi-Robot and Multi-Agent Systems (MRS) 2017
Date	2017 Member of the Technical Committee of the NATO Modelling and Simulation for Autonomous Systems Workshop (MESAS) 2017
Date	2017 Associate Editor for IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2017
Date	2017 Member of the Program Committee of the Robotics Science and Systems (RSS) 2017
Date	2016 Associate Editor for IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2016
Date	2016 Member of the Program Committee of the International Symposium on Distributed Autonomous Robotic Systems (DARS) 2016
Date	2016 Associate Editor for IEEE International Conference on Robotics and Automation (ICRA) 2016
Date	2015 Member of the Program Committee of the Intelligent Robotics and Multi-Agent Systems (IRMAS) track of ACM/SIGAPP Symposium on Applied Computing (SAC) 2016
Date	2015 Associate Editor for IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2015
Date	2015 Associate Editor for IEEE International Conference on Robotics and Automation (ICRA) 2015
Date	2015

	Member of the Program Committee of the Robotics Science and Systems (RSS) 2015
Date	2014
	Member of the Program Committee of the Intelligent Robotics and Multi-Agent Systems (IRMAS) track of ACM/SIGAPP Symposium on Applied Computing (SAC) 2015

Organization of scientific events

Date	2019	Co-organizer and Editor-in-chief of the International Symposium on Multi-Robot and Multi-Agent Systems (MRS)
Date	2018	Co-organizer of the ICRA 2018 Workshop WORKMATE: the WORKplace is better with intelligent, collaborative, robot MATEs
Date	2017	Co-organizer and Program Chair of the International Symposium on Multi-Robot and Multi-Agent Systems (MRS)
Date	2017	Co-organizer of the ICRA 2017 Workshop Human Multi-Robot Systems Interaction
Date	2016	Co-organizer of the IEEE RAS Summer School on Multi-Robot Systems
Date	2016	Co-organizer of the ICRA 2016 Workshop Fielded multi-robot systems operating on land, sea, and air
Date	2016	Co-organizer of the IV 2016 Workshop Cooperative autonomous intelligent vehicles are advanced robotic systems of systems: current trends and challenges
Date	2015	Co-organizer of the IROS 2015 Workshop Cooperative vehicles and robotic systems for industrial applications
Date	2015	Co-organizer of the RSS 2015 Workshop Principles of Multi-Robot Systems
Date	2014	Co-organizer of the IROS 2014 Workshop The future of multiple-robot research and its multiple identities
Date	2014	Co-organizer of the ICRA 2014 Workshop Crossing the Reality Gap: Control, Human Interaction and Cloud Technology for Multi- and Many- Robot Systems
Date	2014	Co-organizer of the ERF 2014 Workshop Advanced Robotics for Industrial Logistics
Date	2013	Co-organizer of the ICRA 2013 Workshop Crossing the Reality Gap - From Single to Multi- to Many Robot Systems

Projects funded by public and institutions

Date	2017 - 2019
Project title	Maintenance and Control of Distributed Robot and Sensor Networks
Role	Scientific coordinator for the Italian unit

Funding	Ministry of Foreign Affairs and International Cooperation, Italy and Ministry of International Relations, Quebec, Canada
Description	The project <i>Maintenance and Control of Distributed Robot and Sensor Networks</i> has been funded by the ministries of international relationships of Italy and Quebec, with the aim of developing methodologies in the field of decentralized control of multi-robot networks. The project consortium is composed by the University of Modena and Reggio Emilia (coordinator: Dr. Lorenzo Sabattini) and by the Polytechnic of Montreal (coordinator: Dr. Giovanni Beltrame).
Date	2013 - 2015
Project title	Algorithms for keeping connectivity and communication efficiency in ad hoc networks of multi-robotic systems
Role	Scientific coordinator for the UNIMORE local unit
Funding	FAPESP, Brazil
Description	The project <i>Algorithms for keeping connectivity and communication efficiency in ad hoc networks of multi-robotic systems</i> has been funded by the Brazilian institution FAPESP, to create a collaboration between the Instituto Tecnológico de Aeronáutica (Brazil) and the University of Modena and Reggio Emilia (Italy). The coordinator of the project is Prof. Carlos Henrique Costa Ribeiro.

Acknowledgements

Date	2019 My paper F. Ferraguti, C. Talignani Landi, L. Sabattini, M. BonfÀ©, C. Fantuzzi, and C. Secchi. <i>Adaptive admittance control for a safe and efficient human-robot interaction</i> . In I-RIM 3D, Italian Conference on Robotics and Intelligent Machines, 2019. Rome, Italy has been selected as finalist for the best interactive presentation
Date	2019 My paper F. Bertoncelli, F. Ruggiero, and L. Sabattini. <i>Wheel slip avoidance through a nonlinear model predictive control for object pushing with a mobile robot</i> . In Proceedings of the 10th IFAC Symposium on Intelligent Autonomous Vehicles (IAV), Gdansk, Poland, jul. 2019 has been selected as finalist for the IAV 2019 Young Author Best Paper Award
Date	2018 I have been awarded with the "Fabrizio Flacco" Young Author Best Paper Award of the Italian Chapter of the IEEE Robotics and Automation Society for my paper A. Gasparri, L. Sabattini, and G. Ulivi. <i>Bounded control law for global connectivity maintenance in cooperative multi-robot systems</i> . IEEE Transactions on Robotics, 33(3):700-717, June 2017
Date	2018 My paper M. Minelli, M. Kaufmann, J. Panerati, C. Ghedini, G. Beltrame, and L. Sabattini. <i>Stop, think, and roll: Online gain optimization for resilient multi-robot topologies</i> . In Proceedings of the International Symposium on Distributed Autonomous Robotic Systems (DARS), Boulder, CO, USA, oct. 2018 has been selected as finalist for the DARS 2018 Best Paper Award
Date	2018 The technical committee on Multi-robot System, for which I am serving as the corresponding co-chair, has been awarded with the IEEE RAS most technical committee award 2018
Date	2017

I have been recipient of the FFABR (Fondo per il finanziamento delle attività base di ricerca) fund, from the Italian Ministry of Education, University and Research, awarded based on the scientific production in the period 2012-2016

Date

2017

I have been elevated to the grade of Senior Member of the IEEE

PhD evaluation committees

Date

2020

Candidate

Emiliano Di Marino

Affiliation

University of Salerno, Italy

Thesis title

An Auction-based Approach to Control Automated Warehouses using Smart Vehicles

Advisor(s)

Prof. Francesco Basile

Date

2020

Candidate

Anna Mannucci

Affiliation

University of Pisa, Italy

Thesis title

Intra-Logistics with Integrated Automatic Deployment: from one to multi-mobile robot systems

Advisor(s)

Prof. Lucia Pallottino

Date

2020

Candidate

Alicja Barbara Wasik

Affiliation

EPFL, Switzerland and IST, Portugal

Thesis title

Institutional Robotics for Socially Aware Navigation in Multi-Robot Systems

Advisor(s)

Prof. Alcherio Martinoli, Prof. Pedro U. Lima

Date

2018

Candidate

Francesco Wanderlingh

Affiliation

University of Genova, Italy

Thesis title

Cooperative Robotics for the Smart Factory

Advisor(s)

Prof. Giuseppe Casalino

PhD students supervision

Date

2019 - today

PhD student

Federico Pratissoli

Research topic

Multi-robot systems

Date

2018 - today

PhD student

Beatrice Capelli

Research topic

Multi-robot systems: control and interaction

Date

2018 - today

PhD student

Filippo Bertocelli

Research topic

Cooperative transportation with multi-robot systems

Service for scientific societies

Date

2014 - Today

L. Sabattini is one of the founders, together with A. Franchi (LAAS-CNRS, France) and N. Ayanian (Univ. of Southern California, USA) of the Technical Committee on Multi-Robot Systems, within the IEEE Robotics and Automation Society. Since its foundation, he is serving as the Corresponding Co-Chair

Memberships of scientific societies

Date	2018 Member of the Nomination Committee of the IEEE RAS Award for Most Active Technical Committee (2019)
Date	2017 - Today Senior Member, IEEE
Date	2014 - Today Funding Co-Chair, and Corresponding Co-Chair, IEEE/RAS Technical Committee on Multi-Robot Systems
Date	2012 - 2017 Member, IEEE/RAS Technical Committee on Networked Robots
Date	2008 - Today Member, IEEE
Date	2008 - Today Member, IEEE Robotics and Automation Society (RAS)
Date	2008 - Today Member, IEEE Control System Society (CSS)
Date	2014 - Today Member, IFAC Technical Committee 4.3 Robotics
Date	2016 - Today Member, IFAC Technical Committee 4.5 Human Machine Systems
Date	2015 Member of the Triennial Review Committee for the Technical Committees of the IEEE Robotics and Automation Society

Scientific publications

International journals

- [1] M. Minelli, J. Panerati, M. Kaufmann, C. Ghedini, G. Beltrame, and L. Sabattini. Self-optimization of resilient topologies for fallible multi-robots. *Robotics and Autonomous Systems*, 2019
- [2] V. Villani, B. Capelli, C. Secchi, C. Fantuzzi, and L. Sabattini. Humans interacting with multi-robot systems: a natural affect-based approach. *Autonomous Robots*, 2019
- [3] V. Villani, L. Sabattini, F. Loch, B. Vogel-Heuser, and C. Fantuzzi. A general methodology for adapting industrial hmis to human operators. *IEEE Transactions on Automation Science and Engineering*, 2019
- [4] K. Khateri, M. Pourgholi, M. Montazeri, and L. Sabattini. Decentralized local-global connectivity maintenance for networked robotic teams. *European Journal of Control*, 2019
- [5] V. Villani, J. N. Czerniak, L. Sabattini, A. Mertens, and C. Fantuzzi. Measurement and classification of human characteristics and capabilities during interaction tasks. *Paladyn, Journal of Behavioral Robotics*, 10(1):182–192, April 2019
- [6] F. Ferraguti, C. Talignani Landi, L. Sabattini, M. Bonfé, C. Fantuzzi, and C. Secchi. A variable admittance control strategy for stable physical human-robot interaction. *The International Journal of Robotics Research (SAGE)*, 38(6):747–765, May 2019
- [7] K. Khateri, M. Pourgholi, M. Montazeri, and L. Sabattini. A comparison between decentralized local and global methods for connectivity maintenance of multi-robot networks. *IEEE Robotics and Automation Letters*, 4(2):633–640, April 2019

- [8] F. Boem, L. Sabattini, and C. Secchi. Decentralized state estimation for the control of network systems. *Journal of the Franklin Institute*, 356(2):860–882, January 2019
- [9] J. Panerati, M. Minelli, C. Ghedini, L. Meyer, M. Kaufmann, L. Sabattini, and G. Beltrame. Robust connectivity maintenance for fallible robots. *Autonomous Robots*, 43(3):769–787, March 2019
- [10] C. Talignani Landi, V. Villani, F. Ferraguti, L. Sabattini, C. Secchi, and C. Fantuzzi. Relieving operators' workload: Towards affective robotics in industrial scenarios. *Mechatronics*, 54:144–154, oct. 2018
- [11] L. Sabattini, V. Digani, M. A. Hsieh, and C. Secchi. Coordination of multiple AGVs: a quadratic optimization method. *Autonomous Robots*, 43(3):539–555, mar. 2019
- [12] L. Sabattini, C. Secchi, B. Capelli, and C. Fantuzzi. Passivity preserving force scaling for enhanced teleoperation of multi-robot systems. *IEEE Robotics and Automation Letters*, 3(3):1925–1932, 2018
- [13] C. Ghedini, C. H. C. Ribeiro, and L. Sabattini. Toward efficient adaptive ad-hoc multi-robot network topologies. *Ad Hoc Networks*, 74:57 – 70, 2018
- [14] Valeria Villani, Lorenzo Sabattini, Julia N. Czerniak, Alexander Mertens, and Cesare Fantuzzi. MATE robots simplifying my work: The benefits and socioethical implications. *IEEE Robotics Automation Magazine*, 25(1):37–45, March 2018
- [15] L. Sabattini, C. Secchi, and C. Fantuzzi. Multi-robot systems implementing complex behaviors under time-varying topologies. *European Journal of Control*, 38:73–87, Nov. 2017
- [16] Cinara Ghedini, Carlos Ribeiro, and Lorenzo Sabattini. Toward fault-tolerant multi-robot networks. *Networks*, 70(4):388–400, 2017
- [17] 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, and K. Fuerstenberg. The pan-robots project: Advanced automated guided vehicle systems for industrial logistics. *IEEE Robotics Automation Magazine*, 25(1):55–64, March 2018
- [18] N. Ayanian, R. Fitch, A. Franchi, and L. Sabattini. Multirobot systems [tc spotlight]. *IEEE Robotics Automation Magazine*, 24(2):12–16, June 2017
- [19] E. Cardarelli, V. Digani, L. Sabattini, C. Secchi, and C. Fantuzzi. Cooperative cloud robotics architecture for the coordination of multi-AGV systems in industrial warehouses. *Mechatronics*, 45:1–13, August 2017
- [20] V. Villani, L. Sabattini, G. Riggio, C. Secchi, M. Minelli, and C. Fantuzzi. A natural infrastructure-less human-robot interaction system. *IEEE Robotics and Automation Letters*, 2(3):1640–1647, July 2017
- [21] A. Gasparri, L. Sabattini, and G. Ulivi. Bounded control law for global connectivity maintenance in cooperative multi-robot systems. *IEEE Transactions on Robotics*, 33(3):700–717, June 2017
- [22] L. Sabattini, C. Secchi, and C. Fantuzzi. Collision avoidance for multiple lagrangian dynamical systems with gyroscopic forces. *International Journal of Advanced Robotic Systems (Invited Paper)*, 14(1):1–15, jan. 2017
- [23] P. Beinschob, M. Meyer, C. Reinke, V. Digani, C. Secchi, and L. Sabattini. Semi-automated map creation for fast deployment of AGV fleets in modern logistics. *Robotics and Autonomous Systems*, 87:281–295, jan. 2017
- [24] L. Sabattini, C. Secchi, and C. Fantuzzi. Coordinated dynamic behaviors for multirobot systems with collision avoidance. *IEEE Transactions on Cybernetics*, 47(12):4062–4073, dec. 2017
- [25] V. Digani, L. Sabattini, and 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, jan. 2016
- [26] L. Sabattini, C. Secchi, M. Cocetti, A. Levratti, and C. Fantuzzi. Implementation of coordinated complex dynamic behaviors in multi-robot systems. *IEEE Transactions on Robotics*, 31(4):1018–1032, aug. 2015

- [27] V. Digani, L. Sabattini, C. Secchi, and C. Fantuzzi. Ensemble coordination approach in multi-AGV systems applied to industrial warehouses. *IEEE Transactions on Automation Science and Engineering*, 12(3):922–934, jul. 2015
- [28] L. Sabattini, F. Ehlers, and D. Sofge. Guest editorial special issue on networked cooperative autonomous systems. *IEEE Transactions on Automation Science and Engineering*, 12(3):783 – 785, jul. 2015
- [29] L. Sabattini, C. Secchi, and N. Chopra. Decentralized estimation and control for preserving the strong connectivity of directed graphs. *IEEE Transactions on Cybernetics*, 45(10):2273–2286, oct. 2015
- [30] R. Falconi, L. Sabattini, C. Secchi, C. Fantuzzi, and C. Melchiorri. Edge-weighted consensus based formation control strategy with collision avoidance. *Robotica*, 33(02):332–347, February 2015
- [31] L. Sabattini, C. Secchi, and N. Chopra. Decentralized connectivity maintenance for networked lagrangian dynamical systems with collision avoidance. *Asian Journal of Control (Invited Paper)*, 17(1):111–123, January 2015
- [32] L. Sabattini, N. Chopra, and C. Secchi. Decentralized connectivity maintenance for cooperative control of mobile robotic systems. *The International Journal of Robotics Research (SAGE)*, 32(12):1411–1423, October 2013
- [33] L. Sabattini, C. Secchi, N. Chopra, and A. Gasparri. Distributed control of multi-robot systems with global connectivity maintenance. *IEEE Transactions on Robotics*, 29(5):1326–1332, October 2013
- [34] C. Secchi, L. Sabattini, and 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
- [35] L. Sabattini, C. Secchi, and C. Fantuzzi. Closed-curve path tracking for decentralized systems of multiple mobile robots. *Journal of Intelligent and Robotic Systems (Springer)*, 71(1):109–123, 2013
- [36] L. Sabattini, C. Secchi, and C. Fantuzzi. Arbitrarily shaped formations of mobile robots: artificial potential fields and coordinate transformation. *Autonomous Robots (Springer)*, 30(4):385–397, may 2011

International conferences

- [37] K. Karpe, A. Chatterjee, P. Srinivas, D. Samiappan, K. Ramamoorthy, and L. Sabattini. SPRINTER: A discrete locomotion robot for precision swarm printing. In *19th International Conference on Advanced Robotics (ICAR)*, Belo Horizonte, Brazil, dec. 2019. IEEE
- [38] B. Capelli and L. Sabattini. Human-friendly multi-robot systems: Legibility analysis. In *Human Friendly Robotics. Springer Proceedings in Advanced Robotics*, Reggio Emilia, Italy, oct. 2019. Springer
- [39] B. Capelli, C. Secchi, and L. Sabattini. Communication through motion: Legibility of multi-robot systems. In *Proceedings of the IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*, New Brunswick, NJ, USA, aug. 2019
- [40] F. Pratissoli, A. Reina, Y. Kaszubowski Lopes, L. Sabattini, and R. Gross. A soft-bodied modular reconfigurable robotic system composed of interconnected kilobots. In *Proceedings of the IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*, New Brunswick, NJ, USA, aug. 2019
- [41] B. Capelli, V. Villani, C. Secchi, and L. Sabattini. Understanding multi-robot systems: on the concept of legibility. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Macau, China, nov. 2019
- [42] T. Murayama and L. Sabattini. Improvement of network fragility for multi-robot robustness. In *Proceedings of the Joint 12th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles (CAMS) 1st IFAC Workshop on Robot Control (WROCO)*, Daejeon, Korea, sep. 2019

- [43] F. Bertoncelli, F. Ruggiero, and L. Sabattini. Wheel slip avoidance through a nonlinear model predictive control for object pushing with a mobile robot. In *Proceedings of the 10th IFAC Symposium on Intelligent Autonomous Vehicles (IAV)*, Gdansk, Poland, jul. 2019
- [44] L. Siligardi, J. Panerati, M. Kaufmann, M. Minelli, C. Ghedini, G. Beltrame, and L. Sabattini. Robust area coverage with connectivity maintenance. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, Montreal, Canada, may 2019
- [45] J. J. Chung, D. Miklic, L. Sabattini, K. Tumer, and R. Siegwart. The impact of agent definitions and interactions on multiagent learning for coordination. In *Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems, AAMAS '19*, pages 1752–1760, Richland, SC, 2019. International Foundation for Autonomous Agents and Multiagent Systems
- [46] K. Khateri, M. Pourgholi, M. Montazeri, and L. Sabattini. Effects of stubborn agents on bounded confidence opinion dynamic systems: Unanimity in presence of stubborn agents. In *Proceedings of the IEEE Iranian Conference on Electrical Engineering (ICEE)*, Yazd, Iran, may 2019
- [47] K. Karpe, D. Samiappan, K. Ramamoorthy, and L. Sabattini. Perturbation analysis of decentralised estimators. In *Proceedings of the IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Kuala Lumpur, Malaysia, dec. 2018
- [48] F. Loch, M. Fahimipirehgalin, M. Batut, J. N. Czerniak, A. Mertens, V. Villani, L. Sabattini, C. Fantuzzi, and B. Vogel-Heuser. An adaptive virtual training system based on universal design. In *Proceedings of the 2nd IFAC Conference on Cyber-Physical and Human-Systems (CPHS)*, Miami, FL, USA, dec. 2018
- [49] M. Minelli, M. Kaufmann, J. Panerati, C. Ghedini, G. Beltrame, and L. Sabattini. Stop, think, and roll: Online gain optimization for resilient multi-robot topologies. In *Proceedings of the International Symposium on Distributed Autonomous Robotic Systems (DARS)*, Boulder, CO, USA, oct. 2018
- [50] L. Sabattini, C. Fantuzzi, and C. Secchi. Teleoperation of a multi-robot system with adjustable dynamic parameters. In *Proceedings of the International Symposium on Distributed Autonomous Robotic Systems (DARS)*, Boulder, CO, USA, oct. 2018
- [51] V. Villani, B. Capelli, and L. Sabattini. Use of virtual reality for the evaluation of human-robot interaction systems in complex scenarios. In *Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, Nanjing, China, aug. 2018
- [52] V. Villani, L. Sabattini, C. Secchi, and C. Fantuzzi. A framework for affect-based natural human-robot interaction. In *Proceedings of the IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, Nanjing, China, aug. 2018
- [53] L. Sabattini, V. Villani, J. N. Czerniak, F. Loch, A. Mertens, B. Vogel-Heuser, and C. Fantuzzi. Methodological approach for the evaluation of an adaptive and assistive human-machine system. In *Proceedings of the IEEE Conference on Automation Science and Engineering (CASE)*, Munich, Germany, 2018. IEEE
- [54] L. Sabattini, C. Secchi, and C. Fantuzzi. Controlling the interaction of a multi-robot system with external entities. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, Brisbane, Australia, may 2018
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