Curriculum Vitae
Lorenzo Scalera

November 28, 2024

Current Academic Position

Assistant Professor (Ricercatore RTD-B) since 21/12/2021 at the Polytechnic Department of Engineering and Architecture of University of Udine (Italy), sector ING-IND/13, Mechanics of Machines, title of the research project: "Trajectory planning for robotic and mechatronic systems".

Teacher of the course Mechanics of Machines, module 2 at the Polytechnic Department of Engineering and Architecture of University of Udine (Italy).

Professional Qualifications

National Scientific Habilitation, Abilitazione Nazionale per il Settore Concorsuale 09/A2 Meccanica Applicata alle Macchine, II Fascia, valid from 17/11/2020 to 17/11/2031 (art. 16, comma 1, Legge 240/10).

Professional Habilitation, Habilitation as a professional engineer, Section A (2015).

Working Experience

Assistant Professor (Ricercatore RTD-A) from 04/05/2020 to 20/12/2021 at the Polytechnic Department of Engineering and Architecture of University of Udine (Italy), sector ING-IND/13, Mechanics of Machines, research project: "Trajectory planning for robotic and mechatronic systems".

Research Fellow (Assegnista di ricerca) from 01/11/2019 to 03/05/2020 at the Polytechnic Department of Engineering and Architecture of University of Udine (Italy), research project POR-FERS 2014/2020 "Wind Propulsion Aid For Ships – WEPAS".

Research Fellow (Assegnista di ricerca) from 01/11/2018 to 31/10/2019 at the Faculty of Science and Technology of the Free University of Bozen-Bolzano, research project: "Mech4SME3: Mechatronics for Predictive Maintenance and Energy Efficiency Enhancement".

Visiting

Visiting at the University of Lincoln (United Kingdom), June 13-16, 2023, for research collaborations on mobile robotics for agriculture.

Erasmus+ teaching Staff at the Byalistok University of Technology (Poland) for 8 teaching hours within the course "Advanced trajectory planning for collaborative robots and safety in industrial robotics" from 17 to 18/11/2022.

Invited Researcher at the Computer-Aided Design Department, School of Computer Science of the St. Petersburg Electrotechnical University (St. Petersburg, Russia). The research activity, carried out in collaboration with prof. Denis Butusov, focuses on the development and experimental validation of algorithms for artistic applications of robotic systems.

Visiting Research Fellow from 16/08/2019 to 14/09/2019 at the Department of Mechanical Engineering of Chiang Mai University, Chiang Mai, Thailand, within the European project SME 4.0. The research activity, carried out with prof. Theeraphong Wongratanaphisan, focused on the study of energy efficiency in parallel robots through the introduction of elastic elements.

Visiting PhD student from 03/01/2018 to 28/07/2018 at the Wearable Robotic System (WRS) Lab, Stevens Institute of Technology, Hoboken (NJ, USA). The research activity, carried out with prof. Damiano Zanotto, focused on the modelling and control of an underactuated cable-driven robotic system.

Education

Ph.D. Programme in Industrial and Information Engineering from 01/11/2015 to 31/10/2018 at the Polytechnic Department of Engineering and Architecture of University of Udine (Italy). The research topics, all related to the scientific disciplinary sector 09/A2 (Mechanics of Machines), included: kinematic and dynamic modelling of mechatronic and robotic systems, trajectory planning, experimental validation of robotic systems, collaborative robotics, human-machine interaction, development of interfaces for mechatronic systems, design and implementation of measurement, control and data acquisition systems. Ph.D. final exam discussed on 05/03/2019. Title of the PhD. thesis: "Modelling and Control of Flexible-Link Robotic Systems".

Master's degree in Mechanical Engineering (14/10/2015) at the University of Trieste, supervisor: prof. Paolo Gallina, grade: 110/110 cum laude.

Bachelor's degree in Industrial Engineering, curriculum Mechanical Engineering (13/12/2012) at the University of Trieste, supervisor: prof. Paolo Gallina, grade: 110/110 cum laude.

High school diploma (2009), Scientific high school Liceo N. Copernico in Udine, grade: 100/100.

Scientific Production

Ph.D. Thesis

Thesis Title: "Modeling and Control of Flexible-Link Robotic Systems." Supervisor: Prof. Alessandro Gasparetto. Defended on March 05, 2019, at the Polytechnic Department of Engineering and Architecture, University of Udine.

Journal publications (indexed in Scopus)

1. Fabris, G., **Scalera, L.**, Gasparetto, A. (2024). Dynamic modelling and energy-efficiency optimization in a 3-DOF parallel robot. The International Journal of Advanced Manufacturing Technology, 1-23.

2. **Scalera, L.**, Lozer, F., Giusti, A., Gasparetto, A. (2024). An experimental evaluation of robot stopping approaches for improving fluency in collaborative robotics. Robotica.

3. **Scalera, L.**, Giusti, A., Vidoni, R. (2024). Trajectory Planning for Intelligent Robotic and Mechatronic Systems. Applied Sciences, 14(3), 1179.

4. Fabris, G., **Scalera, L.**, Gasparetto, A. (2024). Playing Checkers with an Intelligent and Collaborative Robotic System. Robotics, 13(1), 4.

5. Tiozzo Fasiolo, D., Pichierri, A., Sivilotti, P., **Scalera, L.** (2023). An analysis of the effects of water regime on grapevine canopy status using a UAV and a mobile robot. Smart Agricultural Technology, 6, 100344.

6. Tiozzo Fasiolo, D., **Scalera, L.**, Maset, E., Gasparetto, A. (2023). Towards autonomous mapping in agriculture: A review of supportive technologies for ground robotics. Robotics and Autonomous Systems, 104514.

7. Mystkowski, A., Wolniakowski, A., Kadri, N., Sewiolo, M., **Scalera, L.** (2023). Neural Network Learning Algorithms for High-Precision Position Control and Drift Attenuation in Robotic Manipulators. Applied Sciences, 13(19), 10854.

8. Tiozzo Fasiolo, D. T., **Scalera, L.**, Maset, E. (2023). Comparing LiDAR and IMU-based SLAM approaches for 3D robotic mapping. Robotica, 1-17.

9. Martinez-Bejar, R., García-González, M. S., **Scalera, L.**, Gasparetto, A. (2023). A Modelling Approach to Privacy and Safety Issues in Cyber-Physical Systems. In Exploring Cyber Criminals and Data Privacy Measures (pp. 241-252). IGI Global.

10. Karimov, A., Kopets, E., Leonov, S., **Scalera, L.**, Butusov, D. (2023). A Robot for Artistic Painting in Authentic Colors. Journal of Intelligent & Robotic Systems, 107(3), 34.

11. Dreon, S., **Scalera, L.**, Salvati, E. (2023). A contact analysis for unconventional mounting processes of angular ball bearings. International Journal of Mechanics and Materials in Design, 1-15.

12. **Scalera, L.**, Nainer, C., Giusti, A., Gasparetto, A. (2023). Robust safety zones for manipulators with uncertain dynamics in collaborative robotics. International Journal of Computer Integrated Manufacturing, 1-13.

13. Boscariol, P., Gasparetto, A., **Scalera, L.** (2023). Path Planning for Special Robotic Operations. In Robot Design (pp. 69-95). Springer, Cham.

14. Gasparetto, A., **Scalera, L.**, Palomba, I. (2022). Robotics and Vibration Mechanics. Applied Sciences, 12(19), 9478.

15. **Scalera, L.**, Giusti, A., Vidoni, R., Gasparetto, A. (2022). Enhancing fluency and productivity in human-robot collaboration through online scaling of dynamic safety zones. The International Journal of Advanced Manufacturing Technology, 121(9), 6783-6798.

16. Gasparetto, A., Seriani, S., **Scalera, L.** (2022). Modelling and Control of Mechatronic and Robotic Systems, Volume II. Applied Sciences, 12(12), 5922.

17. Maset, E., **Scalera, L.**, Beinat, A., Visintini, D., Gasparetto, A. (2022). Performance Investigation and Repeatability Assessment of a Mobile Robotic System for 3D Mapping. Robotics, 11(3), 54.

18. Kopets, E., Karimov, A., **Scalera, L.**, Butusov, D. (2022). Estimating Natural Frequencies of Cartesian 3D Printer Based on Kinematic Scheme. Applied Sciences, 12(9), 4514.

19. **Scalera, L.**, Canever, G., Seriani, S., Gasparetto, A., Gallina, P. (2022). Robotic Sponge and Watercolor Painting Based on Image-Processing and Contour-Filling Algorithms. Actuators, 11(2), 62.

20. **Scalera, L.**, Maset, E., Seriani, S., Gasparetto, A., Gallina, P. (2021). Performance evaluation of a robotic architecture for drawing with eyes. Int. J. Mech. Control, 22, 53-60.

21. **Scalera, L.**, Seriani, S., Gallina, P., Lentini, M., Gasparetto, A. (2021). Human–Robot Interaction through Eye Tracking for Artistic Drawing. Robotics, 10(2), 54.

22. Gasparetto, A., Seriani, S., **Scalera, L.** (2021). Modelling and Control of Mechatronic and Robotic Systems. Applied Sciences 2021, 11(7), 3242.

23. Vidussi, F., Boscariol, P., **Scalera, L.**, Gasparetto, A. (2021). Local and trajectory-based indexes for task-related energetic performance optimization of robotic manipulators. Journal of Mechanisms and Robotics, 13(2), 021018.

24. Karimov, A., Kopets, E., Kolev, G., Leonov, S., **Scalera, L.**, Butusov, D. (2021). Image Preprocessing for Artistic Robotic Painting. Inventions, 6(1), 19.

25. Boscariol, P., **Scalera, L.**, Gasparetto, A. (2021). Nonlinear Control of Multibody Flexible Mechanisms: A Model-Free Approach. Applied Sciences, 11(3), 1082.

26. Carabin, G., **Scalera, L.**, Wongratanaphisan, T., Vidoni, R. (2021). An energy-efficient approach for 3D printing with a Linear Delta Robot equipped with optimal springs. Robotics and Computer-Integrated Manufacturing, 67, 102045.

27. Gallina, P., Gei, M., **Scalera, L.**, Seriani, S. (2021). Liquid structures: A novel Computational Fluid Dynamics (CFD) inspired metamaterial. Extreme Mechanics Letters, 2021, 42, 101119.

28. Caruso, M., **Scalera, L.**, Gallina, P., Seriani, S. (2020). Dynamic modeling and simulation of a robotic lander based on variable radius drums. Applied Sciences (Switzerland), 2020, 10(24), pp. 1–21, 8862.

29. Kopets, E.E., Karimov, A.I., Kolev, G.Y., **Scalera, L.**, Butusov, D.N. (2020). Interactive robot for playing Russian checkers. Robotics, 2020, 9(4), pp. 1–15, 107.

30. Carabin, G., **Scalera, L.** (2020). On the Trajectory Planning for Energy Efficiency in Industrial Robotic Systems. Robotics, 9(4), 89.

31. **Scalera, L.**, Giusti, A., Vidoni, R., Di Cosmo, V., Matt, D.T., Riedl, M. (2020). Application of dynamically scaled safety zones based on the ISO/TS 15066:2016 for collaborative robotics. International Journal of Mechanics and Control, 21(1), pp.41-49.

32. Maset, E., **Scalera, L.**, Zonta, D., Alba, I. M., Crosilla, F., Fusiello, A. (2020). Procrustes analysis for the virtual trial assembly of large-size elements. Robotics and Computer-Integrated Manufacturing, 62, 101885.

33. Beltramello, A., **Scalera, L.**, Seriani, S., Gallina, P. (2020). Artistic robotic painting using the palette knife technique. Robotics, 9(1), 15.

34. **Scalera, L.**, Gasparetto, A., Zanotto, D. (2020). Design and experimental validation of a 3-DOF underactuated pendulum-like robot. IEEE/ASME Transactions on Mechatronics, 25(1), 217-228.

35. **Scalera, L.**, Boscariol, P., Carabin, G., Vidoni, R., Gasparetto, A. (2020). Enhancing Energy Efficiency of a 4-DOF Parallel Robot Through Task-Related Analysis. Machines, 8(1), 10.

36. **Scalera, L.**, Seriani, S., Gasparetto, A., Gallina, P. (2019). Watercolour robotic painting: a novel automatic system for artistic rendering. Journal of Intelligent & Robotic Systems, 95(3-4), 871-886.

37. **Scalera, L.**, Carabin, G., Vidoni, R., Wongratanaphisan, T. (2019). Energy efficiency in a 4-DOF parallel robot featuring compliant elements. International Journal of Mechanics and Control, 20(2), pp. 1-9.

38. **Scalera, L.**, Seriani, S., Gasparetto, A., Gallina, P. (2019). Non-photorealistic rendering techniques for artistic robotic painting. Robotics, 8(1), 10.

39. **Scalera, L.**, Palomba, I., Wehrle, E., Gasparetto, A., Vidoni, R. (2019). Natural motion for energy saving in robotic and mechatronic systems. Applied Sciences, 9(17), 3516.

40. Seriani, S., **Scalera, L.**, Caruso, M., Gasparetto, A., Gallina, P. (2019). Upside-Down Robots: Modeling and experimental validation of magnetic-adhesion mobile systems. Robotics, 8(2), 41.

41. Seriani, S., Gallina, P., **Scalera, L.**, Lughi, V. (2018). Development of n-DoF preloaded structures for impact mitigation in cobots. Journal of Mechanisms and Robotics, 10(5), 051009.

42. Trigatti, G., Boscariol, P., **Scalera, L.**, Pillan, D., Gasparetto, A. (2018). A new path-constrained trajectory planning strategy for spray painting robots. The International Journal of Advanced Manufacturing Technology, 98(9-12), 2287-2296.

43. **Scalera, L.**, Seriani, S., Gallina, P., Di Luca, M., Gasparetto, A. (2018). An experimental setup to test dual-joystick directional responses to vibrotactile stimuli. IEEE Transactions on Haptics, 11(3), 378-387.

44. **Scalera, L.**, Gallina, P., Seriani, S., Gasparetto, A. (2018). Cable-based robotic crane (CBRC): Design and implementation of overhead traveling cranes based on variable radius drums. IEEE Transactions on Robotics, 34(2), 474-485.

45. Vidoni, R., **Scalera, L.**, Gasparetto, A. (2018). 3-D ERLS based dynamic formulation for flexible-link robots: theoretical and numerical comparison between the finite element method and the component mode synthesis approaches. International Journal of Mechanics and Control, 19(1), pp. 39-50.

46. Boscariol, P., Gasparetto, A., **Scalera, L.**, Vidoni, R. (2017). Efficient closed-form solution of the kinematics of a tunnel digging machine. Journal of Mechanisms and Robotics, 9(3).

47. **Scalera, L.**, Gallina, P., Gasparetto, A., Seriani, S. (2017). Anti-Hedonistic Machines. International Journal of Mechanics and Control, 18(2), pp. 9-16.

48. Ristorto, G., Gallo, R., Gasparetto, A., **Scalera, L.**, Vidoni, R., Mazzetto, F. (2017). A mobile laboratory for orchard health status monitoring in precision farming. Chemical Engineering Transactions, 2017, 58, pp. 661-666.

Conference proceedings (indexed in Scopus)

49. Fabris, G., **Scalera, L.**, Boscariol, P., Gasparetto, A. (2024). Experimental analysis and comparison of friction models applied to the UR5e robot. In Advances in Mechanism Design for Robots. Springer, Cham. (to appear).

50. Vegnaduzzo, A., **Scalera, L.**, Pillan, D., Gasparetto, A. (2024). Orientation trajectory planning based on unit quaternions for spray painting robots. In International Conference on Robotics in Alpe-Adria Danube Region. Springer, Cham. (to appear).

51. **Scalera, L.**, Gasparetto, A., Seriani, S., Gallina, P. (2024). History of Drawing Robots. In 8th International Symposium on History of Machines and Mechanisms. Cham: Springer Nature Switzerland.

52. Fabris, G., **Scalera, L.**, Gasparetto, A. (2023). An interactive collaborative robotic system to play Italian checkers. In IFToMM World Congress on Mechanism and Machine Science (pp. 74-84). Cham: Springer Nature Switzerland.

53. Lozer, F., **Scalera, L.**, Boscariol, P., Gasparetto, A. (2023). An Experimental Setup to Test Time-Jerk Optimal Trajectories for Robotic Manipulators. In International Conference on Robotics in Alpe-Adria Danube Region (pp. 309-316). Cham: Springer Nature Switzerland.

54. Boscariol, P., Clochiatti, E., **Scalera, L.**, Gasparetto, A. (2023). A Framework for Improving the Energy Efficiency and Sustainability of Collaborative Robots. In Proceedings of I4SDG Workshop 2023: IFToMM for Sustainable Development Goals (pp. 47-54). Cham: Springer Nature Switzerland.

55. Tiozzo Fasiolo, D., Maset, E., **Scalera, L.**, Macaulay, S. O., Gasparetto, A., Fusiello, A. (2022). Combining LiDAR SLAM and deep learning-based people detection for autonomous indoor mapping in a crowded environment. The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences, 43, 447-452.

56. Tiozzo Fasiolo, D., **Scalera, L.**, Maset, E., Gasparetto, A. (2022). Experimental Evaluation and Comparison of LiDAR SLAM Algorithms for Mobile Robotics. In The International Conference of IFToMM ITALY (pp. 795-803). Springer, Cham.

57. **Scalera, L.**, Giusti, A., Vidoni, R., Gasparetto, A. (2022). Online Planning of Path-Consistent Stop Trajectories for Collaborative Robotics. In The International Conference of IFToMM ITALY (pp. 693-701). Springer, Cham.

58. Boscariol, P., **Scalera, L.**, Gasparetto, A. (2022). Improving the Efficiency of Closed-Chain Robotic Systems by the Trajectory Energy Index. In The International Conference of IFToMM ITALY (pp. 612-620). Springer, Cham.

59. Tiozzo Fasiolo, D., **Scalera, L.**, Maset, E., Gasparetto, A. (2022). Recent Trends in Mobile Robotics for 3D Mapping in Agriculture. In International Conference on Robotics in Alpe-Adria Danube Region (pp. 428-435). Springer, Cham.

60. **Scalera, L.**, Vidoni, R., Giusti, A. (2021). Optimal Scaling of Dynamic Safety Zones for Collaborative Robotics. In IEEE International Conference on Robotics and Automation (ICRA 2021).

61. Maset, E., **Scalera, L.**, Beinat, A., Cazorzi, F., Crosilla, F., Fusiello, A., Gasparetto, A. (2021). Preliminary comparison between handheld and mobile robotic mapping systems. In IFToMM and Sustainable Development Goals - Proceedings of the First I4SDG Workshop. Springer, Cham.

62. Gallina, P., Scuor, N., Nolich, M., **Scalera, L.**, Seriani, S. (2021). A proof of concept of self replicating robots for space settlements. In IFToMM and Sustainable Development Goals - Proceedings of the First I4SDG Workshop. Springer, Cham.

63. **Scalera, L.**, Seriani, S., Gasparetto, A., Gallina, P. (2021). A Novel Robotic System for Painting with Eyes. In The International Conference of IFToMM ITALY (pp. 191-199). Springer, Cham.

64. **Scalera, L.**, Boscariol, P., Carabin, G., Vidoni, R., Gasparetto, A. (2021). Optimal Task Placement for Energy Minimization in a Parallel Manipulator. In Joint International Conference of the International Conference on Mechanisms and Mechanical Transmissions and the International Conference on Robotics (pp. 12-22). Springer, Cham.

65. Boscariol, P., **Scalera, L.**, Gasparetto, A. (2020). Task-dependent energetic analysis of a 3-dof industrial manipulator. In International Conference on Robotics in Alpe-Adria Danube Region (pp. 162-169). Springer, Cham.

66. **Scalera, L.**, Carabin, G., Vidoni, R., Gasparetto, A. (2020). Minimum-Energy Trajectory Planning for Industrial Robotic Applications: Analytical Model and Experimental Results. In International Conference on Robotics in Alpe-Adria Danube Region (pp. 334-342). Springer, Cham.

67. Seriani, S., Gallina, P., **Scalera, L.**, Gasparetto, A., Wedler, A. (2019). A new mechanism for the deployment of modular solar arrays: kinematic and static analysis, Proceedings of ARK 2018, 16th Int. Symposium on Advances in Robot Kinematics, Bologna, Italy, July 01-05, 2018.

68. Gasparetto, A., **Scalera, L.** (2019). From the Unimate to the Delta robot: the early decades of Industrial Robotics. In Explorations in the History and Heritage of Machines and Mechanisms (pp. 284-295). Springer, Cham.

69. Seriani, S., **Scalera, L.**, Gasparetto, A., Gallina, P. (2018). A new family of magnetic adhesion based wall-climbing robots. In The International Conference of IFToMM ITALY (pp. 223-230). Springer, Cham.

70. **Scalera, L.**, Seriani, S., Gasparetto, A., Gallina, P. (2018). Busker Robot: a robotic painting system for rendering images into watercolour artworks. In IFToMM Symposium on Mechanism Design for Robotics (pp. 1-8). Springer, Cham.

71. Seriani, S., **Scalera, L.**, Gasparetto, A., Gallina, P. (2018). Preloaded structures for space exploration vehicles. In IFToMM Symposium on Mechanism Design for Robotics (pp. 129-137). Springer, Cham.

72. Trigatti, G., Boscariol, P., **Scalera, L.**, Pillan, D., Gasparetto, A. (2018). A look-ahead trajectory planning algorithm for spray painting robots with non-spherical wrists. In IFToMM Symposium on Mechanism Design for Robotics (pp. 235-242). Springer, Cham.

73. **Scalera, L.**, Mazzon, E., Gallina, P., Gasparetto, A. (2018). Airbrush robotic painting system: Experimental validation of a colour spray model. In International Conference on Robotics in Alpe-Adria Danube Region (pp. 549-556). Springer, Cham.

74. **Scalera, L.**, Seriani, S., Gallina, P., Di Luca, M., Gasparetto, A. (2018). Experimental evaluation of vibrotactile training mappings for dual-joystick directional guidance. In International Conference on Human Haptic Sensing and Touch Enabled Computer Applications (pp. 575-586). Springer, Cham.

75. **Scalera, L.**, Seriani, S., Gallina, P., Di Luca, M., Gasparetto, A. (2017). An experimental setup to test dual-joystick directional responses to vibrotactile stimuli. In 2017 IEEE World Haptics Conference (WHC) (pp. 72-77). IEEE.

76. Trigatti, G., **Scalera, L.**, Pillan, D., Gasparetto, A. (2017). A novel trajectory planning technique for anthropomorphic robots with non-spherical wrist. 49th International Symposium on Robotics, ISR 2017.

77. Vidoni, R., **Scalera, L.**, Gasparetto, A., Giovagnoni, M. (2017). Comparison of model order reduction techniques for flexible multibody dynamics using an equivalent rigid-link system approach. 8th ECCOMAS Thematic Conference on Multibody Dynamics 2017, pp. 269-280.

78. **Scalera, L.**, Gallina, P., Gasparetto, A., Giovagnoni, M. (2017). Anti-hedonistic mechatronic systems. In Advances in Italian Mechanism Science (pp. 543-550). Springer, Cham.

79. Boscariol, P., Gasparetto, A., Giovanelli, N., Lazzer, S., **Scalera, L.** (2017). Design and Implementation of a Low-Cost Mechatronic Shoe for Biomechanical Analysis of the Human Locomotion. In Advances in Italian Mechanism Science (pp. 3-10). Springer, Cham.

80. Boscariol, P., Gallina, P., Gasparetto, A., Giovagnoni, M., **Scalera, L.**, Vidoni, R. (2017). Evolution of a dynamic model for flexible multibody systems. In Advances in Italian Mechanism Science (pp. 533-541). Springer, Cham.

81. Vidoni, R., Gallo, R., Ristorto, G., Carabin, G., Mazzetto, F., **Scalera, L.**, Gasparetto, A. (2017). ByeLab: An agricultural mobile robot prototype for proximal sensing and precision farming. In ASME International Mechanical Engineering Congress and Exposition (Vol. 58370, p. V04AT05A057). American Society of Mechanical Engineers.

82. Bietresato, M., Carabin, G., D'Auria, D., Gallo, R., Ristorto, G., Mazzetto, F., Vidoni, R., Gasparetto, A., **Scalera, L.** (2016). A tracked mobile robotic lab for monitoring the plants volume and health. In 2016 12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA) (pp. 1-6). IEEE.

Other scientific publications

83. **Scalera, L.**, Seriani, S., Gasparetto, A., Gallina, P. (2023). An eye tracking approach for inclusive robotic drawing. DAI Il Disegno per l'Accessibilità e l'Inclusione. ISBN 9788899586355.

84. Maset, E., **Scalera, L.** (2022). SLAM, Intelligenza Artificiale e Robotica per la mappatura di ambienti affollati. GEOmedia, 26(6).

85. Maset, E., **Scalera, L.** (2022). Simultaneous Localization and Mapping: la soluzione chiave per il rilievo in movimento. GEOmedia, 26(5).

86. Maset, E., **Scalera, L.**, Tiozzo Fasiolo, D. (2022). Mobile Robotics and Autonomous Mapping: Technology for a More Sustainable Agriculture. GEOmedia, 26(3).

87. Maset, E., **Scalera, L.** (2022). Geomatica e Robotica: un connubio vincente verso l'automazione del rilievo. GEOmedia, 26(1).

88. Vidussi, F., Boscariol, P., **Scalera, L.**, Gasparetto, A. (2019) Energetic analysis of industrial robots for pick-and-place operations, Proceedings of the Second International Jc-IFToMM Symposium, Kanagawa, Japan, October 26, 2019.

89. Gasparetto, A., **Scalera, L.**, (2019). A Brief History of Industrial Robotics in the 20th Century, Advances in Historical Studies, 8(1).

Abstracts

90. **Scalera, L.**, Gasparetto, A., Gallina, P. (2023). Collaborative robot technologies for artistic painting, IEEE International Conference on Robotics and Automation (ICRA), 29 May – 2 June 2023.

91. **Scalera, L.**, Seriani, S., Gasparetto, A., Gallina, P. (2020). Artistic painting with a collaborative robot, 2nd Italian Conference on Robotics and Intelligent Machines I-RIM 2020, online event, December 10-12, 2020.

92. **Scalera, L.**, Seriani, S., Gasparetto, A., Gallina, P. (2019). Painting watercolour artworks with Busker Robot, IEEE ICRA-X Robotic Art Program, Montreal, Canada, May 22, 2019.

93. Chiandetti, C., Dissegna, A., Biasin, L., **Scalera, L.**, Gallina, P. (2019). Calming effect of rocking in an avian species, Trieste Symposium on Perception and Cognition and the 27th Kanizsa Lecture, Trieste, Italy, November 8, 2019.

Bibliometric indicators

	Documents	**Citations**	**H-index**
Scopus	80	845	19
Google Scholar	89	1235	22

The following bibliometric indicators are compared with the threshold values of the Competition Sector 09/A2 Mechanics of Machines.

Candidate			**Threshold (II Fascia)**			**Ratio**		
n. articles 5 years	**n. cit. 10 years**	**H-index 10 years**	**n. articles 5 years**	**n. cit. 10 years**	**H-index 10 years**	**n. articles 5 years**	**n. cit. 10 years**	**H-index 10 years**
35	**845**	**19**	7	92	6	5	9,18	3,17

Candidate			**Threshold (I Fascia)**			**Ratio**		
n. articles 10 years	**n. cit. 15 years**	**H-index 15 years**	**n. articles 10 years**	**n. cit. 15 years**	**H-index 15 years**	**n. articles 10 years**	**n. cit. 15 years**	**H-index 15 years**
43	**845**	**19**	14	208	8	3,07	4,06	2,38

Candidate			**Threshold (Commissioners)**			**Ratio**		
n. articles 10 years	**n. cit. 15 years**	**H-index 15 years**	**n. articles 10 years**	**n. cit. 15 years**	**H-index 15 years**	**n. articles 10 years**	**n. cit. 15 years**	**H-index 15 years**
43	**845**	**19**	16	336	11	2,69	2,51	1,73

Sourse: Scopus database, updated on: 12/04/2024.

Research projects

Principal investigator of the project: "**Advanced artificial intelligence and visual reasoning approaches for collaborative robotics (AI4ROB)**". Young Researchers' Call for the financing of research projects intended for young researchers within the research program of the Innovation Ecosystem PNRR M4C2I1.5 "iNEST – Interconnected Nord-Est Innovation Ecosystem" – ECS_00000043 - CUP G23C22001130006.

Responsible of the research unit of University of Udine of the project PRIN 2022 (Italian Projects of Significant National Interest): "**An Artificial Intelligence Approach for Forestry Robotics in Environment Survey and Inspection (AI4FOREST)**".

Member of the research group of the project **Agritech National Center (Spoke 4: Multifunctional and resilient agriculture and forestry systems for the mitigation of climate change risks)** within the Next Generation EU (PNRR) at University of Udine, since 2022.

Member of the research group of the project **iNEST - The Interconnected Nord-Est Innovation Ecosystem** (Green and digital transition for advanced manufacturing technology - WP2: Smart Manufacturing, Mechatronics and Robotics) within the Next Generation EU (PNRR) at University of Udine, since 2022.

Member of the research group of the Departmental Strategic Plan Project: "**Mechanical behaviour of cellular materials obtained through additive manufacturing**". (3-years project starting from October 2022).

Consultancy projects

Consultancy contract: "Study relating to the level of digitization and automation of manufacturing companies in the furniture and panel sector, with the involvement of 10 companies representing the sector, and an analysis of the state of the art of research and possible applications for companies" commissioned by Cluster Legno Arredo e Sistema Casa FVG (2023).

Consultancy contract: "Automation of the gluing process of small parts on automotive lightnings", commissioned to the Polytechnic Department of Engineering and Architecture of the University of Udine by Marelli Automotive Lighting S.p.a. (2023).

Consultancy contract commissioned by the Free University of Bozen-Bolzano within the research project "Automated Process Planning in Cyber Physical Production Systems of Smart Factories (SMART-APP)" FaST -332/2022 (2022).

Consultancy contract: "Analysis of vibration phenomenon on vacuum pump system and definition of guidelines for possible interventions", commissioned to the Polytechnic Department of Engineering and Architecture of the University of Udine by SMS Group S.p.A. (2022).

Consultancy contract commissioned by the Free University of Bozen-Bolzano within the research project "Re-Tipping - Tip Extender for wind turbines: vibrational, structural and fluid-dynamic monitoring and analysis" (TN233I-C), 2021.

Consultancy contract commissioned by the Free University of Bozen-Bolzano within the research project "Automation concept for the production of a special nozzle (DURST-1)".

Consultancy contract commissioned by the Free University of Bozen-Bolzano within the research project "D-VINO: Dynamic models for vibration and noise reduction in planetary gear trains".

Consultancy contract: "Preliminary study of the applicability of sensor solutions on the Rocky Transformer machine for the crushing of bricks", commissioned to the Polytechnic Department of Engineering and Architecture of the University of Udine by F.A.R. Fonderie Acciaierie Roiale S.p.a.

Member of the research group for the research project: "Preliminary research activity for the development of a calculation model on the vibrations generated by the rotor head system and correlation with the instability phenomena generated by them (ground resonance)", commissioned to the Polytechnic Department of Engineering and Architecture of the University of Udine by KONNER S.R.L.

Member of the research group for the research project: "Robotic scanning system", commissioned to the Polytechnic Department of Engineering and Architecture of the University of Udine by CMA ROBOTICS S.p.a.

Member of the research group for the research project: "FLASH-LENS", commissioned to the Polytechnic Department of Engineering and Architecture of the University of Udine by FIRST S.R.L.

Member of the research group for the research project POR FESR 2014-2020: "Future and more than" (University of Udine, Minini & C. S.R.L.).

Member of the research group for the research project POR FESR 2014-2020: "Wind Energy Propulsion Aid for Ships - WEPAS" (University of Udine, CONCRANE S.R.L., NAOS Ship and Boats Design S.R.L.).

Member of the research group for the research project POR FESR 2014-2020: "New materials for fire safety in the naval applications - NUMASTE" (University of Udine, Naval Suppliers S.R.L., HAYAMA TECH SERVICE S.R.L.).

Invited speaker at international conferences

IEEE International Conference on Robotics and Automation ICRA 2023, Workshop on Configurable Collaborative Robot Technologies in Construction. June 29, 2023 (online). Contribution: Collaborative robot technologies for artistic painting.

5th Italian Conference on Robotics and Intelligent Machines (I-RIM 2023), Rome, Italy, October 20-22, 2023. Contributions: "Improving fluency in collaborative robotics through online scaling of dynamic safety zones"; "Recent trends in mobile robotics for autonomous mapping in agriculture".

IEEE International Conference on Robotics and Automation ICRA 2019, Montreal, Canada, 20-22 May 2019. Invited paper: Scalera, L., Gallina, P., Seriani, S., Gasparetto, A. (2018). CBRC (Cable-Based Robotic Crane): design and implementation of overhead travelling cranes based on variable radius drums. IEEE Transaction on Robotics. Vol. 34, No. 2.

Speaker at national and international conferences

Second Innovation Design Application Symposium (IDEA 2024), March 18, 2024 (online). Contribution: "Inclusive robotic drawing using eye-tracking technology".

Il Disegno per l'Accessibilità e l'Inclusione (DAI 2023), Udine, Italia, December 1-2, 2023. Contribution: "An eye tracking approach for inclusive robotic drawing".

Second IFToMM for Sustainable Development Goals Workshop, I4SDG 2023, Bilbao, Spain, June 22-23, 2023. Contribution: "A Framework for Improving the Energy Efficiency and Sustainability of Collaborative Robots".

Fourth International Conference of IFToMM ITALY, IFIT 2022, 7-9 September 2022, Naples, Italy. Title of the paper: "Online Planning of Path-Consistent Stop Trajectories for Collaborative Robotics".

IEEE International Conference on Robotics and Automation ICRA 2021, online, 1 June 2021. Title of the paper: "Optimal scaling of dynamic safety zones for collaborative robotics".

Workshop I-RIM, Institute of Robotics and Intelligent Machines, Motion Planning in Industrial Application, online event, 10-12 December 2020. Title of the paper: "Artistic painting with a collaborative robot".

Third International Conference of IFToMM Italy, IFIT 2020, online event, 9-11 September 2020. Title of the paper: "A novel robotic system for painting with eyes".

Workshop I-RIM, Institute of Robotics and Intelligent Machines, Motion Planning in Industrial Application, Rome, 20 October 2019. Title of the paper: "Looking for energy efficiency in robotic tasks".

IEEE ICRA-X Robotic Art Forum 2019, Montreal, Canada, 20-22 May 2019. Title of the paper: "Painting watercolor artworks with Busker Robot".

Second International Conference of IFToMM Italy, IFIT 2018, 29-30 November 2018, Cassino, Italy. Title of the paper: "A new family of magnetic adhesion based wall-climbing robots".

4th IFToMM Symposium on Mechanism Design for Robotics, MEDER 2018, 11-13 September 2018, Udine, Italy. Title of the papers: "Busker robot: a robotic painting system for rendering images into watercolor artworks", "A look-ahead trajectory planning algorithm for spray painting robots with non-spherical wrist".

GMA 2017, presentation of the research activity at the Annual Congress of the Mechanics of Machines Group, Bologna, 11-12 July 2017.

8th ECCOMAS Thematic Conference on Multibody Dynamics, Prague, Czech Republic, 19-22 June 2017. Title of the paper: "Comparison of model order reduction techniques for flexible multibody dynamics using an Equivalent Rigid-Link System approach".

IEEE World Haptics Conference 2017, Munich, 6-9 June 2017. Title of the paper: "An experimental setup to test dual-joystick directional responses to vibrotactile stimuli".

First International Conference of IFToMM Italy, IFIT 2016, Vicenza, 1-2 December 2016. Title of the paper: "Design and implementation of a low-cost mechatronic shoe for biomechanical analysis of human locomotion".

Member of scientific committees

Member of the International Scientific Committee dell'International Symposium on Industrial Engineering and Automation, ISIEA, dal 2022.

Editor of international journals

Associate Editor of IEEE Robotics and Automation Letters, 27/01/2024 - today.

Associate Editor of Discover Applied Sciences (Springer), 2023 - today.

Editorial Board Member of Journal of Autonomous Intelligence (Frontier Scientific Publishing), 2023 - today.

Young Advisory Editor of Engineering Reports (Wiley), 2022 - today.

Editorial Board Member of Discover Mechanical Engineering (Springer), 2022 - today.

Review Editor of Frontiers in Mechanical Engineering, Section Mechatronics (Frontiers), 2022 - today.

Review Editor of Frontiers in Space Technology, Section Space Exploration (Frontiers), 2022 - today.

International Journal of Mechanical Engineering and Applications (Science Publishing Group), 2019 - today.

Topic Editor of MDPI Applied Sciences.

Guest Editor of the Special issue "Trajectory Planning for Intelligent Robotic and Mechatronic Systems" of Applied Sciences (MDPI).

Guest Editor of the Special issue "Modelling and Control of Mechatronics and Robotic Systems" of Applied Sciences (MDPI).

Guest Editor of the Special issue "Modelling and Control of Mechatronics and Robotic Systems, Volume II" of Applied Sciences (MDPI).

Guest Editor of the Special Issue "Robotics and Vibration Mechanics" of Applied Sciences (MDPI).

Editor of books

Editor of the book "Modelling and Control of Mechatronics and Robotic Systems". Editors: Alessandro Gasparetto, Stefano Seriani, Lorenzo Scalera. Published by Applied Sciences (MDPI).

Editor of the book "Modelling and Control of Mechatronics and Robotic Systems, Volume II". Editors: Alessandro Gasparetto, Stefano Seriani, Lorenzo Scalera. Published by Applied Sciences (MDPI).

Reviewer for Scientific Journals

IEEE/ASME Transactions on Mechatronics; IEEE Transactions on Robotics; IEEE Robotics and Automation Letters; IEEE Transactions on Instrumentation & Measurement; IEEE Access; Journal of Mechanisms and Robotics; Robotics and Autonomous Systems; Mechanisms and Machine Theory; Robotica; Frontiers in Robotics and AI; Automation in Constructions; International Journal of Advanced Robotic Systems; MDPI Robotics; MDPI Machines; MDPI Electronics; MDPI Applied Sciences; MDPI Sensors; MDPI Energies; MDPI AgriEngineering; MDPI Sustainability; Mathematical Problems in Engineering; Cogent Engineering; Journal of Control; Automation and Electrical Systems. (non-exhaustive list).

Reviewer for International Conferences

IEEE International Conference of Robotics and Automation, (ICRA); IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS); IEEE International Conference on Automation Science and Engineering (CASE); IEEE World Haptics Conference (WHC); IEEE EuroHaptics Conference; ASME International Mechanical Engineering Congress and Exposition (IMECE); International Symposium on Industrial Engineering and Automation (ISIEA); International Conference of IFToMM Italy (IFIT); International Conference on Robotics in Alpe-Adria-Danube Region (RAAD); IFToMM for Sustainable Development Goals Workshop (I4SDG); International Conference on Mechanisms and Mechanical Transmissions (MTM). (non-exhaustive list).

Member of research groups

Member of the research group Mechatronics (Robotics and Automation Research Group of North-East Italy). The Mechatronics group operates in five universities (Padua, Vicenza, Udine, Trieste and Bolzano) carrying out teaching and research activities. The staff of the group includes professors and researchers from the various universities, all of them pertaining to the disciplinary scientific sector of Mechanics of Machines ING-IND/13. The research activity is divided into six main areas that concern different aspects of mechatronics, in particular robotics, medical robotics, haptic interfaces, industrial automation, control of mechanical systems, and mechanics of vibrations. The research activities are carried out in collaboration with Italian and European partners, in the context of national and international research projects as well as within research agreements with companies.

Member of the research group of Mechanics of Machines ING-IND/13 of the Polytechnic Department of Engineering and Architecture of University of Udine. The group is coordinated by prof. Alexander Gasparetto. The research activity of the group concerns kinematics and dynamics modelling of robotic and mechatronic systems, trajectory planning, and experimental validations. The group deals with issues related to the mechanics of vibration, control and data acquisition, particularly in mechatronic and robotic systems. The activities of the research group are characterized by collaborations at national and international level with universities and research centers, in particular with:

- the research group of Mechanics of Machines of the Free University of Bozen-Bolzano (coordinator prof. Renato Vidoni), on the topics of kinematics, dynamics and trajectory planning of robotic and mechatronic systems, and energy efficiency;

- the research group of Mechanics of Machines of the University of Padua, on the topics of kinematics, dynamics and trajectory planning of robotic systems and mechatronics;
- the research group of Mechanics of Machines of the University of Trieste (coordinator prof. Paolo Gallina), on the topics of cable-driven robots, haptic interfaces and human-machine interaction, robotics for artistic applications and collaborative robotics;
- Fraunhofer Italia Research (Dr. Andrea Giusti), on the topic of collaborative robotics (in particular, real-time control and planning of stop trajectories);
- Chiang Mai University (coordinator prof. Theeraphong Wongratanaphisan), on the topic of energy efficiency using the natural motion approach for paralell robots;
- Stevens Institute of Technology, Hoboken, NJ, USA (coordinator prof. Damiano Zanotto), on the topics of experimental modelling, control and validation of underactuated cable-driven robots;
- School of Computer Science of St. Petersburg Electrotechnical University, St. Petersburg, Russia (coordinator prof. Denis Butusov), on the topic of image processing and artistic robotic painting;
- School of Psychology of the University of Birmingham (coordinator Dr. Massimiliano Di Luca), on the topics of human-machine interaction and haptic interfaces;
- Intelligent and Autonomous Systems Lab of the University of Padua (coordinator prof. Stefano Ghidoni), on the topic of collaborative robotics;
- Technical University of Ostrava (coordinator prof. Václav Krys), with whom he collaborates on the topic of collaborative robotics;
- Bialystok University of Technology (coordinator prof. Arkadiusz Mystkowski), on the topics of dynamic modelling and trajectory planning of robotic systems;
- University of Antwerp (coordinator prof. Stijn Derammelaere), on the topics of trajectory planning and optimization for mechatronic and robotic systems.

Member of the teaching staff

Member of the teaching staff of the National Doctorate in Artificial Intelligence (pillar: Agrifood and Environment), headed by University of Naples Federico II, since a.a. 2021/2022 (XXXVII cycle).

Teaching activity

Robotics, Industrial Engineering for Sustainable Manufacturing, Università degli Studi di Udine. English. A.A. 2023-2024.

Mechatronic Systems, Industrial Engineering for Sustainable Manufacturing, Università degli Studi di Udine. English. A.A. 2023-2024.

Mechanics of Machines, module 2, Bachelor degree in Mechanical Engineering and Management Engineering, University of Udine, 48 hours, Italian, A.A. 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023.

Measurement techniques for mechatronic systems, Industrial and Information Engineering PhD Programme (IIE-PhD), University of Udine, A.A. 2019-2020, 2020-2021, 2021-2022, 2022-2023.

Dynamics of Mechanical Systems, Master in Mechanical Engineering, Faculty of Science and Technology, Free University of Bozen-Bolzano, English, A.A. 2021-2022 (16 hours), 2022-2023 (13 hours).

Mechatronics and Process Automation, Bachelor in Wood Engineering, Faculty of Science and Technology, Free University of Bozen-Bolzano, English, A.A. 2019-2020 (25 hours), 2020-2021 (28 hours).

National Instruments LabVIEW environment for data measurement and analysis, teaching activities within the training plan called "FIMA 1/2019 ERGON SMART FACTORY ID: - SMART FACTORY: IoT sensor systems for innovative production processes." CUP: G91D21000220008. Course held at Bertagni 1882 spa, 8 hours, online. 2020-2021.

Data Collection and Analysis for Industry 4.0, teaching activities within the training plan called "FIMA 1/2019 ERGON SMART FACTORY ID: - SMART FACTORY: IoT sensor systems for innovative production processes." CUP: G91D2100022. Course held at Bertagni 1882 spa, 16 hours. 2020-2021.

Introduction to Robotics and Computer Creativity at the Computer-Aided Design Department, School of Computer Science, St. Petersburg Electrotechnical University (St. Petersburg, Russia). Course held in English. Number of hours: 20. 2019-2020.

Collaborative Robots: What They Are and How They Can Be Utilized, organized by COMET Plus (Metalmechanics Cluster of Friuli Venezia Giulia), Pordenone (PN).

Fundamentals of Mechatronics, Robotics, and Cyber-Physical Systems (since 2017), at the Malignani Foundation ITS (Higher Technical Institute) in Udine, as part of the Higher Technical Course for Automation and Mechatronic Systems (specialization in Mechatronics and Additive Manufacturing).

Teaching activities during the course on Mechanical Vibrations by Prof. Gasparetto, Master's Degree in Mechanical Engineering, University of Udine. Number of hours: 16. 2017-2028, 2018-2019.

Teaching activities during the course on Mechatronics and Robotics by Prof. Gasparetto, Master's Degree in Mechanical Engineering, University of Udine. Number of hours: 4. 2017-2028, 2018-2019.

Thesis Supervisor and Co-Supervisor

Supervisor of more than 3 Bachelor's Theses in Mechanical Engineering, 4 Bachelor's Theses in Electronic Engineering, 7 Bachelor's Theses in Industrial Engineering, 1 Master's Thesis in Mechanical Engineering, and 2 Master's Theses in Electronic Engineering.

Co-Supervisor of 5 Master's Theses in Mechanical Engineering and 2 Master's Theses in Electronic Engineering.

Supervisor of doctoral students and research fellows

Supervisor of the research fellow Giuliano Fabris (within the iNEST project of the National Recovery and Resilience Plan) since 2023.

Supervisor of the doctoral student Diego Tiozzo Fasiolo (National Ph.D. program in Artificial Intelligence) since 2021.

Supervisor of the research fellow Federico Lozer from 16/04/2022 to 31/10/2022.

Erasmus Exchange Coordinator

Erasmus Exchange Coordinator for the exchange program between the University of Udine and the University of Antwerp (Belgium), since 2023.

Erasmus Exchange Coordinator for the exchange program between the University of Udine and the Technical University of Ostrava (Czech Republic), since 2022.

Other activities

Member of the Doctoral Committee at the University of Antwerp (Belgium), for the PhD thesis: "Motion Profile Optimization for Enhanced Energy Efficiency in Industrial Positioning Applications" by Nick Van Oosterwyck.

Member of the State Exam Commission for the qualification to the profession of Engineer (Industrial Section) at the University of Udine, 2023.

President of the Commission in the state exams of the two-year period 2021/2023 of the ITS Accademy Meccatronico Veneto Foundation, Vicenza, July 10-13, 2023.

Participation in the contemporary art exhibition "Art and Robots" at the Museo Diffuso di Arte Contemporanea (MAC) in Lula (Sardinia) from 21/04/2023 to 25/06/2023.

Representative of the University of Udine for the EuRobotics technology platform starting from 2022. Participation in the European Robotics Forum 2022 in Rotterdam (Netherlands) from 28 to 30/06/2022. Participation in the European Robotics Forum 2023 in Odense (Denmark) from 14 to 16/03/2023. Participation in the European Robotics Forum 2024 in Rimini (Italy) from 12 to 15/03/2024.

Participation in the working group "Boschi Vetusti" (Ancient Forests), coordinated by Prof. Roberto Tognetti, since 2022.

Speaker at the event "Le nuove frontiere della robotica avanzata" (The new frontiers of advanced robotics), organized by Fraunhofer Italia as part of the Interreg IT-AT project "Dolomiti Live: un territorio di talenti" (Dolomites Live: a territory of talents), held in Bolzano on June 28, 2021.

Representative of the University of Udine at the Review Panels of the Smart Specialization Strategy (S3) for the specialization area of Smart Factory (2020) in the Friuli Venezia Giulia (FVG) region.

Commissioner of the TOLC (Online Test for University Admission), organized by CISIA, since 2020.

Judge of the technical jury for the "Robot Design" category at the First Lego League in Udine, since 2019.

Participation in the international exhibition "Art and Robotics" from November 17th to 28th, 2018 (Trieste, TS) with Busker Robot, an artist robot developed in collaboration with Prof. Paolo Gallina.

Participation in Trieste Next 2017 with Busker Robot (in collaboration with Prof. Paolo Gallina), held in Trieste from September 21-23, 2017.

Participation in the exhibition "Art and Robotics" (in collaboration with Prof. Paolo Gallina), held in Trieste from October 29th to November 27th, 2016.

Coordinator of the tutoring service at the Department of Engineering and Architecture, University of Trieste (2015), 200 hours.

Tutor at the Department of Engineering and Architecture, University of Trieste (2014), 150 hours.

Participation in international workshops

IFToMM Italy International Summer School On Human-Centred Robotics (HumAN), Ancona, Italy, June 26-30, 2023.

Mobile Mapping School, Padua's Botanic Garden, May 23, 2023.

ROBOzen: International Winter School on Mechanism Design and Motion Planning for Robotics, Free University of Bozen-Bolzano, January 27-31, 2020.

1st Italian Multibody Summer School, Parma, April 11-15, 2016. Multibody Dynamics Workshop, University of Parma.

Honors and Arwards

Silver Best Application Paper Award at the Second IFToMM for Sustainable Development Goals Workshop (I4SDG 2023) for the contribution: "A Framework for Improving the Energy Efficiency and Sustainability of Collaborative Robots".

Silver Best Application Paper Award at the Third International Conference of IFToMM ITALY (IFIT 2020) for the contribution: "A novel robotic system for painting with eyes".

Best Application Paper Award at the 29th International Conference on Robotics in Alpe-Adria-Danube Region (RAAD 2020) for the contribution: "Minimum-Energy Trajectory Planning for Industrial Robotic Applications: Analytical Model and Experimental Results".

Best Paper Award at the 6th IFToMM International Symposium on History of Machines and Mechanisms (HMM 2018) for the contribution: "From the Unimate to the Delta robot: the early decades of Industrial Robotics".

Honorable Mention received by the Busker Robot team (Lorenzo Scalera and Prof. Paolo Gallina, University of Trieste) at the RoboArt Competition 2018, an online competition for robot artists, `https://robotart.org/`.

Best Paper Award in Research Category at the First Conference of IFToMM Italy (IFIT 2016) for the contribution: "Anti-hedonistic mechatronic systems".

Membership

Member of GMA, Group of Mechanics of Machines (Gruppo Italiano di Meccanica Applicata), since 2022.
Member of IFToMM ITALY, International Federation for the Promotion of Mechanisms and Machine Science, since 2017.
IEEE Membership, 2018.

Linguistic skills

Italian: Native language.
English: Very good proficiency in both written and spoken forms, also gained abroad.
German: Goethe Institut certification, level A2.

Software skills

Microsoft Office (Word, Excel, PowerPoint), LateX, Solidworks, Matlab and Simulink, Python, ANSYS, MSC Adams, LabVIEW, real-time C programming with Arduino and Teensy micro-controllers, Universal Robot Programming Language, RoboDK.
Courses on LabView software and National Instruments instrumentation to acquire the ability to design a measurement, control, and data acquisition system: LabView Core 1, Assago (MI), January 18-20, 2016; LabView Core 2, Assago (MI), January 25-26, 2016; LabView Embedded Control and Monitoring using LabView, Assago (MI), February 8-12, 2016; Data Acquisition Using NI-DAQmx and LabView, December 14-15, 2017, Udine (UD); LabView Core 3, June 16-19, 2020.
CLAD Certification, Certified LabView Associate Developer, Padua, March 31, 2016.
Training course for programming Universal Robots collaborative robots, Udine (UD), November 9, 2018.
Training course on the Concept Laser 3D printer, Udine (UD), May 5, 2016.
Training course on Omron Electronics Machine Controller NX/NJ, Padua (PD), November 29, 2019.

I, the undersigned Lorenzo Scalera, born in Trieste on 26/02/1991, aware of the criminal sanctions in case of false statements and falsehood in official documents, as referred to in Article 76 of Legislative Decree No. 445 of 28/12/2000, declare that the information provided in this document is true and authorize the processing of my personal data in accordance with Article 13 of the EU Regulation 679/2016 (General Data Protection Regulation) and Article 13 of Legislative Decree No. 196/2003 (Personal Data Protection Code).

Udine, November 28, 2024

Lorenzo Scalera