Lorenzo Gerini

✉ **Email address:** _____

📍 **Home:**

WORK EXPERIENCE

Postgraduate researcher
University of Genoa, DIBRIS [01/02/2023 – Current]

Postgraduate Researcher at the Department of Informatics, Bioengineering, Robotics, and Systems Engineering (DIBRIS) focusing on studying and implementing passive haptics techniques for Virtual Reality.

- Developed Virtual and Mixed Reality applications using Unity and Vuforia Engine, and conducted experimental sessions to record and analyze biomechanical data.
- Co-supervised a Bachelor's Thesis in Biomedical Engineering titled "Analysis of movement smoothness in Virtual and Mixed Reality Systems".
- Participated in a Computer Science internship for high school students, presenting immersive experiences to demonstrate different interaction approaches in VR, including passive haptic-based interaction and bare hands interaction.

Teacher
University of Genoa, UniGeSenior [12/01/2023 – 25/05/2023]

Teacher of the Computer Science Course (Intermediate Level) for third-age students organized by UniGeSenior. The course covered the use of common mobile and desktop operating systems (Android, iOS, Windows, macOS) and applications like Google Docs and Google Drive for documents creation and management. It also focused on teaching students about Online Security to help them recognize phishing attempts and other potential threats.

EDUCATION AND TRAINING

Master's Degree in Bioengineering
University of Genoa [2019 – 2022]

Final grade: 110/110 cum laude
Thesis: "Interacting with augmented objects in Mixed Reality: analysis of movements' smoothness from real to virtual"

Using Unity and Vuforia, I developed a Mixed Reality system that tracks in real-time the position and orientation of physical objects to visualize their virtual counterparts within an immersive environment. This setup allows users to directly interact with the physical objects while perceiving their virtual representation.

To assess the naturalness of users' hand movements in term of smoothness, I recorded their interactions within the Mixed Reality environment, comparing the results obtained in the MR environment with those from a corresponding Virtual Reality environment and a real-world scenario.

Supervisors: Prof. Manuela Chessa, Prof. Fabio Solari

Bachelor's Degree in Computer Engineering
University of Pisa [2014 – 2019]

Final grade: 100/110
Thesis: "Development of an accurate model of meteorological parameters for a railway systems simulator within the Stingray project"

The work focused on processing meteorological data in order to develop a probabilistic model for meteorological parameters. Additionally, I implemented statistical models to forecast time series data.

Supervisors: Prof. Carlo Vallati, Prof. Giuseppe Anastasi, Ing. Felicita Di Giandomenico, Ing. Giulio Masetti

PUBLICATIONS

L.Gerini, F.Solari and M.Chessa, "Passive haptic feedback for more realistic and efficient grasping movements in virtual environments", 2023 *International Conference on Extended Reality (XRSalento).* Peer-reviewed accepted paper.

L. Gerini, F. Solari and M. Chessa, "A cup of coffee in Mixed Reality: analysis of movements' smoothness from real to virtual," 2022 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct), Singapore, Singapore, 2022, pp. 566-569, doi: 10.1109/ISMAR-Adjunct57072.2022.00118.

M. Chessa, **L. Gerini** and F. Solari, "Are interaction movements smoother in Mixed Reality than in Virtual Reality?", 2022 In *PERCEPTION* (Vol. 51, pp. 21-22). 1 OLIVERS YARD, 55 CITY ROAD, LONDON EC1Y 1SP, ENGLAND: SAGE PUBLICATIONS LTD.

PROJECTS

EEG Microstates Analysis

Project work for the Master course in *Analysis of Biomedical Data and Signals*: Identification and analysis of microstates in a 64-channel EEG signal recorded under resting conditions using unsupervised learning techniques.

Trivial File Transfer Protocol (TFTP)

Project work for the Bachelor course in *Computer Networks*: Development of a file transfer application (client and server) based on the TFTP protocol, implemented in C using UDP socket.

COURSES

Crash Course in Geometric Computer Vision

Crash Course in Geometric Computer Vision held by Prof. Andrea Fusiello and organized by DIBRIS, University of Genoa. April 2023

Machine Learning

Machine Learning course held by Stanford University & DeepLearning.AI on Coursera, October 2022

Link: https://www.coursera.org/account/accomplishments/specialization/MMGERV2MAYVJ

LANGUAGE SKILLS

Mother tongue(s): **Italian**

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user