Manuel Boldrer

manuel.boldrer@gmail.com
Born in Trento (Italy) on 29.07.1992
CV Updated to March 2024

Work Experiences

Mar '23 - Now **Postdoctoral Scholar**, *Department of Cybernetics, Czech Technical University* , Czechia
- **Supervisor:** Martin Saska, Robert Penicka

May '22 - Nov '23 **Postdoctoral Scholar**, *Cognitive Robotics Department, Delft University of Technology*, Netherlands
- **Supervisor:** Laura Ferranti

Oct '18-Sep '20 **Teaching support activity**, *held at University of Trento*, Italy, (80 hours)
- **Department:** Information Engineering and Computer Science (DISI)
- **Course:** Systems Theory

Jun-Nov 2018 **Scholarship**, *held at University of Trento*, Italy
- **Title**: Distributed estimation and control algorithms for a team of service robots

Education

Nov '18-May '22 **PhD Student in Mechatronics, 34th cycle**, *University of Trento*, Italy
- **Supervisors:** Daniele Fontanelli, Luigi Palopoli
- **Title:** Distributed control algorithms for a team of service robots
- **PhD Defense Date:** 06 June 2022;
- **PhD Committee:** Lucia Pallottino, Dimos Dimarogonas, Andrea Del Prete.
- **Research Interests:** Multi-agent systems, Distributed control, Robotics.

Sep '21-Feb '22 **Visiting Scholar**, *University of California, Riverside*, United States
- **Supervisor:** Fabio Pasqualetti
- **Research Activity:** Networked system control, Reinforcement learning

Sep '15-Mar '18 **Master's degree in Mechatronics Engineering**, *University of Trento*, Italy
- **Curriculum in Electronics and Robotics**
- **Grade:** magna cum laude
- **Master thesis:** "Control of a Synchrotron with LMI-based Techniques".
  - *Advisor:* Luca Zaccarian

Sep '12-Jul '15 **Bachelor's degree in Industrial Engineering**, *University of Trento*, Italy
- **Methodological Curriculum**
- **Bachelor thesis:** "Study of Lateral Vibrations in a Beam".
  - *Advisor:* Daniele Bortoluzzi

Sep '06-Jun '12 **Secondary Education Diploma**, *Liceo Scientifico "L. Da Vinci"*, Trento, Italy

Publications

Journal Articles

[J7] **M. Boldrer⋆, A. Serra-Gomez, L. Lyons, J. Alonso-Mora, L. Ferranti**, *Rule-Based Lloyd Algorithm for Multi-Robot Motion Planning and Control with Safety and Convergence Guarantees*, in IEEE Transactions on Robotics, Under Review

[J6] **M. Boldrer⋆, L. Lyons, L. Palopoli, D. Fontanelli, L. Ferranti**, *Time-inverted Kuramoto Model Meets Lissajous Curves: Multi-Robot Persistent Monitoring and Target Detection*, in IEEE Robotics and Automation Letters, IF 4.321, Q1, 2022
doi: 10.1109/LRA.2022.3224661

[J5] **M. Boldrer⋆, L. Palopoli, D. Fontanelli**, *A Unified Lloyd-based Framework for Multi-Agent Collective Behaviours*, in Elsevier, Robotics and Autonomous Systems, IF 3.7, Q1, 2022
doi: 10.1016/j.robot.2022.104207

[J4] **M. Boldrer⋆, F. Pasqualetti, L. Palopoli, D. Fontanelli**, *Multi-Agent Persistent Monitoring via Time-Inverted Kuramoto Dynamics*, in IEEE, Control Systems Letters, IF 3.698, Q1, 2022
doi: 10.1109/LCSYS.2022.3178294

[J3] **M. Boldrer⋆, A. Antonucci, P. Bevilacqua, L. Palopoli, D. Fontanelli**, *Multi-Agent Navigation in Human-Shared Environments: a Safe and Socially-Aware Approach*, in Elsevier, Robotics and Autonomous Systems, IF 3.7, Q1, 2021
doi: 10.1016/j.robot.2021.103979

[J2] **M. Boldrer*, P. Bevilacqua, L. Palopoli, D. Fontanelli**, *Graph Connectivity Control of a Mobile Robot Network with Mixed Dynamic Multi-Tasks*, in IEEE Robotics and Automation Letters, IF 4.321, Q1, 2021
doi: 10.1109/LRA.2021.3061072

[J1] **M. Boldrer*, M. Andreetto, S. Divan, L. Palopoli, D. Fontanelli**, *Socially-aware Reactive Obstacle Avoidance Strategy based on Limit Cycle*, in IEEE Robotics and Automation Letters, IF 4.321, Q1, 2020
doi: 10.1109/LRA.2020.2976302

Refereed Conference Publications

[C6] **M. Boldrer*, F. Riz, F. Pasqualetti, L. Palopoli, D. Fontanelli**, *Time-Inverted Kuramoto Dynamics for κ-Clustered Circle Coverage*, In IEEE Conf. on Decision and Control (CDC), doi: 10.1109/CDC45484.2021.968331, 2021

[C5] **M. Boldrer*, D. Fontanelli, A. Antonucci, L. Palopoli**, *A Novel Framework for Multi-Agent Navigation in Human-Shared Environments*, In Italian Institute of Robotics and Intelligent Machines Conference (I-RIM), doi: 10.5281/zenodo.5900505, 2021, (***Best Student Paper Finalist***)

[C4] **M. Boldrer*, L. Palopoli, D. Fontanelli**, *Lloyd-based Approach for Robots Navigation in Human-shared Environments*, In IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), doi: 10.1109/IROS45743.2020.9341272, 2020

[C3] **M. Boldrer*, L. Palopoli, D. Fontanelli**, *Socially-aware Multi-agent Velocity Obstacle based Navigation for Nonholonomic Vehicles*, In IEEE Computer Software and Applications Conference (COMPSAC), doi: 10.1109/COMPSAC48688.2020.00012, 2020

[C2] **A. Antonucci*, P. Bevilacqua, L. Palopoli, M. Boldrer, D. Fontanelli**, *Motion Planning in Crowds: Proxemics as a Base for a Socially Acceptable Behaviour*, In 1st Italian Conference on Robotics and Intelligent Machines (I-RIM), doi: 10.5281/zenodo.4782236, 2019

[C1] **M. Boldrer*, D. Fontanelli, L. Palopoli**, *Coverage control and distributed consensus-based estimation for mobile sensing networks in complex environments*, In IEEE Conf. on Decision and Control (CDC), doi: 10.1109/CDC40024.2019.9028967, 2019

* Corresponding Author and Main contributor.

Language Skills

Italian	Mother tongue
English	Fluent

Computer Skills

Languages	C++, LaTeX, MatLab, Phyton
Other Software	Ansys, Maple, Maplesim, Mathematica, NI LabVIEW, Blender, Microsoft Office Package

Links

Linkedin.com	Manuel Boldrer - Professional profile.		
Google Scholar	Google Scholar Profile.	Website	Personal website