

PERSONAL INFORMATION

Vasco Fanti



Sex | Date of birth 25/05/1995 | Nationality

WORK EXPERIENCE

October 2023 – May 2024

Didactic Tutor for the “Matriculae Project”

Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)
Support **courses in Mathematical Analysis** and University **pathway organization support**

September 2023 – January 2024

Teaching Support for the course “Fundamentals of Biomedical Data and Signal Processing”

Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)
EEG, ECG, EMG signal processing, **Exercise support** and **Knowledge verification**

November 2022 - Today

PhD Student in Bioengineering and Robotics – Development and Assessment of an Industrial Exoskeleton for trunk and shoulder assistance of heavy working activities in the civil and construction sector

Istituto Italiano di Tecnologia – IIT (ADVR, Via S. Quirico 19d, 16163, Genova, GE, Italy)
Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)
Software developer, data scientist, and test investigator for the project:

- BEEYONDERS (Breakthrough European tEchnologies Yielding cOnstruction sovereiGnty, Diversity & Efficiency of ResourceS), European Union's Horizon 2022

May 2021 – November 2022

Fellow Junior Bioengineer – Development and Evaluation of a Back-Support Exoskeleton (BSE) to assist railway workers + Improvement and Assessment of a BSE for logistic tasks

Istituto Italiano di Tecnologia - IIT (ADVR, Via S. Quirico 19d, 16163, Genova, GE, Italy)

Developer, data scientist, and test investigator for the projects:

- STREAM (Smart Tools for Railway work safEty and performAnce iMprovement), European Union's Horizon 2020.
- EC2 (Esoscheletri Collaborativi 2), INAIL, 2020-2022

January 2020 – November 2020

Master Thesis in Bioengineering – Evaluation of a Soft and Quasi-Passive Exoskeleton to assist walking

Istituto Italiano di Tecnologia - IIT (ADVR, Via S. Quirico 19d, 16163, Genova, GE, Italy)

Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)

Exoskeleton evaluator and methodology developer:

- Working with the exosuit platform Xosoft- Gamma

February 2018 – September 2019

Technological facilities responsible and lifeguard

Piscine di Albaro Srl. (Piazza Henry Dunant, 4, 16146, Genova, GE, Italy)

- Facility and pool **maintainer, lifeguard**

March 2017 – September 2017

Bachelor's Thesis in Biomedical Engineering - Stability Assessment of Dental Endoprostheses

Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)
Internal prostheses assessment:

- **Stability assessment** of orthodontic mini-screws

EDUCATION AND TRAINING

October 2021

License to practice as an Information Engineer

Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)

September 2018 – March 2021

Master's degree in "Rehabilitation Engineering and Biomaterials"

Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)

- Analysis of biomedical data and signals
- Bioengineering of human movement
- Perceptual systems and interactions
- Composite materials for bio-medical application
- Rehabilitation engineering and prosthetic devices
- Biomedical imaging

September 2014 – February 2018

Bachelor's degree in "Biomedical Engineering"

Università degli Studi di Genova - UniGe (DIBRIS, Via all'Opera Pia 13, 16145, Genova, GE, Italy)

- Fundamentals of biomedical data and signal processing
- Physiology
- Automatic controls
- Materials science and technology
- Fundamentals of biomechanics

September 2009 – July 2014

Scientific High School Diploma

Liceo Scientifico Statale G. D. Cassini(Via Galata 34, 16122, Genova, GE, Italy)

- Mathematics
- Chemistry
- Physics
- Latin
- Philosophy

PERSONAL SKILLS

Mother tongue

Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B1	B2	C1
	CAT				
French	A2	A2	A2	A2	A2

Scholastic level

Communication skills

- Good communication skills with the public acquired during conferences, exhibitions and slideshows
- Good communication skills with young people acquired during my experiences as animator and coach
- Good communication skills with adults acquired during conferences, trade fairs and project meetings

Organisational / managerial skills Comfortable organizing and/or managing teams

Job-related skills

Managing and organizing:

- Data analysis
- Models Development
- Experimental set-up management
- Work and time organization

Mastery in:

- Practical and manual activities
- Public speaking activities
- Data analysis and features/metrics extraction
- Computer and electronic devices use

Computer skills

Mastery with:

- MATLAB
- Tools of the Office suite (Word, Excel, PowerPoint, SharePoint)
- Latex
- Computer languages (C, C++, Arduino)
- ROS
- GitLab

Driving licence ▪ AM, A1, A2, A, B

ADDITIONAL INFORMATION

Publications
Presentations
Projects
Conferences
Seminars

Fairs and exhibitions:

- "Italian Tech Week" – Officine OGR, Torino, Italy, 29-30 September 2022
- "Innotrans" – Messe Berlin, Berlin, Germany, 20-23 September 2022
- "ConnexT" - Confindustria, MiCo, Milano, Italy, 2-3 December 2021
- "Space festival" - Villa Borzino, Busalla, Ge, Italy, 2-3-4 July 2021

Conferences:

- "ExoBerlin" – Berlin, Germany, 11-12 October 2022
- "BioRob" – Heidelberg, Germany, 1-4 September 2024
Poster presentation

Schools:

- "SSNR - Summer School in NeuroRehabilitation", Baiona, Po, Spain, 11-16 June 2023
Slideshow presentation
Poster presentation

Publications:

- **Fanti, V.** and Leggieri, S., Poliero, T., Sposito, M., Caldwell, D. G., & Di Natali, C. (2024). Multi-Exoskeleton Performance Evaluation: integrated muscle energy indices to determine the quality and quantity of assistance. *IEEE Transactions on Biomedical Engineering* (Submitted).
- **Fanti, V.** and Leggieri, S., Caldwell, D. G., & Di Natali, C., (2024). Proprioceptive-Based Control Strategy to Assist Walking and Carrying Task in Back-Support Exoskeletons. *IEEE: BioRob* (Accepted).

- **Fanti V.** and Ahmad J., Caldwell D. G., Di Natali C. (2023). "An Updated Framework for Adoption, Evaluation, and Impact of Occupational Exoskeletons at Different Technology Readiness Levels", *Robotics and Autonomous Systems* (Submitted).
- Sposito, M., **Fanti, V.**, Poliero, T., Caldwell, D. G., & Di Natali, C. Field Assessment of Active Bse: Trends Over Test Days of Subjective Indicators and Self-Reported Fatigue for Railway Construction Workers. Available at SSRN 4737518.
- Di Natali, C., Poliero, T., **Fanti, V.**, Sposito, M., & Caldwell, D. G. (2024). Dynamic and Static Assistive Strategies for a Tailored Occupational Back-Support Exoskeleton: Assessment on Real Tasks Carried Out by Railway Workers. *Bioengineering*, 11(2), 172.
- **Fanti, V.** and Leggieri S., Caldwell, D. G., & Di Natali, C. (2023). Online Ergonomic Evaluation in Realistic Manual Material Handling Task: Proof of Concept. *Bioengineering*, 11(1), 14.
- Sposito, M., **Fanti, V.**, Sencandan, P., Caldwell, D. G., & Di Natali, C. (2022, August). Measuring Anthropometric Fit for Exoskeletons: Methodologies and Preliminary Assessment. In 2022 9th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob) (pp. 01-08). IEEE.
- **Fanti, V.**, Sanguineti, V., Caldwell, D. G., Ortiz, J., & Di Natali, C. (2022). Assessment methodology for human-exoskeleton interactions: Kinetic analysis based on muscle activation. *Frontiers in Neurorobotics*, 16, 982950.
- Lazzaroni, M., **Fanti, V.**, Sposito, M., Chini, G., Draicchio, F., Di Natali, C., ... & Ortiz, J. (2022). Improving the efficacy of an active back-support exoskeleton for manual material handling using the accelerometer signal. *IEEE Robotics and Automation Letters*, 7(3), 7716-7721.
- Poliero, T., **Fanti, V.**, Sposito, M., Caldwell, D. G., & Di Natali, C. (2022). Active and passive back-support exoskeletons: a comparison in static and dynamic tasks. *IEEE Robotics and Automation Letters*, 7(3), 8463-8470.

Certificates

Awards:

- IF Design Award 2024 – StreamEXO: Industrial exoskeleton for heavy-duty industries

Patents:

- Soft Fabric EMG Based Load Estimation on a Compliant Armband (Pending)

Licences:

- Diving (up to 18m)
- Driving (cars and motorbikes)
- Lifeguard
- First aid