



## Lorenzo Gerini

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📍 Home: [REDACTED]

### WORK EXPERIENCE

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#### PhD Student in Computer Science

*University of Genoa, DIBRIS* [ 01/11/2023 – Current ]

PhD Student in Computer Science working on Human-Computer Interaction.

#### Postgraduate researcher

*University of Genoa, DIBRIS* [ 01/02/2023 – 31/10/2023 ]

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

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#### 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

## **LANGUAGE SKILLS**

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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*

## **PUBLICATIONS**

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### **L. Gerini, G. Delzanno, G. Guerrini, F. Solari, M. Chessa, Gamified Virtual Reality for Computational Thinking**

In Proceedings of the 2nd International Workshop on Gamification in Software Development, Verification, and Validation (Gamify '23) - *Peer-reviewed paper*

### **L. Gerini, F. Solari, M. Chessa, Passive Haptic Feedback for More Realistic and Efficient Grasping Movements in Virtual Environments.**

(2023) In: De Paolis, L.T., Arpaia, P., Sacco, M. (eds) Extended Reality. XR Salento 2023. Lecture Notes in Computer Science, vol 14218. Springer, Cham. [https://doi.org/10.1007/978-3-031-43401-3\\_1](https://doi.org/10.1007/978-3-031-43401-3_1)

### **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.

## **COURSES**

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### **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>

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