Silvia Villafranca

VR Developer

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🌐 *Silvia Villafranca | Portfolio*

I am a VR developer focused on the creation of immersive virtual environments and interactive simulations. I contribute to the design and development of applications with a focus on training, education and real-world simulations.

In recent years, I have worked with Unity and Blender, with expertise in 3D modeling, animation, and interactive VR applications. I optimize 3D assets and develop advanced immersive solutions, integrating high-quality visualizations and intuitive interactions to enhance user experience and engagement.

With a background in Digital Humanities, I serve as a bridge between technical and artistic disciplines, facilitating effective communication and collaboration between different parts of the development team.

Work Experience

2023–2025 **Research Fellow**, *Mixed Realities Group, Institute of Mechanical Intelligence (IIM)*, Sant'Anna School in Advanced Studies, Pisa, Italy.
Task: Development of virtual reality applications, 3D modelling and creation of Virtual Humans

2022–2023 **Internship and Master's Thesis**, *Mixed Realities Group, Institute of Mechanical Intelligence (IIM)*, Sant'Anna School in Advanced Studies, Pisa, Italy.

Research Projects

2023-2025 **VR Solution for Tele-Collaborative e-Health Applications,** *TrialsNet*.
- Worked on the TrialsNet European project, focusing on the development of 5G applications.
- Contributed to the design and development for Use Case 7 (Remote Proctoring) and Use Case 8 (Smart Ambulance) within the e-Health and Emergency domain.
- Aimed to enhance remote medical training and emergency response through VR and real-time collaboration.

2023-2024 **Virtual Reality Training Platform,** *Rete Ferroviaria Italiana (RFI)*.
- Developed a VR-based smart learning platform for remote technical staff training in the railway sector.
- Collaborated in the realisation of two maintenance scenarios: rail switch inspection and measurement, turnout maintenance with P80 switch machine.
- This project improves training efficiency and safety procedures through realistic VR simulations.

2022-2023 **Virtual Environment to support hearing rehabilitation,** *Azienda Ospedaliera Universitaria Pisana*.
- Developed as part of a master's thesis project.
- Focused on visual strategies such as lip reading, to complement traditional speech therapy programs.
- The application provides interactive exercises targeted at the learning phase, to be used under the guidance of a therapist.
- Bridges the gap in current solutions, which focus mainly on sign language, by offering an alternative rehabilitation method.

Seminars and Educational Projects

2024 **Virtual Reality and its Applications: An Immersive Journey into the Future**, *Erasmus Training – EELISA European University*, Budapest University of Technology and Economics.
- Conducted a seminar and workshop on Mixed Reality and its applications.
- Explored innovative use cases of Mixed Reality in various sectors.
- Provided practical implementations and hands-on training for participants.

2025 **Dentro il Mare**, *Istituto Comprensivo Statale "C. Cassola"*.
- Conducted training sessions as an expert instructor.
- Contributed to the development of an educational program focused on STEM, digital skills, and innovation.
- Helped improve understanding of technology through interactive learning experiences.

2025 **Oltre la realtà: esplorando i mondi virtuali**, *Scuola Primaria "Giovanni Parmini"*.
- XR introductory lecture with overview of application fields.
- Hands-on demonstration with VR headsets.

Education

2020–2023 **Master Degree in Digital Humanities**, *University of Pisa*, Pisa, Italy.
Degree: 110/110

2021 **Advanced Course in Game Design**, *University of Pisa*, Pisa, Italy.

2017–2020 **Bachelor's Degree in Humanistic Sciences for Communication**, *University of Florence*, Florence, Italy.

Technical Skills

Game Engine: Unity, Unreal Engine

3D Computer graphics software: Blender, Maya

Character Design and Animation: Character Creator 4, iClone 8

Programming Language: C#, JavaScript, Java, Python

Web: HTML, CSS, XML, Three.js

CMS OpenSource: WordPress

Front-End Frameworks: Bootstrap, React

Adobe Suite and UI/UX Tools: Photoshop, Illustrator, After Effects, Figma

Operating System: Windows, Linux

Publications

Silvia Villafranca, Chiara Evangelista, Marcello Carrozzino , Franco Tecchia. **Virtual Reality and Virtual Human in support of rehabilitation methods such as lip reading**.In *XR SALENTO - International Conference on eXtended Reality 2024*.

Pasquale Bufano, Silvia Villafranca, et al. **A new VR medical telepresence system to improve communication in remote surgical proctoring**. In *EMBC 2025 - 47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*.

Andrea Di Giglio, Silvia Villafranca, et al. **Beyond 5G Benefits on eHealth and Emergency**. In *2025 European Conference on Networks and Communications and 6G Summit: Applications, IoT, Use cases (AIU)*.

Languages

Italian | Native Language
English | Professional knowledge (B2)