




Marianna Pizzo, PhD student








Education

- November 2022 - Present  **Ph.D. STUDENT IN COMPUTER SCIENCE**
University of Genoa, Italy
Research Topic: Interactive environments in eXtended Reality (XR).
Advisors: Professor Manuela Chessa, Professor Fabio Solari.
- September 2019 - March 2022  **MASTER'S DEGREE IN BIOENGINEERING**
University of Genoa, Italy
Thesis title: Development of a system for interaction with contextualized real objects in Mixed Reality Environments.
Supervisors: Professor Manuela Chessa, Professor Fabio Solari.
Final degree mark: 110/110 cum laude and recommendation for publication.
- September 2016 - September 2019  **BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING**
University of Genoa, Italy
Thesis title: Assessment of cybersickness in immersive Virtual Reality environments.
Supervisor: Professor Fabio Solari.
Final degree mark: 105/110
- 2011 - 2016  **SCIENTIFIC HIGH SCHOOL DIPLOMA**
Liceo Scientifico G.P. Vieusseux, Imperia, Italy
Final mark: 87/100





Research Experience

- July 2023  Attended the *International Computer Vision Summer School, from Perception to Action*, hosted by the IPLAB in Scicli (Italy).
Description: This school offered a distinguished program focused on the science and technology of enabling machines to perceive and interpret visual data. Led by world-renowned experts from academia and industry, the school delved into cutting-edge research; in particular, it focused on recognising objects, spatial layout, and shape recovery from visual data, alongside the integration of machine learning. Moreover, the school facilitated networking with fellow researchers in a collaborative environment.
- May 2023  Organized, together with the other PhD students, the 4th edition of the *Computer Science Workshop*, hosted by the DIBRIS Department of the University of Genoa.
- April 2023  Attended a three-day *Crash Course in Geometric Computer Vision* held by Professor Andrea Fusiello, from the University of Udine.





Research Experience (continued)

- March 2023  Attended the *Social XR Spring School*, hosted by the DIS Lab, at the Centrum Wiskunde & Informatica in Amsterdam (Netherlands).
Description: This multidisciplinary school allows the attendants to gain a deeper understanding of the underlying mechanics of immersive experiences, such as human perception and user-centered delivery systems. The program also targets rendering and interaction, including the development of new immersive and multi-sensory experiences. In the end, also the assessment and evaluation of human experiences are addressed.
- December 2022  Local Arrangement Chair in the *Fifth IEEE International Conference on Image Processing, Applications and Systems (IPAS'22)*.
- October 2022  Collaborated with Professor Patrizia Boccacci on the SkinSkan project, which is coordinated by INFN.
- June 2022  Attended the *Computer Science Workshop*, organized by PhD students in Computer Science of the University of Genoa, and also took part in the poster session.
- May 2022 - October 2022  Postgraduate researcher at PILab, University of Genoa, Italy.
Research Theme: Techniques for developing Mixed Reality environments.
Scientific coordinator: Professor Manuela Chessa.


Oral Presentations

- July 2023  Presented a poster during the *International Computer Vision Summer School* in Scicli (Italy).
- March 2023  Presented a poster during the *Social XR Spring School* at the Centrum Wiskunde & Informatica in Amsterdam (Netherlands).
- December 2022  Presented a publication at the the *Fifth IEEE International Image Processing, Applications and Systems Conference (IPAS'22)*.
- February 2022  Presented a poster during the on-line poster session held at the *6th International Conference on Human Computer Interaction Theory and Applications*.
- February 2021  Attended as a speaker a webinar organized by *Aliseo*, entitled "Progettiamoci il futuro: professione ingegnere clinico", to talk about the MSc program in Bioengineering.

Didactic Experiences

- October 2023 - January 2024  Teaching assistance for the Bachelor in Computer Science, University course "*Introduction to Programming*", University of Genoa.
- 2023  Co-advisor of a Bachelor's Thesis in Biomedical Engineering entitled "*A serious game for the assessment of the figural fluency*", University of Genoa.
- September 2022 - June 2023  Teaching assistance for the Bachelor in Biomedical Engineering, University course "*Programming Fundamentals*", University of Genoa.
- 2022  Co-advisor of a Bachelor's Thesis in Biomedical Engineering entitled "*Development of an Immersive Virtual Reality Environment to Execute Cognitive Exercises*", University of Genoa.

Research Publications

-  **Pizzo, M.**, Viola, E., Solari, F., Chessa, M. (2024). Evaluation of 3d reconstruction techniques for the blending of real and virtual environments. *IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*, accepted for publication.

- 2 Chessa, M., Delzanno, G., Giovannetti, D., Guerrini, G., Manini, F., Miggiano, D., **Pizzo, M.**, & Viola, E. (2023). Work-in-progress—icoding: Immersive coding in unity. *Immersive Learning Research-Academic*, 78–92.
- 3 Hussain, R., **Pizzo, M.**, Ballestin, G., Chessa, M., Solari, F. (2022). Experimental validation of photogrammetry based 3d reconstruction software. *2022 IEEE 5th International Conference on Image Processing Applications and Systems (IPAS)*, 1–6.

Skills

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| Languages | ■ | English (fluent), French (basic), Italian (native). |
| Coding | ■ | C, C++, C#, MATLAB, Simulink, Arduino, SQL, \LaTeX . |
| Software | ■ | Unity, Blender, Vuforia, MeshLab, CloudCompare, Git, Skanect, Autodesk ReCap Photo, COLMAP, Metashape, 3DF Zephyr, Meshroom, Regard3D, 3D Slicer, Microsoft Power Point, Microsoft Word, Microsoft Excel, OBS Studio. |
| Field of Expertise | ■ | Virtual/Mixed Reality (XR application development, UX paradigms, perception and interaction), Computer Vision (3D reconstruction, Tracking, Object detection), Sensor fusion. |
| Certificates | ■ | <u>Image Processing Onramp</u> , <u>MATLAB Onramp</u> . |
| Other skills | ■ | Authorization to use semi-automatic defibrillator in out-of-hospital environment, (obtained in January 2020), driving licence. |

Projects

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| November 2022 - present | ■ | Since November 2022, I have been part of the group of PhD students in the DIBRIS department of the University of Genoa, named <u>DoCS</u> , which organises workshops and seminars and helps during the orientation activities. |
| 2021 | ■ | Attended a seminar held by Professor Ekaterina Prasolova-Førland, from NTNU's IMTEllab, and I presented her a demo of my Master's thesis work. |
| 2020 | ■ | University Project (as part of the course of Motor Control and Human Performance Assessment): I realized a wearable device for elderly home monitoring: it was developed using the Arduino IDE. The device has sensors to track body temperature and heart rate, and it detects any falls of the subject. If a problem is pointed out, the device, connected to WiFi, will send an email to the family doctor. |
| 2019 | ■ | University Project (part of the Analysis of Biomedical Data and Signals course): I realized two classifiers (Bayesian Naive and SVM) capable of recognising facial expression and sex of photographed subjects. The project was realized using MATLAB. |