# Manuel Boldrer

*Postdoctoral Scholar*

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*Born in Trento (Italy) on 29.07.1992*
*CV Updated in November 2022*


## Work Experiences

May '22 - Present **Postdoctoral Scholar**, *Cognitive Robotics Department, Delft University of Technology*, Netherlands.
- **Supervisor:** Laura Ferranti
- **Title:** Secure and Private Robot Control

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
- **Professor:** Elisa Ricci

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 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

[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, In press, Nov. 2022.

[J5] **M. Boldrer, L. Palopoli, D. Fontanelli**, *A Unified Lloyd-based Framework for Multi-Agent Collective Behaviours*, in Elsevier, Robotics and Autonomous Systems, Jul. 2022.

[J4] **M. Boldrer, F. Pasqualetti, L. Palopoli, D. Fontanelli**, *Multi-Agent Persistent Monitoring via Time-Inverted Kuramoto Dynamics*, in IEEE, Control Systems Letters, May 2022.

[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, Dec. 2021.

[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, Feb. 2021.

[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, Feb. 2020.

### Refereed Conference Publications

[C5] **M. Boldrer, F. Riz, F. Pasqualetti, L. Palopoli, D. Fontanelli**, *Time-Inverted Kuramoto Dynamics for $\kappa$-Clustered Circle Coverage*, In IEEE Conf. on Decision and Control (CDC), Dec. 2021.

[C4] **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), Oct. 2021, (***Best Student Paper Finalist***).

[C3] **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), Oct. 2020.

[C2] **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), Jul. 2020.

[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), Dec. 2019.

## Grants

Oct. 2022 **General purpose Attack-Resilient Solutions for Multi-Robot Systems**, *NWO XS*, Submitted.

Nov. 2022 **ADvanced RObotics Integrated Technologies: Going Beyond Imitation** , *HORIZON-CL4-2022-DIGITAL-EMERGING-02-05*, In Preparation.

## 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