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

1. **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

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	Image Processing Onramp, MATLAB Onramp.
Other skills	Authorization to use semi-automatic defibrillator in out-of-hospital environment, (obtained in January 2020), driving licence.

Projects

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 *DoCS*, 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.