

Mauro Franceschelli

Associate Professor

Dept. Electrical and Electronic Engineering
Università degli Studi di Cagliari, Italy

Via Marengo 2, 09123, Cagliari, Italy

mauro.franceschelli@unica.it

https://www.unica.it/unica/page/en/mauro_franceschelli

<https://sites.google.com/site/conetdomesys/>

➤ *Research interests*

Cooperative distributed control (coordination, optimization, learning, estimation, consensus) of multi-agent systems and networks, resilient networks, nonsmooth analysis, monotone systems, with applications to multi-robot systems, distributed electric demand side management and response, federated and decentralized learning.

➤ *Academic indicators 23/04/2025:*

Journal papers: 38

Total papers: 100

Citations: 1996 (Google Scholar) 1504 (Scopus)

H-index: 25 (Google Scholar) 22 (scopus)

i10 Index: 53 (Google Scholar)

Patents: 1

➤ *Education*

March 2011 **Ph.D.**, Dept. of Electrical and Electronic Engineering, University of Cagliari, Italy.

Thesis: "*Consensus Algorithms for Estimation and Discrete Averaging in Networked Control Systems*". Advisor: Prof. A. Giua.

July 2007 **Master degree** in Electronic Engineering, University of Cagliari, Italy.

Honors: 110/110 Summa Cum Laude.

Oct 2005 **Bachelor degree** in Electronic Engineering, University of Cagliari, Italy.

Honors: 110/110 Summa Cum Laude.

➤ *Academic positions*

July 2022-today Associate professor at the Dept. of Electrical and Electronic Engineering (DIEE), University of Cagliari, Italy

2019-2022 Senior assistant professor (RTDB) (3 years tenure track position) at the Department of Electrical and Electronic Engineering (DIEE), University of Cagliari, Italy

2015-2019 Assistant professor (RTDA), position financed by the Italian Ministry of Education, University and Research (MIUR) under the 2014 program "**Scientific Independence of Young Researchers**" (SIR). Host institution: University of Cagliari.

2013-2015 Postdoctoral fellow at the Department of Electrical and Electronic Engineering, University of Cagliari

2011-2013 Contract researcher on European FP7-ICT project "HYCON2" (GA n. 257462), 2010-2014, "Highly-complex and networked control systems"

➤ **Visiting positions/periods**

- Oct 2018 **Visiting researcher**, GIPSA-lab, CNRS, Grenoble, France (with Prof. Paolo Frasca, one week)
- Nov 2014 **Visiting researcher**, Xidian University, *School of Electro-Mechanical Engineering*, Xi'an, China. (with Prof. Zhiwu Li, visit funded by the Research Fellowship for International Young Scientists)
- Oct-Dec 2010 **Visiting student**, University of California at Santa Barbara, *Center for Control, Dynamical Systems, and Computation*, Santa Barbara, CA, US. (with Prof. Francesco Bullo).
- Oct-Dec 2009 **Visiting student**, Georgia Institute of Technology, *GRITS LAB*, Atlanta, GA, US. (with Prof. Magnus Egerstedt)
- Sep 2008 **Visiting student**, Universidad de Zaragoza, *Depto. de Informatica e Ingenieria de Sistemas*, Zaragoza, Spain. (with Prof. Cristian Mahulea)
- Aug 2007 **Visiting student**, Royal Institute of Technology, *Dept. of Computer Engineering*, Stockholm, Sweden. (with Prof. Magnus Egerstedt)

➤ **Awards and fellowships**

- 2023 *As officer (secretary) of the IEEE CSS Italy chapter (since 2022), chaired by Fabrizio Dabbene, won the "2023 Outstanding Chapter award", awarded at IEEE CDC, Dec 2023, Singapore.*
- 2023 The e-Mago Startup project of the University of Cagliari (Team: Michela Melis, Diego Deplano, Mauro Franceschelli) wins the Special Mention from the Italian Alliance for Sustainable Development (ASviS) at the twenty-first edition of the National Innovation Prize (PNI) 2023 for the best startup projects that implement solutions oriented towards sustainable development goals, awarded to e-Mago (StartCup Sardegna)."
- 2022 Advisor and co-author of the paper by Diego Deplano, Mauro Franceschelli, Alessandro Giua "Dynamic max-consensus with local self-tuning", finalist for the young paper award at IFAC Conference on Networked Systems (NECSYS 2022), 5-7 July, Zurich, Switzerland. Young author: Diego Deplano
- 2021 Finalist at the Italian "Intellectual Property Award" (IPA 2021) with "Method and architecture for managing the energy demand of the multi-agent type for reducing the peaks of electrical consumption of a plurality of electrical appliances" Inventors: Franceschelli Mauro, Pisano Alessandro, Pilloni, Alessandro, Gasparri Andrea. Reference number 102018000006385, date 15/06/2018. Category: Renewable energy /alternative energy
- 2015 Prize (10k Euros) by the regional government "Regione Autonoma della Sardegna" (RAS) for the financing of research projects in highly competitive national and european calls, with project "CoNetDomeSys" (call SIR 2014 financed by MIUR)
- 2014 Best Session Presentation Award, American Control Conference
- 2013 *Research Fellowship for International Young Scientists*

Awarded by: National Natural Science Fundation of China (NSFC) on 30/06/2014
Category: International (Regional) Cooperation and Exchange Projects
Program: Research Fund for International Young Scientists

2012 Diploma supplement of doctoral studies: ICO-NEH International Curriculum Option of Doctoral Studies in Networked, Embedded, and Hybrid Control Systems for Complex, Distributed and Heterogeneous Systems. Pisa, Italy.

2013-2015 University of Cagliari Postdoctoral Fellowship

2010 Best P.h.D student, DRIEI P.h.D. School of Electronics and Computer Science, Dept. of Electrical and Electronic Engineering, University of Cagliari, XXIII cycle.

2009 Best Session Presentation Award, American Control Conference

2008-2010 MIUR (Italian Ministry of Education and research) Graduate Fellowship

➤ **Research projects**

2024-2027 *Research project (National):* "Tecnologie ICT e dell'Industria 4.0 per l'analisi e l'ingegnerizzazione di Sistemi alimentari complessi per la produzione di pani artigianali locali ad alto valore aggiunto ", (AISAC). Duration: 36 months. Programma di ricerca e sviluppo: "Accordi per l'innovazione" a valere sulle risorse del Piano nazionale per gli investimenti complementari al PNRR. **Role: WP leader of OR10.**

2022-2023 *Research project funded by private company DEDEM s.r.l.*
"Development of multi-agent coordination and optimization methods and algorithms for workforce management through task assignment and routing".
"Sviluppo di metodi ed algoritmi di coordinamento e ottimizzazione multi-agente per la gestione della forza lavoro tramite assegnamento di compiti e instradamento". 50k euros. **Role: Principal investigator.**

2020-2022 Regional project (Sardegna): "Formal Methods and Technologies for the Future of Energy Systems", Progetti biennali finanziati dalla Fondazione di Sardegna - Esercizio finanziario 2019. **Role: Principal investigator.**

2019-2022

Research and development program: Fondo per la Crescita Sostenibile "AGRIFOOD" PON I&C 2014-2020, IOT (IAPC) "Ingegnerizzazione e Automazione del Processo di produzione tradizionale del pane Carasau mediante l'utilizzo di tecnologie IOT ", 36 mesi, 02/10/2019-02/10/2022. Resp.: Alessandro fanti. **Role: WP leader of OR3**

2019-2021 Regional project FSC 2014-2020 Regione Autonoma della Sardegna, call "RICERCA DI BASE 2017": "Metodi formali per il MONitoraggio di Sistemi dinamici Multi-Agente (MOSIMA)". Code RASSR05871. Member of the research unit.

2018-2020 Regional project POR FESR Sardegna 2014 – 2020, call "AIUTI PER PROGETTI DI RICERCA E SVILUPPO". Project UNICARASAU: "Optimization of the production process of Carasau bread for the increment of the automation level and productivity of the enterprise". Member of the research unit and reference person for control systems research group.

- 2017-2020 Regional project POR Sardegna FESR 2014-2020, call "Cluster top-down", project VIRTUALENERGY: "Development of systems for the aggregation, coordination and optimization of Virtual Power Plants". Member of the research unit and reference person for control systems research group.
- 2015-2019 National project CoNetDomeSys "Cooperative constrained optimization of networked domestic thermal systems for efficient and coordinated urban energy consumption". 360k Euros, Awarded by: MIUR, under call S.I.R 2014 (Scientific Independence of young researchers), code: RBSI14OF6H. **Principal Investigator**.
- 2013- 2016 European Artemis JU project, ACCUS (GA n. 333020), "Adaptive cooperative control of urban systems"). **Deputy of scientific responsible** for University of Cagliari.
- 2013-2015 Regional project, under call PIA Industria G.R. N° 39/3 DEL 10.11.2010 , **project "Giedieon"**: "Gestione Intelligente e sicura di sEnzoristica Distribuita e della sua Interazione uOmo-macchiNa: possibili scenari futuri". Member of the research unit.
- 2012-2015 Regional project L7/2007, call 2010 "SIAR": "Sistemi interconnessi per l'automazione su reti" (Control of Networked Systems). Member of the research unit.
- 2010-2014 European FP7-ICT project "HYCON2" (GA n. 257462) "Highly-complex and networked control systems". Contract researcher.
- 2008-2011 European FP7 project DISC (GA n. 224498),"Distributed Supervisory Control of Large Plants". Member of research unit.
- 2007-2008 Regional project POR Sardegna, call Misura 3.13 "DiagDis": Sviluppo di uno strumento di diagnosi per l'analisi di guasto in sistemi distribuiti" (Development of diagnosys tools for avionic systems). Member of the research unit.

➤ **Patents**

- 2018 Patent (Italy): "Metodo ed architettura di gestione della domanda energetica di tipo multi-agente per la riduzione dei picchi di consumo elettrico di una pluralità di apparecchiature elettriche" Inventors: **Franceschelli Mauro**, Pisano Alessandro, Pilloni, Alessandro, Gasparri Andrea. Reference number 102018000006385, date 15/06/2018.

➤ **Invited Talks and Seminars**

- Dec 2016 **Invited speaker** at the workshop: TAXONOMIES OF INTERCONNECTED SYSTEMS: LARGE-SCALE NETWORKS. Organizers: A. Gasparri, Ryan K. Williams, B. Sinopoli, 55th IEEE Conference on Decision and Control, December 12-14, 2016, Las Vegas, NV, USA.
- Nov 2015 "A gossip based distributed approach for Heterogeneous Multi-Vehicle Routing Problems" Politecnico di Bari, Bari, Italy. Hosted by Prof. N. G. Dotoli.
- Nov 2015 "A gossip based distributed approach for Heterogeneous Multi-Vehicle Routing Problems" Università del Salento, Lecce, Italy. Hosted by Prof. G. Notarstefano.
- Sept 2015 **Invited speaker** "Cooperative constrained optimization of networked domestic thermal systems for efficient and coordinated urban energy consumption". Talk invited by the Italian Society of professor and Researchers in Automatic control, Automatica.it, Bari, 2015.

Nov 2014 “Introduction to the Discrete Consensus Problem and Gossip Based Algorithms for Distributed Task Assignment in Multi Agent Systems”. Xidian University, Xi'an, China. Hosted by Prof. Z.W. Li.

March 2013 “Discrete Consensus for gossip-based distributed load balancing” Institut national de recherche en informatique et en automatique (INRIA), Grenoble, France. Hosted by Prof. C. Canudas-de-Wit.

Jan 2013 “Discrete and Quantized Consensus for Gossip-Based Distributed Load Balancing” Politecnico di Bari, Italy. Hosted by Prof. M.P.Fanti.

Nov 2010 “Decentralized Laplacian spectrum estimation” University of California of Santa Barbara, Santa Barbara, CA, USA. Student talk. Hosted by Prof. F. Bullo.

➤ ***Institutional duties***

- Secretary for the master degree LM32 “Computer Engineering for Artificial Intelligence and CyberSecurity”, dal 2018, Università degli Studi di Cagliari.
- Quality Assurance reference person (Referente per la qualità) for the master degree LM32 “Computer Engineering for Artificial Intelligence and CyberSecurity”, dal 2024, Università degli Studi di Cagliari.
- He is Tutor (Docente tutor) for the master degree “Computer Engineering for Artificial Intelligence and CyberSecurity”, dal 2018, Università degli Studi di Cagliari.
- Member of "Commissione di Internazionalizzazione" del Dipartimento di ingegneria elettrica ed elettronica in qualità di referente per il corso di laurea triennale in Ingegneria dell’Energia Elettrica per lo Sviluppo Sostenibile, dal 2024, Università degli Studi di Cagliari.
- Erasmus reference person for the bachelor degree in “Ingegneria dell’Energia Elettrica per lo Sviluppo Sostenibile”, since 2024, Università degli Studi di Cagliari.
- Member of Comitato di Gestione Dipartimento di Eccellenza (Dipartimento di Ingegneria Elettrica ed Elettronica, Dipartimento di Eccellenza 2023-2027).
- Member of Commissione Pratiche Studenti per il corso di laurea magistrale LM32 “Computer Engineering for Artificial Intelligence and CyberSecurity”, dal 2021, Università degli Studi di Cagliari.
- Member of Commissione CAV per laurea magistrale “Computer Engineering for Artificial Intelligence and CyberSecurity”, dal 2018 Università degli Studi di Cagliari.
- Member of collegio di dottorato “PhD Scholl in Information Engineering” DRIEI, Dipartimento di ingegneria elettrica ed elettronica, dal 2020, Università di Cagliari
- Member of collegio di dottorato nazionale “DAUSY”, National PHD program in AUtonomous SYstems, dal 2023.

➤ ***Professional activities***

Editorial activity

Journals:

Associate Editor for the IEEE Transactions on Automatic Control since 2025.

Guest Associate Editor for the “Special Section: Resilient and Safe Control in Multi-Agent Systems” of the IEEE Open Journal of Control Systems (OJ-CSYS), 2024.

Associate Editor for IFAC Nonlinear Analysis: Hybrid Systems since 2023.

Associate Editor for the IEEE Transactions on Automation Science and Engineering 2021-2022-2023.

Conferences:

Publication chair of 18th IEEE International Conference on Emerging Technologies & Factory Automation, (ETFA) 2013.

Publication chair of IEEE 20th International Conference on Automation Science and Engineering August 28 – September 1, 2024, Bari, Italy.

Member of the local organizing committee with functions of program chair for Automatica.it 2020 Virtual Edition, 9-11 September, Cagliari, Italy.

Associate editor for IEEE International Conference on Automation Science and Engineering (IEEE CASE since 2015).

Member of the Conference Editorial Board of IEEE Control System Society (since 2019)

Associate editor for IEEE American Control Conference (IEEE ACC since 2020).

Associate editor for IEEE Conference on Decision and Control (IEEE CDC since 2020).

Participation in technical committees

Member of the IEEE RAS Technical Committee on Multi-Robot Systems (MRS).

Member di IEEE RAS Steering Committee on Multi-Robot Systems (MRS).

Member of the IEEE CSS Technical Committee on Networks and communications

Member of Track Program Committee of IEEE ETFA 2015,2016.

Member of the Int. program committe of ICINCO 2013,2014,2015,2016,2018.

Technical reviewer for

IEEE Transactions on Automatic Control; Automatica; IEEE Transactions on Control of Network systems; IEEE Transactions on Robotics; IEEE Control Systems Letters; IEEE Transactions on Automation Science and Engineering; IEEE Transactions on Cybernetics; Springer; IEEE Transactions on Control Systems technologies; Systems and Control Letters; IEEE Transactions on Automation Science and Engineering, Int. Journal of Control; Int. Journal of Robust Control.

Membership and volunteer positions in scientific societies

2025 – today Officer (vice-Chair) for the IEEE Italy Section Chapter of the IEEE Control Systems Society

2023 – 2024 Officer (Secretary) for the IEEE Italy Section Chapter of the IEEE Control Systems Society

2021 – today Senior Member of IEEE

2014 – today Member IEEE RAS

2012 – today Member of IEEE CSS

2011 – today Member of IEEE

➤ National evaluations for access to academic positions

2023 Italian national qualification for access to a position of *full professor* (*professore di I fascia*), disciplinary sector ING-INF/04, Automatica, in 06/02/2023, valid from 06/02/2023 to 06/02/2035 (art. 16, comma 1, Legge 240/10).

2017 Italian national qualification for access to a position of *associate professor* (*professore di II fascia*), disciplinary sector ING-INF/04, Automatica, with validity from 07/04/2017 to 07/04/2023 (art. 16, comma 1, Legge 240/10)

2014 French national qualification for access to a position of maître de conférences (assistant professor). Section 61: *Génie informatique, automatique et traitement du signal*. Date: 24/01/2014, num. 14261263531.

➤ **Supervision of postdocs at University of Cagliari**

2024-today Diego Deplano, RTD-A , Advisor: M. Franceschelli

2020-2023 Diego Deplano, postdoc , Advisor: M. Franceschelli

2020-2022 Mojtaba Kaheni, postdoc, Advisor: M. Franceschelli.

2018-2019 Alessandro Pilloni, postdoc (one year), Advisor: M. Franceschelli

2017-2018 Alessandro Pilloni, postdoc (one year), Advisor: M. Franceschelli

➤ **Supervision of PhD students at University of Cagliari**

2024- today Marco Ledda, PhD student, Advisors: M. Franceschelli, A. Giua

2022- today Wenjie Zhao, PhD student, Advisors: M. Franceschelli, A. Giua

2018 -2022 Zohreh Sanai, PhD student, Advisors: C. Seatzu and M. Franceschelli.

2017 -2020 Diego Deplano, PhD student, Advisors: A. Giua and M. Franceschelli.

2012-2015 Mehran Zareh Eshghdoust, PhD student, Advisors: C. Seatzu and M. Franceschelli.

2011-2014 Daniele Rosa, PhD student. Advisors: A. Giua and M. Franceschelli.

➤ **Supervision of undergraduate/graduate students with research scholarship**

2025 Meng Tao

2024-2025 Nicola Arridu

2024-2025 Marco Ledda

2024 Nicola Deidda

2023-2024 Gabirele Poddighe

2022-2023 Michela Melis

2021-2022 Claudia Congiu

2019-2020 Simone Zanda

➤ **Teaching**

2023-today Lecturer of the course “*Fondamenti di Automatica*” *Laurea Triennale in Ingegneria per l’Energia elettrica e lo sviluppo sostenibile*, L9, Università di Cagliari. 30 out of 90 hours of frontal lectures, 9 CFU. Start in October 2023, first semester, second year. Teaching language: Italian;

2020-today Lecturer of the course “*Networked Control Systems and Security*” *Laurea magistrale in Computer Engineering, Artificial Intelligence and Cybersecurity, LM32, Università of Cagliari*. 50 hours of frontal lectures, 5 CFU, Start 03/03/2021, second semester, second year. Teaching language: English;

2018-today Lecturer of the course “Fault Diagnosis and Estimation in Dynamical Systems”, Master degree Computer Engineering, Artificial Intelligence and Cybersecurity, University of Cagliari. 50h of frontal lectures. Teaching language: English.

2016-2018 Lecturer of the course “Control of Network Systems”, Master degree in Electronics Engineering, University of Cagliari. 60h of frontal lectures. Teaching language: English.

2015-2016 Lecturer of the course “Controllo di Sistemi Multi-Agente”, Master degree in Electronics Engineering, University of Cagliari. 40h of frontal lectures. Teaching language: Italian.

2009 Teaching assistant of the course “Tecnologie dei Sistemi di Controllo”. Lecturer: Prof. S. Malan. Distance learning Bachelor degree in Mechatronics Engineering, Polytechnic of Turin, held in Oristano, Italy. 30h of frontal lectures and teaching support. Teaching language: Italian.

2008 Teaching assistant of the course “Analisi dei Sistemi”. Lecturer: Prof. A. Giua. Bachelor degree in Electronics Engineering, University of Cagliari, Italy. 50h of teaching support. Teaching language: Italian.

2007 Teaching assistant of the course “Controlli Automatici”. Lecturer: Prof. E. Usai. Bachelor degree in Electronics Engineering, University of Cagliari. 50h of teaching support. Teaching language: Italian.

List of papers

Journal papers

[J44] Diego Deplano, Nicola Bastianello, Mauro Franceschelli, Karl H. Johansson "Optimization and Learning in Open Multi-Agent Systems", IEEE Transactions on Automatic Control, under review.

[J43] Marco Ledda, Alessandro Giua, Mauro Franceschelli "Adversarial Learning Attacks on Autoencoder-based models for Nonlinear Dynamical Systems", IEEE Control Systems letters (L-CSS) and CDC 2025. Under review

[J42] Andrea Miele, Mauro Franceschelli, Andrea Gasparri "Gossip-Based Estimation of Centroid and Common Reference Frame in Open Multi-Agent Systems", IEEE Control Systems letters (L-CSS) and CDC 2025. Under review

[J41] Nicola Arridu, Martina Lippi, Mauro Franceschelli, Andrea Gasparri "On Ensemble Learning Models for Autoencoder-Based Identification of Nonlinear Dynamical Systems", IEEE ACCESS, under review.

[J40] Diego Deplano, Mauro Franceschelli, Alessandro Giua, "Distributed Tracking of Network Size, Diameter, Radius, and Node Eccentricities in Open Multi-Agent Systems" IEEE Transactions on Automatic Control, under review.

[J39] Wenjie Zhao, Diego Deplano, Zhiwu Li, Alessandro Giua, Mauro Franceschelli, "Algebraic Connectivity Control and Maintenance in Multi-Agent Networks under Attack" Automatica, under review.

- J38. Nicola Bastianello, Diego Deplano, Mauro Franceschelli, Karl H. Johansson "Robust Online Learning over Networks ", IEEE Transactions on Automatic Control, 2024, DOI: 10.1109/TAC.2024.3441723
- J37. Mojtaba Kaheni, Alessandro V. Papadopoulos, Elio Usai, Mauro Franceschelli, "A Privacy-Preserving Distributed Greedy Framework to Desynchronize Power Consumption in a Network of Thermostatically Controlled Loads", IEEE Transactions on Control Systems Technologies, 2024.
- J36 Diego Deplano, Mauro Franceschelli, Alessandro Giua, "Stability of Nonexpansive Monotone Systems and Application to Recurrent Neural Networks" IEEE Control Systems letters, 2024.
- J35. Eduardo Sebastian, Mauro Franceschelli, Andrea Gasparri, Eduardo Montijano and Carlos Sagues "Accelerated Alternating Direction Method of Multipliers Gradient Tracking (A2DMM-GT) for Distributed Optimization" IEEE Control Systems letters, 2024.
- J34. Mojtaba Kaheni, Martina Lippi, Andrea Gasparri, Mauro Franceschelli, "Selective Trimmed Average: a Resilient Federated Learning Algorithm with Deterministic Guarantees on the Optimality Approximation" IEEE Transactions on Cybernetics, 2024, corresponding author. DOI: 10.1109/TCYB.2024.3350387.
- J33. Gabriele Oliva, Mauro Franceschelli, Andrea Gasparri and Antonio Scala "A Sum-of-states Preservation Framework for Nonlinear Open Multi-Agent Systems", IEEE Transactions on Automatic Control, 2023, doi: 10.1109/TAC.2023.3317728. <https://ieeexplore.ieee.org/document/10256201>.
- J32. Mojtaba Kaheni, Elio Usai, Mauro Franceschelli, "Resilient and Privacy-Preserving Multi-Agent Optimization and Control of a Network of Battery Energy Storage Systems under Attack", IEEE Transaction on Automation Science and Engineering, 2023. DOI: 10.1109/TASE.2023.3310328.
- J31. Eduardo Sebastián, Eduardo Montijano, Carlos Sagues, Mauro Franceschelli, Andrea Gasparri, "Accelerated Multi-Stage Discrete Time Dynamic Average Consensus" IEEE Control Systems letters, 2023, DOI: 10.1109/LCSYS.2023.3289483.
- J30. Alessandro Piloni, Mauro Franceschelli, Alessandro Pisano, Elio Usai, "On the Variable Structure Control Approach with Sliding Modes to Robust Finite-Time Consensus Problems: a Methodological Overview Based on Nonsmooth Analysis", Annual Reviews in Control, Volume 55, 2023, Pages 338-355, 2023.
- J29. Diego Deplano, Mauro Franceschelli, Alessandro Giua "Novel Stability Conditions for Nonlinear Monotone Systems and Consensus in Multi-Agent Networks", IEEE Transactions on Automatic Control, Feb 2023, corresponding author. DOI: [10.1109/TAC.2023.3246419](https://doi.org/10.1109/TAC.2023.3246419)
- J28. Zoreh Al Zahra Sanai Dashti, Gabriele Oliva, Carla Seatzu, Andrea Gasparri, and Mauro Franceschelli "Distributed Mode Computation in Open Multi-Agent Systems", IEEE Control Systems letters, vol. 6, pp. 3481-3486, , 2022.
- J27. Mojtaba Kaheni, Alessandro Piloni, Giulia Serra Ruda, Elio Usai, [Mauro Franceschelli](#) "Distributed Asynchronous Greedy Control of Large Networks of Thermostatically Controlled Loads for Electric Demand Response", IEEE Control Systems letters, Page(s): 1 - 1, 27 June 2022, DOI: 10.1109/LCSYS.2022.3186617. Corresponding author.
- J26. Mojtaba Kaheni, Elio Usai, [Mauro Franceschelli](#) "Resilient Constrained Optimization in Multi-Agent Systems With Improved Guarantee on Approximation Bounds", IEEE Control Systems Letters, volume: 6, Page(s): 2659 - 2664, 09 May 2022, DOI: 10.1109/LCSYS.2022.3173495. Corresponding author.
- J25. Diego Deplano, [Mauro Franceschelli](#), Alessandro Giua "Dynamic Min and Max Consensus and Size Estimation of Anonymous Multi-Agent Networks", IEEE Transactions on Automatic Control,(Early Access), 14 December 2021, DOI: 10.1109/TAC.2021.3135452. corresponding author.

- J24. Matteo Santilli, Mauro Franceschelli and Andrea Gasparri "Secure Rendezvous and Static Containment in Multi-Agent Systems with Adversarial Intruders", *Automatica*, in press, 2022. Corresponding author.
- J23. M. Santilli, M. Franceschelli, and A. Gasparri "Dynamic Resilient Containment Control in Multi-Robot Systems" *IEEE Transactions on Robotics*, Volume: 38, Issue: 1, Feb. 2022, page(s): 57 - 70, DOI: 10.1109/TRO.2021.3057220.
- J22. Diego Deplano, Mauro Franceschelli, Alessandro Giua, Luca Scardovi, "Distributed Fiedler Vector Estimation with Application to Desynchronization of Harmonic Oscillator Networks", *IEEE Control Systems Letters*, Volume: 5, Issue: 2, April 2021, Page(s): 659 - 664.
- J21. M. Franceschelli, P. Frasca "Stability of Open Multi-Agent Systems and Applications to dynamic Consensus", *IEEE Transactions on Automatic Control*, Volume: 66, Issue: 5, May 2021, Page(s): 2326 - 2331. Corresponding author.
- J20. D. Deplano, M. Franceschelli, S. Ware, S. Ring, A. Giua "A Discrete Event Formulation for Multi-Robot Collision Avoidance on Pre-planned Trajectories", *IEEE ACCESS*, 2020, page(s): 1-10 Print ISSN: 2169-3536, Online ISSN: 2169-3536, Digital Object Identifier: 10.1109/ACCESS.2020.2994472 Corresponding author.
- J19. A. Pilloni, M. Franceschelli, A. Pisano, Elio Usai "Sliding Mode based Robustification of Consensus and Distributed Optimization Control Protocols", *IEEE Transactions on Automatic Control*, 2020, Print ISSN: 0018-9286 Online ISSN: 1558-2523 Digital Object Identifier: 10.1109/TAC.2020.2991694 Corresponding author.
- J18. D. Deplano, M. Franceschelli, A. Giua "A Nonlinear Perron-Frobenius Approach for Stability and Consensus of Discrete-Time Multi-Agent Systems" *Automatica*, Volume 118, August 2020. Corresponding author.
- J17. M. Franceschelli, A. Pilloni, A. Gasparri "Multi-Agent Coordination of Thermostatically Controlled Loads by Smart Power Sockets for Electric Demand Side Management", *IEEE Transactions on Control Systems Technologies*, 2020, Early Access, pages: 1-13, Print ISSN: 1063-6536 Online ISSN: 1558-0865, Digital Object Identifier: 10.1109/TCST.2020.2974181. Corresponding author.
- J16. A. Pilloni, M. Franceschelli, A. Pisano, E. Usai "Delta modulation (D-M) via Second-order Sliding-Mode Control Technique" *Control Engineering Practice*, Volume 92, Nov. 2019, 104129. Corresponding author.
- J15. I. Notarnicola, M. Franceschelli, G. Notarstefano "A duality-based approach for distributed min-max optimization", *IEEE Transactions on Automatic Control*, June 2019, vol. 64, issue 6, pages 2559-2566.
- J14. M. Franceschelli, A. Gasparri "Multi-Stage Discrete Time and Randomized Dynamic Average Consensus", *Automatica*, Volume 99, January 2019, Pages 69-81. Corresponding author.
- J13. M. Franceschelli, A. Giua, C. Seatzu, "Gossip based asynchronous and randomized distributed task assignment with guaranteed performance on heterogeneous networks", *Nonlinear Analysis: Hybrid Systems*, Volume 26, November 2017, Pages 292-306. ISSN: 1751570X. Corresponding author.
- J12. M. Franceschelli, A. Giua, A. Pisano, "Finite-Time Consensus on the Median Value with Robustness Properties" *IEEE Transactions on Automatic Control*, vol. 62, no. 4, pp. 1652-1667, April 2017. ISSN: 00189286. Corresponding author.
- J11. V. Pilloni, M. Franceschelli, L. Atzori, A. Giua, "Deployment of Applications in Wireless Sensor Networks: a Gossip-based Lifetime Maximization Approach", *IEEE Transactions on Control Systems Technologies*, 2016, vol. 24, no. 5, pages 1828-1836. ISSN: 10636536. Corresponding author.

- J10. M. Franceschelli, A. Giua, C. Seatzu, "Fast Discrete Consensus Based on Gossip for Makespan Minimization in Networked Systems", *Automatica*, 2015, Volume 56, Pages 60-69. ISSN: 00051098. Corresponding author.
- J9. M. Franceschelli, A. Giua, A. Pisano, E. Usai, "Finite-Time Consensus with Disturbance Rejection by Discontinuous Local Interactions in Directed Graphs", *IEEE Transactions on Automatic Control*, 2015, vol.60, no.4, Pages 1133-1138. ISSN: 00189286. Corresponding author.
- J8. M. Franceschelli, A. Gasparri, "Gossip Based Centroid and Common Reference Frame Estimation in Multi-Agent Systems", *IEEE Transactions on Robotics*, vol. 30, no.2, 2014, pages 524-531. ISSN: 15523098.
- J7. M. Franceschelli, D. Rosa, C. Seatzu, F. Bullo, "Gossip Algorithms for Heterogeneous Multi-Vehicle Routing Problems", *Nonlinear Analysis: Hybrid Systems*, 2013, vol. 10 (1) , pages 156-174. ISSN: 1751570X. Corresponding author.
- J6. M. Franceschelli, A. Giua, A. Pisano, E. Usai, "Finite-Time Consensus for Switching Network Topologies with Disturbances", *Nonlinear Analysis: Hybrid Systems*, 2013, 2013, vol. 10 (1), pages 83-93. ISSN: 1751570X. Corresponding author.
- J5. M. Franceschelli, A. Giua, C. Seatzu, "Decentralized Estimation of Laplacian Eigenvalues in Multi-Agent Systems", *Automatica* Volume 49, Issue 4, 2013, Pages 1031–1036. ISSN: 00051098. Corresponding author.
- J4. N. Orani, A. Pisano, M. Franceschelli, A. Giua, E. Usai " Robust reconstruction of the discrete state for a class of nonlinear uncertain switched systems " *Nonlinear Analysis: Hybrid Systems*, vol. 5, no. 2, 2011, pages 220–232. ISSN: 1751570X.
- J3. M. Franceschelli, A. Giua, C. Seatzu, " Distributed Averaging in Sensor Networks Based on Broadcast Gossip Algorithms " *IEEE Sensors Journal*, vol. 3, no. 3, 2011, pages 808-817. ISSN: 1530437X. Corresponding author.
- J2. M. Franceschelli, A. Giua, C. Seatzu, " Quantized Consensus in Hamiltonian Graphs" *Automatica*, vol. 47, no. 11, 2011, pages 2495-2503. ISSN: 00051098. Corresponding author.
- J1. M. Franceschelli, A. Giua, C. Seatzu, " A gossip-based algorithm for discrete consensus over heterogeneous networks" *IEEE Transactions on Automatic Control*, vol. 55, no.5, 2010, pages 1244-1249. ISSN: 00189286. Corresponding author.

International Conference Proceedings

[C66] Marco Ledda, Diego Deplano, Alessandro (IEEE TAC Senior Editor) Giua, Mauro Franceschelli "Certification of Autoencoder-based Models for Dynamical Systems", 64th IEEE Conference on Decision and Control, to be held in Rio de Janeiro, 9-12 December, 2025, under review.

[C65] Hamza Chakraa, Diego Deplano, Carla Seatzu, Dimitri Lefebvre, Mauro Franceschelli , "A Gossip-Based Approach for Measurement Task Allocation and Routing in Multi-Robot Systems with Heterogeneous Sensing", 2025 IEEE 21st International Conference on Automation Science and Engineering (CASE 2025), to be held in Los Angeles, USA, August 17-21, 2025, under review.

[C64] Diego Deplano, Nicola Bastianello, Mauro Franceschelli, Karl H. Johansson "Distributed Variance Consensus with Application to Personalized Learning" 10th IFAC Conference on Networked Systems, (NECSYS 2025), Hong Kong, on June 2-5, 2025.

- [C63] Diego Deplano*, Sergio Grammatico, Mauro Franceschelli, "On the convergence of the Krasnoselskij iteration for strictly pseudocontractive operators" 23rd European Control Conference (ECC), 24 - 27 June, 2025, Thessaloniki, Greece.
- [C62] Diego Deplano, Mauro Franceschelli, and Alessandro Giua, "Stability of Paracontractive Open Multi-Agent Systems" 63rd IEEE Conference on Decision and Control, December 16-19, 2024, Milan, Italy,
- [C61] Mohamed A. Elmouamin Messilem, Diego Deplano, Mauro Franceschelli, Elio Usai, Ruggero Carli "Distributed Optimization for Networks of Battery Energy Storage Systems in Energy Communities with Shared Energy Incentives" IEEE Conference on Automation Science and Engineering (CASE), Bari, Italy, 28 August 2024.
- [C60] Jerónimo José Moré, Diego Deplano, Alessandro Pilloni, Alessandro Pisano, Mauro Franceschelli, "Online Coordination of BESS and Thermostatically Control Loads for Shared Energy Optimization in Energy Communities" IEEE Conference on Automation Science and Engineering (CASE), Bari, Italy, 28 August 2024.
- [C59] Wenjie Zhao, Diego Deplano, Zhiwu Li, Alessandro Giua, Mauro Franceschelli, "Resilient Networks for Multi-Agent Systems based on Graph Self-Organization into Random Approximate Regular Graphs" IEEE Conference on Automation Science and Engineering (CASE), Bari, Italy, 28 August 2024.
- [C58] Diego Deplano, Carla Seatzu, Mauro Franceschelli, "A Distributed Online Heuristic for a Large-scale Workforce Task Assignment and Multi-Vehicle Routing Problem" IEEE Conference on Automation Science and Engineering (CASE), Bari, Italy, 28 August 2024.
- [C57] Ning Ran, Jinyuan Hao, Zhou He, Mauro Franceschelli, Carla Seatzu "Bisimulation non-interference analysis of bounded Petri nets" IEEE CoDIT 2024.
- [C56] Antonio Furchi, Mauro Franceschelli, Andrea Gasparri, "A MILP Scheduling Problem for Multi-Robot Logistics Systems in a Precision Farming Application and a Polynomial Time Optimal Algorithm" the 32nd Mediterranean Conference on Control and Automation J, 2024, Crete, Greece.
- [C55] Diego Deplano, Nicola Bastianello, Mauro Franceschelli, Karl H. Johansson "A unified approach to solve the dynamic consensus on the average, maximum, and median values with linear convergence", 62nd IEEE Conference on Decision and Control, Dec. 13-15, 2023, Singapore.
- [C54] Diego Deplano, Mauro Franceschelli, Carla Seatzu "Experimental Comparison of Models of the Drying-Cooling Process of Flatbreads for Optimized Automated Production: the Case Study of Carasau Bread" [9TH International Conference on Control, Decision and Information Technologies](#), (CoDit), Roma, Italy, 3-6 July, 2023,
- [C53] Diego Deplano, Claudia Congiu, Alessandro Giua, Mauro Franceschelli "Distributed Estimation of the Laplacian Spectrum via Wave Equation and Distributed Optimization", IFAC WC, Yokohama, Japan, July 2023.
- [C52] Zohreh Al Zahra Sanai Dashti, Diego Deplano, Carla Seatzu and Mauro Franceschelli "Resilient Self-Organizing Networks in Multi-Agent Systems via Approximate Random k-Regular Graphs", 61st IEEE Conference on Decision and Control, Cancun, Mexico, Dec. 2022.
- [C51] Diego Deplano, Mauro Franceschelli, Alessandro Giua "Dynamic max-consensus with local self-tuning", 9th IFAC Conference on Networked Systems, Zurigo, July, 2022.
- [C50] Diego Deplano, Mauro Franceschelli, Alessandro Giua "Distributed tracking of graph parameters in time-varying anonymous networks" 60th IEEE Conference on Decision and Control, Austin, Texas, USA, December 2021.
- [C49] Mojtaba Kaheni, Elio Usai, Mauro Franceschelli "A Distributed Optimization and Control Framework for a Network of Constraint Coupled Residential BESSs" IEEE Conference on Automation Science and Engineering (CASE), Lyon, France, 23-26 August 2021.
- [C48] D. Deplano, M. Franceschelli, A. Giua "Discrete-Time Dynamic Consensus on the Max Value" 15th European Workshop on Advanced Control and Diagnosis, ACD 2019, November 2019, Bologna, Italy.
- [C47] Matteo Santilli, Mauro Franceschelli, Andrea Gasparri "Robust Containment Control in Multi-Agent Systems with Common Coordinate Frames and Bearing Angle Measurements" 58th IEEE Conference on Decision and Control, Nice, France, 11-13 December 2019.
- [C46] Zohreh Al Zahra Sanai Dashti, Carla Seatzu, Mauro Franceschelli. "Dynamic Consensus on the Median Value in Open Multi-Agent Systems", 58th IEEE Conference on Decision and Control, France, 11-13 December 2019.

- [C45] Diego Deplano, Mauro Franceschelli, Alessandro Giua "Lyapunov Free Convergence Analysis of Nonlinear Multi-Agent Systems" 57th IEEE Conference on Decision and Control, Miami Beach, FL, USA, December 17-19, 2018.
- [C44] Mauro Franceschelli, Paolo Frasca "Proportional Dynamic Consensus in Open Multi-Agent Systems" 57th IEEE Conference on Decision and Control, Miami Beach, FL, USA, December 17-19, 2018.
- [C43] Alessandro Pilloni, Mauro Franceschelli, Alessandro Pisano and Elio Usai "High Resolution Sigma-Delta Modulator implementations via Suboptimal Second Order Sliding Mode Control", 15th International Workshop on Variable Structure Systems and Sliding Mode Control (VSS18), Graz, Austria, July, 9 - 11, 2018.
- [C42] G. Cavone, M. Dotoli, N. Epicoco, M. Franceschelli, C. Seatzu "On Using Hybrid Petri Nets to Re-design Low-Automated Production Processes the Case Study of a Sardinian Bakery" 14th IFAC Workshop on Discrete Event Systems, (WODES 2018), to appear.
- [C41] M. Franceschelli, A. Pilloni, A. Gasparri "A Heuristic approach for Online Distributed Optimization of Multi-Agent Networks of Smart Sockets and Thermostatically Controlled Loads based on Dynamic Average Consensus", 17th annual European Control Conference, Limassol, Cyprus, June 12-15, 2018, to appear.
- [C40] A. Pisano, M. Franceschelli, A. Pilloni, Y. Shtessel, E. Usai, J. A. Cosby "Retaining Connectivity in Mobile Communication Mesh Networks", 20th World Congress of the International Federation of Automatic Control, 9-14 July 2017.
- [C39] M. Franceschelli, A. Gasparri "Multi-Stage Discrete Time Dynamic Average Consensus", 55th IEEE Conference on Decision and Control, Las Vegas, NV, USA, December 12-14, 2016
- [C38] I. Notarnicola, M. Franceschelli, G. Notarstefano "A duality-based approach for distributed min-max optimization with application to demand side management" 55th IEEE Conference on Decision and Control, Las Vegas, NV, USA, December 12-14, 2016.
- [C37] A. Pilloni, A. Pisano, M. Franceschelli, E. Usai "Robust Distributed Consensus on the Median Value for Networks of Heterogeneously Perturbed Agents" 55th IEEE Conference on Decision and Control, Las Vegas, NV, USA, December 12-14, 2016.
- [C36] A. Pilloni, A. Pisano, M. Franceschelli, E. Usai "A discontinuous algorithm for distributed convex optimization" 14th International Workshop on Variable Structure Systems, 1-4 June, Nanjing, Jiangsu, China, 2016.
- [C35] A. Pilloni, A. Pisano, M. Franceschelli, E. Usai "Integral sliding modes for the robustification of consensus-based multi-agent based systems" 14th International Workshop on Variable Structure Systems, 1-4 June, Nanjing, Jiangsu, China, 2016.
- [C34] M. Franceschelli, A. Gasparri, A. Pisano "Coordination of Electric Thermal Systems for Distributed Demand-Side Management: A Gossip-based Cooperative Approach" 15th annual European Control Conference, Aalborg, Denmark, June 29-July 1, 2016.
- [C33] M. Franceschelli, A. Giua, C. Seatzu "Distributed Task Assignment Based on Gossip with Guaranteed Performance on Heterogeneous Networks" 5th IFAC Conference on Analysis and Design of Hybrid Systems, Atlanta, USA, Oct. 14-16, 2015.
- [C32] M. P. Fanti, M. Franceschelli, A. M. Mangini, G. Pedroncelli, W. Ukovich, "Simulation Study on the Convergence of a Discrete Consensus Algorithm for Distributed Task Assignment" IEEE International Conference on Systems, Man, and Cybernetics, Hong Kong, Oct. 9-12, 2015.
- [C31] M. Zareh, D. V. Dimarogonas, M. Franceschelli, K. H. Johansson and C. Seatzu "Consensus in multi-agent systems with non-periodic sampled-data exchange and uncertain network topology", International Conference on Control, Decision and Information Technologies, CoDIT'14, Metz, France, November 3-5, 2014.
- [C30] C. A. López-Limón, M. Franceschelli, C. Seatzu, A. Ramirez "A Dynamic Average Consensus Algorithm for Common Reference Frame Estimation in Networked Multi-Agent Systems", 53rd IEEE Conference on Decision and Control, Los Angeles, CA, USA, December 15-17, 2014.
- [C29] M. Zareh, D. V. Dimarogonas, M. Franceschelli, K. H. Johansson, C. Seatzu "Consensus in multi-agent systems with second-order dynamics and non-periodic sampled-data exchange", IEEE International Conference on Emerging Technology & Factory Automation, Barcelona, Spain, September 16-19, 2014.
- [C28] A. Pilloni, M. Franceschelli, A. Pisano, and E. Usai, "Recent advances in sliding-mode based consensus strategies", 13th International Workshop on Variable Structure Systems, Nantes, France, June 30-July 2, 2014.

- [C27] M. Franceschelli, A. Giua, C. Seatzu, "Fast Discrete Consensus Based on Gossip for Makespan Minimization in Networked Systems", 19th WC of the International Federation of Automatic Control, Cape Town, South Africa, August 24-29, 2014.
- [C26] M. Franceschelli, A. Giua, A. Pisano "Finite-Time Consensus on the Median Value by Discontinuous Control", IEEE American Control Conference, Portland, Oregon, USA, June 4-6, 2014. (Best Presentation in Session Award) [Preprint of journal version with extended proofs is available upon request.]
- [C25] M. P. Fanti, M. Franceschelli, A. M. Mangini, G. Pedroncelli, W. Ukovich, "Discrete Consensus in Networks with Constrained Capacity" 52nd IEEE Conference on Decision and Control, Florence, Italy, Dec 10-13, 2013.
- [C24] A. Pilloni, A. Pisano, M. Franceschelli, E. Usai, "Finite-Time Consensus for a Network of Perturbed Double Integrators by Second-Order Sliding Mode Technique" 52nd IEEE Conference on Decision and Control, Florence, Italy, December 10-13, 2013.
- [C23] M. Franceschelli, A. Pilloni, A. Pisano, A. Giua, E. Usai, "Finite-Time Consensus with Disturbance Attenuation for Directed Switching Network Topologies by Discontinuous Local Interactions" 52nd IEEE Conference on Decision and Control, Florence, Italy, December 10-13, 2013.
- [C22] M. Zareh Eshghdoust, C. Seatzu, M. Franceschelli, "Consensus on the Average in Arbitrary Directed Network Topologies with Time-Delays" 4th IFAC Workshop on Distributed Estimation and Control in Networked Systems, Koblenz, Germany, Sep 2013.
- [C21] M. Zareh Eshghdoust, C. Seatzu, M. Franceschelli, "Consensus of second order multi-agent systems with time delays and slow switching topology" 10th IEEE International Conference on Networking, Sensing and Control, Paris-Evry University, France, April 10-12, 2013.
- [C20] A. Gasparri, G. Oliva, M. Franceschelli, S. Panzneri, "Online Distributed Synchronizability Check for Networks of Interconnected Systems" 6th International Workshop on Wireless Sensor, Actuator and Robot Networks (WiSARN) Las Vegas, Nevada, US, Oct 2012.
- [C19] D. Rosa, M. Franceschelli, C. Seatzu, F. Bullo, "A Gossip Based Heuristic Algorithm for Heterogeneous Multi Vehicle Routing Problems" 3rd IFAC Workshop on Distributed Estimation and Control in Networked Systems, Santa Barbara, CA, US, Sep 2012.
- [C18] M. Franceschelli, A. Gasparri, "Decentralized Centroid Estimation for Multi-Agent Systems in Absence of a Common Reference Frame: A Convergence Analysis" 51th IEEE Conference on Decision and Control, Maui, Hawaii, Dec 2012.
- [C17] M. Franceschelli, A. Pisano, A. Giua, E. Usai, "Finite-Time Consensus based Clock Synchronization by Discontinuous Control", 4th IFAC Conference on Analysis and Design of Hybrid Systems, Eindhoven, Netherlands, June 6-8, 2012.
- [C16] M. Franceschelli, D. Rosa, C. Seatzu, F. Bullo, "A Gossip Algorithm for Heterogeneous Multi-Vehicle Routing Problems", 4th IFAC Conference on Analysis and Design of Hybrid Systems, Eindhoven, Netherlands, June 6-8, 2012.
- [C15] D. Rosa, M. Franceschelli, A. Giua, "Robust Common Reference Estimation and Formation Control for Multi-Agent Systems" IEEE American Control Conference, Montreal, Canada, June 27-29, 2012.
- [C14] V. Pilloni, M. Franceschelli, L. Atzori, A. Giua, "A Decentralized Lifetime Maximization Algorithm for Distributed Applications in Wireless Sensor Networks" IEEE International Conference on Communications, Ottawa, Canada, June 10 - 15, 2012.
- [C13] M. Franceschelli, S. Martini, M. Egerstedt, A. Bicchi, A. Giua, "Observability and Controllability Verification in Multi-Agent Systems through Decentralized Laplacian Spectrum Estimation" 49th IEEE Conference on Decision and Control, Atlanta, US, Dec 2010.
- [C12] M. Franceschelli, A. Gasparri, "On Agreement Problems with Gossip Algorithms in absence of common reference frames" IEEE International Conference on Robotics and Automation, Anchorage, Alaska, USA, May 4 - 8, 2010.
- [C11] M. Franceschelli, A. Gasparri, A. Giua, G. Ulivi, "Decentralized stabilization of heterogeneous linear multi-agent systems" IEEE International Conference on Robotics and Automation, Anchorage, Alaska, USA, May 4 - 8, 2010.
- [C10] M. Franceschelli, A. Gasparri, A. Giua, C. Seatzu, "Decentralized Laplacian Eigenvalues Estimation for Networked Multi-Agent Systems" 48th IEEE Conference on Decision and Control, Shanghai, China, Dec 2009.

- [C9] N. Orani, A. Pisano, M. Franceschelli, A. Giua, E. Usai, "Robust reconstruction of the discrete state for a class of nonlinear uncertain switched systems" 3rd IFAC Conference on Analysis and Design of Hybrid Systems, Zaragoza, Spain, Sep. 2009.
- [C8] M. Franceschelli, A. Giua, C. Seatzu, "Decentralized Fault Diagnosis for Sensor Networks" 5th Annual IEEE Conference on Automation Science and Engineering, Bangalore, India, Aug. 2009.
- [C7] M. Franceschelli, A. Giua, C. Seatzu, "Consensus on the Average on Arbitrary Strongly Connected Digraphs Based on Broadcast Gossip Algorithms" 1st IFAC Workshop on Estimation and Control of Networked Systems, Venice, Italy, Sep 2009.
- [C6] M. Franceschelli, A. Giua, C. Seatzu, "Hamiltonian Quantized Gossip" IEEE Multi-conference on Systems and Control, St. Petersburg, Russia, July 2009.
- [C5] M. Franceschelli, M. Egerstedt, A. Giua, C. Mahulea, "Constrained Invariant Motions for Networked Control Systems" American Control Conference, St. Louis, Missouri, USA, June 2009.
- [C4] M. Franceschelli, A. Gasparri, "Decentralized Centroid Estimation for Multi-Agent Systems in Absence of Any Global Reference Frame" American Control Conference, St. Louis, Missouri, USA, June 2009. (Best Presentation in Session Award)
- [C3] M. Franceschelli, A. Giua, C. Seatzu, "Load balancing over heterogeneous networks with gossip-based algorithms" American Control Conference, St. Louis, Missouri, USA, June 2009.
- [C2] M. Franceschelli, M. Egerstedt, A. Giua, "Motion probes for fault detection and recovery in networked control systems" American Control Conference, Seattle, WA, USA, June 2008.
- [C1] M. Franceschelli, A. Giua, C. Seatzu, "Load Balancing on Networks with Gossip-Based Distributed Algorithms" 46th IEEE Conf. on Decision and Control, New Orleans, LA, USA, December 2007.

Abstracts at international conferences

- [I1] Diego Deplano*, Nicola Bastianello, Mauro Franceschelli, Karl H. Johansson "Learning in Open Multi-Agent Systems" 10th IFAC Conference on Networked Systems, NECSYS 2025, Hong Kong, on June 2-5, 2025.

Abstracts at national conferences (italy)

- [N16] Diego Deplano, Mauro Franceschelli and Alessandro Giua "Dynamic Consensus on the Max/Min Value in Discrete-Time Multi-Agent Systems" Automatica.it 2023, Catania, Italy, 6-8 September 2023.
- [N15] Claudia Congiu, Diego Deplano, Alessandro Giua, Mauro Franceschelli "Distributed Estimation of All Distinct Eigenvalues of the Laplacian Matrix via Data-Driven Consensus Optimization" Automatica.it 2022, Cagliari, Italy, 1-3 September 2022.
- [N14] Diego Deplano, Mauro Franceschelli, Alessandro Giua and Luca Scardovi, Distributed Fiedler Vector Estimation with Application to Desynchronization of Harmonic Oscillator Networks, Automatica.it 2021, Virtual Edition, Catania, Italy, 8-10 September 2021.
- [N13] Zohreh Al Zahra Sanai Dashti, Carla Seatzu and Mauro Franceschelli "Dynamic Consensus on the Median Value in Open Multi-Agent Systems", Automatica.it 2020, Virtual Edition, Cagliari, Italy, 9-11 September 2020.
- [N12] Diego Deplano, Mauro Franceschelli and Alessandro Giua "Discrete-Time Dynamic Consensus on the Max Value", Automatica.it 2020, Virtual Edition, Cagliari, Italy, 9-11 September 2020.
- [N11] Matteo Santilli, Mauro Franceschelli and Andrea Gasparri "Robust Containment Control in Multi-Agent Systems with Common Coordinate Frames and Bearing Angle Measurements" Automatica.it, Ancona, Italy, 11-13 September 2019.
- [N10] Alessandro Pilloni, Mauro Franceschelli, Alessandro Pisano and Elio Usai "Delta modulation (Δ -M) via Second-order Sliding-Mode Control Technique" Automatica.it, Ancona, Italy, 11-13 September 2019.

[N9] Diego Deplano, Mauro Franceschelli and Alessandro Giua, "Stability and Consensus Analysis for a Class of Nonlinear Discrete-Time Multi-Agent Systems" Automatica.it, Ancona, Italy, 11-13 September 2019. **Winner of Best presentation of Automatica.it 2019 (Diego Deplano) awarded by Società Italiana Docenti e Ricercatori in Automatica (SIDRA).**

[N8] Ghiani, E., Mocci, S., Franceschelli, M., Anedda, M., Desogus, C., Fadda, G. "VIRTUALENERGY: A project for testing ICT for virtual energy management" 110th AEIT International Annual Conference, AEIT 2018.

[N7]. A. Pilloni, M. Franceschelli, M. Gholami, A. Pisano, E. Usai "Sliding mode robustification of networked controllers with application to distributed optimization and microgrid control" Automatica.it, Firenze, Italy, 12-14 September 2018.

[N6] I. Notarnicola, M. Franceschelli, G. Notarstefano "A Duality-Based Approach for Distributed Optimization in Demand Side Management" Automatica.it, Milano, Italy, 11 – 13 Settembre 2017.

[N5] M. Franceschelli, A. Gasparri, A. Pilloni, A. Pisano "A Low cost testbed for multi-agent electric demand side management strategies for thermostatically controlled loads" Automatica.it, Milano, Italy, 11 – 13 Settembre, 2017.

[N4] M. Franceschelli, A. Giua, A. Pisano, E. Usai "Advances on Consensus Protocols based on Discontinuous Local Interactions in Multi-Agent Systems: Disturbance Rejection Properties and Robustness Against Outlier and Uncooperative Agents" Automatica.it, Bari, Italy, 7-9 Settembre 2015.

[N3] A. Pilloni, A. Pisano, E. Usai, M. Franceschelli, A. Giua "Finite-Time Consensus of Perturbed Networks via Discontinuous Algorithms", Automatica.it, Palermo, Italy, 16-18, September, 2013

[N2] Mauro Franceschelli, Alessandro Giua, Carla Seatzu "Discrete Consensus for Gossip-Based Distributed Load Balancing" Automatica.it, Benevento, Italy, 12-14, Settembre, 2012.

[N1] M. Franceschelli, A. Giua, C. Seatzu "Load balancing with gossip-based distributed algorithms" Sidra2008, Vicenza, Italy, 11-13 Settembre 2008.

Ph.D. Thesis

"Consensus Algorithms for Estimation and Discrete Averaging in Networked Control Systems", Department of Electrical and Electronic Engineering, Cagliari, Italy, March 2011. Advisor: Prof. A. Giua.