Curriculum Vitae

Andrea Giusti

01/10/2025

Present appointment

- **Associate Professor** (Professore Associato) since 01/10/2025, at the Faculty of Engineering, Free University of Bozen-Bolzano (Italy), sector IIND-02/A (ex ING-IND/13) Mechanics of Machines.
- **Lecturer of the courses *Mechanics of Machines* and *Industrial Robotics*** at the Faculty of Engineering, Free University of Bozen-Bolzano (Italy).

Professional qualification

- 2023, Italian Scientific Habilitation (ASN - Abilitazione Scientifica Nazionale) for the role of associate professor in the Italian higher education system for the disciplinary field IIND-02/A – "Meccanica Applicata alle Macchine" (09/A2, ING-IND/13 - Meccanica Applicata alle Macchine).

Summary of research contributions

- In my research so far I have led and contributed to numerous works that advance knowledge and can rethink practice for: *i)* automatic modelling and control of modular reconfigurable robots; *ii)* automatic derivation of models and deployment of robust controllers for robots despite uncertain data from modules; *iii)* task-driven composition synthesis of modular robots; *iv)* dynamics and control of robot manipulators with joint elasticity and uncertain dynamics for trajectory tracking and collision detection; *v)* safety and fluency in human-robot collaboration; *vi)* robotics applications including imitation learning for flexible automation; *vii)* facilitated robot programming for robotics applications in buildings and construction; *viii)* robotic grasping for industrial manufacturing applications.

Education

- 2018, doctorate (Dr.-Ing.) at the Chair of Robotics, AI and Real-time systems, Technical University of Munich (TUM), Germany
- 2013, master's degree in Mechatronics Engineering (LM 33 – Mechanical Engineering), *summa cum laude*, University of Trento, Italy
- 2010, bachelor's degree in Telecommunications Engineering (09 - Information Technology), University of Trento, Italy

Professional experience

From / to	Job title	Name of academic Institution	Academic level	Responsibilities
Nov. 2020 - Sept. 2025	Head of Department RISE - (Robotics and Intelligent Systems Engineering)	Fraunhofer Italia Research s.c.a.r.l.	Researcher Head of unit / Principal investigator	- Research activity and principal investigator for scientific and industrial research projects of the RISE unit. - Preparation of research project proposals with

				companies, universities, and research institutes (national and international). - Recruitment, guidance and mentoring of researchers of the unit and interns. - Scientific coordination for the Fraunhofer Italia's application centre ARENA (continued from previous experience below).
Nov. 2017- Oct. 2020	Researcher	Fraunhofer Italia Research s.c.a.r.l.	Postdoctoral researcher	Research activity, execution, management and writing of research projects in the unit "Automation and Mechatronics Engineering". (since Jan. 2019) scientific coordination for the Fraunhofer Italia's application centre ARENA - "Area for Research and Innovative Applications."
Feb. 2017 – Mar. 2017; Apr. 2016 – Jul. 2016	Visiting/guest researcher	Italian Institute of Technology - IIT	Marie-Curie Early-Stage Researcher	Research activity and development of models and model-based control methods for reconfigurable robots with elastic joints and tests with prototypes.
Jul. 2014 - Oct. 2017	EU-researcher	Technical University of Munich (TUM)	Marie-Curie Early-Stage Researcher	Research and implementation of modelling and control methods for modular reconfigurable robot manipulators. Teaching assistant for "Fundamentals of Artificial Intelligence". Organizer and lecturer of the lab course "Control of Modular Robots". Tutor for the seminar "Cyber-Physical Systems".
Jul. 2013 - May 2014	Project engineer	Whirlpool R&D	Post-graduate	Design and test of control methods for food preparation and processing systems, modelling and identification of thermal systems involving high frequency power electronics.

Participation in exhibitions

- Co-organizer of and participation at the workshop: "Wie kann ein Unternehmen die Interaktion Mensch-Maschine durch KI verbessern? / Come migliorare l'interazione persona-macchina attraverso l'AI?". Workshop organized within the event: "Künstliche Intelligenz: Eine Chance für Südtiroler Unternehmen / L'Intelligenza Artificiale: un'opportunità per le imprese dell'Alto Adige," NOI Techpark Bozen-Bolzano, held on 26/03/2025.

- Speaker at the event "Fraunhofer Italia Trend Talk", NOI Techpark Bozen-Bolzano, Italy. Presentation title: "Modular robots for cross-industry flexible robotic applications", held on 03/04/2025.
- Invited speaker at the exhibition "A&T Automation and Testing", Vicenza, Italy, round table "La robotica collaborativa e Industria 5.0: la re-invenzione dell'artigianato?". Presentation title: "Cross-industry flexible automation with modular robots", held on 07/11/2024.
- Invited speaker at the workshop and open-lab event on Field Robotics, organized by the Free University of Bozen-Bolzano, Bolzano. Presentation title: "Advanced Mobile Robotics Applications", held on 01/07/2021.
- Invited speaker at the E-Edu 4.0 - Webinar "Robotica Industriale Avanzata" organized by the Free University of Bozen-Bolzano, Bolzano. Held online on 04/03/2021.
- Invited speaker at SAVE Web Edition, Automazione, intelligenza artificiale e soluzioni 4.0 per l'industria del futuro. Ente Italiano Organizzazione Mostre (EIOM). Presentation title: "ROS e robotica avanzata in Fraunhofer Italia Arena: il progetto anti-covid Balto", held online on 27/10/2020.
- Invited speaker at SAVE Web Edition, Automazione, intelligenza artificiale e soluzioni 4.0 per l'industria del futuro. Ente Italiano Organizzazione Mostre (EIOM). Presentation title: "Automazione flessibile attraverso sistemi riconfigurabili", held online on 02/07/2020.
- Invited speaker at the event "Giornate del Tirolo – Forum Europeo Alpbach" as a finalist for the Euregio young researchers award, Alpbach, Austria, 2019. Held on 17/08/2019.
- Invited speaker at the congress "Automazione 5.0 – L'uomo, l'intelligenza artificiale e il robot", Tecniche Nuove, Milano, Italy. Presentation title: "Automazione flessibile attraverso sistemi riconfigurabili e intelligenti", held on 02/07/2019.
- Invited speaker at the Digital Days 2019, "Uomo & Macchina", Camera di Commercio, Industria, Artigianato, Turismo e Agricoltura di Bolzano, Bolzano. Presentation title: "Collaborazione uomo-macchina: Manutenzione predittiva e produzione decentralizzata", held on 05/04/2019.
- Participation as a volunteer on 23-24 July 2016 to the outreach event organized by the European Commission: "Science is a revolution", museum of Science and Industry of Manchester, UK. The outreach event was a scientific exhibition including hands-on activities for children.

Experience in academic teaching

- A.Y. 2024-2025, lecturer for the course/module "Mechatronics and Robotics" at the Free University of Bozen-Bolzano, part of the program of the master's degree in industrial mechanical engineering. Commitment of 48 hours (24 hours lectures, 24 hours exercises). The activities also included an excursion on 15/05/2025 to SPS Italia

2025, Parma, with the initiative "Lezioni in fiera".

- Speaker for the "SME 5.0 Winter School", 2024, Free University of Bozen-Bolzano, Bruneck-Brunico, Italy. Title of the presentation: "New Trends in Intelligent Robotic Applications". Held on 18/12/2024.
- A.Y. 2024-2025, lecturer for the course "AI Applications in Industry" at the Free University of Bozen-Bolzano, part of the program of the master's degree in industrial mechanical engineering. Commitment of 24 hours (12 hours lectures, 12 hours exercises).
- A.Y. 2023-2024, lecturer for the course "AI Applications in Industry" at the Free University of Bozen-Bolzano, part of the program of the master's degree in industrial mechanical engineering. Commitment of 48 hours (24 hours lectures, 24 hours exercises). The activities also included an excursion on 11/12/2023 to Durst and Covision Lab in Brixen (BZ), Italy.
- A.Y. 2022-2023, lecturer for the course "AI Applications in Industry" at the Free University of Bozen-Bolzano, part of the program of the master's degree in industrial mechanical engineering. Commitment of 40 hours (10 hours lectures, 30 hours exercises). The activities also included an excursion on 14/12/2022 to Alupress AG in Brixen (BZ), Italy.
- Speaker for the "ROBOzen: International Winter School on Mechanism Design and Motion Planning for Robotics", 2020, Free University of Bozen-Bolzano, Italy. Organized by IFToMM Italy and the group of "Meccanica Applicata alle Macchine" of the Free University of Bozen-Bolzano. Title of the presentation: "Control of modular & collaborative robots". Held on 31/01/2020.
- Summer semester 2017, practical course "Safe Human-Robot Co-Existence" at the Technische Universität München. Commitment of 6 SWS (weekly hours per semester).
- Winter semester 2016/17, practical course "Control of Modular Robots" at the Technische Universität München. Commitment of 6 SWS (weekly hours per semester).
- Winter semester 2015/16, practical course "Control of Modular Robots" at the Technische Universität München. Commitment of 6 SWS (weekly hours per semester).
- Summer semester 2015, practical course "Control of Modular Robots" at the Technische Universität München. Commitment of 6 SWS (weekly hours per semester).
- Winter semester 2016/17, seminar "Cyber-Physical Systems" at the Technische Universität München. Commitment of 2 SWS (weekly hours per semester).
- Summer semester 2016, seminar "Cyber-Physical Systems" at the Technische Universität München. Commitment of 2 SWS (weekly hours per semester).
- Summer semester 2015, seminar "Cyber-Physical Systems" at the Technische Universität München. Commitment of 2 SWS (weekly

hours per semester).

- Winter Semester 2015/16, teaching assistant for the course "Grundlagen der Künstlichen Intelligenz" (fundamentals of artificial intelligence) at the Technische Universität München. Commitment of 1 SWS (weekly hours per semester).
- Winter Semester 2014/15, teaching assistant for the course "Grundlagen der Künstlichen Intelligenz" (fundamentals of artificial intelligence) at the Technische Universität München. Commitment of 1 SWS (weekly hours per semester).
- Postgraduate supervision and mentoring: Co-supervisor of a PhD Candidate (2022) at the Free University of Bozen-Bolzano and Mentor of a PhD candidate (2024) at the Technical University of Munich (TUM).
- Supervision of students for bachelor's and master's theses: Co-supervisor of students for 6 bachelor's theses and for 5 master's theses.

Other responsibilities

- Co-organizer of and speaker at the international workshop "Configurable Collaborative Robot Technologies in Construction", at the IEEE International Conference on Robotics and Automation (ICRA), 2023, London, 29/05/2023.
  Website: https://concertproject.eu/workshops/icra-2023 (last access 23/12/2024).
- Co-organizer of and speaker at the international workshop "Modular and Reconfigurable Robot Mechatronics and Control: Challenges and Recent Advancements", at the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021, held online on 27/09/2021.
  Website: https://concertproject.eu/workshops/iros-2021 (last access 23/12/2024).
- Reviewer for scientific journals such as IEEE Transactions of Robotics, IEEE Transactions on Control Systems Technology, IEEE Robotics and Automation Letters, Mechanical Systems and Signal Processing, Communications Engineering, Nonlinear Dynamics, International Journal of Intelligent Robotics and Applications. Reviewer for scientific conferences such as IEEE International Conference on Robotics and Automation (ICRA), IEEE International Conference on Intelligent Robots and Systems (IROS), IEEE International Conference on Decision and Control (CDC).

Memberships

- Member of IFToMM Italy since 07/06/2022.
- IEEE Member since 12/04/2020.
- Member of editorial committees of scientific journals:
  - Associate Editor, IEEE Robotics and Automation Letters, since Jan. 2024.
  - Guest Editor for the special issue "Trajectory Planning for Intelligent Robotic and Mechatronic Systems", MDPI Applied Sciences, section Robotics and Automation, 2024.

Research projects and grants

- Research grants and contracts led for a volume of about 2.5M € for the host institute in the previous 5 years. Research activity in the following research projects:

Project title, ID, status, project website	**Funding body**	**Role in the project**
ManIpolatoRe spAziale ricoNfigurabile moDulare itAliano (MIRANDA), CUP F83D24000430001, ongoing	Agenzia Spaziale Italiana (ASI) - Bando Tecnologie Abilitanti Robotiche e di Intelligenza Artificiale	Lead researcher / Principal investigator at Fraunhofer Italia Research s.c.a.r.l. (up to 30/09/2025)
Robotica di campo e soluzioni autonome per il settore FV (ROBO&M), CUP D53C23003080007, ongoing, https://www.fraunhofer.it/it/ricerca/advanced-robotics/roboandm.html	EFRE/FESR Autonomous province of Bozen/Bolzano - Programme 2021 – 2027	Principal investigator at Fraunhofer Italia Research s.c.a.r.l.
Configurable Collaborative Robot Technologies (CONCERT), ID 101016007, completed, https://concertproject.eu/	EU, H2020-ICT-2020-2	Principal investigator at Fraunhofer Italia Research s.c.a.r.l. and work-package leader
Reconfigurable Collaborative Agri-Robots (RECOARO), CUP I52F20000300005, completed, https://www.fraunhofer.it/en/Research/advanced-robotics/recoaro.html	Autonomous province of Bozen/Bolzano, Research Südtirol/Alto Adige 2019 funds	Principal investigator at Fraunhofer Italia Research s.c.a.r.l.
Sustainable Manufacturing through Application of Reconfigurable and inTelligent systems in Production processes (SMART-Pro), CUP B52F20001530009, completed, https://www.fraunhofer.it/en/Research/sustainable-innovation/SMARTpro.html	EFRE/FESR Autonomous province of Bozen/Bolzano - Programme 2014 – 2020	Scientific co-responsible and team member at Fraunhofer Italia Research s.c.a.r.l.
Autonomous disinfection of crucial areas based on BIM-integrated Robotics (BALTO), No. Anti-Corona 840241, completed, https://www.fraunhofer.it/en/Research/human-centered-technology/balto.html	Fraunhofer Internal programs grant	Technical lead at Fraunhofer Italia Research s.c.a.r.l.
Virtual SimUlator for Automation Laboratory (VISUAL), CUP B51G17000280001, completed, https://www.fraunhofer.it/en/Research/flexible-production-systems/visual.html	EFRE/FESR Autonomous province of Bozen/Bolzano - Programme 2014 – 2020	Team member at Fraunhofer Italia Research s.c.a.r.l.
Decentralized Control of Production processes, CUP B56J16001730001, completed, https://www.fraunhofer.it/en/Research/flexible-	EFRE/FESR Autonomous province of	Team member at Fraunhofer Italia

production-systems/deconpro.html	Bozen/Bolzano - Programme 2014 – 2020	Research s.c.a.r.l.
Sustainable Manufacturing through Advanced Robotics Training in Europe (SMART-E), ID 608022, completed, https://cordis.europa.eu/project/id/608022/it	EU FP7-PEOPLE-2013-ITN - Marie-Curie Action: "Initial Training Networks"	Team member (Marie-Curie Early-Stage Researcher) at the Technische Universität München (TUM)

Organization, coordination, and participation of/in national and international research groups

- Participation in the activities of the research group "Cyber Physical Systems" coordinated by Prof. Matthias Althoff, Technical University of Munich (TUM), Germany, for the EU FP7-PEOPLE Marie-Curie project "Sustainable Manufacturing Through Advanced Robotics Training (SMART-E)" id. 608022. Jul. 2014 – Oct. 2017.
- Participation in the activities of the Advanced Robotics department of the Italian Institute of Technology (Genoa, Italy) as a guest researcher on research secondment from the Technische Universität München, Germany. First participation: Apr. 2016-Jul. 2016. Second participation: Feb. 2017 – Mar. 2017.
- Participation in the activities of the research group "Automation and Mechatronics Engineering" led by Dr. Michael Riedl, Fraunhofer Italia Research, Bolzano, Italy. Nov. 2017 – Oct. 2020.
- Scientific coordination for the Fraunhofer Italia's application centre "Area for Research and Innovative Applications" (ARENA), including the management of industrial/academic synergies for the application centre, the definition of research lines and technical specifications of research demonstrators. Jan. 2019 – Sept. 2025.
- Organization and coordination as Head of the research group "Robotics and Intelligent Systems Engineering" (RISE), Fraunhofer Italia Research, Bolzano, Italy. Members of the group now: 5 junior researchers and 2 senior researchers (one of which postdoc). Nov. 2020 – Sept. 2025.

Presentations at scientific conferences

- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 28 Sept. – 2 Oct., 2015, Hamburg, Germany, with the contribution: "Automatic centralized controller design for modular and reconfigurable robot manipulators";
- IEEE American Control Conference (ACC), 6 Jul. – 8 Jul., 2016, Boston, Massachusetts, USA, with the contribution: "Ultimate robust performance control of rigid robot manipulators using interval arithmetic";
- IEEE International Conference on Robotic Computing (IRC), 10 Apr. – 12 Apr., 2017, Taichung, Taiwan, with the following contribution: "Efficient computation of interval-arithmetic-based robust controllers for rigid robots";

- IEEE International Conference on Robotics and Automation (ICRA), 29 May – 3 June, 2017, Singapore, with the following contribution: "Combined inverse-dynamics/passivity-based control for robots with elastic joints";
- International Conference on Robotics in the Alpe-Adria-Danube-Region (RAAD), 19 June – 21 June, 2019, Kaiserslautern, Germany, with the following contribution: "Collaborative robotics safety control application using dynamic safety zones based on the ISO/TS 15066: 2016";
- International Conference of IFToMM Italy, 8 Sept., 2022, Naples, Italy, with the following contribution: "Inverse Uncertain-Dynamics of Robot Manipulators Using Interval Arithmetic";
- IEEE International Conference on Robotics and Automation (ICRA), 29 May – 2 June, 2023, London, with the following contribution: "Automatically Deployable Robust Control of Modular Reconfigurable Robot Manipulators".

Publications

Journal papers	
J20	*J. Külz*, M. Terzer, M. Magri, **A. Giusti** and M. Althoff, "Holistic Construction Automation With Modular Robots: From High-Level Task Specification to Execution," IEEE Transactions on Automation Science and Engineering, vol. 22, pp. 16716-16727, 2025. DOI: 10.1109/TASE.2025.3579720.
J19	*C. Morganti*, M. Terzer, and **A. Giusti**, "Automatic Vehicle Kinematics Recognition and Deployment of the Navigation for Modular Wheeled Mobile Robots", Journal of Intelligent & Robotic Systems, vol. 111, n. 3, 77. DOI: 10.1007/s10846-025-02258-9
J18	M. Todescato, D. T. Matt, and **A. Giusti**, "Application of Bayesian Optimization in Gripper Design for Effective Grasping," IEEE Access, vol. 13, pp. 10215-10226, 2025. DOI: 10.1109/ACCESS.2025.3528643
J17	*L. Scalera*, F. Lozer, **A. Giusti**, A. Gasparetto, "An experimental evaluation of robot-stopping approaches for improving fluency in collaborative robotics," Robotica, 2024, 42(5):1386-1402. DOI: 10.1017/S0263574724000262
J16	M. Todescato, O. Braholli, D. Chaltsev, I. Di Blasio, D. Don, G. Egger, J. Emig, G. Pasetti Monizza, P. Sacco, D. Siegele, D. Steiner, M. Terzer, M. Riedl, **A. Giusti**, and D. Matt, "Sustainable manufacturing through application of reconfigurable and intelligent systems in production processes: a system perspective," Sci Rep 13, 22374 (2023). DOI: https://doi.org/10.1038/s41598-023-49727-5
J15	*L. Scalera*, C. Nainer, **A. Giusti**, A. Gasparetto, "Robust Safety Zones for Manipulators with Uncertain Dynamics in Collaborative Robotics," International Journal of Computer Integrated Manufacturing, 37(7), pp. 887-899, 2024. DOI: https://doi.org/10.1080/0951192X.2023.2258111
J14	*S. B. Liu*, **A. Giusti** and M. Althoff, "Velocity Estimation of Robot Manipulators: An Experimental Comparison," IEEE Open Journal of Control Systems, vol. 2, pp. 1-11, 2023. DOI: 10.1109/OJCSYS.2022.3222753
J13	*L. Scalera*, **A. Giusti**, R. Vidoni, A. Gasparetto, "Enhancing fluency and productivity in human-robot collaboration through online scaling of dynamic safety zones," The International Journal of Advanced Manufacturing Technology, 121 (9-10), 2022. DOI: https://doi.org/10.1007/s00170-022-09781-1
J12	*R.A. Rojas*, **A. Giusti**, R. Vidoni, "Online Computation of Time-Optimization-Based, Smooth and Path-Consistent Stop Trajectories for Robots," Robotics, 2022, 11(4), 70. DOI: https://doi.org/10.3390/robotics11040070
J11	*J. G. Adigun, M. Camilli, M.* Felderer, **A. Giusti**, D. T. Matt, A. Perini, B. Russo, and A. Susi, "Collaborative Artificial Intelligence Needs Stronger Assurances Driven by Risks," Computer, 2022, 55(3), 52-63. DOI: 10.1109/MC.2021.3131990
J10	*C. Nainer* and **A. Giusti,** "Automatically Deployable Robust Control of Modular

	Reconfigurable Robot Manipulators," IEEE Robotics and Automation Letters, vol. 7, no. 2, pp. 5286-5293, 2022. DOI: 10.1109/LRA.2022.3155826
J9	***A. Giusti***, S. B. Liu and M. Althoff, "Interval-Arithmetic-Based Robust Control of Fully Actuated Mechanical Systems," IEEE Transactions on Control Systems Technology, vol. 30, no. 4, pp. 1525-1537, 2022. DOI: 10.1109/TCST.2021.3118488
J8	*C. Marcher*, **A. Giusti**, D.T. Matt, "On the Design of a Decision Support System for Robotic Equipment Adoption in Construction Processes," Appl. Sci. 2021, 11, 11415. https://doi.org/10.3390/app112311415
J7	*C. Follini*, V. Magnago, K. T. Freitag, M. Terzer, C. Marcher, M. Riedl, **A. Giusti**, D.T. Matt, "BIM-Integrated Collaborative Robotics for Application in Building Construction and Maintenance" Robotics*,* 2021, 10, 2. DOI: 10.3390/robotics10010002
J6	*C. Marcher*, **A. Giusti**, D.T. Matt "Decision Support in Building Construction: A Systematic Review of Methods and Application Areas," Buildings, 2020, 10, 170. DOI: 10.3390/buildings10100170
J5	L. Scalera, ***A. Giusti***, R. Vidoni, V. Di Cosmo, D.T. Matt, M. Riedl "Application of dynamically scaled safety zones based on the ISO/TS 15066: 2016 for collaborative robotics," International Journal of Mechanics and Control, 2020, 21, 41-49
J4	*M. Althoff*, **A. Giusti**, S. B. Liu, A. Pereira, "Effortless creation of safe robots from modules through self-programming and self-verification", Science Robotics, Vol 4, no. 31, eaaw1924, 2019. DOI: 10.1126/scirobotics.aaw1924
J3	***A. Giusti***, J. Malzahn, N. Tsagarakis, and M. Althoff, "On the combined inverse-dynamics/passivity-based control of elastic-joint robots," IEEE Transactions on Robotics, vol 34, no. 6, 2018. DOI: 10.1109/TRO.2018.2861917
J2	***A. Giusti***, *M.J.A. Zeestraten*, E. Icer, A. Pereira, D.G Caldwell, S. Calinon, and M. Althoff, "Towards Flexible Automation Driven by Demonstration: Leveraging Strategies that Simplify Robotics," IEEE Robotics and Automation Magazine, vol. 25, no. 2, 2018. DOI: 10.1109/MRA.2018.2810543
J1	***A. Giusti*** and M. Althoff, "On-the-fly control design of modular robot manipulators," IEEE Transactions on Control Systems Technology, vol. 26, no. 4, pp. 1484-1491, 2018. DOI: 10.1109/TCST.2017.2707336
Conference papers	
C29	*I. Soraruf*, M. Todescato, D. T. Matt and **A. Giusti**, "Reducing the Sim2Real gap for vacuum grasping in Isaac Sim," IEEE International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAR), Palermo, Italy, 2025, pp. 1-6. DOI: 10.1109/SIMPAR62925.2025.10978999
C28	*S. Garbin*, A. Gagliardo, M. Terzer, M. Todescato, D.T. Matt, and **A. Giusti**, "A Vision-Controlled Robotic System for Precision Agriculture and Its Application to an Artificial Vineyard," Advances in Italian Mechanism Science. IFToMM Italy 2024. Mechanisms and Machine Science, vol 163, pp. 308-316. Springer, Cham. DOI: 10.1007/978-3-031-64553-2_36
C27	*M. Terzer,* T. Flatscher, M. Magri, S. Garbin, J. Emig, and **A. Giusti**, "A Facilitated Construction Robot Programming Approach using Building Information Modelling," 10th International Conference on Control, Decision and Information Technologies (CoDIT), Vallette, Malta, 2024, pp. 2656-2661. DOI: 10.1109/CoDIT62066.2024.10708285
C26	*L. Scalera*, et al, "A Collaborative Robotics Application for the Assembly of Car Rear Lamps," Latest Advancements in Mechanical Engineering. ISIEA 2024. Lecture Notes in Networks and Systems, vol 1125, pp. 29-37. Springer, Cham. DOI: 10.1007/978-3-031-70465-9_4
C25	*M. Todescato*, **A. Giusti**, and D. Matt, "Gripper Design Optimization for Effective Grasping of Diverse Object Geometries," 9th International Conference on Control, Decision and Information Technologies (CoDIT), Rome, Italy, 2023, pp. 01-06. DOI: 10.1109/CoDIT58514.2023.10284269
C24	*A. Gagliardo*, S. Garbin, M. Terzer, D.T. Matt, and **A. Giusti**, "A BIM-Integrated Robotics Application for Color Spraying in Construction", International Conference on Construction Logistics, Equipment, and Robotics, Lecture Notes in Civil Engineering, vol. 390, pp. 194-200, 2023. DOI: 10.1007/978-3-031-44021-2_21

C23	***A. Giusti***, C. Nainer, "Inverse Uncertain-Dynamics of Robot Manipulators Using Interval Arithmetic," Advances in Italian Mechanism Science. IFToMM Italy 2022. Mechanisms and Machine Science, vol 122. Pp. 661-668. Springer, Cham. DOI: 10.1007/978-3-031-10776-4_76
C22	*L. Scalera*, **A. Giusti**, R. Vidoni, A. Gasparetto, "Online planning of path-consistent stop trajectories for collaborative robotics," Advances in Italian Mechanism Science. IFToMM Italy 2022. Mechanisms and Machine Science, vol 122, pp. 693-701. Springer, Cham. DOI: 10.1007/978-3-031-10776-4_80
C21	*M. Feder*, **A. Giusti**, R. Vidoni, "An approach for automatic generation of the URDF file of modular robots from modules designed using SolidWorks," Procedia Computer Science, Volume 200, 2022, Pages 858-864. DOI: 10.1016/j.procs.2022.01.283.
C20	*M. Camilli,* M. Felderer, **A. Giusti**, D. T. Matt, A. Perini, B. Russo, A. Susi, "Risk-Driven Compliance Assurance for Collaborative AI Systems: A Vision Paper," Requirements Engineering: Foundation for Software Quality. REFSQ 2021. Lecture Notes in Computer Science, vol 12685, pp. 123-130. Springer, Cham. DOI: 10.1007/978-3-030-73128-1_9
C19	*M. Camilli*, M. Felderer, **A. Giusti**, D. T. Matt, A. Perini, B. Russo, A. Susi, "Towards Risk Modeling for Collaborative AI," 2021 IEEE/ACM 1st Workshop on AI Engineering - Software Engineering for AI (WAIN), Madrid, Spain, 2021, pp. 51-54. DOI: 10.1109/WAIN52551.2021.00014
C18	*L. Scalera*, R. Vidoni, and **A. Giusti**, "Optimal scaling of dynamic safety zones for collaborative robotics," IEEE International Conference on Robotics and Automation (ICRA), 2021, pp. 3822-3828. DOI: 10.1109/ICRA48506.2021.9561611
C17	*C. Nainer*, M. Feder, and **A. Giusti**, "Automatic Generation of Kinematics and Dynamics Model Descriptions for Modular Reconfigurable Robot Manipulators," IEEE 17th International Conference on Automation Science and Engineering (CASE), 2021, pp. 45-52. DOI: 10.1109/CASE49439.2021.9551680
C16	***A. Giusti*** et al., "BALTO: A BIM-Integrated Mobile Robot Manipulator for Precise and Autonomous Disinfection in Buildings against COVID-19," IEEE 17th International Conference on Automation Science and Engineering (CASE), 2021, pp. 1730-1737. DOI: 10.1109/CASE49439.2021.9551635
C15	*D. Siegele*, D. Steiner, **A. Giusti**, M. Riedl, D.T. Matt "Optimizing Collaborative Robotic Workspaces in Industry by Applying Mixed Reality". In: De Paolis L.T., Arpaia P., Bourdot P. (eds) Augmented Reality, Virtual Reality, and Computer Graphics. AVR 2021. Lecture Notes in Computer Science, vol 12980, pp. 544-559. Springer, Cham. DOI: https://doi.org/10.1007/978-3-030-87595-4_40
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Other mentions

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Recognitions for the research activity

- Best paper award with the paper "Optimizing Collaborative Robotic Workspaces in Industry by applying Mixed Reality", at the 8th International Conference on Augmented Reality, Virtual Reality and Computer Graphics, 2021.
- Finalist for the IEEE I-RAS Young Author Best Paper Award, 2020 with the paper "On the Combined Inverse-Dynamics/Passivity-Based Control of Elastic-Joint Robots", IEEE Transactions on Robotics, 2018.
- Finalist at the Euregio Young Researchers Award 2019, Alpbach.
- 3rd place for the best application paper award with the paper: "Collaborative Robotics Safety Control Application Using Dynamic Safety Zones Based on the ISO/TS 15066:2016" at the International Conference on Robotics in Alpe-Adria-Danube Region (RAAD), 2019.

Entrepreneurship

- Inventor in patent application: Giusti A., et al. "Process for the automated handling of products within a plant.", WO2024/095120. International publication date: 10 May 2024.

Language competences

Italian: first language
English: C1 (IELTS Academic)
German: A2 (ÖSD Zertifikat A2)