Luca Fortini

Born in Rome on August 1st 1994 - Nationality: Italian
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PROFILE

I am a Postdoctoral researcher with a research interest in motion capture, biomechanics, human animation, robotics, simulation environments and ergonomics. As the lead of Real-Move, a technology transfer project focused on markerless motion capture, I have driven the development of an innovative product that transforms human motion into actionable insights. My role spans from concept to deployment, integrating AI and computer vision technologies to create a robust, real-world solution bridging academic research and industry needs.

EDUCATION

2019 - 2023	*Politecnico di Milano & Istituto Italiano di Tecnologia* - Bioengineering PhD Fellow
2016 - 2019	*Politecnico di Milano* - Master in Biomedical Engineering
2013 - 2016	*University of Rome "La Sapienza"* - Bachelor Degree in Clinical Engineering
2008 - 2013	*Liceo Scientifico Morgagni* - High School Degree

PROFESSIONAL EXPERIENCE

Jun 2023 - Present	**PostDoctoral Researcher at Istituto Italiano di Tecnologia**, Genova, Italy
Sep 2019 - Jun 2023	**Phd Fellow at Istituto Italiano di Tecnologia**, Genova, Italy
Dec 2018 - Sep 2019	**Master Thesis Internship at Istituto Italiano di Tecnologia**, Genova, Italy
May 2016 - Nov 2016	**Internship at IRCCS San Raffaele Pisana**, Rome, Italy

VOLUNTEER WORK AND ACTIVITIES

2023 - Present	**Corpo Nazionale Soccorso Alpino e Speleologico (CNSAS)**, Rescuer, Genova, Italy
2020 - 2022	**Chief Scout, AGESCI**, Rome, Italy
2019 - 2020	**Libera contro le mafie**, active member
2017 - 2019	**Co-founder and board member, BEA (Biomedical Engineering Association)**, student association
2018 - 2019	**IEEE member and Co-founder of IEEE EMB Student Branch Chapter** at Politecnico di Milano
2013 - 2016	**Basketball Coach, project "Basket & Disability"**, Smit club, Rome, Italy
2003 - 2022	**Scouting, AGESCI,** Rome, Italy

LANGUAGE SKILLS

Italian: mother tongue
English: fluent, English Language Testing System (IELTS) Academic, score 8/9, level C1
Spanish: comprehension and elementary communication

COMPUTER AND ELECTRONIC SKILLS

Application and software: Blender, Git, Simulink, Gazebo, Motive, CUDA, Docker, CI/CD
Hardware: Optitrack, XSens, RGBD and RGB cameras, XSENSORS, BTS Forceplates
Programming language: Matlab, C++, LaTeX, Simulink, Python, ROS, bash, Markdown
Electronics: Microcontroller Programming and Prototyping (Arduino)
Operating Systems: Windows, Linux

PUBBLICATIONS

L. Fortini, et al. *"Markerless 3D human pose tracking through multiple cameras and AI: Enabling high accuracy, robustness, and real-time performance." arXiv preprint arXiv:2303.18119 (2023).*

L. Fortini, et al. *"Open-VICO: An Open-Source Gazebo Toolkit for Multi-Camera-based Skeleton Tracking in Human-Robot Collaboration"* 2022 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN).

L. Fortini, et al. "*A Framework for Real-time and Personalisable Human Ergonomics Monitoring.*" 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). IEEE, 2020.

L. Fortini, et al. *"A Real-time Tool for Human Ergonomics Assessment based on Joint Compressive Forces."* 2020 29th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN). IEEE.

L. Fortini, et al. *"A collaborative robotic approach to gaze-based upper-limb assisted reaching."* 2019 IEEE International Work Conference on Bioinspired Intelligence (IWOBI). IEEE, 2019.

P. Balatti, I. Ozdamar, D. Sirintuna, **L. Fortini**, M. Leonori, J. M. Gandarias and A. Ajoudani. *"Robot-assisted navigation for visually impaired through adaptive impedance and path planning" IEEE International Conference on Robotics and Automation (ICRA).* IEEE 2024.

M. Leonori, M. Lorenzini, **L. Fortini**, J. M. Gandarias and A. Ajoudani *"The Bridge between Xsens Motion-Capture and Robot Operating System (ROS): Enabling Robots with Online 3D Human Motion Tracking*" arXiv preprint arXiv:2306.17738 (2023).

M. Lorenzini, J. M. Gandarias, **L. Fortini** and A. Ajoudani *"ErgoTac-Belt: Anticipatory Vibrotactile Feedback to Lead Centre of Pressure during Walking*" 2022 RAS/EMBS IEEE 9th International Conference on Biomedical Robotics and Biomechatronics (BioRob).

M. Lorenzini, M. Lagomarsino, **L. Fortini**, S. Gholami and A. Ajoudani *"Ergonomic Human-Robot Collaboration in Industry: A Review*" 2022 Frontiers in Robotics and AI, section Human-Robot Interaction.

CONFERENCE PRESENTATION

IEEE International Conference on Humanoid Robots (Humanoids), November 28-30, 2022, Okinawa, Japan
IEEE International Conference on Robot and Human Interactive Communication (RoMan), September 29-2, 2022, Naples, Italy
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), October 25-29, 2020 - Las vegas
IEEE International Conference on Robot and Human Interactive Communication (RoMan), September 1-4, 2020, Naples,Italy
IEEE International Work Conference on Bioinspired Intelligence (IWOBI), July 3-5, 2019 - Budapest, Hungary

EXTRACURRICULAR ACTIVITIES

-   *"Extreme Sports & Engineering"* Summer School, Lecco, Italy, Summer School
-   *"XL School of National Bioengineering Group"* 2021, Bressanone, Italy, Summer School
-   "Medical Robotics and Technologies for Computer Aided Surgery Laboratory", Teaching assistant
-   *"B4i Bocconi For Innovation"* 2024, Milan, Italy