

**THAT DIGITAL
ELSEWHERE,
SO IMPOSSIBLE
TO IGNORE!**

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MULTIMEDIA ARTS

VIRTUAL REALITY

AUGMENTED REALITY

INTERACTIVE ART

DIGITAL TRANSFORMATION

This essay presents the professional journey and philosophical underpinnings of a visual artist, Chiara Passa, who has been deeply engaged with multimedia arts since 1996. Educated at the Academy of Fine Arts in Rome, the artist has explored the interplay between physical and virtual spaces using Virtual and Augmented Reality as tools to probe architectural concepts and challenge the static nature of places. The work often transcends traditional artistic boundaries to create immersive, interac-

tive experiences that blend real and virtual worlds, encouraging viewers to engage actively with the artwork. Significant projects utilize augmented reality and artificial intelligence to offer dynamic and unexpected artistic encounters, reflecting on emptiness and space transformation themes. The artist's work underscores a long-term commitment to integrating cutting-edge technology with artistic expression, contributing to the ongoing discourse on the role of digital technology in the evolution of art.

I am a visual artist who has been working in the field of multimedia arts since 1996. I graduated from the Academy of Fine Arts in Rome, which at the time was also the place where my experimentation with the so-called new media began. My works analyze the subtle differences between physical and virtual space through the practice of various techniques, technologies, and devices, such as virtual reality and augmented reality which I use as an artistic medium to explore architecture as a fluid and vibrant interface. I use immersive reality to question the static nature of the place, exploring the liminal duality between tangible and virtual site, obtaining in art a bizarre oscillation between spaces that generates new perceptual levels of reality around the spectators.

My artistic research fits perfectly into the renaissance of the immersive art that began around the mid-nineties. In fact, at the end of the nineties I designed video installations through virtual and augmented reality with an immersive effect, using the media of the time which were based on whole-wall Beamer projections, such as the Cave system (Cave Automatic Virtual Environment).

Inspired by Marcos Novak's writings *Liquid Architectures in Cyberspace*, after the mid-nineties, I started using the term super-place to characterize the dynamic and self-performing places in my virtual works, which appeared animated by an intrinsic metaphysics to transform in front of the spectator into something always different and unexpected. An example of a super-place is my recent interactive wall-drawing *Null Void 0*, which comes alive thanks to an application of augmented reality and artificial intelligence. The artwork explores the theme of emptiness and the related artistic-creative potential associated with it. *Null Void 0* is a sort of impossible puzzle in which the viewer is called to reconstruct the entire shape of the wall-drawing made up of more than one hundred pieces. By touching the screen, the user generates the parts of the solids that design the 3D drawing. Each piece (which can be scaled, translated, and rotated in real space) emits an artificial intelligence sentence (randomly



Fig. 1 Chiara Passa, 2017-23.
Null Void O.

generated) that speculates on the machine learning practice inherent to the object recognition. In fact, most of the time the artificial intelligence deliberately does not recognize the part of the wall-drawing as a portion of itself, causing unexpected shifts in meaning that question the shape of the artwork. *Null Void O* invites the public to cross the lively and unexpected border between art and game that viewers by playing create between real and virtual places.

I have been working with immersive technologies for a long time, since these artistic experiments were far from the art system and therefore referred only to very few artists who had the opportunity to experience virtual reality in the nineties, through university laboratories and specific research centers. We had to wait about twenty years to see how these technological experiences in digital art are now recon-

Fig. 2 Chiara Passa, 2017.
Earth Spiral.



sidered by the art system and become the subject of numerous international studies and publications. At the end of the nineties, I developed an artistic language using the so-called new media and through the immersive technologies which currently constitute the main tools of my artistic expression. I have therefore focused my artistic research and modus operandi around virtual reality to design an artistic fruition open to multiple perceptual levels, which actively introduces the public into the vibrant context of the work of art.

Metaverse is definitely the word of the moment linked to a certain hype which, as always, will fade away from fashion. However, my artistic research has always evolved through virtual platforms and immersive technologies ignoring conceptual obsolescence and temporary hype. I would define metaverse as that sort of digital elsewhere –currently impossible to ignore– which for years now has been immersing us in online and offline multidimensional spaces, more or less complex. The metaverse has been an ongoing project since the nineties when the futurist engineer Mark Pesce created the first virtual world for the web (*Atlantis*) in the form of a 3D chat. Mark Pesce obviously also invented the VRML programming language that carried the 3D to the web through the *Cosmo Player* browser, with which



Fig. 3 Chiara Passa, 2023.
Abstract Space.

the user interacted and moved into the metaverse of the time. Later, many other virtual worlds arise, including *Second Life*, and the more recent *Mozilla Hubs*.

Within my virtual worlds the viewer can establish an intimate dimension with the artwork that can penetrate to the point of origin. The user therefore hyper-sees the work between-spaces, in that dimension suspended between the real and the intangible where everything is possible in art.

I use immersive reality to design liminal and dynamic virtual places that intersect with real space to expand the perceptive limits beyond the idea of the material body. Central to my artistic research is the theme of the involvement of the spectator who, for some time now, is no longer looking for a purely aesthetic experience, but knows that must transform into a dynamic *spett-attore* (a term already used by Augusto Boal meaning lively spectator) aware of being an active part of the process of the artwork, which is experienced through new paradigms built from unpredictable synesthetic combinations. To create new opportunities of fruition, I take art to

virtual and unexplored places such as, for example, the previously avantgardes like futurism, street art, net art, and others have done. This is precisely how non-places can become artistic spaces.

Virtual reality and augmented reality, combined with artificial intelligence, are necessary tools that I use on a wide scale to create illusory declinations of the real space where digital echoes come to life for expanding the field of sensory intuition. The theme of the self-performative space has always been very important in my artistic research since the beginning. In fact, already in 1997, I began to develop a deep interest in architectural space and how it can be transformed within the computer language. Since the creation of the *Live Architectures series*, immersive artworks of the late nineties (CAVE type), I came to fully use virtual and augmented reality when they were finally commercialized. I manipulate augmented reality to outward and animate the real space and virtual reality to explore the space from the inside and find its hidden parts. Through immersive technologies, I design mixed reality installations that connect physical and digital space with the aim of generating curious overlaps and intersections between them, often producing in the viewers the sensation to feel suspended. I use augmented reality to stretch space beyond its limit and virtual reality to penetrate it until its most recondite place of origin, achieving in situ a bizarre oscillation between virtual and real spaces. In my artworks, emerging spaces are interconnected: the imaginary space arranged by virtual effects and the spatial arrangement of the place itself. Spectators are unsettled by this double relationship, having the sensation of remaining suspended between inside and outside. The space opens up to include several dimensions, with time being just one of many that aid people's vision. Spectators walk and move as if they were in so-called 'reality', but classical space is bent, expanded, and pierced: the place itself becomes an immersive reality/non-reality to be explored. Multiplication is also created by structures enclosing virtual reality, such as

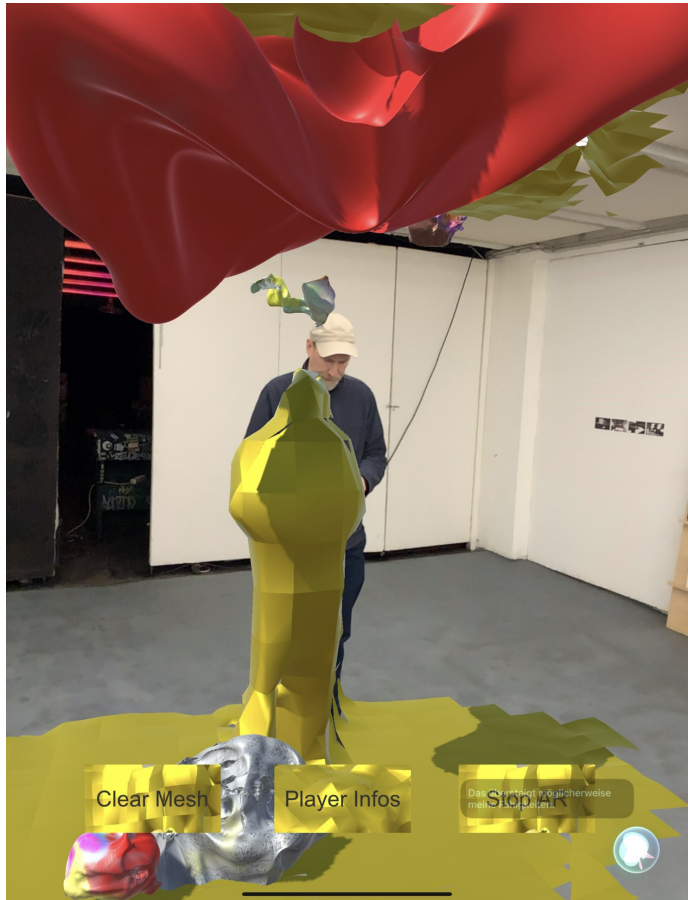
Google Cardboard geometric figures or augmented reality frescoes, further increasing multidimensionality.

For me, virtual reality has also meant getting in touch with the landscape in a concrete way, creating site-specific artworks such as, for example, *Earth Spiral*; a virtual reality installation consisting of twenty *Google Cardboards* and related smartphones that reveal twenty different immersive animations to be seen underground where the 3D viewers are well embedded. The 360° animations show to the viewers a cyclical and transformed nature through the digital manipulation of specially selected maps from *Google Earth*. The animated maps are drawn by wandering super objects and micro/macro dimensions in continuous transformation that often change in front of the users to put them confronting with a synthetic and post-organic nature.

Also in the recent artwork *Abstract Space*, the idea of a performative space is clearly evident where an imaginary and minimalist environment I created using GPT3 (Generative Pre-trained Transformer) artificial intelligence models and some GAN (Generative Adversarial Network), casually adds up, or subtract parts in order to divide and intersect with the real space. The spectator immersed in this new site experiences a sense of absence by observing the birth of a new place in constant evolution and drawn by volumes of shadow which extrude the outlines of the primitives along the direction of the light source.

Gold Environment is an artwork in the form of an augmented reality application using pre-trained artificial intelligence algorithms to recognize and interpret the real space for creating specific meshes that cover the place turning it into gold. From the meshes chunks, randomly grow up—from the walls, ceiling, and floor—a series of nomadic sculptures that move and continue growing when touched. The spectators, via tablets and smartphones, are invited to touch the screen also for generating sound effects that invite them to look beyond the real surface; where artificial intelligence incredibly transforms everything into gold and generates—all around the

Fig. 4 Chiara Passa, 2022.
Gold Environment.



viewer—a new object-oriented reality in constantly transformation. *Gold Environment* shakes up the ontological vision of the place by challenging human perception.

The dynamic space in my virtual artwork *Still Life*, transforms the past into the present and the future, redefining the concept of Cultural Heritage. Heritage that is no longer made up only of aesthetic values, but also and above all is made of shared experiential, historical and artistic values. *Still Life* reinvents aesthetics and cultural identity through virtual reality, reflecting on landscapes, paintings and history, to overthrow the space in an immersive and interactive dimension, where the spectator, walking around and

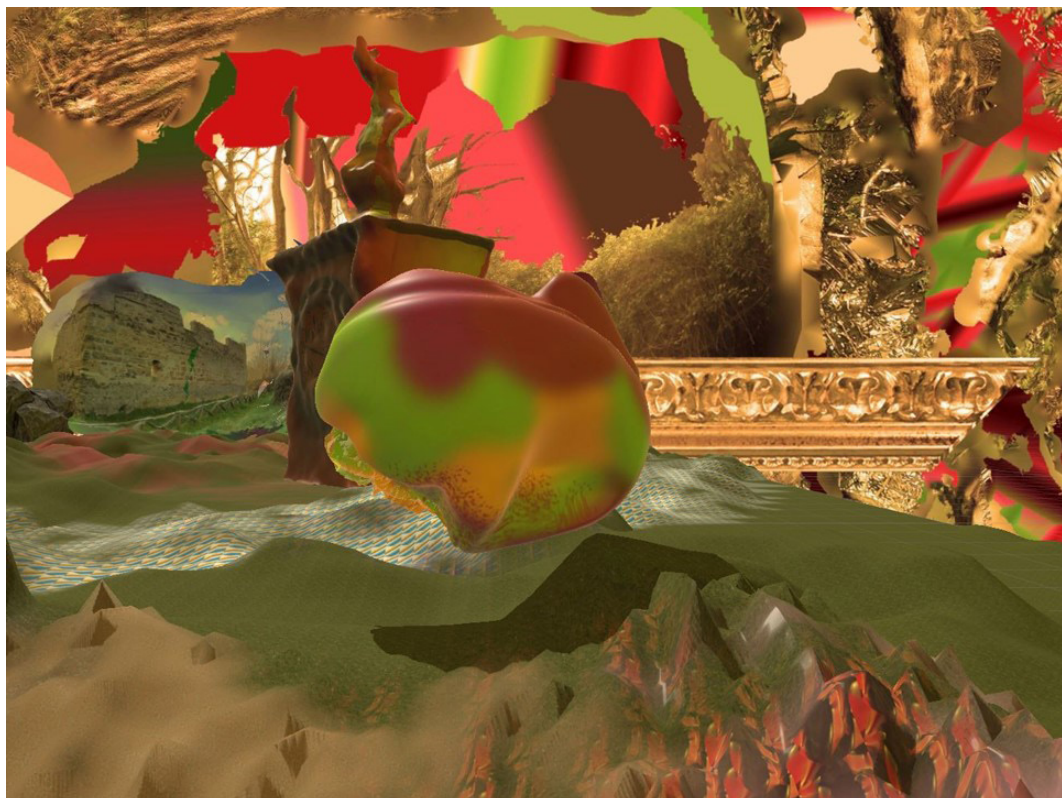


Fig. 5 Chiara Passa, 2019-23.
Still Life (sepia-gold version).

having different experiences through the artwork with the objects, recovers cultural information by conversing in a cognitive way with the history of art. For the creation of the artwork, I designed the virtual environments using techniques such as photogrammetry and 3D scanning. Then, I worked on color mapping and texture manipulation. The result is a still life, an interactive three-dimensional painting, where objects can be unexpectedly deformed and animated. *Still Life* is finally capable of realizing (thanks to immersive reality) what the Futurist manifesto said more than a century ago: “We will bring the viewer to the center of the painting” (Boccioni et al., 1910, p. 2).

During the past pandemic, the discourse on the Metaverse exploded again, also because it was the only livable space during the lockdown. Nowadays the online and offline

exhibition possibilities have expanded –just like our reality in the metaverse –to the point of being able to build immersive shows in virtual, augmented, and mixed reality that can be enjoyed simply through a mobile browser. Technology makes it possible to overcome boundaries by imagining presence in an elastic dimension suspended between the real and the intangible, where it is possible to coexist, make art and interact on a wide-ranging basis. The metaverse must be perceived and understood as a sort of ‘other’ space, as a means to live artistic experiences open to multiple levels: emotional, physical, intellectual and sensorial. The metaverse for art is a space for construction and creativity, as well as an opportunity to design –using immersive technologies– something that does not exist. In fact, the beauty of art is that there are no limits, just like in virtual worlds. I believe that in the future we will be more and more immersed and that the 3D viewer, augmented glasses, will most likely be our next psychotechnology (to use De Kerckhove words), impossible not to wear!

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