Academic Curriculum Vitae

Personal information

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Education since leaving school

- 2025 - **National Scientific Habilitation** (ASN) for Assoc. Prof. level in the scientific sector IND-05/A (Industrial mechanical plants).
- 2021 - **PhD in Sustainable Energy and Technologies**; Free University of Bozen-Bolzano. Dissertation "Methodologies and Guidelines for the Design of Safe and Ergonomic Collaborative Robotic Assembly Systems in Industrial Settings".
- 2017 - **Occupational Health and Safety Trainer certification** released by the Institution for Professional Training in Bolzano, Alto Adige (valid from 2017 to 2023).
- 2016 - **Master's Degree in Industrial Engineering, Logistics and Production**; University of Padua.
- 2016 - **Occupational Health and Safety Manager certification** (RSPP) released by the Institution for Professional Training in Bolzano, Alto Adige (valid from 2016 to 2024);
- 2013 - **Bachelor's Degree in Industrial Engineering, Logistics and Production**; Free University of Bozen-Bolzano.

Current appointment

- **Associate Professor** of Industrial System Engineering (SSD IIND-05/A), Industrial Engineering and Automation (IEA) group of the Faculty of Engineering of UniBz.
- **Deputy head** of "Smart Mini Factory" laboratory for Industry 4.0/5.0 at the Faculty of Engineering of UniBz.
- **Working group leader and founder** "Tecnologie avanzate per l'ergonomia in industria" of "Società Italiana di Ergonomia e Fattori Umani" (SIE) (https://societadiergonomia.it).

Previous academic appointment

- Oct 2023 – Sep 2026. **Assistant Professor (Tenure Track)** (RTD-B) of Industrial System Engineering (ex SSD: ING-IND/17) at UniBz.
- May 2023 – Sep 2023. **Assistant Professor** (RTD-A) of Manufacturing Systems and Technologies (ex SSD: ING-IND/16) at UniBz.
- Dec 2022 – May 2023. **Senior Technologist** (1st level) (ex SSD: ING-IND/17) at UniBz.
- Dec 2021 – Dec 2022. **Postdoctoral Research Fellow** (ex SSD: ING-IND/17) at UniBz.
- Dec 2020 – Dec 2021. **Research Fellow** (ex SSD: ING-IND/16/13) at UniBz.

Teaching activities and supervision of students

- Master in Industrial and Mechanical Engineering (LM33), UniBz. **Responsible lecturer** of the course "Digital Factory and Industrial Maintenance" (5 ECTS - IIND-05/A, since 2023).
- Master in Industrial and Mechanical Engineering (LM33), UniBz. **Responsible lecturer** of the elective module "Safety and Ergonomics in industrial human-robot interaction" (3 ECTS -IIND-05/A, since 2024).
- Professional Bachelor in Wood Technology (LP-03), UniBz. **Responsible lecturer** of the course "Sicurezza e valutazione LCA" (6 ECTS - IIND-05/A, since 2023). Course loaned with the Bachelor in Industrial and Mechanical Engineering (L9).
- **Invited guest/visiting lecturer** at several international universities and PhD schools (2021–2024), delivering lectures and seminars.

- **Supervisor** of the PhD student Gilbert Soto (41° Cycle, PhD in Advanced-Systems Engineering, UniBz).
- **Co-supervisor** of the PhD students Rajesh Mallavarapu (42° Cycle, PhD in Advanced-Systems Engineering), Matteo Manzardo (39° Cycle, PhD "Dottorato Nazionale in Robotica e Macchine Intelligenti", UNIBZ) and Marco Lanzone (40° Cycle, PhD in Advanced-Systems Engineering, UniBz).
- **External examiner** for the PhD dissertation of candidate Shakra Mehak, TU Dublin (2025).
- **Supervisor and co-supervisor** of 18 Theses in the B.Sc. in Industrial and Mechanical Engineering (L9) and Master's theses in the M.Sc. in Industrial Mechanical Engineering (LM-33) at UniBz.

Participation in research projects

Research projects grants as Principal Investigator (PI) or Co-Investigator CO-I (acquired third party funding)

Project	Funding programme	Role	Period	Budget (UniBz)
EXCISC – Exchange of Best Practices in Collaborative Intelligence for Safety Critical Applications	ERC/MSCA	PI UniBz	2026–2030	€60,120
RoboToolkit – A Toolkit for Designing Human-Centered Collaborative Robotic Assembly Systems	Joint Projects CH-I	PI UniBz	2025–2028	€299,173
Inclu5ion – Industry 5.0 Driven Design of Production Systems for Improving Inclusion and Equality of Disabled Workers	Research Südtirol	PI UniBz	2024–2027	€182,328
ProMentoHR - Innovative Worker-Centric Assessment Method for Cognitive Workload in Human-Robot Collaborative Systems in Manufacturin	PRIN 2022	PI UniBz	2023–2025	€106,026
R3D - Redundancy for resilience in smart factories of the future through hybrid mobile robotic systems	Joint Projects DE-I	PI UniBz	2024–2027	€225,500

Research projects grants as team member

Project	Funding programme	Role	Period	Budget (UniBz)
Mes4Res - Measurement Model to assess Resilience of Manufacturing companies	PRIN 2022	Team member	2025–2027	€69,200
Trainee – Advanced MR Training foR HumAn-Centric ProductIon EmpoweriNg Engineering TalEnt	Erasmus+ KA	Team member	2024–2027	€69,891
Woll-e-Lab – Exploring Alternative Possibilities of Local Wool Production through Design, Technology and Crafts with a More-than-Human Approach	UniBz Young Researchers	Team member	2024–2025	€60,000
START – SusTainable dAta-dRiven ManufacTuring	Ministerial funding	Team member	2023	€294,875
Design4SusMan – Design an Erasmus Mundus Master on Digital and Sustainable Manufacturing	Erasmus Europe	Team member	2022–2023	€55,000
SestoSenso – Physical Intelligence for Smart and Safe Human-Robot Interaction	H2020 Research and Innovation Action	Team member	2022–2025	€300,000
SME5.0 – A Strategic Roadmap Towards the Next Level of Intelligent, Sustainable and Human-Centred SMEs	Horizon Europe	WP Task Leader	2023–2026	€317,400
CONFUCIUS – Study the Past if You Would Define the Future: Discovering Patterns in Scheduling and Monitoring Data	Internal project (UniBz)	Team member	2021–2023	€110,000
SME 4.0 – Smart Manufacturing and Logistics in an X-to-order and Mass Customization Environment	H2020 MSCA RISE	Team member	2017–2021	€311,500
WIRECOBOTS – Wire Harness Assembly Using Collaborative Robots to Increase Efficiency and Ergonomics	ESMERA (EU Cascade Funding)	Team member	2019–2020	€100,000
CoHoMe – Comparison and Homogenization of Safety Measurements	COVR (EU Cascade Funding)	Team member	2019–2020	€20,000
E-EDU 4.0 – Engineering Education 4.0	ERDF Interreg Italy–Austria	Team member	2018–2021	€180,000

UniBz internal research projects as PI or CO-I

Project	Funding programme	Role	Period	Budget (UniBz)
iCR - Safety and Ergonomics in Industrial Collaborative Robotics: Test and Validation Lab-Area	Internal project UniBz	PI	2024–2025	€74,399
XR-Lab - Extended Reality Laboratory and Training Center	Internal project UniBz	CO-I	2023–2024	€107,824

Commissioned projects by companies as PI or CO-I

Project	Funding programme	Role	Period	Budget (UniBz)
ROBO-WOOD - Applicazioni robotiche collaborative per la finitura di botti in legno: analisi preliminare per l'automazione ed il miglioramento dell'ergonomia	Mittelberger & Co. OHG	PI	2026	€19,000
AR-MAINTEIN – Procedure Strutturate e Realtà Aumentata per la Manutenzione Intelligente di Impianti Complessi	MEMC Global Wafers (Contract for research project)	CO-I	2026	€10,000
ARKOS – Machbarkeitsstudie zur Implementierung kognitiver und physischer Assistenzsysteme mittels Augmented Reality und kollaborativer Robotik in der industriellen Schaltschrankmontage	Gibitz GmbH (NOI Lab bonus)	CO-I	2025–2026	€20,000
BLD-1 – Study of Process Improvement and Potential for Automation for the Production and Packaging of the Boulderball Product	Climball OHG (NOI Lab bonus)	PI	2023	€7,500
AR-CO-4/2 – Industrializzazione di un "Training Center" basato sull'uso di tecniche di Visual Management (VM) supportate dalla tecnologia di Realtà Aumentata (AR) per la formazione di operatori e trainer per l'attrezzaggio di macchinari complessi (fase 2)	MEMC Global Wafers (Contract for research project)	CO-I	2025	€10,000
AR-CO-4/1 – Industrializzazione di un "Training Center" basato sull'uso di tecniche di Visual Management (VM) supportate dalla tecnologia di Realtà Aumentata (AR) per la formazione di operatori e trainer per l'attrezzaggio di macchinari complessi (fase 1)	MEMC Global Wafers Contract for research project)	CO-I	2024–2025	€19,000
AR-CO-3 – Sviluppo modulo formativo basato sull'uso di tecniche di Visual Management (VM) supportate dalla tecnologia di Realtà Aumentata (AR) per la formazione di operatori e trainer per l'attrezzaggio di macchinari complessi	MEMC Global Wafers (Contract for research project)	CO-I	2024	€18,000
AR-CO-2 – Concettualizzazione di una postazione di training assistita da tecnologia AR e tecniche di VM per l'attrezzaggio di macchinari complessi	MEMC Global Wafers (NOI Lab bonus)	CO-I	2023	€14,100

Commissioned projects by companies as team member

Project	Funding programme	Role	Period	Budget (UniBz)
AR-CO – Studio preliminare relativo all'uso di una soluzione innovativa a supporto visivo agli operatori basata su tecnologia di "Augmented Reality" e combinata con tecniche di "Visual Management"	MEMC Global Wafers (NOI Lab bonus)	Team member	2022–2023	€7,000
GW-1 – Evaluation and Proposal of Robotic Solutions for Resistivity Measurement and Optimized Layout Scenarios	MEMC Global Wafers (NOI Lab bonus)	Team member	2022	€8,000
DURST-1 – Automation Concept for the Production of a Special Nozzle	Durst Phototechnik (LG-14)	Team member	2021	€55,000
SIM-EH-BZ – Simulation Study of the Emergency Department in the Hospital of Bolzano	SABES / ASDAA (Contract for research project)	Team member	2019	€20,000
PROSTAHL – Collaborative Robotics for the Production of Individual Stainless-Steel Furniture	Prostahl srl (LG-14)	Team member	2018–2019	€12,000

National and international collaborations

- Main recent national/international collaborations: Prof. Pietrantoni (UniBo), Prof. Roveda (PoliMi/SUPSI), Prof. Vidoni (UniUd), Prof. Boscariol (UniPd), Ing. Zanella (Centro Ricerche FIAT), Dr. Todescato (Fraunhofer Italia), Prof. Corves (RTWH Aachen), Dr. Wischniewski (German Federal Institute for Occupational Safety and Health), Prof. Francallanza (UniMalta), Prof. Cochran (Purdue University), Prof. Kuhlenkötter (University of Bochum), Prof. Leva (TU Dublin), Prof. Thorvald (University of Skövde), Dr. Rathmair (Joanneum Research Institute), Dr. Haid (TU Munich), Prof. Salimbeni (Universidad del Salvador), Prof. Peruzzini (UniBo).

Visiting activities

- **Visiting Researcher at** Stellenbosch University (South Africa) within the EU MSCA Horizon project "SME5.0". Collaboration with the Industrial Engineering research group. Periods: 10/2023 – 11/2023; 03/2025.
- **Visiting Researcher** at Chiang Mai University (Thailand) within the EU-H2020 MSCA RISE project "SME 4.0". Collaboration with the "Excellence Center in Logistics and Supply Chain Management". Periods: 11/2018 – 12/018; 10/2019 – 12/2019.
- **Visiting Researcher** at ELCOM sro and the Faculty of Manufacturing Technologies of the Technical University of Košice (Slovakia) within the EU-H2020 MSCA RISE project "SME 4.0". Periods: 08/2018 – 09/2018; 06/2019; 02/2020.

Invited talks at international conferences

- **Invited Keynote** speaker at the "7th European Conference on Industrial Engineering and Operations Management" (IEOM Germany), Augsburg (Germany), July 15, 2024. Title of the presentation "Human-centered collaborative robotics: future opportunities and challenges".
- **Invited Keynote** speaker at the "Irish Human-Factors and Ergonomics Society Annual Conference - Human Factors in The Era of Digital Transformation" (IHFES 2023), Dublin (Ireland), 12th June 2023. Title of the presentation "Managing Mechanical Safety in Industrial Human-Robot Interaction".
- **Invited speaker** at the "International Production Environmental Community" conference (session "Human-Centered Production") (IPEC 2023), organized online, 8th March 2023. Title of the presentation "Future Design of Human-Centered Collaborative Assembly Workstations for the Improvement of Operators' Ergonomics and Production Efficiency".
- **Invited speaker** at the "4th European Conference on Industrial Engineering and Operations Management" (session "Automation, MES and Manufacturing 4.0") (IEOM2021), 4th August 2021. Title of the presentation "Flexible Automation through Human-Robot Collaboration to Enhance Ergonomics and Performance in Industrial Assembly: a Case Study".

Scientific presentations

Presentations at national and international conferences

- **Oral contributions at international scientific conferences**, presenting research papers at the International Conference on Flexible Automation and Intelligent Manufacturing (FAIM) (2019, 2025, 2026); the CIRP Design Conference (2020); the Triennial Congress of the International Ergonomics Association (IEA) (2021, 2024); the International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME) (2021); the National Congress of the Italian Society of Ergonomics and Human Factors (SIE) (2022, 2026); the CIRP Conference on Manufacturing Systems (CIRP CMS) (2023); Euro Maintenance (2024); the CIRP Conference on Learning Factories (CLF) (2025); and the CIRP Conference on Assembly Technologies and Systems (CIRP CATS) (2026).

Seminar and webinar presentations

- **Presenter** "Realtà aumentata per la formazione su attività di attrezzaggio e manutenzione macchine: il caso Global Wafers" at "AIMAN on Field 2025" organized by Associazione Italiana di Manutenzione, Pergine (Italy), 8 May 2025.
- **Invited speaker** "Tecnologie industriali avanzate a supporto dei lavoratori: opportunità e rischi"

(webinar) organized by the Società Italiana di Ergonomia e Fattori Umani, 17th May 2023.

- **Invited speaker** "Linee guida per il miglioramento dell'ergonomia cognitiva nella progettazione di sistemi di assemblaggio collaborativo uomo-robot" at ""Ergonomia nei processi produttivi. Dentro ed oltre la direttiva macchine tra compliance e valore competitivo" (Fiera Ambiente & Lavoro), 1st December 2021.
- **Presenter** "Design of human centered collaborative assembly systems: the Wirecobots project" at "International Conference on Intelligent Robots and Systems" (IROS2021), 27th September 2021.
- **Presenter** "AI applicata alla produzione" at the "Artificial Intelligence and Machine Learning" event, SMACT competence center, Portogruaro, Italy, 2 July 2021.
- **Presenter** "Gli aspetti di sicurezza nella robotica collaborativa industriale" (webinar) at the "Web Marketing Festival - Il più grande Festival sull' Innovazione Digitale e Sociale", Robotics room, 19th November 2020.
- **Invited speaker** "Ergonomia e robotica collaborativa industriale" (webinar) at the "Advanced Collaborative Robotics" organized by Assindustria Venetocentro and Fraunhofer Italia, 13th July 2020.
- **Invited speaker** "Introduzione agli aspetti di sicurezza nella robotica collaborativa industriale" (webinar) at the "Advanced Collaborative Robotics" organized by Assindustria Venetocentro and Fraunhofer Italia, 22th June 2020.
- **Invited speaker** "Industria 4.0: robot collaborativi (cobots) da un punto di vista della sicurezza" (seminar) at the "Sicurezza e salute, obbligo o cultura?" international convention about occupational health and safety organized by CPE Comitato Paritetico Edile, UniBz, 2nd September 2019.

Session Chair

- **Session Chair** at international conferences: Conference on Learning Factories (CLF 2025, 2026), Flexible Automation and Intelligent Manufacturing (FAIM 2019, 2025), International Conference on Industry 4.0 and Smart Manufacturing (ISM 2021), First Asia Pacific Conference on Industrial Engineering and Operations Management (IEOM 2021).

Publications

Bibliometric indicators

From Scopus database: H index: 20; Citations: 1744.

International peer-reviewed journal papers

1. Manzardo, M., Fraboni, F., Morandini, S., **Gualtieri, L.**, Vidoni, R., & Pietrantoni, L. (2026). Dynamic velocity scaling for industrial collaborative robots: a gaze-driven approach. *Scientific Reports*, *16*(1), 8471. DOI: https://doi.org/10.1038/s41598-025-34142-9. (Quartile 1).
2. Lanzone, M., **Gualtieri, L.**, & Dallasega, P. (2026). Extended Reality as Assistive Technology for the inclusion of Vulnerable Workers in Industry: The XR Capability Support Framework Manuscript. *Production and Manufacturing Research*. Taylor & Francis. DOI: https://doi.org/10.1080/21693277.2026.2720080. (Quartile 1).
3. Mezentseva, A., Fraboni, F., Kiplangat, S. G., **Gualtieri, L.**, & De Angelis, M. (2026). Designing a tool to assess design-related drivers of cognitive workload in collaborative assembly systems: a Delphi study. *Ergonomics*, 1–25. https://doi.org/10.1080/00140139.2026.2729414. (Quartile 2).
4. Galli, D., Nezzi, C., Manzardo, M., **Gualtieri, L.**, Dallasega, P., & Vidoni, R. (2026). Conceptualisation and Implementation of a ROS-Based Robotic Cell for a Flexible Pre-Assembly Task. *Machines*, 14(8), 884. DOI: https://doi.org/10.3390/machines14080884. (Quartile 2).
5. Caiazzo, C., Djapan, M., Savkovic, M., Milojevic, D., Vukicevic, A**., Gualtieri, L**. (2025). Evaluating Mental Workload and Productivity in Manufacturing: A Neuroergonomic Study of Human–Robot Collaboration Scenarios. *Machines*, 13(9), 783. DOI: 10.3390/machines13090783. (Quartile 2)
6. Dallasega, P., **Gualtieri, L.**, Padovano, A., & Rocca, G. (2025). Investment evaluation of Augmented Reality-based training: a human-centered model. *Production Engineering*, 1-30. DOI: https://doi.org/10.1007/s11740-025-01331-4. (Quartile 2).
7. Gholamizadeh, K., Zarei, E., **Gualtieri, L**., & De Marchi, M. (2025). Advancing occupational and system safety in Industry 5.0: Effective HAZID, risk analysis frameworks, and human-AI interaction management. Safety Science, 184, 106770. DOI: https://doi.org/10.1016/j.ssci.2024.106770. (Quartile

1).

8. **Gualtieri, L.**, Öhler, M., Revolti, A., & Dallasega, P. (2024). A visual management and augmented-reality-based training module for the enhancement of short and long-term procedural knowledge retention in complex machinery setup. *Computers & Industrial Engineering*, 196, 110478. DOI: https://doi.org/10.1016/j.cie.2024.110478. (Quartile 1).
9. Revolti, A., **Gualtieri, L**., Pauwels, P., & Dallasega, P. (2024). From building information modeling to construction digital twin: a conceptual framework. *Production & Manufacturing Research*, *12*(1), 2387679. DOI: https://doi.org/10.1080/21693277.2024.2387679. (Quartile 1).
10. **Gualtieri, L.**, Fraboni, F., Brendel, H., Pietrantoni, L., Vidoni, R., & Dallasega, P. (2024). Updating design guidelines for cognitive ergonomics in human-centred collaborative robotics applications: An expert survey. *Applied Ergonomics*, 117, 104246. DOI: https://doi.org/10.1016/j.apergo.2024.104246. (Quartile 1).
11. Panchetti, T., Pietrantoni, L., Puzzo, G., **Gualtieri, L.**, Fraboni, F. (2023). Assessing the Relationship between Cognitive Workload, Workstation Design, User Acceptance and Trust in Collaborative Robots. *Applied Sciences*, *13*(3), 1720. DOI: https://doi.org/10.3390/app13031720. Scopus indexed (Quartile 2).
12. **Gualtieri, L**., Rauch, E., & Vidoni, R. (2023). Human-robot activity allocation algorithm for the redesign of manual assembly systems into human-robot collaborative assembly. *International Journal of Computer Integrated Manufacturing*, 36(2), 308-333. (Quartile 1).
13. **Gualtieri, L.**, Fraboni, F., De Marchi, M., Rauch, E. (2022). Development and evaluation of design guidelines for cognitive ergonomics in human-robot collaborative assembly systems. *Applied Ergonomics*, *104*, 103807. DOI: https://doi.org/10.1016/j.apergo.2022.103807. Scopus indexed (Quartile 1).
14. **Gualtieri, L.**, Rauch, E., Vidoni, R. (2022). Development and validation of guidelines for safety in human-robot collaborative assembly systems. *Computers & Industrial Engineering*, *163*, 107801. DOI: https://doi.org/10.1016/j.cie.2021.107801. Scopus indexed (Quartile 1).
15. Palomba, I., **Gualtieri, L.**, Rojas, R., Rauch, E., Vidoni, R., Ghedin, A. (2021). Mechatronic re-design of a manual assembly workstation into a collaborative one for wire harness assemblies. *Robotics*, *10*(1), 43. DOI: https://doi.org/10.3390/robotics10010043. Scopus indexed (Quartile 1).
16. **Gualtieri, L.**, Rauch, E., Vidoni, R. (2021). Methodology for the definition of the optimal assembly cycle and calculation of the optimized assembly cycle time in human-robot collaborative assembly. *The International Journal of Advanced Manufacturing Technology*, *113*(7-8), 2369-2384. DOI: https://doi.org/10.1007/s00170-021-06653-y. Scopus indexed (Quartile 1)
17. **Gualtieri, L.**, Rauch, E., Vidoni, R. (2021). Emerging research fields in safety and ergonomics in industrial collaborative robotics: A systematic literature review. *Robotics and Computer-Integrated Manufacturing*, *67*, 101998. DOI: https://doi.org/10.1016/j.rcim.2020.101998. Scopus indexed (Quartile 1).
18. **Gualtieri, L.**, Palomba, I., Merati, F. A., Rauch, E., Vidoni, R. (2020). Design of human-centered collaborative assembly workstations for the improvement of operators' physical ergonomics and production efficiency: A case study. *Sustainability*, *12*(9), 3606. DOI: https://doi.org/10.3390/su12093606. Scopus indexed (Quartile 2).
19. Rauch, E., Unterhofer, M., Rojas, R. A., **Gualtieri, L.**, Woschank, M., Matt, D. T. (2020). A maturity level-based assessment tool to enhance the implementation of industry 4.0 in small and medium-sized enterprises. *Sustainability*, *12*(9), 3559. DOI: https://doi.org/10.3390/su12093559. Scopus indexed (Quartile 2).

Papers at conferences

1. Manzardo, M., Galli, D., **Gualtieri, L.**, & Vidoni, R. (2026). Genetic-Algorithm Based Approach to Maximize Robot's Capabilities of Generating Forces. In The International Conference of IFToMM ITALY (pp. 216-224). Cham: Springer Nature Switzerland.
2. Lanzone, M., **Gualtieri, L.**, Dallasega, P. (2026). Extended Reality for the Inclusion of Disabled Operators: A Systematic Literature Review. In *International Conference on Flexible Automation and Intelligent Manufacturing* (pp. 706-715). Springer, Cham. https://doi.org/10.1007/978-3-032-07675-5_71
3. Manzardo, M., Sigmund, G., Hahl, M., **Gualtieri, L.**, Vidoni, R. (2026). Inclusion of Disabled Workers in Production Environments through Industrial Collaborative Robots: a Company Case Study. *Procedia*

Computer Science, *277*, 2796-2805. https://doi.org/10.1016/j.procs.2026.02.316

4. Ciaghi, D., Manzardo, M., Soto, G., Vidoni, R., **Gualtieri, L**. (2026). Multimodal Intention Recognition for Dynamic Tool Sharing in Anthropocentric Human-Robot Collaborative Applications. In Srihari, K., Khasawneh, M.T., Yoon, S., Won, D. (eds) *Flexible Automation and Intelligent Manufacturing: The Future of Automation and Manufacturing: Intelligence, Agility, and Sustainability*. FAIM 2025. Lecture Notes in Mechanical Engineering. Springer, Cham. https://doi.org/10.1007/978-3-032-07675-5_59
5. Mallavarapu, R., Manzardo, M., Yan, Y., Huesing, M., Corves, B., **Gualtieri, L**., Vidoni, R. (2025). Experimental Evaluation of Sensor Redundancy and Filtering for Human Tracking in Industrial Collaborative Applications. In *Manufacturing 2030-A Perspective to Future Challenges in Industrial Production: Proceedings of the 4th International Symposium on Industrial Engineering and Automation ISIEA 2025 and 18th EPIEM Conference 2025, Volume 2* (Vol. 2, p. 319). Springer Nature. DOI: 10.1007/978-3-032-03722-0_27.
6. Ciaghi, D., Manzardo, M., Gasparetto, A., Vidoni, R., **Gualtieri, L**. (2025). Human Motion Tracking for Action Recognition Through Wearable Sensors: an IMU Based Approach. In *International Conference MECHANICAL ENGINEERING SOLUTIONS: Design, Simulation, Testing, Manufacturing* (pp. 246-256). Cham: Springer Nature Switzerland. DOI: 10.1007/978-3-032-02352-0_24
7. Aggrey, O., **Gualtieri, L.**, Dallasega, P. (2025). Visual Management (VM) and Augmented Reality (AR) for Enhanced Assembly Instructions: A Comparative Study of VM-AR vs. VM-Paper-Based Methods. In *Conference on Learning Factories* (pp. 280-287). Cham: Springer Nature Switzerland. DOI: https://doi.org/10.1007/978-3-031-98883-7_34.
8. Ciaghi, D., **Gualtieri, L.**, Fraboni, F., Dallasega, P. (2024). Development of a Shared Tool for Collaborative Robotic Applications in Assembly. In *Proceedings of the 22nd Congress of the International Ergonomics Association*, Volume 6: Better Life Ergonomics for Future Humans (IEA 2024) (Vol. 58, p. 479). Springer Nature. DOI: https://doi.org/10.1007/978-981-96-8904-0_61
9. Manzardo, M., Carabin, G., **Gualtieri, L.**, Vidoni, R. (2023). Cycle Time Reduction Through Redundancy Optimization in Industrial Robotic Tasks. In *IFToMM World Congress on Mechanism and Machine Science* (pp. 540-550). Cham: Springer Nature Switzerland. DOI: https://doi.org/10.1007/978-3-031-45770-8_54
10. **Gualtieri, L.**, Fraboni, F., Brendel, H., Dallasega, P., Rauch, E., Pietrantoni, L. (2023). Guidelines for the integration of cognitive ergonomics in the design of human-centered and collaborative robotics applications. *Procedia CIRP*, 120, 374-379. DOI: https://doi.org/10.1016/j.procir.2023.09.005
11. Revolti, A., **Gualtieri, L.**, Odorizzi, R., Tosi, P., Dallasega, P. (2023). Training Support with Augmented Reality for Machine Setup: A Case Study in the Process Industry. In *International Symposium on Industrial Engineering and Automation* (pp. 74-83). Cham: Springer Nature Switzerland. DOI: https://doi.org/10.1007/978-3-031-38274-1_7
12. **Gualtieri, L.**, Revolti, A., Dallasega, P. (2023). A human-centered conceptual model for integrating Augmented Reality and Dynamic Digital Models to reduce occupational risks in industrial contexts. *Procedia Computer Science*, *217*, 765-773. DOI: https://doi.org/10.1016/j.procs.2022.12.273
13. Miro, M., Glogowski, P., Lemmerz, K., Kuhlenkoetter, B., **Gualtieri, L.**, Rauch, E., ... & Kumar, A. A. (2022). Simulation technology and application of safe collaborative operations in human-robot interaction. In *ISR Europe 2022; 54th International Symposium on Robotics* (pp. 1-9). VDE. http://hdl.handle.net/10993/53950
14. **Gualtieri, L.**, Fraboni, F., De Marchi, M., Rauch, E. (2022). Evaluation of Variables of Cognitive Ergonomics in Industrial Human-Robot Collaborative Assembly Systems. In: Black, N.L., Neumann, W.P., Noy, I. (eds) Proceedings of the 21st Congress of the International Ergonomics Association (IEA 2021). IEA 2021. *Lecture Notes in Networks and Systems*, vol 223. Springer, Cham. DOI: https://doi.org/10.1007/978-3-030-74614-8_32
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25. **Gualtieri, L.**, Rojas, R., Carabin, G., Palomba, I., Rauch, E., Vidoni, R., Matt, D. T. (2019). Advanced automation for SMEs in the I4.0 revolution: Engineering education and employees training in the smart mini factory laboratory. In *2018 IEEE international conference on industrial engineering and engineering management (IEEM)* (pp. 1111-1115). IEEE. DOI: https://doi.org/10.1109/IEEM.2018.8607719
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Book chapters

1. Haid, C., De Marchi, M., Metzner, A., Manzardo, M., Dallasega, P., & **Gualtieri, L**. (2026). Technological Opportunities for Empowering Workers. In Industry 5.0 for SMEs: Challenges, Opportunities and Requirements (pp. 381-401). Cham: Springer Nature Switzerland. DOI: https://doi.org/10.1007/978-3-032-26279-0_13.
2. **Gualtieri, L.**, Palomba, I., Wehrle, E. J., Vidoni, R. (2020). The opportunities and challenges of SME manufacturing automation: safety and ergonomics in human–robot collaboration. *Industry 4.0 for SMEs: Challenges, opportunities and requirements*, 105-144. DOI: https://doi.org/10.1007/978-3-030-25425-4_4
3. **Gualtieri, L.**, Rojas, R. A., Ruiz Garcia, M. A., Rauch, E., Vidoni, R. (2020). Implementation of a laboratory case study for intuitive collaboration between man and machine in SME assembly. *Industry 4.0 for SMEs: Challenges, Opportunities and Requirements*, 335-382. DOI: https://doi.org/10.1007/978-3-030-25425-4_12.

Awards and recognitions

- **Best Paper Award (2025)** – Robotics and Computer-Integrated Manufacturing (RCIM) (Q1) with the paper "Emerging research fields in safety and ergonomics in industrial collaborative robotics: A systematic

literature review". This award is assigned to one single article per year, recognizing the work that attracted the highest number of citations in the past five years. RCIM is one of the leading international journals in the field of industrial robotics and manufacturing.

- **Best Teacher Award (2025)** – Faculty of Engineering, UniBz. Awarded to one lecturer per faculty based on student evaluations of teaching activities.
- **Honorable Mention, Peter Bruckner Award (2026)** – Project "Woll-e-Lab – Exploring Alternative Possibilities of Local Wool Production through Design, Technology and Crafts with a More-than-Human Approach". Role: UniBz team member. The Peter Bruckner Award recognizes outstanding projects at the intersection of design, craftsmanship, and local manufacturing.
- **Nominated full member of "Sigma Xi (2024**) – The Scientific Research Honor Society" (https://www.sigmaxi.org/) (year 2024). As the world's largest interdisciplinary scientific honor society, membership in Sigma Xi distinguishes researchers as exceptional contributors to the research community. Membership is by invitation and requires nomination by two Sigma Xi members.
- **Outstanding Paper Award (2018)** – IEEM 2018 (Bangkok, Thailand) with the paper: Advanced Automation for SMEs in the I4.0 Revolution: Engineering Education and Employees Training in the Smart Mini Factory Laboratory (Gualtieri L., Rojas R., Carabin G., Palomba I., Rauch E., Vidoni R., Matt D.);

Membership of scientific societies

- **Working group leader and founder** "Tecnologie avanzate per l'ergonomia in industria" of "Società Italiana di Ergonomia e Fattori Umani" (SIE).
- **Member of the Ergonomics Training Committee** (CFE) at "Società Italiana di Ergonomia e Fattori Umani" (SIE).
- **Ordinary member** of the Italian Association of Industrial Plant Teachers (AIDI).
- **Member of the Technical Committee** "Human Factors in Robotics" - International Ergonomics Association (IEA).
- **Member of the Working Group** on "Human Robot Collaboration" - International Association of Learning Factories (IALF), expertise in safety and ergonomics.
- **Member of the following international conference technical/scientific committee**: International Symposium on Industrial Engineering and Automation (ISIEA 2023, 2025, 2026), Conference on Learning Factories (CLF 2025, 2026), International Conference on Industry 4.0 and Smart Manufacturing (ISM 2023, 2024, 2026), International Conference on Management Science and Industrial Engineering (MSIE 2024, 2025), International Conference on Mechanical and Intelligent Manufacturing Technologies (ICMIMT 2022-2025), International Conference on Emerging Technologies and Factory Automation (IEEE ETFA 2024 – Workshop committee).

Editorial activities

- **Member of the Editorial Board** of the journal "CIRP Annals" (Elsevier) and "Production & Manufacturing Research" (Taylor & Francis), both Scopus Indexed, Q1.
- **Member of the Reviewer Board** for the journal "Applied Sciences" (MDPI).
- **Guest editor** for the Special Issue "Humans and Robots in Factories of the Future", Production & Manufacturing Research (Taylor and Francis), Q2; "Human Factors and Cognitive Ergonomics in Advanced Industrial Human-Robot Interaction", Frontiers in Robotics and AI (Frontiers), Q2; "Assessment, Validation and Improvement of Safety and Ergonomics in Industrial Human-Robot Interaction", Machines (MDPI), Q2; "Design and Application of Collaborative Robotics", Applied Sciences (MDPI), Q2.
- **Reviewer for peer-reviewed journals** "Frontiers In Organizational Psychology" (Q2), "International Journal of Production Economics" (Q1), "Robotics and Computer Integrated Manufacturing" (Q1), "IEEE Transactions on Engineering Management" (Q1), "Human Factors: The Journal of the Human Factors and Ergonomics Society" (Q1), "IEEE Robotics and Automation Letters" (Q1), "Computers & Industrial Engineering" (Q1), "Safety Science" (Q1), "Production & Manufacturing Research" (Q1), "Journal of Manufacturing Systems" (Q1), "Journal of Manufacturing Technology Management" (Q1), "Applied Science" (Q2), "Sustainability" (Q2), "Sensors" (Q2), "Behaviour & Information Technology" (Q2), "Frontiers in Robotics and AI" (Q2), "International Journal of Human Factors and Ergonomics" (Q4).

Organization of conferences and workshops

- **Member of the organizing committee** for the international conference "16th Conference on Learning Factories" (CLF2026), UniBz, May 05-07, 2026.
- **Conference co-chair** for the international conference "4th International Symposium on Industrial Engineering and Automation" (ISIEA2025), UniBz, June 18-20, 2025.
- **Conference organization co-chair** of the "1st International Symposium on Industrial Engineering and Automation" (ISIEA2022), UniBz, June 20-23, 2022.
- **Organization co-chair** for the conference special session "Human Factors for Collaborative Intelligence Applications in Safety Critical Domains" at the European Safety and Reliability Conference 2026 (ESREL 2026).
- **Organization co-chair** for the workshop "Human-Centered Robotics and Cognitive Workload in Modern Manufacturing" organized by the University of Bologna and UniBz, 12th of November 2025.
- **Organization chair** for the convention "Fattori umani nell'Industria 5.0: opportunità e sfide per il futuro" organized by the "Società Italiana di Ergonomia e Fattori Umani", "Ambiente e Lavoro" national fair, 10th of October, 2023.
- **Organization chair** "Workshop on Industrial Collaborative Robots: Design of Safe Applications and Programming" organized by UniBz in collaboration with the University of Udine and Homeberger spa, January 11-13, 2023.

Reviewer activities for founding agencies

- **Expert and reviewer** for funding agencies and foundations, including the Croatian Science Foundation, Linz Institute for Technology, Fondazione Cassa di Risparmio di Verona Vicenza Belluno e Ancona, Fondazione Cassa di Risparmio di Trento e Rovereto, and the Latvian Council of Research.

Results obtained in technology transfer activities

- **Support in the creation of a company training center** - Dr. Gualtieri worked as Co-PI in several commissioned projects by MEMC Global Wafers. These projects focused on developing innovative training modules to support machinery setup. As projects result, the company established a dedicated training center with the support of the UniBz research team. (https://www.ansa.it/trentino/notizie/2024/10/02/la-realta-aumentata-migliora-la-formazione-nellindustria_f598ec31-cc3f-417c-83ec-17914c89f5cc.html).
- **PI and CO-PI of 8 industrial commissioned research projects** carried out between 2023 and 2026 with MEMC Global Wafers, Gibitz, Climball, and Mittelberger with a total managed budget exceeding €117,000.
- **Team member in 5 industrial commissioned research projects** carried out between 2018 and 2023 with MEMC Global Wafers, Durst Phototechnik, Südtiroler Sanitätsbetrieb, and Prostahl.
- **Responsible and/or contributor for professional training activities** involving several local industrial companies like MEMC Global Wafers, Alpitronic, Finstral, Alupress, GKN, etc.
- **Deputy Head** of the accredited Learning Factory and laboratory for Industry 4.0/5.0 "Smart Mini Factory" of the Faculty of Engineering, UniBz.

Institutional assignments

- **Member of the Committee for Intellectual Property and Spin-offs**, UniBz.
- **Member of the Third Mission Board** of the Faculty of Engineering, UniBz.
- **Quality Assurance Representative** of Study Program of the "Bachelor's degree Industrial and Mechanical Engineering" (L-9), UniBz.
- **Responsible for high school internship programs** (PCTO) for the Faculty of Engineering, UniBz;

Place and Date: Bolzano, 01.10.2026