
Work Experiences

- Mar '24 - Now **Researcher**, *Department of Cybernetics, Czech Technical University in Prague, Czechia*
○ **Advisor:** Martin Saska
○ **Lab:** Multi-robot systems group (MRS)
- May '22 - Nov '23 **Postdoctoral Scholar**, *Cognitive Robotics Department, Delft University of Technology, The Netherlands*
○ **Advisor:** Laura Ferranti
○ **Lab:** Reliable Robot Control Lab (R2C)
- Oct '18-Sep '20 **Teaching Assistant**, *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-robot systems, Distributed control, Mobile 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".
- *Supervisor:* 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".
- *Supervisor:* Daniele Bortoluzzi
- Sep '06-Jun '12 **Secondary Education Diploma**, *Liceo Scientifico "L. Da Vinci", Trento, Italy*

Publications

Journal Articles

- [J10] **M. Boldrer, V. Krátký, V. Walter, M. Saska**, *Communication-less Swarming in the Wild: A Distributed Lloyd-based Algorithm dealing with Uncertainties*, In IEEE Transactions on Robotics, Under Review.
- [J9] **M. Boldrer, V. Krátký, M. Saska**, *Aerial Robots Persistent Monitoring and Target Detection: Deployment and Assessment in the Field*, Autonomous Robots, Under Review.
- [J8] **L. Lyons, M. Boldrer, L. Ferranti**, *Distributed Attack-Resilient Platooning Against False Data Injection*, IEEE Transactions on Vehicular Technology, Under Review.
- [J7] **M. Boldrer, A. Serra-Gomez, L. Lyons, V. Krátký, J. Alonso-Mora, L. Ferranti**, *Rule-Based Lloyd Algorithm for Multi-Robot Motion Planning and Control with Safety and Convergence Guarantees*, International Journal of Robotics Research, 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, 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, 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, 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, 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, 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, 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.

Language Skills

Italian	Mother tongue
English	Fluent

Computer Skills

Languages	C++, Phyton
Software/Tools	Vim, Neovim, Tmux, Tmuxinator, Bash, Latex, ROS/ROS2, Git, Github, Docker, Apptainer, Ansible, Blender, Labview, Maple/Maplesim, Matlab/Simulink..
OS	Linux, Windows
Soft Skills	Adaptive, critical thinker, eager to learn, flexible, problem-solver, decisive, clear communicator, motivating, collaborative, influential, positive, enthusiastic, friendly, honest, respectful, dedicated, organized, independent, self-motivated, punctual, reliable, and effective under pressure.

Links

Driving license	B
Sports	Table tennis, Tennis, Football, Basketball
Linkedin.com	Manuel Boldrer - Professional profile.
Google Scholar	Google Scholar Profile. Website Personal website