






Diego Tiozzo Fasiolo




Education

- 2021 – 2024  **Ph.D. in Robotics, University of Udine.**
The Italian National Ph.D. Program in Artificial Intelligence.
Thesis title and advisor: *Autonomous mobile robotics for mapping and monitoring in agriculture*, Prof. Lorenzo Scalera.
- 2019 – 2021  **Master's degree in Mechanical Engineering, University of Padua.**
Thesis title and advisor: *Automatic trajectory generation for collaborative robots in the presence of obstacles*, Prof. Giulio Rosati.
- 2016 – 2019  **Bachelor's degree in Mechanical Engineering, University of Padua.**
Thesis title and advisor: *CAD modeling and finite element analysis with mesh free of structural notching effects*, Prof. Giovanni Meneghetti.







Visiting periods

- 2024  **Stevens Institute of Technology (New Jersey, USA).**
Visiting duration: 6 months.
Research groups: Prof. Long Wang's Advanced Robot Manipulators Lab and Prof. Brendan Englot's Robust Field Autonomy Lab.
- 2023  **University of Lincoln (Lincoln, UK).**
Visiting duration: 1 week.
Research group: Prof. Marcello Calisti's Lincoln Agri Robotics.


Employment History

- 2024 –  **Research fellow.** Mechatronics and Robotics Lab, University of Udine (Italy).
- 2023 – 2024  **Teaching assistant.** Prof. Alessandro Gasparetto, Applied Mechanics of Machines, Bachelor's degree in Mechanical Engineering, University of Udine (Italy).
- 2022 – 2024  **Lecturer.** Multibody simulation with MSC Adams, Master's degree in Mechanical Engineering, University of Udine (Italy).

Skills

- Languages  Strong reading, writing and speaking competencies for English, acquired also through visiting periods abroad in the UK and USA as well as scientific presentations and lectures in English, and Italian.
- Coding  Python, C++, MATLAB, Robot Operating System, \LaTeX , Adept V+.
- Software  ANSYS Mechanical APDL, Office Suites: MS Office; Open Office; Libre Office, MSC Adams, SolidWorks, CloudCompare, UltiMaker Cura.
- Robots  Experienced with AgileX Scout Mini, AgileX Scout 2.0, AgileX Bunker, Robotnik RB-VOGUI, Universal Robots UR5, Franka Emika Panda, Omron Techman TM5, and Clearpath Husky robots.
- Sensors  Experienced with Velodyne VLP16, RS-Helios-32-5515, Ouster OS1 LiDAR sensors, Kinect V2, Intel RealSense D435, MicaSense RedEdge cameras, U-blox GNSS receivers, Xsens IMUs.
- Misc.  Academic research, teaching, \LaTeX typesetting and publishing.

Professional certifications

2023  Italian license to practice as an engineer. Section A.

Research Publications

Journal Articles

- 1 M. Sodini, A. Pichierri, **Tiozzo Fasiolo, Diego, et al.**, “Canopy volume mitigates hail damage on grapevine berries: Insights from a bayesian probabilistic analysis,” *Submitted to Precision Agriculture*, 2025.
- 2 **Tiozzo Fasiolo, Diego**, L. Scalera, E. Maset, and A. Gasparetto, “Field evaluation of an autonomous mobile robot for navigation and mapping in forest,” *Submitted to Robotics*, 2025.
- 3 **Tiozzo Fasiolo, Diego**, L. Scalera, E. Maset, and A. Gasparetto, “FriulBot: an autonomous ground robot for vineyard 3D mapping,” *Submitted to Robotics and Autonomous Systems*, 2025.
- 4 **Tiozzo Fasiolo, Diego**, L. Wang, L. Scalera, and B. Englot, “A factor graph-based framework integrating odometry and object pose estimation for mobile manipulators,” *Submitted to Robotics and Autonomous Systems*, 2025.
- 5 **Tiozzo Fasiolo, Diego**, A. Pichierri, P. Sivilotti, and L. Scalera, “An analysis of the effects of water regime on grapevine canopy status using a UAV and a mobile robot,” *Smart Agricultural Technology*, vol. 6, p. 100 344, 2023.
- 6 **Tiozzo Fasiolo, Diego**, L. Scalera, and E. Maset, “Comparing LiDAR and IMU-based SLAM approaches for 3D robotic mapping,” *Robotica*, vol. 41, no. 9, pp. 2588–2604, 2023.
- 7 **Tiozzo Fasiolo, Diego**, L. Scalera, E. Maset, and A. Gasparetto, “Towards autonomous mapping in agriculture: A review of supportive technologies for ground robotics,” *Robotics and Autonomous Systems*, p. 104 514, 2023.

Conference Proceedings






- 1 L. Scalera, D. Tiozzo Fasiolo, E. Maset, *et al.*, “Mobile robotics for forest monitoring and mapping within the AI4FOREST project,” in *Accepted at MES-2025 2nd International Conference and Exhibition “Mechanical Engineering Solutions”*, Springer, 2025, pp. 399–408.
- 2 **Tiozzo Fasiolo, Diego**, L. Scalera, E. Maset, *et al.*, “A navigation approach for autonomous mobile robots in sustainable agriculture,” in *International Workshop IFToMM for Sustainable Development Goals*, Springer, 2025, pp. 399–408.
- 3 **Tiozzo Fasiolo, Diego**, L. Scalera, E. Maset, and A. Gasparetto, “Robotic mapping and detection of dynamic objects in outdoor environments,” in *European Conference on Mechanism Science*, Springer, 2024, pp. 245–252.
- 4 **Tiozzo Fasiolo, Diego**, E. Maset, L. Scalera, S. Macaulay, A. Gasparetto, and A. Fusiello, “Combining LiDAR SLAM and deep learning-based people detection for autonomous indoor mapping in a crowded environment,” in *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, vol. 43, Copernicus GmbH, 2022, pp. 447–452.
- 5 **Tiozzo Fasiolo, Diego**, L. Scalera, E. Maset, and A. Gasparetto, “Experimental evaluation and comparison of LiDAR SLAM algorithms for mobile robotics,” in *The International Conference of IFToMM ITALY*, Springer, 2022, pp. 795–803.
- 6 **Tiozzo Fasiolo, Diego**, L. Scalera, E. Maset, and A. Gasparetto, “Recent trends in mobile robotics for 3D mapping in agriculture,” in *International Conference on Robotics in Alpe-Adria Danube Region*, Springer, 2022, pp. 428–435.

Awards

- 2025  Gold Best Application Paper Award from The International Award Committee for I4SDG 2025 (IFToMM for Sustainable Development Goals).

Seminars and Conferences

Speaker

- 2025  The 3rd IFToMM for Sustainable Development Goals Conference. Villa San Giovanni, Italy.
- 2024  The 9th European Conference on Mechanism Science (EuCoMeS). Padova, Italy.
- 2023  International week - Blended Intensive Programmes (BIP). "Mobile Robotics: Advanced solutions for indoor and field applications". Free University of Bolzen-Bolzano, Italy.
- 2022  The Fourth International Conference of IFToMM ITALY IFIT. Naples, Italy.
-  The 31st International Conference on Robotics, Alpe-Adria-Danube Region (RAAD). Klagenfurt am Wörthersee, Austria.

Attendee

- 2025  Embodied Intelligence Robotics Workshop in Venice Biennale Architettura. ETH Zurich, Massachusetts Institute of Technology (MIT), Tongji University.
- 2024  Artificial intelligence: training and development opportunities for the Italian agricultural sector. National Doctorate in Artificial Intelligence Agriculture (Agrifood) and Environment. Portici, Italy.
- 2023  IFToMM International Summer School on Human-Centered Robotics. Marche Polytechnic University, Italy.
-  The 12th International Symposium On Mobile Mapping Technology (MMT 2023). University of Padua, Italy.
- 2022  CISM APT National Course "Recent Developments in Digital Photogrammetry: 3D Acquisition and Automatic Information Extraction Techniques". Udine, Italy.
-  The 4th Italian Conference on Robotics and Intelligent Machines (I-Rim 3D 2022). Field and Service Robotics Workshop. Online event.
-  The 21st International Conference of the Italian Association for Artificial Intelligence (AIxIA 2022). University of Udine, Italy.