Illusion of Time:
An Exploration of Nonsequential Time Through Hybrid Art Practice

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in Interdisciplinary Master's in Art, Media, and Design

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Illusion of Time: An Exploration of Nonsequential Time Through Hybrid Art Practice

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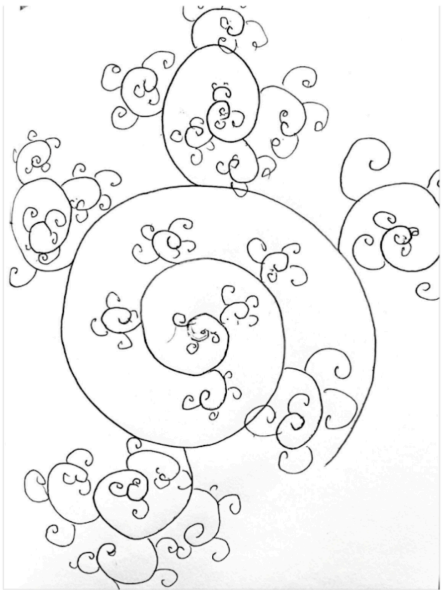


一花一世界

一叶一菩提

One flower, one world

One leaf, one bodha

见天地

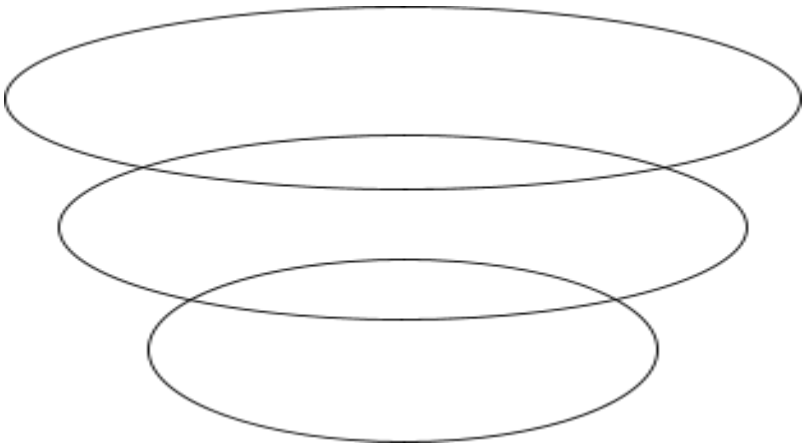
见众生

见自己

To witness all multitude (sky and earth),

To behold all beings,

To return to the self



Abstract

Illusion of Time is a research-creation project that explores dimensional and nonsequential conceptions of time through hybrid art practice by combining physical and digital media. By spatializing temporal concepts across both virtual and physical environments, this research investigates how art can visualize and embody the experience of nonsequential time. Drawing inspiration from theoretical physics, such as three-dimensional time (Kletetschka, 2025) and the holographic principle (Susskind, 2008), this exploration interprets abstract theories of time into artistic practice. The three-dimension time theory proposes that time extends beyond a single linear dimension, while the holographic principle proposes that each part can reflect the whole. These theories inspire this research to consider time as an interconnected whole rather than linear sequence.

Working across physical materials (e.g. glass) and digital media (e.g. extended reality), the research examines how hybrid spaces can reinterpret the concept of time through material and spatial exploration. In my approach virtual space, in this case extended reality and game engines, function as a timeless and immaterial environment for documenting, preserving, and reconstructing physical spaces and artworks. These digital traces document moments of lived experience that can be revisited, questioning conventional notion of linear time.

Guided by a research-through-creation approach, *Illusion of Time* generates knowledge through material exploration and experimentation. I propose that meaning can be generated through the process of making itself and that immersive art is used as a method and means to interpret, document and visualize nonlinear space and time.

Keywords: Non-sequential Time, Research-Creation, Hybrid Space, Hybrid Art, XR

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Last but not least, I would like to leave space here for the unknown

— to acknowledge all that cannot be named, yet has quietly shaped this process.

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Artist Statement

By working through a range of material and virtual practices, my art practice is a meditation on time as an interconnected, multidimensional field. Drawing inspiration from concepts in theoretical physics, including three-dimensional time (Kletetschka, 2025), the holographic principle (Susskind, 2008), and the idea that past, present, and future coexist, I explore time beyond its conventional linear understanding. Through glass and virtual spaces, I move between material presence and immaterial infinity, capturing moments while metaphorically dissolving linear time.

“The distinction between the past, present, and future is only a stubbornly persistent illusion.”

—- Albert Einstein

My practice interprets abstract ideas to lived experiences across modalities. I explore the concept that when time is conceptualized as three-dimensional 'everything'[1] becomes hypothetically connected. Art becomes a way of exploring and visualizing such abstract concepts.

By working across glass, photogrammetry, and extended reality (XR)[2] I explore how different media shape our experience of time. Glassblowing demands complete presence; to me, it is a meditation on the present through the immediacy and fluidity of the material. The process is highly time-sensitive, working with glass becomes a way of seemingly capturing

[1] By ‘everything’ I mean space, memory, perception, and even dimensions.
[2] XR (Extended reality) is an umbrella term for virtual reality (VR), augmented reality (AR), and mixed reality (MR).

and preserving moments. Existing in transition between liquid and solid[3], molten glass offers me another lens to reflect on melting, transforming, and crystallizing materiality—-as a method in preserving and shaping time. This works in relation to my digital practice including photogrammetry (for capture), virtual and augmented reality (for display), whose state is timelessly interchangeable and immaterial. My interest in virtual reality is as a medium to document and share the material (3D scanned models) and immaterial objects.

Drawing on a series of conceptual, practical and expressive approaches to research-through-creation, each process and piece generated meanings through the making.

[3] Physicists speak about this puzzling material property of glass as a "phase that looks like both a liquid and a solid at the same time: the glass phase. On the outside the material behaves like a solid, but inside it appears as disorderly as a liquid. Nonetheless, as far as physics is concerned, a material in the glass phase is a solid." (Eindhoven University of Technology, n.d.).

Immersive Art as a Healing Space

The COVID-19 pandemic with its psychological aftermath and the ongoing global uncertainty made me aware of our need for healing and moments of stillness. The process of making art to me is a form of therapy, and I became increasingly interested in creating spaces that invite people to slow down, reconnect with themselves, and simply be present. Inspired by Bessel van der Kolk's (2014) emphasis on safety, somatic awareness and the body in healing, my work has the intent to explore how immersive art can foster presence and encourage emotional grounding.

This interest informs my material exploration across performance, virtual reality, and glass. A sound healing performance was offered at the opening of my exhibition and meant to encourage audiences to pause and become present. The immersive digital environment invites slow, contemplative movement through nonlinear space; and the glass installation combines with light to create sensory experience. Brought together these works form an exploration of nonsequential time through hybrid art with the intent to create a contemporary sanctuary—gently holding a space and offering moments of calmness, contemplation and self-awareness.

1. Introduction

Time is often being perceived as a linear progression from past to present to future. However, our lived experience rarely unfolds so neatly in this order. It is not always easy to stay present as the mind constantly wanders around to the past or the future. Memories resurface unexpectedly, emotions return in cycles, feelings we experienced many years ago come back unpredictably. The significant moments in life continue to shape the present long after they have existed. These experiences made me realize that time is not always experienced by simply linear progression, but is lived through memories and perceptions. *Illusion of Time* emerges from such realization, exploring how hybrid art practice can offer alternative ways of perceiving and experiencing nonsequential time. This chapter discusses my research context, personal motivations, and conceptual foundations that inform the development of this project.

1.1 Research Context

Illusion of Time: An Exploration of Nonsequential Time Through Hybrid Art Practice is a research-creation project that explores how hybrid artistic practice can visualize and embody nonsequential time through an immersive environment. I spatialize time by giving it a form through digital and physical mediums. By combining extended reality, installation, sculpture, performance, video, and glass, this project investigates how different mediums converge to create a hybrid space to experience time that moves beyond conventional linear understandings.

The central research question asks:

How can hybrid art practice translate the concept of nonsequential time through embodied and immersive experience?

Rather than understanding time as a fixed progression of past, present, and future, my thesis explores time as layered, spiraling, fractal, and continuously unfolding. It is an artistic interpretation of how I perceive time when it is no longer linear: reality unfolds itself in an inverted spiral. An immersive environment offers an alternative perception of time in space, and invites viewers to meditate on the concept of time as spatialized and three-dimensional. Digital space serves as the primary site of this immaterial exploration, where participants travel through liminal space that blur the boundaries, merging memory, perception and imagination. Drawing inspiration from theoretical physics such as the three-dimensional time theory and the holographic principle, these ideas are approached as conceptual frameworks for artistic exploration rathan than scientific claims. Through research-creation, abstract theories become experimental environments that invite audiences to perceive time through movement, space, and interaction.

Hybrid art practice forms the foundation of this investigation. Rather than seeing physical and digital media as separate media, I approach them as interconnected components in this exploration. Sculpture, performance, extended reality, painting, installation, and glass function collectively as an assemblage, where meaning is created through the relationships between material, technologies, bodies, and spaces.

This idea formed during and developed after the COVID-19 pandemic, the project is intended to create spaces for contemplation in the midst of uncertainties that we are continuously experiencing. While this research focuses on an artistic interpretation of nonsequential time, my broader intention is to create immersive environments that hold

space for people to slow down and stay in the present. A space for visitors to move gently, pause, and experience time in a meditative and expansive way.

My thesis adopts a research-creation methodology in which making becomes a form of inquiry. Through iterative material experimentation and spatial design, Illusion of Time investigates how hybrid art practice can transform philosophical ideas into lived experiences. Ultimately, my project argues that immersive environments can offer new ways of experiencing nonsequential time through embodied perception rather than representation alone.

1.2 Motivation

While the research is informed by philosophical and theoretical perspectives on time, it is equally rooted in personal experience. This section reflects on how my lived experience motivated the project and explains how the process of art making helped me channel my thoughts with the intention to hold space for others.

This research emerged from my own experience of navigating life during the COVID-19 pandemic and the years that followed. The past few years have unfolded with a sense of chaos and uncertainty, leaving many people carrying the weight of collective distress. Like many, I found myself overwhelmed by constant exposure to unsettling global news, which greatly impacted my daily mental well-being. In response, I turned to art as a way of coping and rechanneling energy—a practice that allowed me to escape reality when the world felt unsteady.

The act of making offers moments of refuge, while the collective body of work becomes spaces that I want to share with others. I hope to create sanctuaries and healing spaces through therapeutic encounters with art. Holding space for people in need of help and hope: to pause, to ease, to heal, and to restore self-awareness. My intention is to find a solution or at least a direction in making people feel safe, being protected, and cared for. Rather than proposing art as therapy, this research suggests how immersive environments might encourage viewers to pause, reflect and contemplate. The project ultimately asks how immersive art might help us navigate uncertainty, find grounding, and imagine more spacious ways of being in the world.

While documenting my artistic journey and preserving these experiences within digital space, I invite viewers into an interactive and immersive environment where they can encounter my work and inner-world firsthand, creating their own self-reflection.

1.3 Hybrid Art Practice and Nonsequential Time

The concept of nonsequential time in my thesis is explored through a hybrid art practice that combines physical and digital media. Material exploration has been a crucial aspect of my artistic inquiry, rather than favouring one medium over another, all contribute to a different way of experiencing time.

Throughout this research, I became increasingly interested in the dynamic relationship between physical and virtual space. Physical material provides a tangible engagement with the body, while virtual spaces enable spatial exploration not limited by

material constraints. Bringing these two forms of making together, I created a hybrid artistic practice that I propose can actualize an abstract concept of time.

Virtual space is significant in my practice as it offers an immersive environment to be fully experienced rather than just observed. Through gameplay and physical interaction, participants are able to immerse themselves in an artistic interpretation of nonsequential time. Rather than following a fixed objective, the virtual environment encourages wandering and allows participants to construct their own spatial experience.

I interpret nonsequential time as spiraling forward branching fractal pathways. Here, I imagine time as being spatialized and the space is layered with memories and objects. These metaphors suggest that time is not experienced through chronological progression, but an ever changing process being shaped by perception and interaction. Through hybrid art practice, *Illusion of Time* offers an alternative perspective of how time can be imagined and experienced.

2. Methodology

This project adopts a research-creation methodology, drawing specifically from Chapman and Sawchuk's framework, which articulates research-creation as encompassing research-for-creation, research-through-creation, research-from-creation, and creative presentations of research (Chapman and Sawchuk, 2012, p.45). Within this structure, my approach is primarily situated in research-for-creation and research-through-creation, where knowledge is generated through the process of making, reflection, and material experimental explorations. Research-for-creation provides the theoretical and conceptual foundation through engaging with literature, while research-through-creation positions artistic practice as a primary inquiry, where knowledge is generated through the process of making.

Rather than following a linear path from theory to artwork, these two paths constantly inform one another. Theoretical research inspires contexts to the creative experimentation, while material exploration discovers new meanings in the process. This makes the exploration not just the outcome of the research but also a means of producing knowledge.

2.1 Rhizomatic System

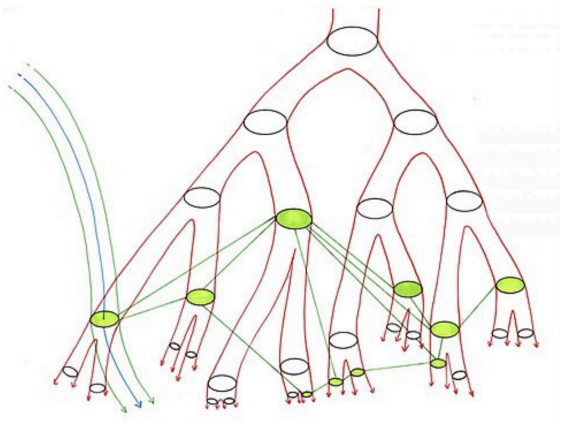


Figure 2.1. *Illustration of the rhizome in opposition to arborescence.* From *Drawing Thousand Plateaus: Introduction* (HappySleepy.com, 2006).

Conceptually, my approach resonates with Gilles Deleuze and Félix Guattari's concept of the rhizome[4]. Rather than proceeding linearly from one beginning toward a conclusion, the research unfolds as a rhizomatic assemblage, as ideas, materials, theories, and experiments connect laterally and expand outward in multiple directions. This structure is non-hierarchical, branches outward and operates through interconnection.

Manta (2018) suggests, artistic creativity emerges through networked relationships rather than isolated moments of invention, while Hickey-Moody (2015) position practice-as-research as an inherently rhizomatic process of continual becoming. These perspectives provide an understanding of the research developed in an interconnected and evolving network rather than a linear progression.

[4] A rhizome is a philosophical concept developed by Gilles Deleuze and Félix Guattari, who borrowed the term from botany. In botany, a rhizome is an underground stem, such as ginger or bamboo, that grows horizontally, spreading roots and shoots in multiple directions. The rhizome in philosophy represents a way of thinking that is nonlinear, non-hierarchial, interconnected and open-ended, in which ideas develop through multiple pathways rather than a single linear progression (Deleuze & Guattari, 1987).

2.2 Spiractal Model

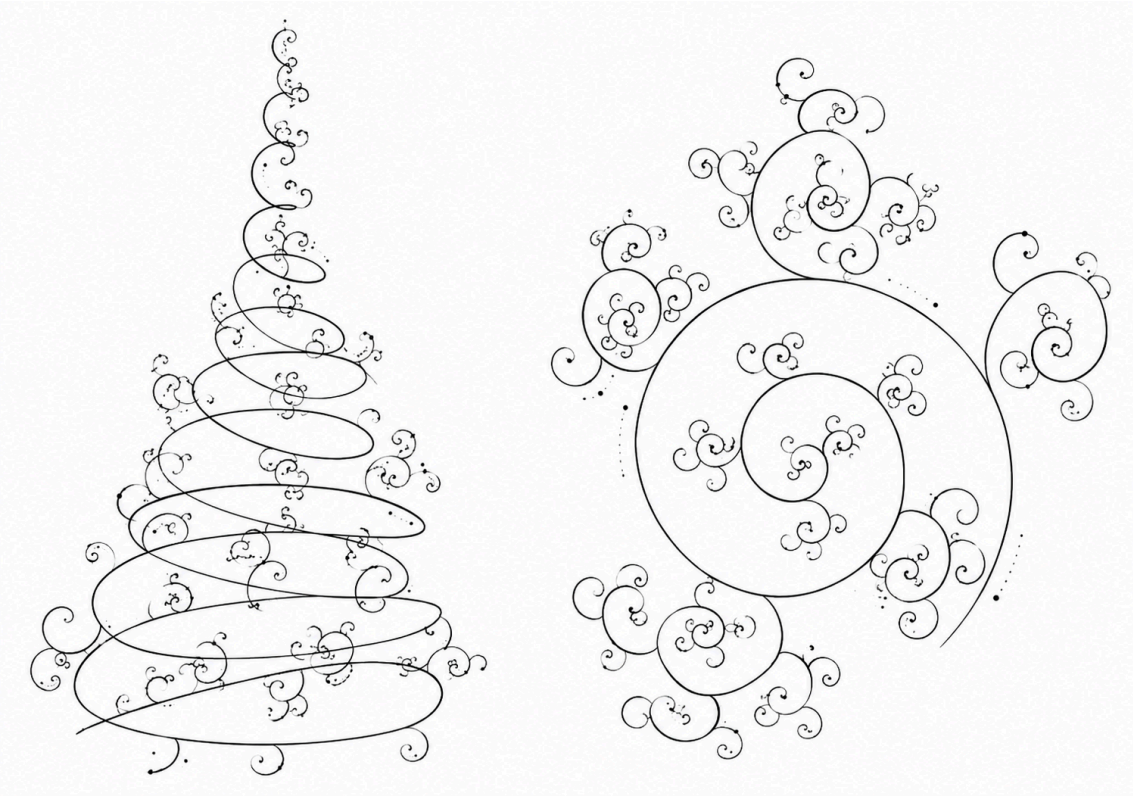


Figure 2.2. Conceptual illustrations of Spiractal Model.

Conceptualizing and building upon the rhizomatic framework, I developed what I refer to as the **Spiractal Model** (Figure 2.2) to visualize the evolution of my research process. Spiractal is a word that combines ‘spiral’ and ‘fractal’, as these are the structures that consist of the system. It is a structural system with continuous spiralling forward movement, and branching out in fractals. While the rhizome provides the philosophical foundation, the Spiractal Model functions both as the methodological model of my exploration process as well as the conceptual structure of how I spatialize nonsequential time.

The Spiractal is my attempt at spatializing time—to give form to a temporal concept of nonlinearity. A visual conceptualization of how time can move continuously, multidirectional, multidimensional, endlessly unfolding and transforming. Spirals act as my interpretation of building upon linear movement. As the rhizome splits diverge my understanding of binary, the main spiral in Spiractual represents our perceived linear path.

As the side tracks radiate out and spiral while fracturing, Spiractual three-dimensionally conceptualizes the notion of cycling outward then folding back upon itself as a representation of three-dimensional movement rather than single axis linear movement.

Figure 2.3. illustrates my material exploration process within my Spiractal Model. The main spiral represents my path of artistic exploration, progressing from the outer edge to the centre. Branching from this main spiral, each smaller spiral represents an exploration in a different medium and serves as a feedback loop into my core artistic journey. These branches move outward through material experimentation and return inward through reflection, allowing each exploration to influence the direction of the next.

Starting from the first spiral along the path, the VR sculpture introduces me to the concept of multidirectionality as a way to express my interest in nonsequential time. Moving into a more tangible practice, I explored bronze sculpture, to represent the intangible lens of digital reality. The investigation into bronze informed future work in material practice, followed by paper installation that examined the concept of dimensionality. Then glassblowing, where I explored the relationship between material, time, and heat, observing the tension of form in reaction to momentum and gravity. The process culminated in the design of a game environment as the final exploration within the spiral, synthesizing the journey of exploration itself into a nonlinear spatial experience.

The material exploration process is discussed in greater detail in **Chapter 5: Process of Material Exploration**.

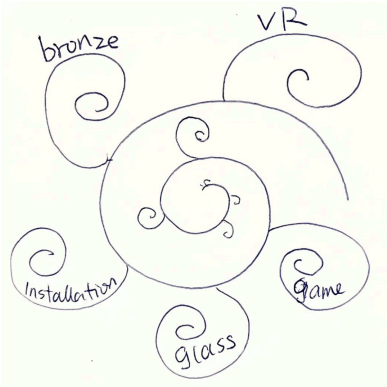


Figure 2.3. Spiractal Model implemented through the material exploration process.

My process of discovery is deeply informed by my seeking journey itself. My methods are iterative and recursive, evolving through a cyclical process of material investigation, making and reflecting. Physical works are scanned and translated into digital environments; virtual forms are re-materialized at altered scales. Experimenting with different forms and media has positioned the project as a hybrid practice. My art practice does not illustrate or demonstrate a theory, but instead is a means of generating knowledge, particularly in addressing abstract concepts and ideas.

3. Literature & Contextual Review

This thesis draws upon interdisciplinary research spanning theoretical physics, installation art, game studies, and research-creation. Rather than treating these disciplines as individual separate fields, they are understood as interconnected frameworks in my artistic practice in spatializing the concept of time. This chapter examines theories of temporality, digital space, hybrid artistic practice, and assemblage to establish the conceptual and methodological[5] foundation of this research-creation project. Together, these perspectives cohesively support the development of an immersive installation that invites viewers to experience time as a nonlinear sequence, as well as of a spatial and affective phenomenon.

3.1 Time, Space, and Nonlinear Reality

In the West, conventional understandings of time often view it as a linear progression from the past to present to future. However, recent developments in theoretical physics and philosophy (amongst other fields) challenge this assumption by proposing an alternative concept of time. Rather than being understood as chronological progression, time can be understood as relational and multidimensional.

Albert Einstein famously wrote that “the distinction between past, present and future is only a stubbornly persistent illusion" (Einstein, 1979, p.39). Although expressed within the

[5] Discussed in Chapter 2. Methodology.

context of relativity, this statement has become an important philosophical reference in questioning the linear concept of time. The block universe (or eternalism) by Einstein proposed this very concept: that the past, present, and future all exist simultaneously. To explain in a more understandable analogy, Brian Greene uses a loaf of bread as an example (Greene, 2004). Slicing it horizontally, each slice represents a specific time chronologically, yesterday, today, and tomorrow. If we slice the bread vertically, it cuts through every moment in time simultaneously, making the past, present, and future exist all at once.

Three-dimensional time is a theoretical model recently proposed by physicist Gunther Kletetschka in 2025, it suggests that time is like space which has directions, and similar to the spatial concept X, Y, and Z, axes. These axes form dimensions and spatialize time. This theory suggests that moving forward represents the familiar experience of chronological time while additional dimensions allow for multiple coexisting possibilities and transitions between different outcomes. Although this theory remains speculative and is currently undergoing scientific scrutiny, it offers a compelling conceptual framework for artistic exploration. Rather than attempting to illustrate theoretical physics literally, this research is inspired by three-dimensional time as a speculative lens through which nonsequential time can be imagined and visualized within immersive environments.

In a similar note, the holographic principle, articulated by theoretical physicist Leonard Susskind, proposes that higher-dimensional reality may be encoded on lower-dimensional surfaces (Susskind, 2008). Susskind's concepts challenge traditional assumptions about dimensionality and the nature of reality. These concepts offer a metaphor for my own research using immersive installation to propose that perceived realit(ies) may emerge from structures beyond our sensory experiences. This concept inspired the virtual environments developed throughout this project, where virtual spaces become projections of invisible relationships between time, memory, and perception.

It is important to distinguish Susskind's holographic principle in theoretical physics from optical holography, as they are not the same. Susskind's theory functions in this research as a conceptual inspiration for thinking about dimensionality and information, while optical holography provides a perceptual and artistic language through which images appear spatially layered. My use of Susskind's "holographic" principle is interpretive and metaphorical rather than a literal application of theoretical physics and not related to optical holography.

Fractal geometry is often found in nature and it provides another conceptual model for understanding nonsequential time. By definition, fractal is a never ending pattern that repeats across different scales. Through infinitely repeating structures, fractals are created by repeating a simple process over and over in an ongoing feedback loop.

In my research, I draw on the concepts of fractal geometry to give form to my understanding of nonsequential time. Fractal resonates metaphorically with our experience throughout a lifetime, where recurring events and cycles that we encounter on a daily basis evolve rather than simply repeat. I interpreted life as unfolding through familiar patterns while remaining open to change and growth. Put in a simpler example, we all experience the same twenty-four hours each day. The overall structure of a day remains familiar, even with the same routine but no two days are ever exactly the same. Throughout this thesis, fractals become both visual language and spatial metaphor for the continuous unfolding experience of time.

Taken together, these theories are not deployed as scientific evidence but as conceptual frameworks that expand the possibility for this artistic interpretation and representation of time beyond chronological progression. They provide the foundation for translating abstract ideas of nonsequential time into an immersive artistic environment.

Feminist materialism offers a useful bridge between these theoretical concepts and my subjective experience of making. For example, Mondloch (2018) argues that new media art does not simply illustrate theory, but can generate knowledge through embodied relationships among bodies, technologies, space, and matter. This perspective helps clarify my approach: the scientific theories discussed above function as conceptual inspiration, while their meanings are transformed through my own material and spatial research-through-creation.

3.2 Hybrid Practice and Assemblage

This research adopts hybrid practice as both artistic methodology and conceptual framework. This research-creation moves beyond medium-specific practice, integrating physical materials, digital technologies, performance and installation to interconnect practices of making. The research itself serves as my artistic material and immaterial exploration. Rather than focusing purely on traditional craft and emerging technologies, hybrid practice brings them together as a collaborative process in generating new forms of knowledge and experience.

Research on hybrid artistic practice argues that digital technologies should not replace handcrafted processes but instead extend and transform them through dialogue. Zoran and Buechley's concept of Hybrid Re-Assemblage (Zoran & Buechley, 2013) proposes that computational design and traditional craftsmanship became mutually generative rather than mutually exclusive. Contemporary discussions of hybrid art describe creative practice as existing between physical and virtual realities, where material and digital

processes continuously influence one another. The digital realm becomes not separate from the physical but another material environment through which embodied experience can be extended and reconfigured.

This approach is closely reflected in my methods throughout this thesis. My interest lies in combining hybrid art to create a hybrid space/reality, blending physical and virtual spaces. One example can be seen in my approach is bringing 3D scanned physical spaces and art pieces into virtual space in *LIMINA*. My scope of exploration includes various physical and virtual materials: bronze sculpture, video game, painting, glass installation, video, projection mapping, performance, virtual reality and augmented reality. Digital environments are not treated as separate works but as interconnected components of immersive installation. Physical and virtual spaces continually communicate with each other, through my process of building them, allowing material and immaterial experiences to coexist in an exploration of the concept of time.

Assemblage theory further expands this understanding. Deleuze and Guattari (1987) describe assemblages as open systems composed of heterogeneous elements whose meaning emerge through relationships rather than fixed identities. Assemblages can be conceived of as dynamic organizations that continually evolve through changing interactions within their components, as characterized by Manuel DeLanda (2006).

My practice and exhibition function as an assemblage, as different material and immaterial explorations all added together in contributing to my overall exploration of nonsequential time. They simultaneously provide meaning cohesively and also individually. Rather than existing as isolated objects, the artworks operate collectively as a network of material, spatial, and temporal relationships.

Assemblage also provides a conceptual model for nonsequential time. Just as assemblages resist conventional chronological organization of becoming, this research understands temporality as layered, relational, and constantly unfolding. My exhibition is both a material assemblage and a temporal assemblage.

3.3 Infinite Play and Open-Ended Experience

Drawing from James P. Carse's (1986) distinction between finite and infinite games, whereas finite games are played to achieve victory, infinite games exist to sustain continued participation. I think of life not as a finite game to be won, but as an infinite one played for the purpose of continuing the play. Everyone reaches the same ending — death, but what matters is the playing itself, the act of seeking, the ongoing process of becoming. Like cultures, meanings are not fixed, they are created and fluid. Each decision and detour makes our lived experiences unique.

This principle directly informs the design of the digital space in LIMINA. No two participants will ever have the same journey, even if they have the same starting point. Rather than presenting predefined linear progression, players navigate an evolving landscape determined by movement and spontaneous decisions. Each experience unfolds differently, mirroring how life itself unfolds as unpredictably as the nonlinear nature of lived experience itself.

My emphasis on infinite play aligns with the broader aims of this thesis. Time is understood not as a destination but as an unfolding process and continuous becoming. Meaning is discovered through active exploration rather than through fixed outcomes.

3.4 Contextual Review: Artistic Reference

The following artists provide important contextual reference for this research through their exploration of immersive installation, embodied perception and contemplative experiences. Even though each has their own unique perspectives, together they demonstrate how contemporary artistic practice can translate ideas and transform space into an experimental medium that reshape audiences' perception of time, space, and presence. Their works inspired both conceptual development and material realization of this thesis.

This contextual review is intentionally selective rather than comprehensive. I chose works that I encountered directly or that became particularly relevant during the development of my practice, because my experience of these works formed part of my research-through-creation process.

Charles Campbell — *How Many Colours Has the Sea* (2024)

Figure 3.1. Charles Campbell, *How Many Colours Has the Sea*, 2024. Installation view at The Power Plant Contemporary Art Gallery as part of the Toronto Biennial of Art.

Charles Campbell's installation at The Power Plant explores the sea as a site of memory, trauma, and transformation. The show combined multiple mediums in creating an immersive environment: layered imagery, sculptural installation and guided meditation. Campbell constructs a space that encourages viewers to move slowly while engaging emotionally with its historical narratives.

Addressing the collective and individual historical and continuous trauma of The Middle Passage and enslavement, the work inspires me to consider how hybrid space can function as an environment for healing, and how art can hold space for emotional processing and contemplation.

This multi-sensory space makes meaning emerge through embodied experience. His work demonstrates how immersive installations can create atmospheres of contemplation and healing, this approach resonates with my interest in creating immersive spaces that invite viewers to slow down, become present and experience nonlinear temporality through sensory engagement.

Xinzhou Zha*ng* —— *Mindscapes (2024)*

Figure 3.2. Xinzhou Zhang, *Mindscapes* (2024). Master's thesis project, OCAD University.

Xinzhou Zhang's Mindscapes investigates the relationship between meditation, virtual reality, and neurofeedback by integrating electroencephalography (EEG), a non-invasive technology that measures brain activity through sensors placed on the scalp, into immersive virtual environments.

Participants's brainwaves are measured through the Muse EEG headband. These brain activity signals are processed and translated into responsive visual forms in the virtual space in real time. The participant's mental state directly influences the surrounding environment in VR, which creates a continuous feedback loop between the internal state and the virtual space.

Drawing from principles of mindfulness, self-awareness, and non-verbal emotional expression in art therapy, the project explores how immersive technologies can support emotional regulation and mental well-being.

Zhang’s work expands the potential of virtual reality beyond entertainment and directs it towards therapeutic use. This perspective closely aligns with my interest in this research’s further direction, which similarly explores immersive digital space as an environment for mental wellness and emotional healing.

Steve Mann —— *Being a Ball (2025)*

Figure 3.3. Public demonstration of Steve Mann's *Being a Ball* (*MoBorg*) at Peter Street Basin, Toronto (2025). Participants navigate transparent inflatable spheres as part of an immersive XR experience. The author is shown in the sphere on the far right, participating.

Steve Mann's *Being a Ball* is an experimental extended reality (XR) project that combines physical movement, wearable technologies, and immersive visualization to explore embodied spatial perception. Participants enter a transparent waterproof inflatable sphere and the gameplay is to keep balance and walk on water, transforming bodily movement into an experience of navigating multidimensional space.

The project envisioned how physical motion can become the means of perceiving invisible spatial relationships, visualizing four-dimensional quaternion[6] space through embodied interaction.

Each orientation of the ball maps to a point on a curved three-dimensional surface embedded in four-dimensional quaternion space. When the participant moves and the ball rotates, this point shifts through the underlying four-dimensional geometry, transforming an abstract mathematical concept into something that can be experienced through movement.

To give a more understandable explanation: I learnt that walking two complete rotations inside the ball correspond to a single cycle in quaternion space. This relationship offers a compelling metaphor for thinking beyond linear and three-dimensional concepts of movement and perception. It encourages participants to perceive space beyond conventional three-dimensional space.

Being a Ball positions the physical body movement as the primary way for understanding space and dimensionality through interaction. This embodied experience aligns with my interest in an immersive environment that encourages participants to experience spatial concepts through embodied perception. The exploration of a higher dimensionality resonates with my research interest in theoretical physics on the concept of time. While Mann's research is grounded in engineering and human-computer interaction, my work adopts a more poetic and artistic approach, using immersive installation and digital space to explore nonsequential time rather than mathematical visualization.

I participated in *Being a Ball* during its demonstration (Figure 3.3). The experience influenced my thinking on how immersive experience can reshape bodily awareness and

[6] A quaternion is a mathematical concept that exists in four-dimensional space and is used to describe the orientation and rotation of objects in three-dimensional space.

expand perceptions of space beyond what we can perceive. This encounter further reinforced my interest in creating environments where body movement enables exploring alternative understanding of time and reality.

Figure 3.4. *Being a Ball* (2025). Long-exposure light painting by professor Steve Mann.

Dale Chihily —— Seaforms (1980 to present)

Figure 3.5. Dale Chihuly, *Seaform*, from the *Seaforms* series, 1980–present. Blown glass. Image courtesy of Chihuly Studio.

Dale Chihuly's glass is known for its rippling and organic edges. His Seaforms series explores the expressiveness of molten glass through wave-like forms that mimic marine life such as jellyfish and shells. The shifting state of the glass is preserved and frozen in each piece. Time in motion is captured and embraced through gravity and heat.

His work resonates with my exploration of glass as a medium that, in a way, preserves time. During the glassblowing process, every movement is time-sensitive, as the material constantly changes with temperature. I am particularly drawn to wavy, rippling edges in glassblowing. The shape is formed by spinning the blowpipe rapidly while the glass is still soft, then allowing gravity to pull the molten glass downward into waves. The process

embodies the tension between control and surrender, push and pull. I find this interaction between the material and gravity deeply exciting and expressive.

4. Hybrid space: Extend Reality

My discussion of hybrid space includes combining material and immaterial works physically in presenting in my exhibition. In this chapter, I am focusing on the topic of hybridity within immaterial spaces. Virtual space can be seen as an ideal environment for experimental spatial exploration, since the visual nature is not bound to certain physical constraints, such as gravity.

Ji and Wakefield's mixed-reality practice similarly emphasizes embodied interaction and the relationship between participants and evolving computational environments (Ji & Wakefield, 2012). Their work provides a useful reference for my understanding of hybrid space as an embodied relationship between physical and virtual environments rather than simply a combination of media.

I envision the participant's movement as swimming in the deep ocean without any problems with breathing. Six degrees of freedom, rotation and zooming in and out.

Hybrid space comes with hybrid experience. A hybrid space is a space that blurs the lines between virtual and physical realities. Particularly in XR (extended reality) and AR (augmented reality) which I see as an additive layer that overlays our physical reality. Hybrid space crosses boundaries, transforming and dissolving our experiences into another form of reality. Rather than existing solely as a virtual simulation, my work creates dialogue between

physical and digital realities, exchanging and translating information between materiality and immateriality.

The notion of hybrid space reflects an ongoing exchange: physical artworks are translated into digital forms, while digital experiences are brought back into the physical exhibition through installation, projection and augmented reality. Rather than replacing one reality with another, my thesis explores how multiple realities can coexist and continuously transform one another.

4.1 Physical to Virtual

The virtual environment began with the 3D scanning of physical locations and artworks. These scans were imported into Blender for modification before being assembled within Unity. Rather than reconstructing existing spaces, the scanned environments were fragmented, dissected, and reassembled into a new spatial composition.

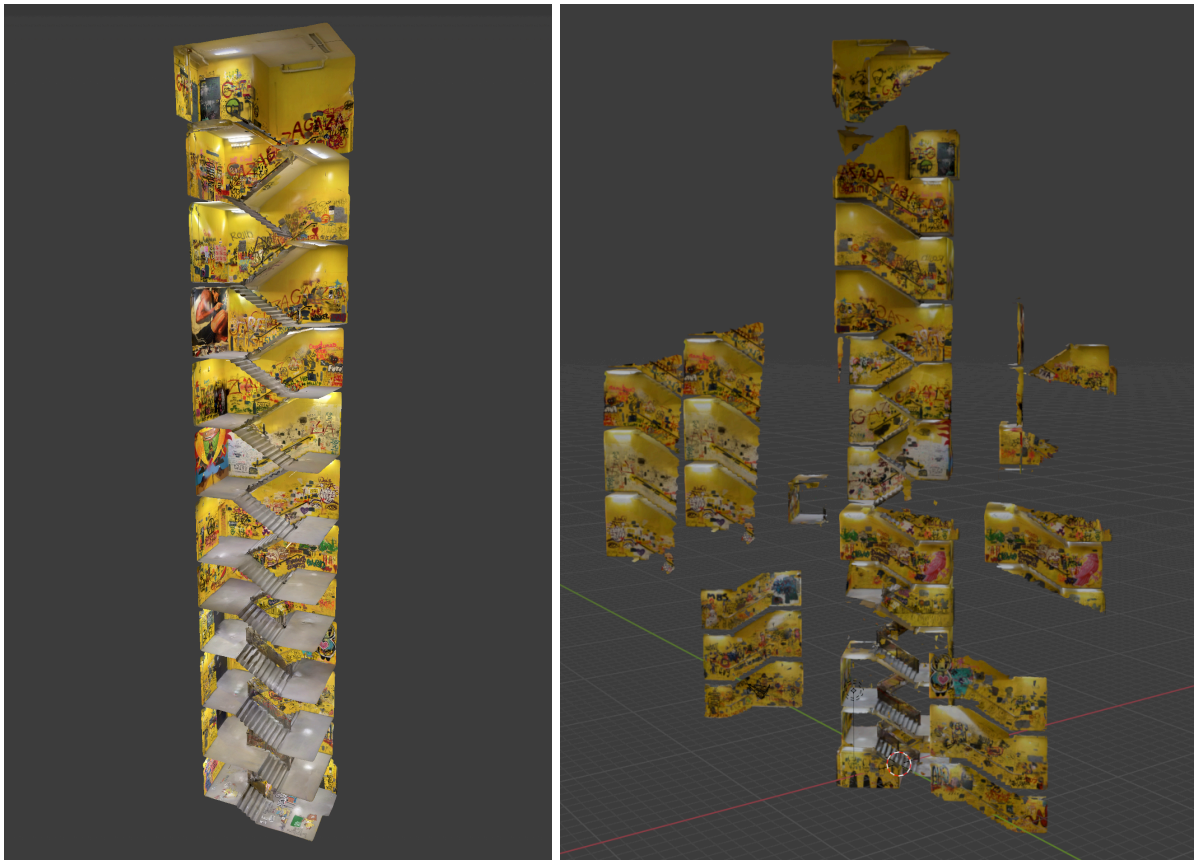


Figure 4.1. 3D scan of the yellow staircase at OCAD University (left) and the scanned model deconstructed into fragmented components in Blender (right).

This process of deconstruction and reconstruction reflect my centre theme of nonsequential time and hybrid practice. Fragments of space and memory are used to create artworks, which were combined into a single immersive environment. The outcome is a three-dimensional collage where physical and digital material become interconnected.

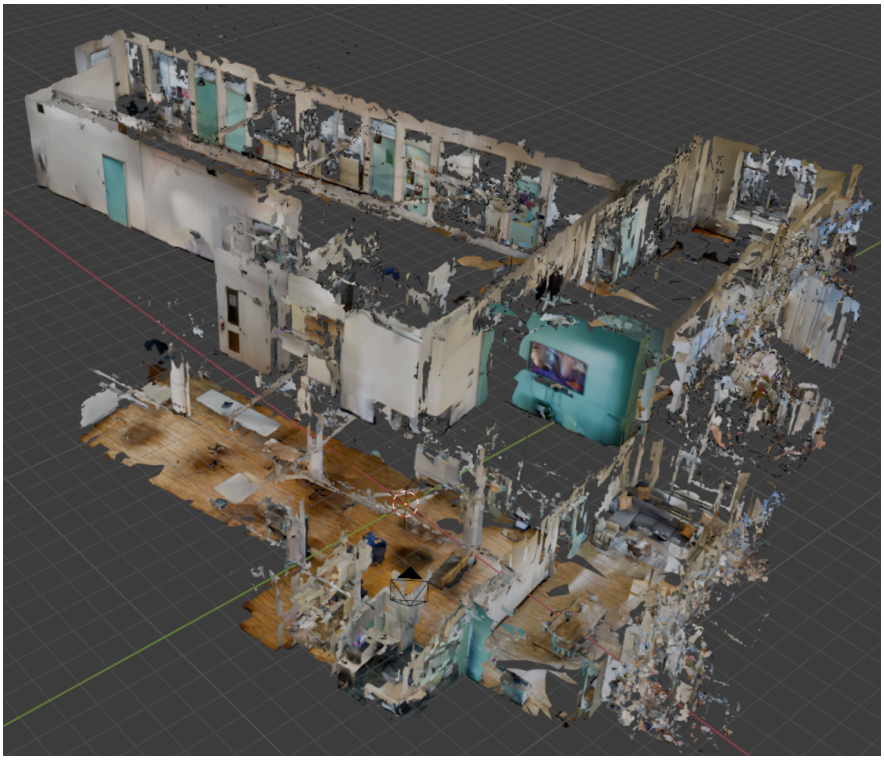


Figure 4.2. Fragmented 3D scan of the graduate student lounge in Blender.

Figure 4.3. Reconstructed 3D-scanned models of two staircases, the graduate student lounge, and the artist's Toronto apartment.

Reconstructed 3D structure can be viewed:

https://www.youtube.com/watch?v=V89l3-g7k1o&t=155s

Building upon Deleuze & Guattari's (1987) concepts of assemblage and the rhizome, my virtual environments used in these works are composed of heterogeneous elements connected through relationships determined by memory of and experiences within these physical spaces.

The player's experience of moving through the work through rotating the structure, zooming in and out with 6 degrees of freedom (6DoF). Freely rotating the environment/ surrounding, zooming in and out, and exploring the virtual space from different perspectives. The experience of navigating and positioning inside the structure encourages nonlinear experience of exploration.

Figure 4.4. Inner structure showing the collusion between the yellow staircase and the graduate student lounge.

Individual fragments retain their own identities while simultaneously contributing to a larger immersive whole. In this sense, the virtual environment becomes a spatial assemblage that allows participants to navigate through multiple connections.

4.2 Virtual to Physical

While the project translates physical space into a virtual environment, it also explores the reverse relationship by bringing virtual experiences back into the physical exhibition. This chapter discusses two of my works that bring the virtual to physical space, through virtual reality (VR) and augmented reality (AR). These works were not exhibited but rather formed part of my material exploration.

Drawing attention to the relationship between the virtual and physical worlds, Everything All at Once (discussed further in Chapter 5.1) employs extended reality (XR), including the optical illusion created through VR headset lens and augmented reality (AR) as an additional layer over the physical environment. Rather than treating the virtual and physical as separate realities, my work allows them to coexist within the same immersive space.

Another example: my virtual installation MaiBaum (2024) uses a physical artwork as the entry point to a virtual layer through a QR code. The physical art piece functions also function as an interface, triggering a digital environment that exists beyond its material form. Rather than acting as separate experiences the physical and virtual components become mutually dependent, showing how one reality can activate and transform another.

Physical Painting

Figure 4.5. Eugene Mireku and Liv Qiu, *MaiBaum* (2024).
Mixed-media physical artwork, 24 × 24 in.

The physical art piece was a collaboration with artist Eugene Mireku, who primarily focuses on relief sculptures. The work is a relief sculpture of a person holding a cup, with vines curved on the wood and extending from the background. Through AR and VR, the vines grow beyond the canvas and extend outward, which allows the participants to witness the transformation of the artwork from two-dimensional to three-dimentional. This merging of traditional and modern media celebrates the connection between physical presence and virtual immersion.

Virtual Reality

Maibaum creation process in virtual reality:

https://youtu.be/el97FjZ3heM

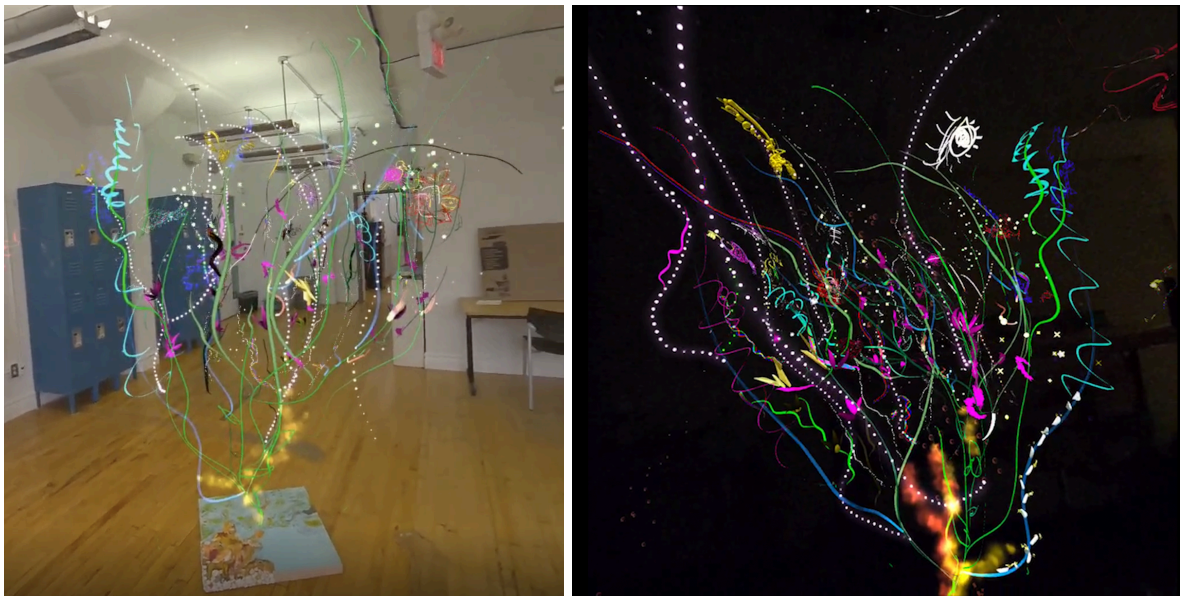


Figure 4.6. *MaiBaum* (2024). Virtual reality screenshot captured from Meta Quest 3.

Maibaum is inspired by the British tale Jack and the Beanstalk, where vines grow to the sky, this work aims to break boundaries between the physical and virtual worlds by combining painting and VR art through AR.

Augmented Reality - Fusing virtual to physical layer through screen

Opening AR through smartphone phone refer to **Appendix: B**

Smartphone screen recorded AR experience**:** https://youtu.be/82lRqNh1HMk

Figure 4.7. *MaiBaum* (2024). Augmented reality screenshot captured on iPhone.

The name Maibaum: In certain parts of Germany, people place a decorated Maibaum (Maypole) in front of their lover's house on May 1st as a sign of affection. The Maibaum tradition is reflected in the VR art, which references the vibrant, passion-colored tree branches that adorn the Maypole.

Through this reciprocal relationship between the physical and virtual, the research challenges the notion of fixed material boundaries and proposes a hybrid reality in which physical and digital spaces continuously influence each other. Reality in this sense is recognized as composed of interconnected layers of physical and virtual experience.

By moving between and across digital and analogue practices, the continuous translation between material and immaterial forms allows physical and digital works to communicate and coexist, creating a state of hybridity.

This research approaches hybridity as an ongoing process of translation and communication between the physical and digital, the interaction and dialogue between different material practices. Bronze preserves a moment through casting, glass changes states and forms through heat and motion, painting becomes a visual register of the emotion in the moment, while XR preserves immaterial memories and can be interacted with in real-time. Together, these media offer different ways of materializing time. This research synthesizes different materials and immaterial into a hybrid practice, offering to experience nonsequential time through multiple perspectives.

5. Process of Material Explorations

My process of making art is a form of meditation on the concept and philosophy of time, an exploration of nonsequential time through immersive art. My practice interprets theoretical physics such as three-dimensional time and holographic principles across modalities. When time is understood as three-dimensional then everything is connected in a hypothetical way. Intersecting physics and philosophy — art to me is a way to visualize an

abstractive concept of time. I am a material artist who works across multiple forms. I work across physical and virtual materials to explore hybrid space and time.

This works in relation to digital practice particularly in virtual reality, whose state is timelessly interchangeable and immaterial. Timeless as it will always stay the same in the immaterial digital world. Interchangeable as it can always be projected through XR into the immersive physical world. My interest in virtual reality is as a medium to document all the materials (3D scans and models) and immaterial objects. My practice involves a continuous process of searching — expanding across materials and art forms. As a material thinker, materiality manifests my abstract thoughts and translates conceptual theories into forms. My work explores time and space by spatializing time, giving it a tangible, three-dimensional form that three-dimensional beings can perceive and understand. Informed by Gunther Kletetschka's theoretical framework of three-dimensional time (Kletetschka, 2025), which proposes time as operating along the x, y, z axis. I interpret time through space as a way of exploring the immaterial through embodied experience.

Interpreting time as nonlinear in a visual way, I thought of a curve in a circle, then landed in a spiral. A spiral consists of a direction and can be interpreted as curving the linear line. I imagine time as a spiral with the movement of spiraling forward. There are fractals of spiral on each of the spirals. Such abstractive interpretation became my process of searching - spiraling forward with each exploration fractal away from the main spiral.

Following the spiral, my work branches and flows through virtual reality, metal sculpture, paper installations, glassblowing and lands back in virtual experiences - such as 'game'.

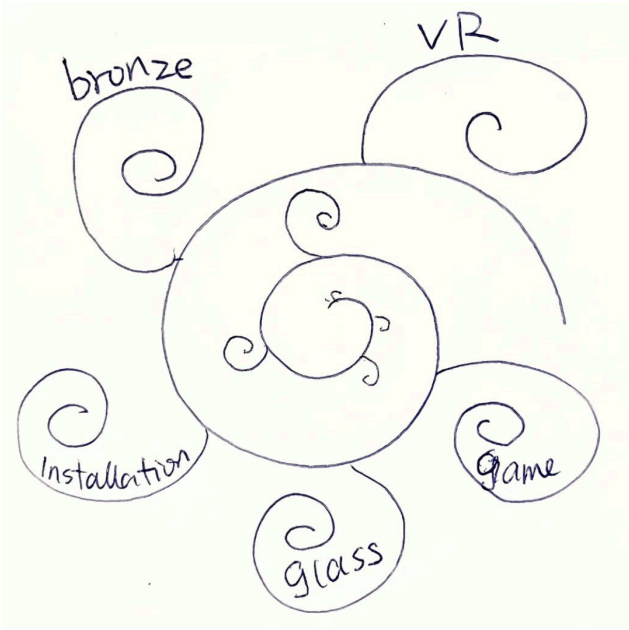


Figure 5.1. Material exploration process visualized through the Spiractal Framework.

5.1 Virtual Reality Sculpture

Figure 5.2. *Everything All at Once*.
Hologram projection installation with Meta Quest 3 headset.

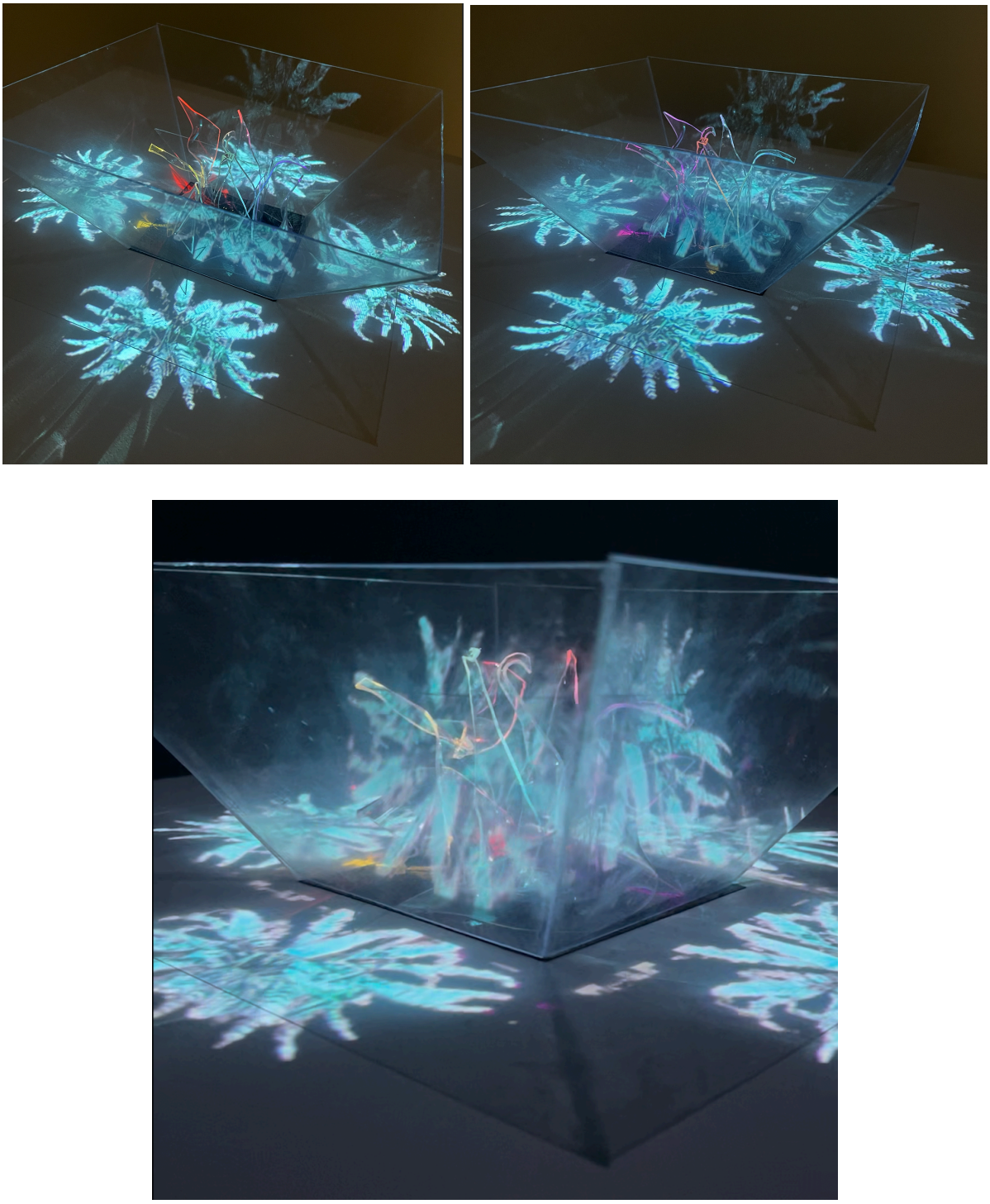


Figure 5.3. *Everything All at Once.* Hologram projection.

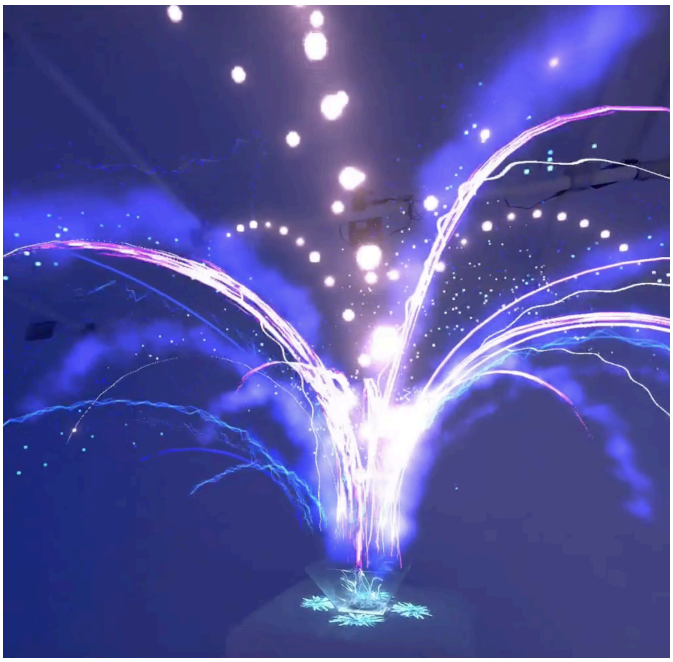


Figure 5.4. *Everything All at Once*. Virtual reality sculpture, screenshot captured from Meta Quest 3.

This video combines footage filmed on a phone with screen recorded through VR headset:

https://youtu.be/ruSx8_UyNK8

What this is

Everything All at Once is an animated holographic installation collaborated with Tavleen Lall. It visualizes my interpretation of non-sequential time by giving it a physical and spatial form through the movement of a feather star, a marine animal. Through this work, I imagine time as a multidimensional phenomenon that exists not as a linear sequence, but as a concept in which the past, present, and future coexist simultaneously.

By combining physical sculpture, projection mapping, hologram, and virtual reality, the installation visualizes higher-dimensional concepts of time by illustrating them as a

feather star that reaches out simultaneously in multiple directions that are beyond our three-dimensional perception. This work remains as three-dimensional but it is an interpretation of what I perceived as a higher-dimensional movement of time. The work proposes time as a layered, simultaneous, and spatial, that can be experienced and perceived from multiple directions at once.

The installation integrates four interrelated media:

Plexiglass sculpture: A transparent sculptural form that is placed at the center of the installation, mimicking the structure of a feather star. Animated projection is mapped directly onto this form

Projection mapping: A looping motion video of the feather star swimming is projection-mapped onto four sides of the hologram on the plinth.

Hologram: The projections are optically reflected from four different sides through transparent surfaces, creating a floating holographic image in the middle of the structure. The holographic effect used here is optical and different from Susskind's holographic principle in theoretical physics.

Virtual reality: An added layer of reality overlays the hologram, with an eruption of virtual light emerging from the center of the hologram, functioning as a speculative time portal

By combining different media it reflects the name *Everything All at Once* in a literary way, conceptually and materially, meditating on the concept of multiple realities, perceptual layers and experiences simultaneously.

Why and How I made it

Why the feather star? The feather star stretches its arms in multiple directions, each arm curling inward then sweep outward, pushing against the water just enough to lift and

glide. Rather than moving through force in a linear motion, it spirals, hovers, and changes direction fluidly. As a marine animal, it navigates in the ocean and lets currents do part of the work.

This structure radiating outward from the center, became a metaphor for nonsequential time. To me, the feather star embodied time as an infinite network of possibilities extending in multiple directions rather than a single path. I consider the movement in the feather star as a type of metaphoric reincarnation, as it returns over and over again, in a loop.

Light was chosen as the primary expressive medium for this work as its symbolic role in measuring and perceiving time, for example, lightyear. Conceptually the medium speaks to the work in interpreting the concept of time.

Through virtual reality, the audience enters a spiralling portal of extending light that emerges from the heart of the art piece. This dynamic vortex distorts the surrounding space, metaphorically creating a speculative gateway portal for time travel.

What I learned from making this

This piece is a static object in the virtual layer of reality, static sculpture through seeing from the VR headset. I see in extended reality (XR), particularly in virtual reality (VR), virtual elements becoming an added layer on top of reality. Extended reality can be interacting with the physical environment, which brings to my exploration a hybridity of spaces.

This is a work to conceptualize and illustrate a concept of time, as multidirectional, multidimensional, nonlinear. This work aimed to interpret theoretical physics in expressive

form using techniques drawn from mixed reality—inspired by physics, art that pushes beyond its aesthetic representation and extends to a way for meaning searching.

This installation is a reflection on the nature of existence, to consider what we perceive as separate moments are, in truth, part of a unified whole. I propose that the installation becomes a space where the boundaries of time dissolve, and the infinite interconnectedness of all moments becomes tangible—a portal not only to other times but to an expanded understanding of time itself.

5.2 Metal sculpture

Figure 5.5. Liv Qiu, *Intertwine* (2025). Cast bronze sculpture, 8 × 4 × 8 in.

The hands are frozen in a moment of subtle tension and unity—the fingers looping through one another to create a form that is familiar but yet Jamais vu[7]. Tension is created between connection and coded communication. Two hands are captured in a lens-like

[7] Jamais vu is a psychological phenomenon in which something familiar suddenly feels unfamiliar or strangely new, despite being recognized as previously known.

structure, symbolizing perception and fusion of physical and virtual realities; this piece references how we see through lenses: glasses, cameras, and VR headsets.

What This is

This work is a bronze sculpture of my own hands, cast life-sized, each hand forming an “OK” gesture. Two hands interlocked in circles, creating an overlapping new circle between them. This shared void becomes the center of the sculpture, functioning as a lens, aperture, or a portal that invites viewers to look through rather than simply look at the work.

The hands resemble overlapping lenses, referencing how we see this world through different lenses, such as glasses, camera lenses, screens, and virtual reality headsets. Rather than depicting a tool explicitly, the sculpture uses the body itself as an interface. The hands become a way of seeing, which suggests perception is embodied and technology increasingly mediates our experience.

The bronze preserves the texture of skin, wrinkles, and joints, emphasizing the hands as a lived physical body.

Why and How I Made It

I made this work to explore how perception is shaped through both our bodies and the technologies we use. The interlocked hands are captured in a moment of quiet tension and connection. While the “OK” gesture is familiar, intertwing two of them transform it to something unexpected—a feeling of *jamais vu*, where something familiar suddenly feels strange. What is usually a sign becomes a structure; what is normally communicative becomes spatial.

The circular openings created by the fingers operate as sculptural lenses. Their interlocking form reflects my interest in how physical and virtual realities increasingly blend together rather than exist as separate worlds. The hands are interlocked in a circle, each hand can be moved and rotated freely, yet they are not completely independent. The hands are in a position between connection and separation, metaphorically referencing the distance between physical presence and digital mediation.

Process of making:

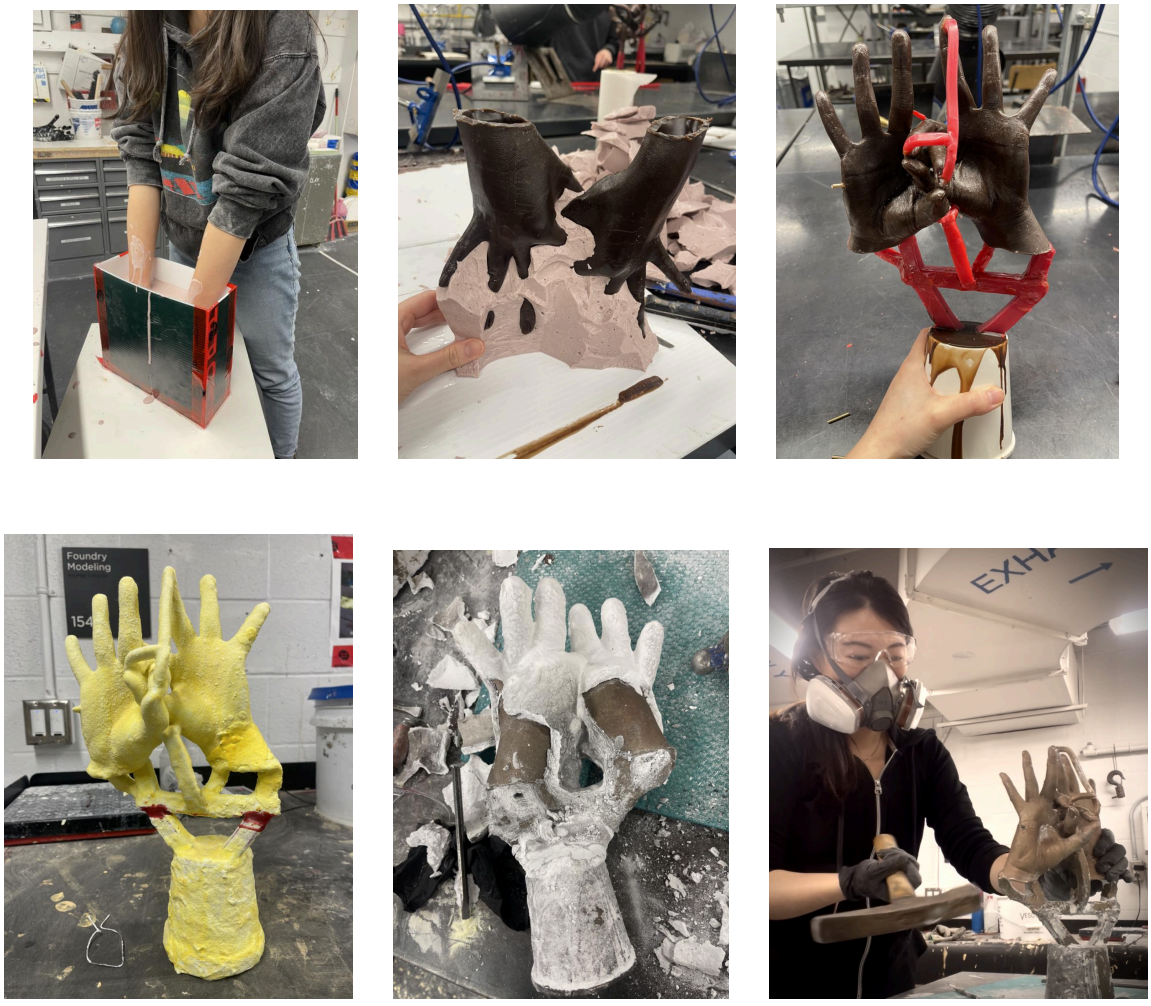


Figure 5.6. Process of making *Intertwine* (2025)
using body molding and the lost-wax bronze casting technique.

Top left: Creating an alginate mold of the artist's hands.

Top middle: Removing the alginate mold out to reveal the wax positive of the hands.

Top right: Assembling the wax sprue (gating) system by attaching the wax sculpture to a pouring cup and wax channels, allowing molten bronze to flow through the mold during casting.

Bottom left: Building a ceramic shell through repeated dipping in ceramic slurry and coating with silica sand.

Bottom middle: After burnout and bronze casting (See Appendix C for the metal pouring process), the ceramic shell is removed by chiseling it away to reveal the bronze sculpture.

Bottom right: The artist coldworking and finishing the bronze sculpture through filing, sanding, cutting, and polishing.

Casting the sculpture in bronze was a deliberate choice. Bronze carries historical weight and is often associated with permanence and memory. This contrasts with the immaterial, fleeting nature of digital vision that the work references through the idea of lenses and virtual perception.

It also made me think about my own body. My hands, my life, and my body here are temporary, but this bronze cast of my hands will outlive me and still exist after a hundred years from now. There is something meaningful about transforming a brief gesture into material that can last through generations. The process of casting, preserving a passing moment into a threshold that can be returned and experienced again.

What I Learned From Making This

Making *Intertwine* changed the way I think about sculpture. Rather than seeing it as a static object, I see it as an interface that invites interaction with the playful act of seeing through it.

This process of making was physically demanding. While the sculpture references the act of seeing through lenses, it was created through an intensely material process of molding, casting, grinding, and metal finishing. This contrast became important in my practice. The work materialized my interest in hybridity, particularly in the relationship between physical embodiment and digital perception. Rather than viewing the physical and virtual are completely separated, this work suggests that digital experience begins with the body. This understanding became my broader exploration of hybrid spaces, where meaning emerges through the interaction between tangible material and virtual experience.

Ultimately, this work functions as a metaphorical portal—between seeing and being seen, between body and technology, and between physical presence and virtual extension. It reflects my ongoing inquiry into how perception is shaped, augmented, and transformed, and how art can operate as a threshold for rethinking the ways we encounter and construct reality.

5.3 Installation

Figure 5.7. *Jellyfish* (2025). Paper installation exhibited in the *Opening Portal* exhibition, Graduate Gallery, OCAD University.

What This Is

Jellyfish (2025) is a suspended paper installation made from cut and folded sheets of paper. Beginning as flat surfaces, the paper transforms through cutting and expands into volume, hanging structures that occupy and activate the surrounding space.

Their vertical extension emphasizes gravity, suspension, and flow, while the opening spaces between the paper allow light and shadow to pass through. The paper transformed from a two-dimensional surface into a three-dimensional spatial structure through folding and cutting.

At scale, the installation feels more architectural than object-based. The hanging structures resemble tents, shelters, jellyfishes, creating a space that feels light, fluid, and gently enveloping.

Why and How I Made It

This work emerged from my ongoing fascination with dimensional thinking, particularly the conceptual transition from three-dimensional to four-dimensional space. To ground these abstract ideas materially, I began by exploring a more accessible shift: from two dimensions to three.

The process started with a large sheet of paper cut into a circle, folded repeatedly, and incised along its edges. When pulled open from the center, the flat surface transformed into a volumetric form, expanding outward into a cone-like structure. This unfolding motion felt organic and buoyant, resembling the movement of a jellyfish drifting through water. The material responded not through rigidity, but through flexibility and surrender to gravity.

This transformation, from flatness to volume, from containment to expansion, became the conceptual model of my thesis exhibition and research.. By repeating and scaling this gesture, I constructed multiple hanging forms that extend downward into space, creating layers of depth and intervals of emptiness. The spaces between the paper links are as important as the material itself, producing moments of passage, breath, and visual rest.

The decision to suspend the forms from above was intentional. Hanging allows the structures to hover rather than assert weight, reinforcing a sense of lightness and care rather than dominance. Scaling the work to human height introduced the possibility for the viewer to stand beneath it, shifting the relationship from observation to inhabitation.

What I Learned From Making This

Through this installation, I learned how dimensional transformation can function not only as a formal strategy but as an emotional and spatial one. Translating a two-dimensional material into a three-dimensional environment revealed how simple gestures, cutting, folding, pulling—can generate complex spatial experiences that feel alive and responsive.

This work clarified my interest in creating spaces that hold rather than contain. The softness of paper, its fragility, and its responsiveness to air and movement allowed the installation to embody the idea of “holding space” in a non-literal way. I imagine the work operating as a metaphoric shelter for contemplation.

The project marks a foundational moment in my thesis research: the pursuit of therapeutic spaces through material experimentation, motion, and immersive spatial design. It established a framework for thinking about art as an environment rather than an object. Future iterations of this work will extend these ideas through kinetic systems, integrating

sensors and motors to introduce slow, breathing-like movement, further exploring how responsive, immersive installations can foster care, presence, and healing.

5.4 Screen-based Exploration

Figure 5.8. *LIMINA*. Gameplay environment showing the reconstructed hybrid digital landscape.

Figure 5.9. *LIMINA*. Emotional and spatial transformation during gameplay.

What This Is

LIMINA is an atmospheric exploration game that investigates liminal space and dimensional emotion through movement, perception, and spatial transformation. Rooted in the concept of liminality, a state of in-between, transition, and becoming, the game invites players to navigate environments that exist on the threshold between physical and digital, real and imagined.

Built using 3D-scanned real-world environments and original artworks, *LIMINA* constructs a phygital experience in which physical spaces are translated into immersive digital form. The game organizes spatial axes—X, Y, and Z—as emotional dimensions:

Meditate, Passion, and Blues. As players move through the world, these emotional states reshape the environment in real time, altering color palettes, textures, lighting, and ambient sound. Rather than progressing through linear levels, players drift through shifting emotional terrains where space responds to internal state rather than external objectives.

Beneath the visible environment lies a warped threshold—an underlying layer where perception destabilizes and conventional spatial logic dissolves. In this hidden realm, players may slip into spaces that defy linear navigation, reinforcing the game's focus on liminality and dimensional ambiguity.

Why and How I Made It

I created *LIMINA* as part of my broader exploration into thresholds, portals, and transitional states across materials and media. While my physical works investigate liminality through sculpture, light, and installation, *LIMINA* extends this inquiry into virtual space—allowing liminality to be experienced temporally and kinesthetically through movement.

The game's core mechanic centers on gliding with six degrees of freedom. This mode of movement removes the sense of gravity-bound walking and replaces it with floating, drifting, and continuous motion. By eliminating traditional game mechanics such as goals, enemies, or competition, *LIMINA* shifts play from achievement-based progression to embodied exploration. The absence of objectives encourages players to slow down, wander, and attune themselves to subtle spatial and emotional changes.

As players glide through scanned environments, their motion becomes an expressive force. Movement itself alters the world: emotional states transition fluidly, environments fold into one another, and perception becomes unstable. This anti-goal structure reframes play

as contemplation, positioning the game as a meditative experience rather than a challenge to be solved.

Conceptually, *LIMINA* functions as a liminal bridge connecting my material practices. Across sculpture, installation, and virtual environments, I repeatedly return to the idea of thresholds—spaces between knowing and becoming, between form and formlessness. In *LIMINA* , this threshold is not only visual but experiential, unfolding through time and motion.

What I Learned From Making This

Through making *LIMINA*, I came to understand virtual space as a powerful medium for emotional and dimensional inquiry. The project revealed how digital environments can function not as simulations of reality, but as spaces for introspection—capable of holding ambiguity, slowness, and emotional complexity.

This work clarified my interest in nonlinear structures, both spatial and philosophical. Rather than offering answers, *LIMINA* embraces uncertainty. It mirrors my growing belief that meaning is not something hidden to be discovered, but something generated through the act of searching itself. The process of moving, wandering, and sensing becomes the work's central purpose.

Ultimately, *LIMINA* reframed my understanding of play, research, and creation as interconnected practices. The game embodies an adjacent question that drives my thesis: *What if the act of seeking is the meaning?* In this sense, *LIMINA* is not a destination, but a continuous passage—a liminal space where perception, emotion, and dimensionality remain in flux.

: LIMINA :

LIMINA is an atmospheric exploration game rooted in the concept of liminality - a space in between, in flux, and on the threshold of transformation. Featuring 3D-scanned real-life environments and original artwork by Liv Qiu, the game invites players to navigate a shifting world where reality and emotion intertwine.

As players move through space, their emotional state: Meditate, Passion, and Blues dynamically reshapes the environment, transitioning between these emotional dimensions. Colors, textures, and ambient cues shift in response, creating a richly immersive phygital experience.

Beneath the visible world lies a warped threshold where perception distorts and players may slip into a hidden realm that defies linear space.

LIMINA blurs the boundaries between physical and digital, art and gameplay, offering an introspective journey through environments that feel both familiar and otherworldly.

More information

Download

Figure 5.10. Screenshot of the *LIMINA* project page on itch.io (https://snowtv.itch.io/limina), showcasing the game's overview, gameplay trailer, and promotional images.

5.5 Glassblowing

Figure 5.11.Glassblown sculptural studies exploring folded and wavy-edged forms.

What this is

My glass works are sculptural meditations of the “now” through the making. I am particularly drawn to creating wavy edges because they emerge through capturing the fleeting movement in tension between control and surrender. Wavey edges and folded form, the sculptures represent time not as a fixed or linear entity, but something fluid, unfolding, and continuously in motion.

As someone still new to glassblowing, part of what draws me to the medium is precisely my inability to fully control it. Working at a dangerously high temperature, approximately 1000 °C, I must shape the glass from a distance, unlike other mediums that can be directly manipulated by hand. Glassblowing becomes an act of interaction rather than domination. It is like dancing with a partner: I cannot control their movements, only to guide, respond, and adapt. The outcome is never entirely mine to decide, but to lead in the direction and go with the flow. I do all I can just to surrender myself and trust the process.

Why and How I made it

The process of glassblowing is a meditation of the very present moment while interacting with the fluidity and immediacy of the medium. It is a way of capturing and preserving time. Molten glass exists in an unstable, transient state that requires immediate and responsive action. Every movement and decision directly shapes the outcome and any distraction results in irreversible change. The process demands complete presence, which parallels to meditation that the whole purpose is to be fully absorbed in the “now”.

Wavy edges embody a balance of intentional control and letting go. These undulating forms feel like moments where the material records motions of folding and unfolding in real

time. Rather than imposing a rigid form, I respond to the glass as it moves, allowing the process to guide the final shape.

The making of wavy edges involves constant movement, shifting between fast spinning, reheating, and dunking. I begin by spinning the molten cup-shaped glass from a rod, using the heat and momentum force to gradually open up the edges and flatten the form. As the glass heats, the edges begin to melt and the entire plate becomes increasingly unstable. At this point, I must continuously move between the heat and open air while spinning to prevent collapse. It is like spinning your dance partner fast and wild while protecting them from falling. The process embodies a tension between control and surrender. When the edges become overheated and too soft, I spin faster and pull the piece out using motion to unfold and stretch the plate. Paradoxically, the moment when the glass feels most uncontrollable is also when it is the most malleable. I often reflect back to moments like this in life—how instability can be a space for reshaping and readjustment.

I drew inspiration from Dale Chihuly's glass sculpture, aiming for organically folding edges. To achieve this effect, I repeatedly dunk the hot glass plate through the air in an up-and-down motion from the rod, while the glass still remains the spinning momentum, gravity pulls it downward creating ripples and texture along the rim. It is a beautiful moment allowing the medium to dance with gravity, letting it go and form freely. It is to control and allow the uncontrollable to happen, it involves skill, timing, and luck. The result can be unpredictable, teaching me to trust and focus on the process rather than overly attach to the outcome.

What I learned from making this

Through glassblowing, I experienced time being captured materially. The process revealed time as something that is preserved through responsiveness and presence. The

present shapes the future, what if the past, present, and future are just an illusion—then what we are able to experience is just the constant present moments like slicing a loaf of bread. The wavy edges became a visual and sculptural trace of this experience, evidence of time unfolding through action. In my work, the glass serves as a physical manifestation of a meditative state that is fully immersed and absorbed in the present moment.

Figure 5.12. The artist glassblowing at Harbourfront Centre, Toronto, exploring the material behaviour of molten glass through heat, movement, and gravity.

5.6 Virtual Space Exploration

Figure 5.13. 3D scan of the artist's first-year MFA shared studio space.

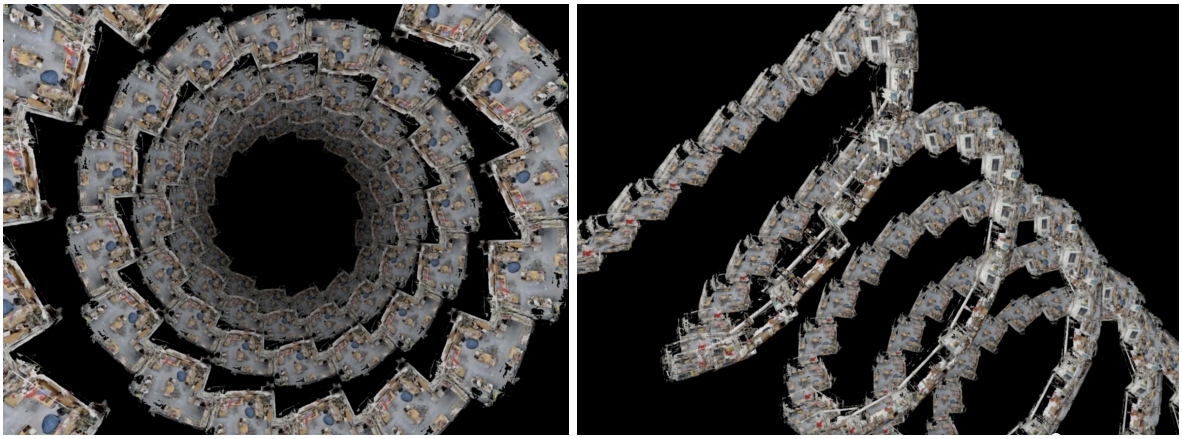


Figure 5.14. 3D-scanned studio reconstructed in the Unity game engine to create a spiral spatial structure.

What this is

(Appendix F: Game Design Document.)

This virtual reality experience is an artistic interpretation of the three-dimensional time theory and the holographic principle. Rather than attempting to visualize these scientific theories literally, the work adopts them as speculative frameworks for imagining non-sequential time. Time is represented as a spiraling structure that continually branches into fractal-like pathways, which suggests that each moment contains multiple potential directions and possibilities. Each spiral exists within a large spiral, symbolizing how every decision creates new trajectories while remaining interconnected within an unfolding temporal landscape.

The virtual environment functions as a conceptual visualization of these ideas, inviting participants to experience time as layered, spatial, and continuously evolving rather than as a fixed linear progression.

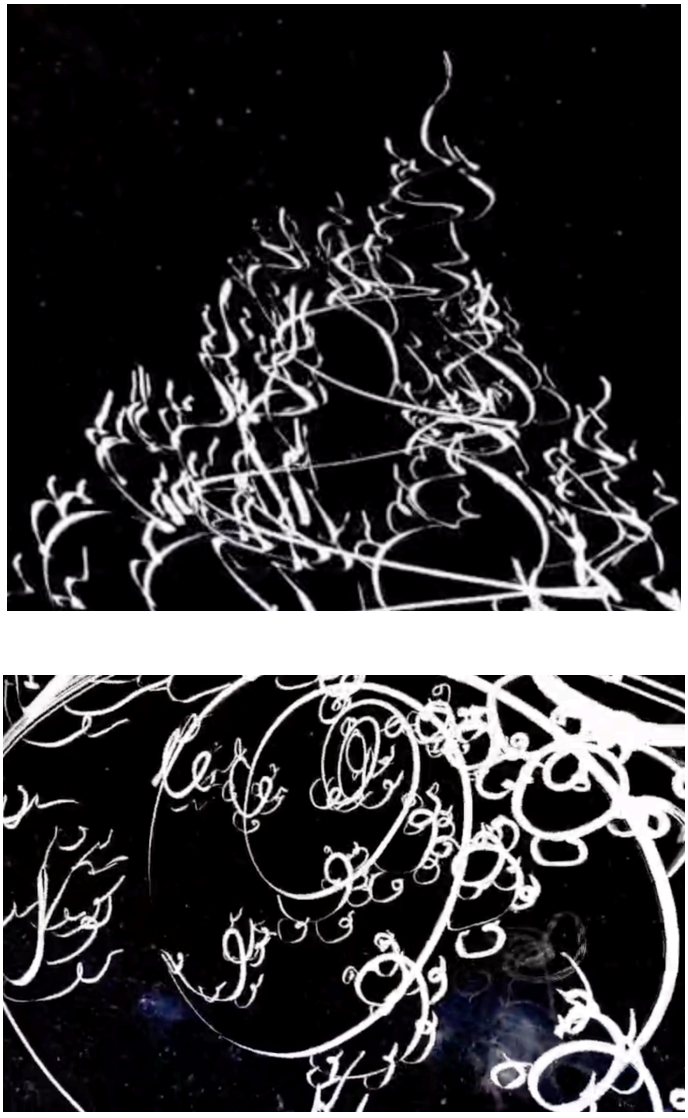


Figure 5.15. Conceptual sketch of Spiractal structure in VR,
illustrating nonsequential time as a continuous spiral with branching fractal structures.

Footage recorded in VR using Open Brush as an early conceptual sketch, illustrating navigation through the Spiractal Framework: https://youtu.be/RjkjV2XEe74

Why and How I made it

Figure 5.15. serves as a conceptual sketch of the Spiractal structure. Being illustrated 3D three-dimensionally in Open Brush from a VR headset.

Taking this abstract interpretation of time by giving it a shape, a virtual environment came to my mind as the best option. As participants are able to have this embodied experience while navigating throughout the scenery in real-time. This work emerged through an experimental process of research-creation that explored virtual reality as a medium for documenting and reconstructing lived experience. The environment pieces fragmented spaces together, where memory, imagination and physical space coexist.

In Figure 5.14. the virtual environment was developed by combining three-dimensional scans of real architectural spaces with digital documentation of my artworks, including photos and sculptural forms. I 3D scanned familiar spaces with Scaniverse on my iPhone, edited these 3D models using Blender, then worked with game designers to import them into Unity. 3D scan images can be found in Chapter 4.1.

These elements were layered and reassembled into a hybrid digital landscape, where physical and virtual materials merge through collage, spatial composition, and interaction. The process reflects my broader artistic practice of working across physical and digital media in an assemblage form, which enables different materials to inform one another within an unified immersive installation.

What I learned from making this

Developing this virtual environment has expanded my understanding of virtual reality as more than a technological medium, it became a conceptual space for thinking through ideas of time, memory, and perception. The process of scanning, editing, and assembling

the composition digital environments shows how immersive space can communicate abstract concepts that are difficult to express through two-dimentional interpretations.

The project reinforced my understanding of hybrid practice, where physical artworks, digital technologies, and virtual environments are not separate media but interconnected components of the research process. Rather than representing reality, the virtual environment became a speculative space that allowed viewers to experience nonsequential time through movement and exploration.

6. Discussion: Hybridity Across Media and Form

Throughout this thesis research, hybridity emerged as a conceptual framework for understanding nonsequential time. Rather than in favour of one single artistic medium, the ongoing exploration and exhibition has experimented in virtual reality, augmented reality, projection mapping, bronze sculpture, installation, performance, glassblowing, screen-based game design, painting, and video. Each medium contributes a different way of experiencing time, while collectively forming an interconnected assemblage that added to the exploration of my artistic practice.

The hybrid nature of this research reflects the nonsequential qualities of time itself. As time unfolds through multiple pathways rather than a singular linear direction, the artworks exist across multiple forms and dimensions simultaneously. The exhibition encourages audiences to navigate these layered experiences, constructing meaning through movement, perception, and interaction.

6.1 Interpreting Nonsequential Time Through Hybrid Space

Virtual space offers an unique environment for exploring dimensions which extend beyond the constraints of physical reality. Unlike material space, virtual environments are not limited by conventional spatial logic. This freedom makes it possible to visualize nonsequential time, making abstract concepts come to life rather than purely theoretical.

In the virtual spaces I created, time is interpreted as spiral, branching pathways, and fragmented space that endlessly transforms when participants navigate through the journey. Movement activates the possibility of multiple temporal experiences simultaneously. Virtual space functions as an artistic method for spatializing time.

6.2 Assemblage and the Holographic Imagination

In my work, physical spaces that are scanned, modified, dissected are then reassembled into the digital space where fragments of space, objects, artworks are continuously dismantled and reconstructed into new spatial relationships. This process is an assemblage where elements remain interconnected without forming a fixed hierarchy. Meanings are created collectively through relationships rather than isolated objects.

My assemblage also resonates with the holographic principle (Susskind, 2008), as each fragment of hologram contains information about the whole, each artwork contributes to a larger interconnected understanding of nonsequential time. Individual works can be experienced independently, yet each simultaneously reflects and extends the conceptual framework of the exhibition as a whole.

6.3 Materiality and Immateriality

One of the central discoveries of this research was that physical and digital media can coexist, even can be blended in and be dependent on each other to exist. For example in augmented reality, images of physical objects can trigger the appearance of virtual objects. Through this research, I came to understand material and immaterial not as opposing conditions, but as relational modes that continually translate into one another within my practice.

Virtual and physical material can be translated into and travel into one another's world through various technologies. 3D scanning, extended reality, projection mapping, and so on. My ongoing dialogue between material and immateriality reflects the broader hybrid nature of contemporary artistic practice. My exhibition ultimately proposes that meaning does not reside exclusively within either physical or virtual space, but emerges through the continuous interaction between both.

7. Exhibition

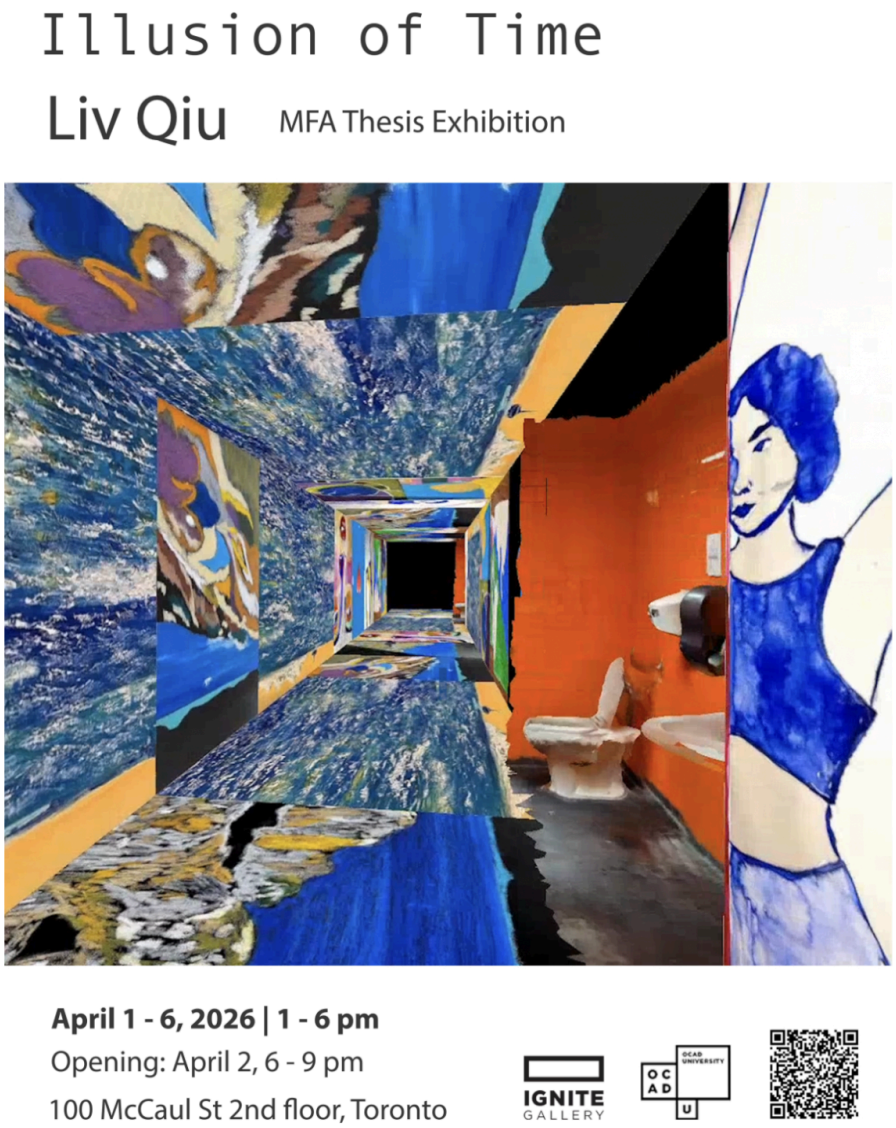


Figure 7.1. *Illusion of Time* exhibition poster.

I opened my thesis exhibition on April 2nd, 2026. The exhibition was presented for a week at Ignite Gallery, OCAD University. It consisted of a series of works arranged around a spiral path, exploring hybrid forms across sculpture, mixed-media painting, video, an interactive digital game and glass. From glass works that capture and preserve time in material form to virtual spaces that spatialize time through immersive experience, the exhibition moves between material presence and immaterial spatiality, capturing fleeting moments while dissolving linear perceptions of time. My work meditates on time as an interconnected, multidimensional field, inspired by theoretical physics and the idea that past, present, and future coexist.

My interest lies in a hybrid reality where physical and virtual spaces overlap, and different media offer distinct ways of engaging with time. Bringing these together, my goal is to manifest time as nonlinear—untwining meaning from permanence, rearranging fragmented space and experience.

Figure 7.2. Installation view of the *Illusion of Time* exhibition.

Figure 7.3. Installation view of the *Illusion of Time* exhibition.

Figure 7.4. Installation view of the *Illusion of Time* exhibition.

7.1 Exhibition Design and Spatial Framework

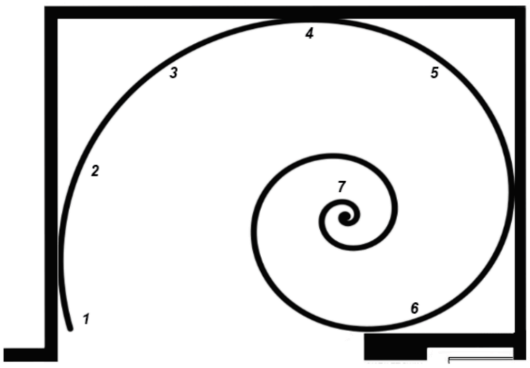


Figure 7.5. Floor plan of Ignite Gallery
showing the spiral orientation of the *Illusion of Time* exhibition.

My thesis exhibition materialized the idea of spiraling and offers an interpretation of nonlinearity. The concept of a spiral as a structure comes with multiple layers of interpretations. In my work, a spiral functions both as a physical pathway for my audience and as a conceptual model for the thesis, which proposes time as nonlinear, layered, and continuously unfolding rather than fixed. This concept is also presented in LIMINA, the game where the player's movements change the outcome of the environment. The future is not decided but shaped and influenced by the present. Inner worlds are projected onto outer realities through movement which affects the surrounding environment in the game. The way we navigate shapes the journey we experience. Every small decision has the potential to alter the outcome, creating new pathways, meanings, and possibilities within the unfolding spiral.

Figure 7.5. is the floor plan of my exhibition, with each work labeled by a number. The show orientation follows a spiral structure that leads visitors from the entrance and gradually guides them inward, swirling toward a golden-ration center. Viewers enter at the

outer edge of the spiral and are guided inward, encountering a series of interconnected works that collectively explore the relationship between temporality, embodiment, and hybrid realities.

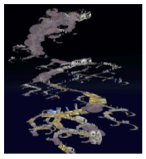
Interwine, 2025
Bronze
8x4x8''

LIMINA, 2025
Video game with original artworks by Liv Qiu
In collaboration with game designer Snow Guan

Between Worlds, We Play, 2026
Mixed media on panel
35x47''
In collaboration with Eugene Mireku

Clock and Folding Clock, 2026
Glass
22x11''
10x10x7''

What Remains When Nothing Lasts, 2026
Mixed media on canvas
35x47''



Illustrating Time, 2026
Video

Experience in collaboration with game designers
Rafael Maubrigades and Snow Guan

Dancing waves, 2026
Glass
Size varies

Figure 7.6. List of exhibited artworks corresponding to the exhibition floor plan.

7.2 Intertwining Materialities

This exhibition brings together a range of art media, as my process of making manifested through material exploration. Rather than focusing on a single medium, the exhibition unfolds across sound performance, bronze sculpture, a digital game, mixed-media paintings, glass art, and a video (of a virtual reality experience). Each medium explores my central interest in time in its own material language. It offers a different path in exploring nonsequential time. Performance exists only for the duration when it lasts, bronze brings the quality of permanence, the digital environment responds to the audience in real time, painting accumulated time through layers over layers, while glass preserves movement in its molten state. Together, these works examine time not as a fixed, linear progression but rather an embodied and continuously unfolding journey to experience.

7.2.1 Sound Healing Performance

Fig 7.7. *Illusion of Time* exhibition opening sound performance with Juliana Gagné (left) and Tavleen Tall (right).

Videos documentation of exhibition opening sound performance:

https://youtu.be/FBlrHzBQB90

The exhibition opened with a collaborative sound healing performance for visitors to slow down, breathe, and be present. I invited artists Tavleen Tall and Juliana Gagné to perform alongside me, rotating between three instruments: a singing bowl, a kenari seed shaker, and a bell. Through gentle and repetitive rhythms, the performance holds space for audiences to pause and reconnect with the present moment.

My mind rarely remains fully in the present, as thoughts constantly drift around, either lingering to the past or wondering toward the future. The sound performance gently guides attention back to the immediate experience, bringing calmness and awareness before entering the exhibition. To me, it is a form of meditation in a sense.

As a time-based medium, the performance exists only for the duration of its unfolding, Unlike the material artworks that remain on view throughout the exhibition, it cannot be revisited in the exact same form. Its fleeting nature reflects one of the exhibition's central concerns: time is not a fixed object but something lived, and continually experiencing.

7.2.2 *Intertwine*: Metal Sculpture

Figure 7.8. *Intertwine* (2025) installed in the exhibition.

At the exhibition entrance, the bronze sculpture *Intertwine* (2025) establishes the conceptual foundation of the exhibition. The work is two interlocked hands forming a continuous loop, evoking ideas of connection and entanglement. As the first work encountered by visitors, it functions as a threshold between everyday reality and the immersive world of the exhibition.

It introduces the exhibition's central concern with interwoven states of being, including physical and virtual space, material and immaterial presence, and tangibility and intangibility. This hand gesture also references the act of seeing through different lenses, whether eyeglasses or virtual reality headsets, commenting on our perception of reality is often mediated. Being placed at the beginning of the spiral journey, the work invites viewers to reconsider the boundaries between worlds before entering the nonsequential spatial experience that follows.

7.2.3 *LIMINA*: Interactive DIgital Environment

Figure 7.9. *LIMINA* installed in the exhibition.

Playtest video: https://www.youtube.com/watch?v=HfKtfWU2Ntk

Playable download: https://snowtv.itch.io/limina

Following the spiral progression, audiences encounter *LIMINA* (2025), an interactive digital environment developed in collaboration with game designer Snow Guan, who introduced procedural generation into the project. The work operates as a non-goal-oriented exploratory experience, rejecting conventional game mechanics such as scoring, competition, and completion. Rather than offering a traditional narrative or goal-driven “game”, the virtual space unfolds uniquely for each participant.

This approach echoes James P. Carse’s concept of the “infinite game", in which “a finite game is played for the purpose of winning, [whereas] an infinite game [is played] for the purpose of continuing the play" (Carse, 1986, p.3). I see life as an infinite game, continually in motion and ongoing interactive transformation rather than fixed outcomes. Incorporating with 3D scanned lived spaces, blending the digital and physical environments, the work invites viewers to reflect on their own emotional patterns, sense of presence, and personal rhythms.

As players move through a liminal tunnel, their movement continuously reshape the surrounding virtual environment. Interacting through a game controller, participants are able to transform their environment through these two variables: movement and speed. It reflects how we navigate ourselves in the present will influence reality gradually unfolding in the future. Each action contributes to the upcoming experience, emphasizing time as something that is continuously constructed through interaction.

The virtual world responds through three affective modes:

Meditative Mode is activated through slow, steady and linear movement, generating calm and contemplative environments composed of 3D scans of the places encountered

throughout my MFA studies. These include school hallways, exhibition spaces, and my paintings that brought me calmness.

Passion Mode emerges through fast and direct movement, creating highly saturated and expressive environments, incorporating 3D scans of my studio and the yellow graffiti staircase at OCAD University. These places are associated with intensity, artistic, and creative energy.

Blues Mode is generated through slow and irregular movement, it mimics how a person walks when they are not sober. Revealing melancholic environments composed of ocean imagery and figurative paintings I created during the COVID-19 pandemic quarantine. Dominated by blue tones, these spaces capture moments of isolation and emotional introspection.

By assembling fragmented spaces, memories, and emotional states into an explorable environment, LIMINA spatializes time as an embodied experience rather than a fixed chronological sequence. The work explores how movement, emotion, and spatial perception co-produce temporal experience, allowing visitors to navigate and shifting state in real time rather than linear progression.

In *Video Game Spaces: Image, Play, and Structure in 3D Worlds*, Michael Nitsche argues that *"game spaces evoke narratives because the player is making sense of them in order to engage with them… Through a comprehension of signs and interaction with them, the player generates new meaning"* (Nitsche, 2018, p. 3). This perspective supports my interest in space as a meaning-making system: a game environment can function as a narrative and emotional landscape, shaping how players navigate, interpret, and feel within it. This project examines space and dimensionality in game space with the aim of creating a therapeutic and meditative digital environment for future progression.

7.2.3 *Between Worlds, We Play*: Mixed Media Painting

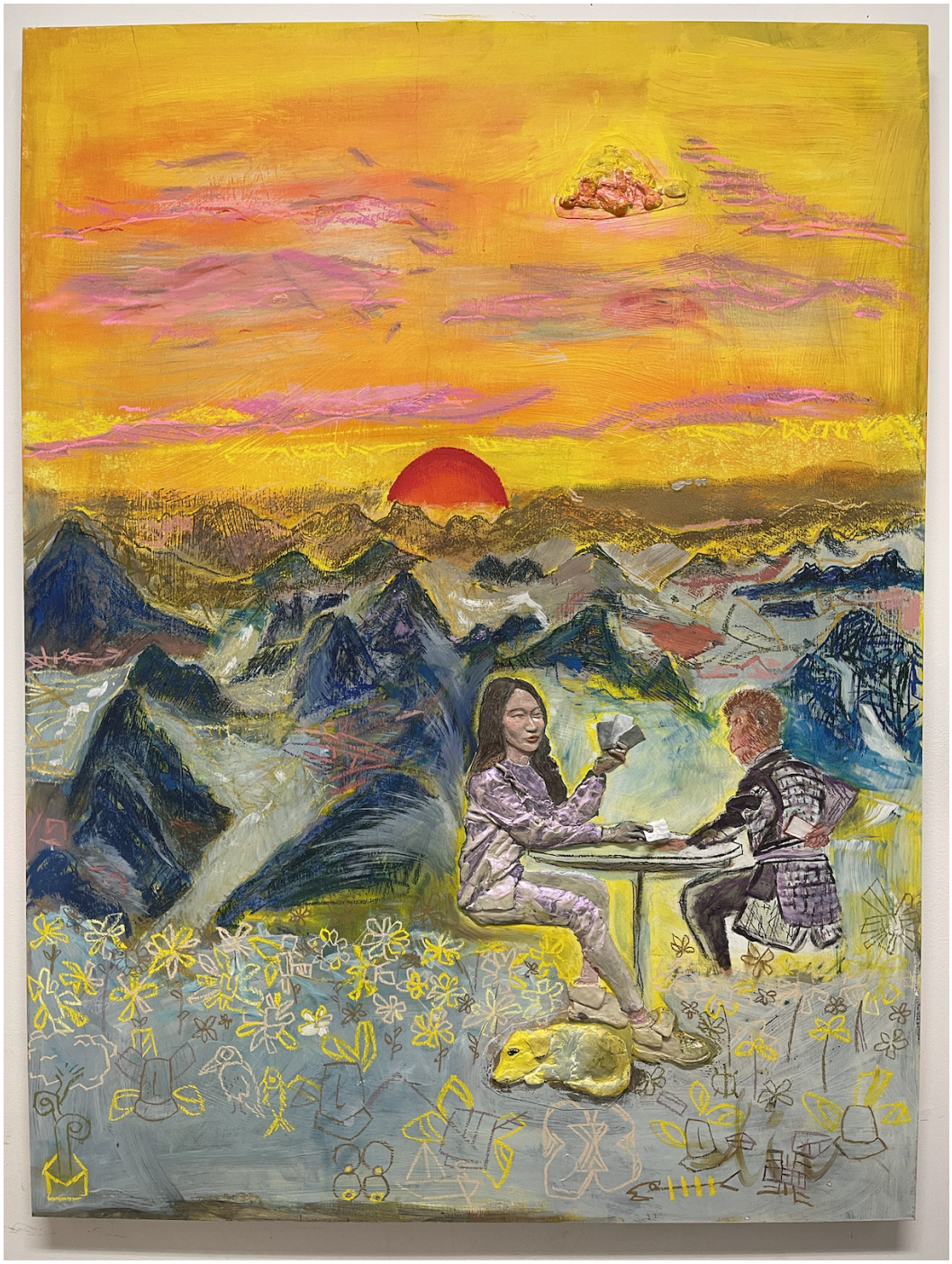


Figure 7.10. *Between Worlds, We Play* (2026) installed in the exhibition. 34 × 47 in.

Further along the spiral, my audience encounters the large-scale mixed media work *Between Worlds, We Play* (2026), created in collaboration with artist Eugene Mireku, who primarily focuses on relief sculpture. Combining painted imagery with sculptural relief, the work depicts a playful card game between myself and Wukong the Monkey King, situated within a sublime landscape inspired by traditional Chinese painting.

The background incorporates stylized mountains and atmospheric depth, creating an environment that enables mythology, memory, and contemporary experience to coexist. This work shows a conversation and playful interaction that transcends the boundary of time, allowing figures from different worlds and eras to exist in the same space.

This work is also placed as a digital element embedded in the meditative mode in *LIMINA*, making it exist both physically and virtually. It collapses distinctions between representation, environment, and interaction, reinforcing the exhibition's interest in the convergence of physical and virtual space.

7.2.4 *Clock and Folding Clock*: Glass Installation

Figure 7.11. *Clock* and Folding Clock (2025).
Glass installation in the *Illusion of Time* thesis exhibition.

A series of glass works further manifest the concept of time through material transformation. *Clock* and *Folding Clock* (2025) explore the fluidity and malleability of time through glassfusing pieces.

Glass as a medium lives in a transitional state between solid and liquid, it shifts based on heat and time. Molten glass is highly time-sensitive to work with, where every

moment influences its viscosity and form. Heat lowers the viscosity and makes the material easier to transform and shape, time decides its state of being. As the glass gradually cools, it shifts from fluidity to a fixed form. Glassblower's physical movement is traced by the medium, along with gravity and motion. The transition of glass from fluidity to fixed form, becomes a way of capturing time into form. As the fleeting moment being preserved and recorded into the material.

Figure 7.12. *Clock* (2025). Suspended glass installation.

Clock (2025) is a suspended glass installation that is paired with a kenari seed instrument from Bali, Indonesia, which makes a gentle, water-like sound when shaken. The work references the familiar form of a wall clock while drawing on the metaphor of time as fluid, reflected in the Chinese proverb 光阴似水 (“time flows like water”). The visual language of melting clocks, where time appears to dissolve beyond rigid measurement. The inclusion of a quotation between *Clock* and *Folding Clock*, attributed to Albert Einstein—“the distinction between past, present and future is a stubbornly persistent illusion” (Einstein, 1979, p. 39) grounds the work conceptually within theories of nonlinearity. By combining glass, sound, movement, and form, the work transforms time into a sensory experience.

Figure 7.13. *Clock* used as a sound instrument during the opening performance of *Opening Portal* (2025) by artist and professor Peter Morin (see Appendix E).

Figure 7.14. *Folding Clock* (2025). Fused-glass sculpture.

Folding Clock further develops this idea through the shape of the glass. Its curved and folded surface turns inwards, and expresses that time can be compressed, expanded, and layered rather than progressing in a single direction. Rather than representing time as a straight line, the work visualizes time as a deformable structure in which past, present, and future coexist simultaneously.

7.2.5 *What Remains When Nothing Lasts*: Mixed Media Painting

Figure 7.15. *What Remains When Nothing Lasts* (2026) installed in the exhibition. 34 × 47 in.

What Remains When Nothing Lasts (2026) is a large scale figurative painting referencing The Kiss by Gustav Klimt. This canvas acts as a register of lived experience, the image of a kiss preserves a fleeting moment in time, capturing an intimate encounter that would otherwise disappear.

Created over the course of a year, the painting accumulated multiple layers of paint with each recording a different moment across the making. Temporary moments being permanently preserved through the slow process of painting.

The title What Remains When Nothing Lasts, reflects an ongoing question that runs throughout my practice. Knowing most things in life are temporary, including our lives. I often find myself associating meanings with permanence, as though temporary feelings, connections, and moments carry less significance simply because they do not last. This work questions this assumption by asking whether impermanence diminishes meaning, or whether the fleeting nature of experience is precisely what makes it valuable.

Just because something does not last forever, does not mean it was not real. Fleeting moments continue to shape our lives long after they have passed and I found it comforting using art to preserve it.

7.2.6 *Illustrating Time:* Video

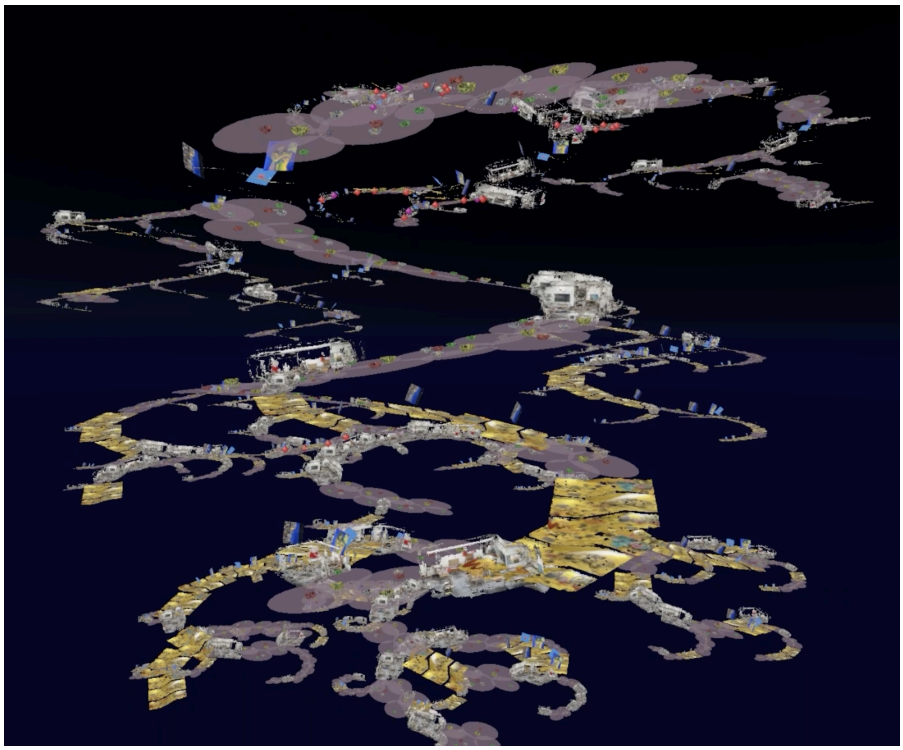


Figure 7.16. *Illustrating Time* video in the exhibition.

Video: https://youtu.be/jsJFHeAK0GY

Illustrating Time (2026) is an eight-minute video installation that explores the spatialization of time through a fractal spiral structure. Rather than presenting time as a linear progression, I gave time a structure of spirals and there are five spirals in each circle of spiral. The animation presents time as a recursive system in which each circular rotation contains smaller spirals. The repeated use of the number five references aspects of the human body (five fingers, five limbs) which connects abstract temporal systems to embodied experience. This work synthesizes many of the theoretical ideas explored throughout this thesis, proposing time as recursive, multidimensional, and continuously unfolding.

7.2.7 *Dancing Waves*: Glass Sculptures

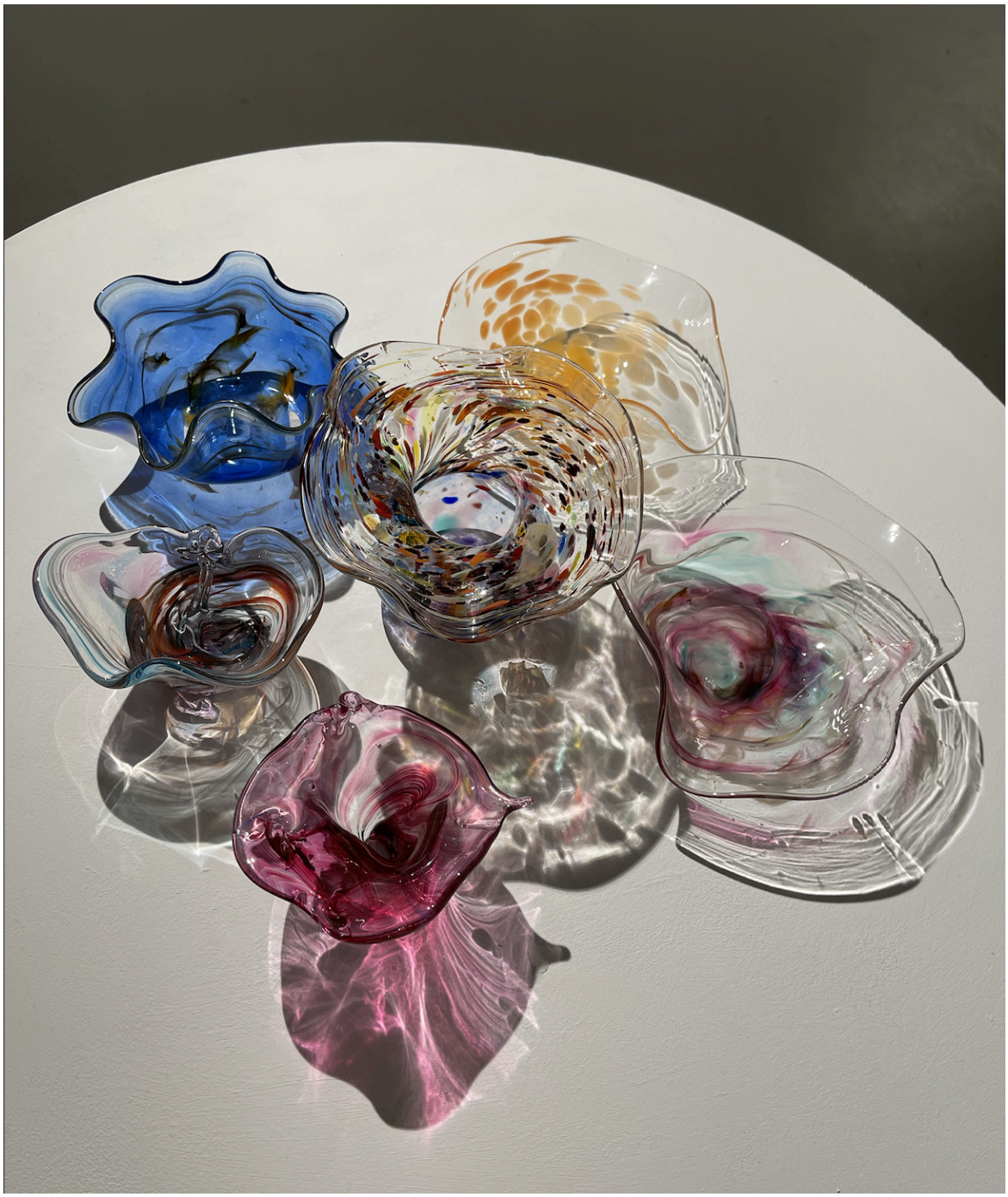


Figure 7.17. *Dancing Waves* (2026).
Glass sculptures installed at the centre of the exhibition.

At the center of the spiral is *Dancing Waves* (2026), a glass installation composed of six blown glass pieces: one central vertical form surrounded by five undulating glasses. This arrangement creates a focal point that echoes the spiral structure of the exhibition as a whole.

Each glass piece preserves the motion from the molten glass to a suspended state, capturing gestures of rotation, expansion, and flow. The material properties of glass, its responsiveness to heat, gravity, and motion make it particularly suited to expressing immediacy and transformation over time.

As the final work encountered within the exhibition, *Dancing Waves* creates a dialogue between intention and chance, control and surrender. The installation suggests like molten glass, time is continually changing, folding, and transforming. Rather than arriving at a conclusion, the centre of the spiral becomes another point of beginning, reflecting upon time as an ongoing process of movement, becoming, and renewal.

8. Future Works

This research marks the beginning of my ongoing exploration into the relationship between physical and virtual spaces, nonsequential time, and emotional well-being. Throughout this process, I found myself continuously traveling between material and immaterial forms of making. While virtual environments offer limitless possibilities and are not bound by any physical constraints, working with physical materials and being able to interact with tangible objects is equally important to me. These two forms of practice have

become complementary and translating into one another in a continuous dialogue. I intend to continue developing both as interconnected aspects of my hybrid art practice.

More importantly, I hope to expand this work beyond visualizing nonsequential time to creating immersive environments that support presence, reflection, and emotional grounding. Rather than using immersive technologies as an entertaining tool, I am interested in exploring their functional potential as a space that fosters mental well-being. A sanctuary to slow down, reconnect to ourselves and hold space for people in need.

8.1 Cyberspace as a Therapeutic Sanctuary

The virtual environment presented in this thesis (Appendix F: Game Design Document) represents the first iteration of a larger research direction. Further development will continue exploring spiral and fractal spatial structure as artistic interpretation of non-sequential time in an immersive virtual reality space.

Beyond visualizing abstract concepts, future iteration will prioritize its functionality, an environment that brings in meditative and therapeutic effects of calmness. Holding a mental space for people in need. Rather than functioning as a game with objectives or clear goals, the participants can wander freely through evolving virtual landscapes, the movement itself became a meditative practice. There will be more research in designing light, sound, spatial rhythm to achieve the effect of meditation. The experience aims to foster self-awareness and emotional grounding.

For further progress of this work, I would focus on making users achieve a meditative state of mind through experiencing the space and the use of frequency. I would focus on the design in helping to achieve this functionality aspect of this virtual interaction experience.

Drawing from the concept of holding space and research on therapeutic environments, I envision the experience as a form of mental therapy for people to contemplate and slow down. In this sense, virtual space is not simply a medium for representation, but a space for therapeutic use in supporting mental well-being.

This thesis did not systematically study audience responses to these environments. My discussion of contemplation, presence, and emotional grounding therefore reflects my intentions as an artist rather than demonstrated therapeutic outcomes. Future iteration could include audience observation, conversation, and participant feedback to better understand how these environments are actually experienced.

3D-scanned glass artwork, *Clock*, in the Unity game engine. Video recorded through a VR headset: https://youtu.be/CVW9B36r06I

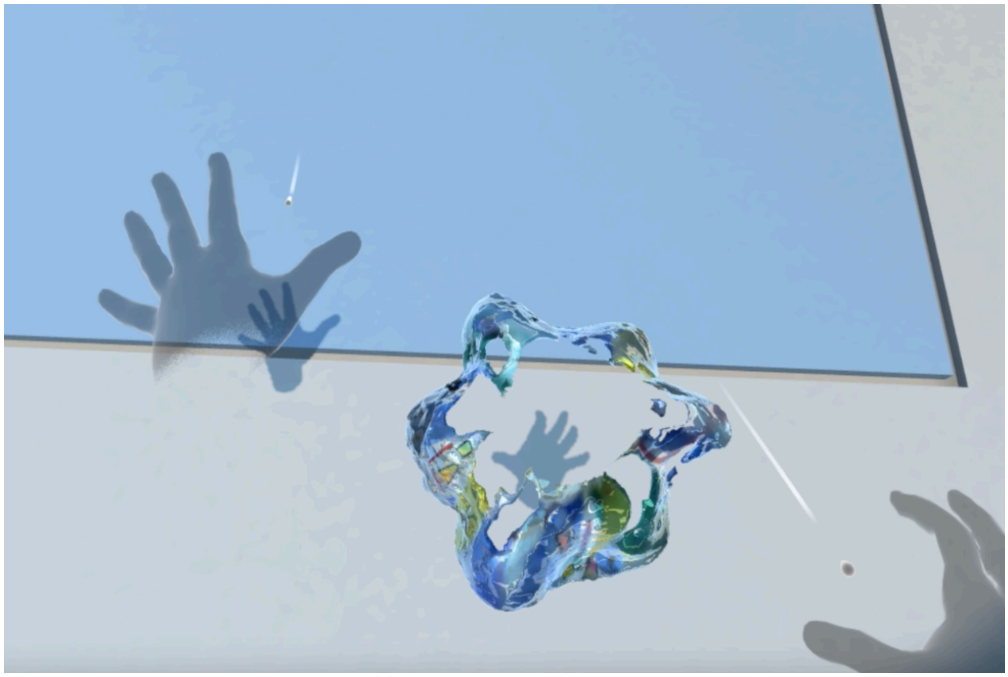


Figure 8.1. Screenshot from the virtual reality experience interacting with the 3D-scanned glass sculpture *Folding Clock*.

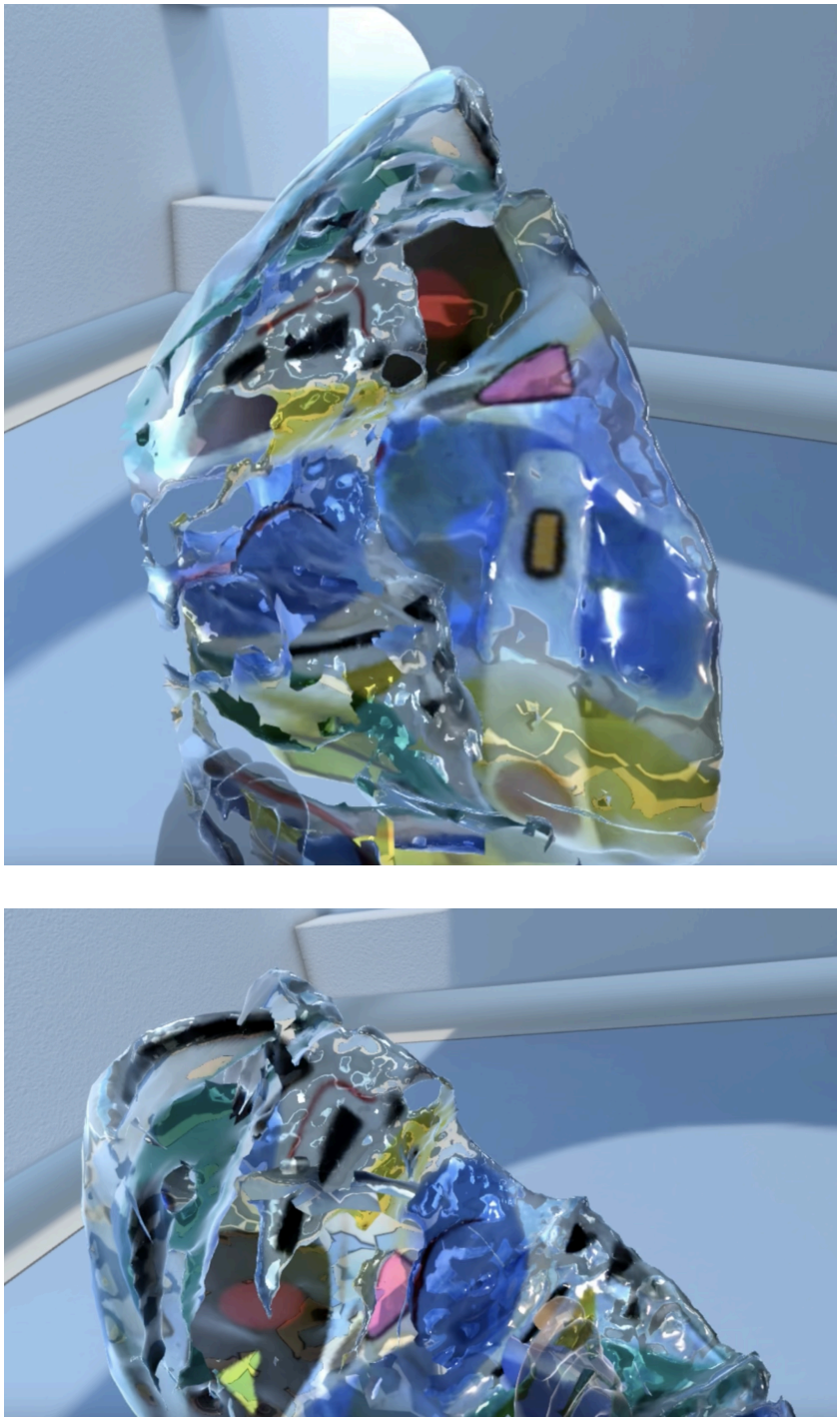


Figure 8.2. 3D scan *Folding Clock* and in virtual reality.

8.2 Glass, Light, and Sensory Environments

Figure 8.3 The artist’s first glass-and-light installation (2025).

Figure 8.4. *Folding Clock* transformed into a lampshade
for future experimentation with glass and lighting.

Alongside virtual practice, I intend to continue expanding my works with glassblowing that combines with lighting design, as physical immersive material. Throughout this journey of research, glassblowing became an important part of my artistic inquiry. After exploring various artistic media, I found myself most drawn to glassblowing. The process of making with molten glass requires complete concentration and presence, and it became a form of meditation for me to be fully present in the moment.

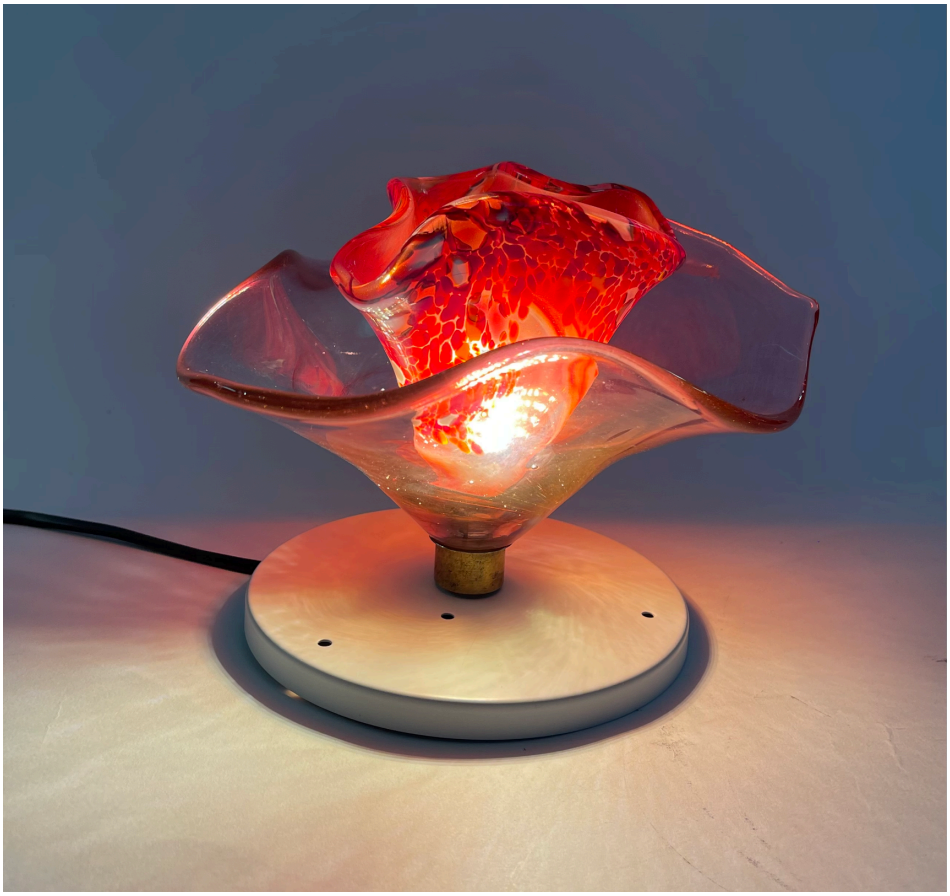


Figure 8.5. Liv Qiu, *Bloom* (2026). Glass-and-light sculptural lamp. 6 x 6 x 6.5 in.

Light is an interesting medium as it is used in every modern household, by literal meaning, it illuminates - bringing light to people in a way is bringing hope. My lighting instructor, Kate Tessier, once said, “Grief moves through my hands and helping others bring light into their practice fills me with such joy.” Her words resonate with how I think about light as both a physical material and an emotional presence. The transparency of glass makes it a natural medium and lens for diffusing light and transforming the surrounding space. By combining sculptural glass with lighting in creating an immersive environment, I hope to bring a sense of warmth to the space, creating an atmosphere that feels peaceful, contemplative, and potentially therapeutic.

Figure 8.6. Liv Qiu, *Untitled* (2026). Stackable glass-and-light sculptural lamp. 7.9 × 7.9 × 23.6 in.

Ultimately, my goal is to continue developing hybrid environments where physical and virtual environments coexist as interconnected experiences. I hope to create contemporary sanctuaries that hold spaces to pause, reflect, and experience nonsequential time as a lived and continue evolving experience.

9. Conclusions

Illusion of Time explores how hybrid art practice can interpret nonsequential concepts of time. Instead of a fixed order of past, present, and future, my research interprets time as interconnected, layered, and continuously unfolding through lived and material experience. Through research-creation, theoretical physics concepts in three-dimensional time and the holographic principle were not illustrated literally but interpreted and translated into material and spatial experiences across sculpture, glass, installation, extended reality, performance, painting, and interactive digital environment.

Return to my research question:

How can hybrid art practices translate the concept of nonsequential time through embodied and immersive experience?

My response to this question emerged through the process of making itself. Rather than arriving at a single visual representation of time, I found that hybrid practice could create conditions through which my interpretation of non-sequential time became spatial and experiential. Movement, material transformation, immersion, and the translation between physical and digital media allowed time to be explored through process rather than represented as fixed image.

The journey of my exploration was my way of answering this question. The pieces I created, and people and situations I encountered. The process of making makes the meaning.

Throughout the progression of this research journey, the making became a form of inquiry. The cycle between theory, experimentation, reflection, and material exploration became a method of generating knowledge and meanings. Drawing on research-creation, assemblage theory, hybrid practice, and theoretical physics.

Through the thesis, I developed the Spiractal Model as a visual way of reflecting on both my research process and my interpretation of non-sequential time. Its outward branching and inward returning movements reflect how my practice developed through cycles of experimentation, reflection, material translation, and return.

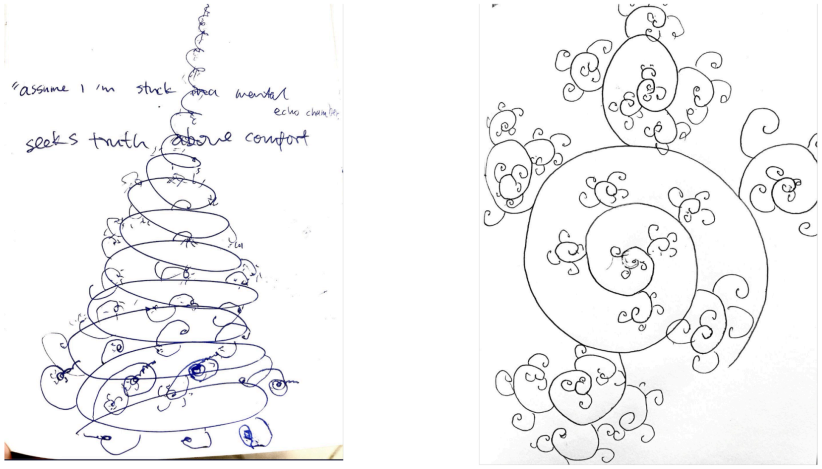


Figure 9.1. Conceptual sketches illustrating the Spiractal Model as a spatial interpretation of nonsequential time through continuous spiral movement and fractal branching.

Working across physical and digital media transformed my understanding of hybridity. Rather than treating virtual and physical as separated domains, my research bridges them and demonstrates how they can inform and reshape one another. Meaning emerged through interconnected relationships between different materials and spaces.

This exhibition materialized the concept of hybridity and spiral journey. Each artworks expressed their unique meaning and investigation of time, while collectively they contributed to a larger conceptual whole in constructing the temporal relationship through movement, perception, and reflection.

Last but not least, Illusion of Time offers an alternative perspective in perceiving the concept of time. Rather than presenting a defined answer about the nature of reality, my project invites viewers to pause, slow down and contemplate the concept of time as layered, nonlinear, multidimensional and continually unfolding. The seeking itself creates the meaning.

Postscript

Looking back at this journey, I realize that the process itself has been just as meaningful as the works I created. Moving between physical and digital media, learning to work with unfamiliar materials, collaborating with different artists, falling in love with glassblowing, and bringing the works together in the final exhibition allowed me to experience my research on time through making and presence.

Seeing the audience encounter the exhibition also reminded me that each person brings their own experiences into the space. I hope the works, as well as this paper, can invite viewers and readers to reflect on their own relationship with time.

Moving forward, I want to continue exploring immersive environments through glass, light, and digital spaces. Rather than reaching a conclusion, this research has opened more possibilities and questions for my future practice.

The end of the paper does not mark the end of my exploration in this journey.

The seeking itself is the meaning.

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11. Appendices

Appendix A

When I look carefully at my work and research now, I notice…

- A strong sense of material exploration across different mediums and art forms. Despite these differences, the works often return to a similar theme: creating a portal or liminal space between different states, realities, or ways of perceiving.
- My work is a philosophical exploration of time and space, questioning conventional understandings of time and exploring how it might instead be experienced as nonlinear, multidimensional, and interconnected.

The first thing I see or encounter when I review or look at my work is…

- Colour. My work is usually very colourful, often using colour, light, and immersive qualities to create a sense of entering another space or reality.

Describing my process, methods, and/or practice gets me to think about…

- Making space for contemplation. Through making, I try to create spaces where people can slow down, meditate, and bring their attention to the present moment in time and space.
- My practice is also a form of seeking—searching for deeper meanings in life, questioning our sense of purpose, and thinking about our existence in relation to time, space, and reality.

I compare my work to _____ as a way to describe…

- A multimedia and multidisciplinary practice that moves fluidly between physical and digital media, materials, technologies, and forms. Rather than being defined by one medium, the practice is connected through recurring questions about time, space, perception, and liminality.

Appendix B

MaiBaum AR Experience Instructions

Scan one of the four QR codes below using your smartphone, then point your camera at the *MaiBaum* painting to activate the augmented reality experience.

When this project was first developed in 2025, the AR experience was created using Adobe Aero. However, Adobe discontinued public support for Aero within eight months of this experiment. As a result, only the first QR code currently provides access to the AR experience.

For a screen recording of the AR experience, see Chapter 4.2, "Virtual to Physical."

Appendix C

CSCIA iron pour at York University, March 15, 2025.

CSCIA metal pour at the Hamilton Museum of Steam & Technology, June 14, 2025.

Appendix D

Thesis Exhibition info sheet

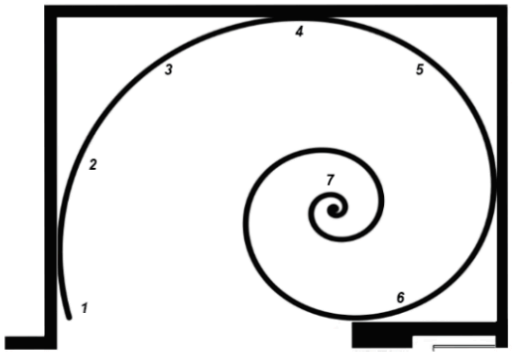
Illusion of Time

Liv Qiu

April 1 - 6, 2026 | 1- 6 pm

My work meditates on time as an interconnected, dimensional field, inspired by theoretical physics and the idea that past, present, and future coexist. Through glass and virtual spaces, I move between material presence and immaterial infinity, capturing moments while dissolving linear time.

My interest lies in the hybridity of reality, where physical and virtual spaces overlap, and different media capture fleeting moments. Bringing these together, I manifest time as nonlinear
—untwining meaning from permanence, rearranging fragmented space and experience.



For contact and more info:

IGNITE GALLERY

Interwine, 2025
Bronze
8x4x8''

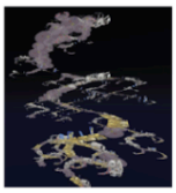
LIMINA, 2025
Video game with original artworks by Liv Qiu,
collab with game designer Snow Guan

Between Worlds, We Play, 2026
Mixed media on panel
35x47''
collab with Eugene Mireku

What Remains When Nothing Lasts, 2026
Mixed media on canvas
35x47''

Dancing waves, 2026
Glass
Size varies

Clock and Folding Clock, 2026
Glass
22x11''
10x10x7''



Illustrating Time, 2026
Video

Experience in collab with game designers
Rafael Maubrigades and Snow Guan

Appendix E

Performance Art - Opening Portal
https://www.youtube.com/watch?v=QnNgRuuAfd8

October 24, 2025
Opening Portals exhibition opening, OCAD University Graduate Gallery

Opening ceremony: Peter Morin

Performances by:

Inez Petrazzini

Juliana Gagné

Tavleen Tall

Liv Qiu

Appendix F

Game Design Document (GDD)

Illusion of Time
(A Spiral Experience of Nonsequential Time)

Project Description

Illusion of Time is a time-based, immersive game experience that explores nonlinear temporality through spatial movement inside a spiral environment. Rather than representing time as a sequence of events, the project translates time into space, allowing players to experience duration, choice, and consequence as a continuous journey.

The game is designed as a meditative, reflective experience, not a challenge. There is no failure, no score, and no optimal path. Meaning is generated through movement, perception, and the accumulation of choices over time.

Just the present movements.

Conceptual Framework

- Time is non-linear: spirals, fractals, loops
- Life is time-based: everyone moves forward, regardless of action
- Choice is partial and constrained
- Meaning emerges retrospectively

The spiral functions simultaneously as:

- a structure of time
- a visualization of lived experience
- a record of accumulated decisions

Player Experience Overview

The player enters the experience in a calm, observational state. Over time, they become immersed, subtly influencing the environment through choice. The experience ends not with resolution, but with **reflection**—revealing the path they have taken.

The emotional arc moves from:

curiosity → immersion → introspection → awareness

Game Structure

1. Beginning — *Orientation*

Initial State

- The player puts on the headset.
- The screen fades in from black.
- A **spiral structure floats in front of them**, fully visible.
- The spiral appears wire-like, sculptural, and suspended in space.

Key Characteristics

- No interaction
- No movement control
- The spiral is observed as a whole (map perspective)

Transition

- The player's viewpoint slowly moves toward the spiral.
- The spiral fills the field of view.
- The wire structure dissolves into space.
- The player crosses a perceptual threshold and enters the spiral.

2. Middle — *Traversal and Choice*

Movement

- Forward movement is automatic and constant.
- The player may slow or pause but cannot reverse.
- Time always progresses.

Environment

- The spiral is now experienced as a **curved tunnel**.
- The tunnel is constructed from repeated segments, each slightly rotated.
- Seams are perceptible up close but dissolve in motion.

Choices

- Choices are optional and missable.
- They appear as:
    - openings in the tunnel wall

    - voids or gravitational pulls
    - shifts in light, sound, or texture
- The player chooses by drifting toward them or clicking once.

Consequences

- Choices alter the environment subtly:
    - color temperature
    - tunnel density
    - movement speed
    - soundscape
    - appearance of new visual fragments
- The world changes around the player rather than the player “teleporting.”

Meaning

- Choices do not communicate outcomes explicitly.
- Emotional or philosophical meaning is felt, not explained.

3. End — *Reflection*

Trigger

- The experience ends after a fixed duration (e.g., 5–10 minutes).

Ending Sequence

- Movement slows.
- The tunnel dissolves.
- The player exits back into an external view.

Final Image

- The spiral reappears.
- It is no longer complete.
- Only the paths the player traveled are visible.
- The spiral becomes a record of lived time.

Conclusion

- Fade to black.
- Silence.
- No summary, score, or explanation.

Visual & Material Language

- The tunnel is **curved, imperfect, and continuously shifting**.
- Paintings and 3D scans are not textures but **fragments**:
    - embedded into tunnel walls
    - floating remnants
    - partial frames
- Objects may be reassembled differently depending on player choices.

The visual system prioritizes:

- atmosphere over clarity
- perception over instruction
- continuity over symmetry

Player Agency Philosophy

- The player always moves forward in time.
- Action shapes experience but does not stop time.
- Meaning is constructed retrospectively.
- The final form of the spiral reflects the player's lived journey.

Status

This document defines:

- the experiential logic of the game
- the narrative arc
- the philosophical grounding

Next steps include:

- spatial prototyping
- visual reference development
- iterative refinement of tunnel segments and choice mechanics