

DIME – Department of Mechanical, Energetic, Management, and Transport Engineering, University of Genova, Via all’Opera Pia 15, 16145 • GENOVA • ITALY

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ACADEMICS

OTHER TITLES

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SCHOLARSHIP AWARDS

Nov. 2021 – PRESENT	Scholarship holder on competitive call for the Ph.D. IMEG – Doctorate in Mechanical Engineering, Energy, and Management, curriculum Mechanics, Measurements and Materials, cycle XXXII at the University of Genova & Institute of Mechanical Intelligence of the Scuola Superiore Sant’Anna, Pisa, Italy.	Genova & Pisa, Italy
Feb. – Oct. 2021	Scholarship holder on competitive call for Postgraduate Research Activities on Exoskeletal Systems for Rehabilitation Purposes at the PercRo Perceptual Robotics Laboratory of the Institute of Mechanical Intelligence of the Scuola Superiore Sant’Anna, Pisa, Italy.	Pisa, Italy
Sept. – Dec. 2019	Scholarship holder on competitive call for the European Union Program, Erasmus+ Mobility for the purpose of study at the University of Edinburgh, United Kingdom.	Edinburgh, United Kingdom

ABROAD EXPERIENCES

Sept. 2023 – March 2024	<u>University of California Los Angeles (UCLA)</u> Visiting Graduate Researcher (PhD Student) on compliant mechanisms.	Los Angeles, US
Sept. – Dec. 2019	<u>University of Edinburgh, United Kingdom.</u> European Union Program, Erasmus+ Mobility for the purpose of study.	Edinburgh, UK

RESEARCH ACTIVITIES

Publications

1. **G. Vazzoler**, S. Shimohara, G. Berselli, J. B. Hopkins, “Design Methodology and Physical Prototyping of a Binary Stiffness, Rotary Motion, Compliant Mechanism with Multiple, Decoupled, Degrees-of-Freedom”, *International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE 2024)*, **ACCEPTED**.
2. **G. Vazzoler**, C. Camardella, M. Gabardi, S. Marcheschi, M. Solazzi, G. Berselli, A. Frisoli, “Design and Performance Assessment of a Modular, Cable-Driven, 3-DoFs Exoskeleton for Orthopedic and Post-Stroke Rehabilitation of the Wrist”, *IEEE/ASME Transactions on Mechatronics*, 2024 (**Q1 Journal Article**, **UNDER REVISION**).
3. **G. Vazzoler**, C. Camardella, M. Gabardi, S. Marcheschi, M. Solazzi, G. Berselli, A. Frisoli, “Evaluating Efficacy of Continuous Assistance Control during Orientation Tasks with an Active Wrist Exoskeleton”, *21st International Conference on Advanced Robotics (ICAR 2023)*, **doi: 10.1109/ICAR58858.2023.10406536**.
4. M. Gallerani, **G. Vazzoler**, G. De Novi, M. P. Ottensmeyer, R. Razzoli, G. Berselli, “Integrated Design and Prototyping of a Robotic Eye System for Ocular and Craniofacial Trauma Simulators”, *International Journal on Interactive Design and Manufacturing*, 2023 (**Q2 Journal Article**, **doi: 10.1007/s12008-023-01364-y**).
5. **G. Vazzoler**, G. Berselli, A. Frisoli, “A Concept for a Gravity-Balanced Upper-Limb Exoskeleton”, *4th Italian Conference for Robotics and Intelligent Machines (I-RIM 2022)* (**BEST PAPER AWARD, finalist**), **https://zenodo.org/records/7531238**.
6. F. Merlo, **G. Vazzoler**, G. Berselli, “A Computer-Aided Tool for the Energy Optimization of Industrial Robots in Manufacturing Applications”, *International Joint Conference on Mechanics, Design Engineering and Advanced Manufacturing (JCM 2022)* (**In book: Advances on Mechanics, Design Engineering and Manufacturing IV**), 2023, **doi: 10.1007/978-3-031-15928-2_1**.
7. F. Merlo, **G. Vazzoler**, G. Berselli, “Eco-Programming of Industrial Robots for Sustainable Manufacturing via Dynamic Time Scaling of Trajectories”, *Robotics and Computer-Integrated Manufacturing*, 2023 (**Q1 Journal Article**), **doi: 10.1016/j.rcim.2022.102420**.
8. F. Merlo, **G. Vazzoler**, G. Berselli, “Eco-Programming of Industrial Robots for Sustainable Manufacturing”, *31st International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2022)*, **fast track to RCIM journal (BEST PAPER AWARD)**.
9. **G. Vazzoler**, P. Bilancia, M. Fontana, A. Frisoli, G. Berselli, “Analysis and Preliminary Design of a Passive Upper Limb Exoskeleton”, *IEEE Transactions on Medical Robotics and Bionics*, 2022 (**Special**

Section entitled on 20th International Conference on Advanced Robotics - ICAR2021) (Journal Article), [doi: 10.1109/TMRB.2022.3186903](https://doi.org/10.1109/TMRB.2022.3186903).

10. **G. Vazzoler**, P. Bilancia, M. Fontana, A. Frisoli, G. Berselli, “Preliminary Design and Virtual Prototyping of an Upper Limb Exoskeleton”, *20th International Conference on Advanced Robotics (ICAR 2021)*, [doi: 10.1109/ICAR53236.2021.9659373](https://doi.org/10.1109/ICAR53236.2021.9659373).

Memberships

ASME – The American Society of Mechanical Engineers • IEEE – Institute of Electrical and Electronics Engineers.

Chair/co-Chair in international conferences

SMASIS 2023 – ASME’s Premier Conference on Smart Materials, Adaptive Structures, and Intelligent Systems, Austin, Texas, USA, 10-13 Sept. 2023.

Reviewer for international journals

ASME – Journal of Mechanical Design, ISSN: 1050-0472 • IEEE/ASME – Transaction on Mechatronics, ISSN: 1083-4435 • IEEE – Robotics and Automation Magazine, ISSN: 1070-9932 • IEEE – Transactions on Haptics, ISSN: 19391412 • Elsevier – International Journal of Mechanical Sciences, ISSN: 207403 • Elsevier – Mechanism and Machine Theory, ISSN: 0094-114X • Springer International Journal on Interactive Design and Manufacturing, ISSN: 19552513 • Springer, Journal of the Brazilian Society of Mechanical Sciences and Engineering, ISSN: 16785878.

Reviewer for international conferences

ASME – SMASIS, Conference on Smart Materials, Adaptive Structures, and Intelligent Systems • IEEE – ICAR, International Conference on Advanced Robotics • IEEE – ICORR, International Conference on Rehabilitation Robotic • IEEE – ICRA, International Conference on Robotics and Automation • IEEE – RoboSoft, International Conference on Soft Robotics • IEEE – WHC, World Haptics Conference • JCM, International Joint Conference on Mechanics, Design Engineering and Advanced Manufacturing.

NOTABLE ACADEMIC PROJECTS

2023 – 2026 (ONGOING)	<u>University of Genova</u> EU Project SMERF: Preparing companies for a greener future. Budget: 2.49 m€.
2022 – 2026 (ONGOING)	<u>University of Genova</u> EU Project IntelliMan: AI-Powered Manipulation System for Advanced Robotic Service, Manufacturing and Prosthetics. Budget: 4.5 m€.
2022 – 2026 (ONGOING)	<u>University of Genova</u> EU Project Fit4MedRob: Fit for Medical Robotics (MUR (PNRR)). Budget: 1.8 m€.
2020 – 2023	<u>Scuola Superiore Sant’Anna</u> National research project RoboGym: Robotic Gym for shoulder and upper limb rehabilitation. Budget: 350 000 €.

PATENTS

1. **Esoscheletro robotico di polso**, deposit: 13/10/2023; inventors: G. Berselli, A. Frisoli, M. Gabardi, M. Solazzi, G. Vazzoler.
2. **Arto Protesico Superiore Motorizzato Avente una Configurazione Costruttiva Ottimizzata**, deposit: 27/09/2023; inventors: G. Berselli, M. Baggetta, **G. Vazzoler**, G. Palli, C. Melchiorri.

ACTIVITIES AT UNIVERSITY LEVEL

University of Genova

Teaching support from 2021 (ONGOING) for the courses of Prof. Giovanni Berselli.

- **Assistant Instructor** (*Master's Degree Course in Mechanical Engineering – Design and Production (Cod. 9269, class LM-33)*): Design of Automatic Machinery and Robots (Cod. 86927) (Italian) • Design of Automatic Machinery and Robots (Cod. 98960) (English).
- **Member of the examination board** (*Bachelor's Degree Course in Mechanical Engineering (Cod. 8720, class L-9)*; *Master's Degree Course in Mechanical Engineering – Design and Production (Cod. 9269,*

class LM-33)): Industrial Technical Design (Cod. 56657) (Italian) • Design of Automatic Machinery and Robots (Cod. 86927) (Italian) • Design of Automatic Machinery and Robots (Cod. 98960) (English).

- **Supervisor** of Bachelor's and Master's students.

OTHER ACTIVITIES

- 2018 – 2019 University of Genova
Part-time collaboration activities (secretary work).
- 2012 – 2020 Personal job/Hobby
 Study aid in Math/Physics/English for elementary/high school students (family and friends) • Work aid as a commercial agent (dad's job).

LANGUAGES CERTIFICATES

- Feb. 2023 Duolingo English Test, 120/160 (EU level **C1/C2**)
- Dec. 2019 Erasmus+ OLS
Diploma of English as a foreign language (EU level **C1**).
- Jun. 2014 Cambridge English Language Assessment, University of Cambridge
First Certificate in English (EU level **B2**).

TECHNICAL SKILLS

- Softwares *MATLAB • PTC Creo • ANSYS Mechanical APDL/Workbench • MBD RecurDyn • Windows Office Package • Adobe Illustrator • LaTeX.*

Genova, Italy, 05/08/2024