



Riccardo Brumali

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CURRENT POSITION

[01/11/2023 – Current]

Ph.D Candidate in Automatic Control and Operational Research Department of Electrical, Electronic and Information Engineering “G. Marconi”, Alma Mater Studiorum University of Bologna, Italy

Advisor: G. Notarstefano

Co-Advisor: G. Carnevale

Topic: Optimal control and learning of complex and distributed systems

[01/09/2025 – Current]

Visiting Graduate Student at University of California San Diego (UCSD)

Advisor: S. Martinez

Topic: Development of distributed and decentralized strategies for the control of large-scale multi-agent systems within the optimal transport framework

EDUCATION

[01/10/2021 – 14/10/2023]

Master’s degree in Automation Engineering (LM-25), University of Bologna, Italy

Mark: 110/110 cum laude.

Advisors: G. Notarstefano, G. Carnevale

Thesis: A Deep Learning Approach for Distributed Aggregative Optimization with Users’ Feedback.

[01/10/2018 – 07/10/2021]

Bachelor’s degree in Automation Engineering (L-08), University of Bologna, Italy

Mark: 107/110.

Advisor: L. Marconi, S. Rossi, A. Eusebi

Thesis: Modeling and Control of a Two-Wheeled Self Balancing Robot and its Extension to the Three-Wheeled Case.

RESEARCH PROJECTS PARTICIPATION

[01/01/2024 – Current]

PRIN: Progetti di Ricerca di Rilevante Interesse Nazionale - Bando 2022 Prot. 202228CTKY

Project: ECODREAM - Energy COMMunity management: DistRibutEd AlgoritMs and toolboxes for efficient and sustainable operations

Principal Investigator: L. Glielmo, M. Robba, G. Notarstefano

Position: Ph.D Student

AWARDS

[24/06/2025 – 27/06/2025]

Best Student Paper Award at the 23rd European Control Conference (ECC), Thessaloniki, Greece

Paper: Distributed Learning and Optimization of a Multi-Agent Macroscopic Probabilistic Model

Authors: R. Brumali, G. Carnevale, G. Notarstefano

[27/08/2024 – 30/08/2024]

Peter Luh Award finalist at the 20th IEEE Conference on Automation Science and Engineering (CASE), Bari, Italy.

Paper: A Distributed Algorithm for Coordination in Energy Communities

Authors: R. Brumali, G. Carnevale, R. Carli, G. Notarstefano

CONFERENCES AND WORKSHOPS

[23/06/2025 – 27/06/2025]

23rd European Control Conference (ECC), Thessaloniki, Greece

Presented the paper: Distributed Learning and Optimization of a Multi-Agent Macroscopic Probabilistic Model

Authors: R. Brumali, G. Carnevale, G. Notarstefano

[03/06/2025 – 06/06/2025]

Workshop on Optimization for Learning and Control, Lucca, Italy

Presented the paper: Data-Driven Distributed Optimization via Aggregative Tracking and Deep-Learning

Authors: R. Brumali, G. Carnevale, G. Notarstefano

[27/07/2024 – 30/07/2024]

20th IEEE Conference on Automation Science and Engineering (CASE), Bari, Italy

[15/07/2024 – 17/07/2024]

6th Annual Learning for Dynamics Control Conference (L4DC), Oxford, United Kingdom

Presented the paper: A Deep Learning Approach for Distributed Aggregative Optimization with Users' Feedback

Authors: R. Brumali, G. Carnevale, G. Notarstefano

TEACHING

[01/10/2024 – 30/09/2025]

Teaching assistant for "Automatic Controls - T", 30h, Bachelor's Degree in Computer Engineering, University of Bologna.

[01/10/2023 – 30/09/2024]

Teaching assistant for "Automatic Controls - T", 30h, Bachelor's Degree in Computer Engineering, University of Bologna.

MENTORING EXPERIENCE AND STUDENT SERVICE

[2024 – Current]

Co-supervision of the master theses in Automation Engineering at the University of Bologna

A. Di Giorgio (2025, joint with Max Planck Institute for Intelligent Systems, Tuebingen), L. Fantini (2025, joint with University of Louvain), G. Speciale (2025, joint with University of Louvain), M. Legnini (2025, joint with IST Stuttgart), A. Ricciardi (2024),

[2024 – Current]

Co-supervision of the bachelor theses in Ingegneria Informatica (Computer Engineering) at the University of Bologna:

L. Moscardini (2025), L. Vercilli (2024), T. Bergonzoni (2024)

JOURNAL PUBLICATIONS

Brumali, R., Carnevale, G., & Notarstefano, G. (2025). Distributed learning and optimization of a multi-agent macroscopic probabilistic model. European Journal of Control, 101332.

CONFERENCE PROCEEDINGS

Messilem, A. M., Brumali, R., Carnevale, G., Notarstefano, G., & Carli, R. (2025). A Distributed MILP-ADMM Framework for Italian Energy Communities: Shared Energy Incentives, Renewables, and Shiftable Loads. IFAC-PapersOnLine, 59(9), 19-24.

Brumali, R., Carnevale, G., Carli, R., & Notarstefano, G. (2024, August). A Distributed Algorithm for Coordination in Energy Communities. In 2024 IEEE 20th International Conference on Automation Science and Engineering (CASE) (pp. 2091-2096). IEEE.

Brumali, R., Carnevale, G., & Notarstefano, G. (2024, June). A deep learning approach for distributed aggregative optimization with users' Feedback. In 6th Annual Learning for Dynamics & Control Conference (pp. 1552-1564). PMLR.

SUBMITTED PAPERS

R. Brumali, G. Carnevale, and G. Notarstefano, "Data-Driven Distributed Optimization via Aggregative Tracking and Deep-Learning", 2025. Accepted as a full paper for Transactions on Control of Network Systems (TCNS), 3rd revision round.

R. Brumali, G. Carnevale, and G. Notarstefano, "A Feedback-Based Distributed Method for Multiscale Optimal Control of Multi-Agent Systems", 2024. Submitted for conference presentation to 64th IEEE Conference on Decision and Control (CDC), (Rio de Janeiro, Brasil), To appear.

PROGRAMMING LANGUAGES AND SOFTWARES

Python

Proficient (control systems simulations, algorithm design, data analysis)

MATLAB and Simulink

Proficient (control systems simulations, algorithm design, data analysis)

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

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Bologna, 19/11/2025