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# Remembrance: Magma

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**Abstract**

Remembrance: Magma

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*Remembrance: Magma* is a 3D animation displayed in an immersive video installation that addresses the imaginaries of a mind as it is dying of dementia. The work was exhibited at The Jack Straw Gallery in Seattle through a solo show in April to June 2022. *Remembrance: Magma* incorporates machine learning, cutting-edge research on the aging brain, East Asian crafting aesthetics, and Korean shamanic traditions as it examines the nature of the brain as a sensor that desires data even as it slowly fails. Culturally intersectional, *Remembrance* explores world-building through the poetic and painful processes of memory degeneration.

## Dedication

To 조명숙 my beloved mother.

## Acknowledgements

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## TABLE OF CONTENTS

DEDICATION.....	I
ACKNOWLEDGEMENT.....	II
TABLE OF CONTENTS.....	III
LIST OF FIGURES.....	IV
LIST OF TABLES.....	1
Chapter 1. INTRODUCTION.....	1
1.1 Overview.....	1
1.2 Research context.....	3
Chapter 2. PROJECT FRAMEWORK.....	6
2.1 Aesthetics of Surrealism .....	6
2.2 Surrealism and Machine Learning.....	8
2.3 Surrealism and Experimental Film.....	11
2.4 Cinematic Immersion in Contemporary Art.....	16

Chapter 3. PREVIOUS WORKS.....	19
3.1 Polaris.....	19
3.1.1 Description.....	19
3.1.2 Conceptual axis.....	20
3.1.2 Methodology.....	22
3.2 PANDEMIC.....	30
3.2.1 Description.....	30
3.2.2 Conceptual axis.....	33
3.2.2 Methodology.....	39
3.3 DARKNESS.....	42
3.3.1 Description.....	42
3.3.2 Conceptual axis.....	43
3.3.2 Methodology.....	44
3.4 Unreal Window.....	51
3.4.1 Description.....	51
3.4.2 Conceptual axis.....	52
3.4.2 Methodology.....	56
Chapter 4. REMEMBRANCE.....	60
4.1 Overview.....	60
4.2 Conceptual approach.....	63
4.3 Methodology.....	64
Chapter 5. CONCLUSION AND FUTURE WORKS .....	78

5.1 Conclusion for Remembrance: Magma.....78

5.2 Future Works .....79

APPENDIX.....83

VITAE.....84

BIBLIOGRAPHY .....85

## LIST OF FIGURES

Figure 1: “Remembrance: Magma” (2022), still image

Figure 2: “Remembrance: Magma” (2022), still image

Figure 3: On the left is M.C. Escher, "Relativity" (1953), on the right is “Remembrance: Magma” (2022), still image

Figure 4: Morgan, Chaelene, “Automatic drawings” (1960s)

Figure 5: Rafik Anadol, "Machine Hallucination" (2020)

Figure 6: On the left is Luis Buñuel, and Salvador Dalí, "Un Chien Andalou" (1929), on the right is “Remembrance: Magma” (2022), still image

Figure 7: “Remembrance: Magma” (2022), still image

Figure 8: On the left is Suzan Pitt, "Asparagus" (1979) still image, on the right is “Remembrance: Magma” (2022), still image

Figure 9: Felix Barrett and Maxine Doyle, “Sleep No More” (2011-), still image

Figure 10: “Polaris” (2019)

Figure 11: Anonymous painter, “Japanese Siege of Busanjin” (1592)

Figure 12: Gerhard Richter and Steve Reich "Reich/Richter" (2019) photo by Hamer, Katy Diamond

Figure 13: “Polaris” (2019), computer embroidery software, making progress

Figure 14: “Polaris” (2019), performance at the Good Shepherd Center, Seattle WA

Figure 15: On the left is the candles at The Do-Seon Sa (Do-Seon Temple), Seoul South Korea, on the right is Polaris (2019)

Figure 16: On the left is Sven Stoffels, "Corona CHingChan" (2020), still image, on the right is "PANDEMIC" (2020-), 3D modeling and UV mapping, making progress

Figure 17: "PANDEMIC" (2020-), still image

Figure 18: "PANDEMIC" (2020-), collective images from news media, and mapping to the game scenes, making progress

Figure 19: On the left is Frau fährt durch Wien mit "Ich bin kein Virus"-Schild (2020), on the right is "PANDEMIC" (2020-), still image

Figure 20: "PANDEMIC" (2020-), still image

Figure 21: On the left is Lisa Li, and Sheng Peng, "Smashed windows and racist graffiti: Vandals target Asian Americans amid coronavirus" (2020), NBC News, on the right is "PANDEMIC" (2020-), still image

Figure 22: On the left is Jason Fang, Samuel Yang and Bang Xiao, "Racist coronavirus graffiti sprayed on Chinese-Australian family's home in Melbourne" (2020), ABC News, on the right is "PANDEMIC" (2020-), still image

Figure 23: Virtual MozFest, "System Failure. Please Restart"(2021) poster

Figure 24: Nogha, Misha. "Wire Movement #9" (1991)

Figure 25: On the left is "DARKNESS" (2020) new poem making progress, on the right is "DARKNESS" (2020) organizing words and sentences

Figure 26: "DARKNESS" (2020), making progress

Figure 27: "DARKNESS" (2020), still image

Figure 28: "Unreal Window" (2021), still image

Figure 29: "Unreal Window" (2021), GPT-2 Machine Learning system

Figure 30: "Unreal Window" (2021), StyleGAN(<https://arxiv.org/abs/1812.04948>) generated the new rooms from 2,000 random room photos on Flickr.

Figure 31: "Unreal Window" (2021), still image

Figure 32: "Unreal Window" (2021), Lifespan\_Age\_Transformation\_Synthesis GAN (<https://arxiv.org/pdf/2003.09764.pdf>) generates different ages of my face

Figure 33: "Unreal Window" (2021), still image

Figure 34: "Unreal Window" (2021), captured image from the video game engine

Figure 35: "Remembrance: Magma" (2022), still image

Figure 36: "Remembrance: Magma" (2022), still image

Figure 37: "Remembrance: Magma" (2022), new poem, and GPT-2 Machine Learning system, making progress

Figure 38: "Remembrance: Magma" (2022), new poem making progress

Figure 39: "Remembrance: Magma" (2022), new poem making progress

Figure 40: "Remembrance: Magma" (2022), new poem and images making progress

Figure 41: On the left is a generated image by text-image A.I. generator, on the right is "Remembrance: Magma" (2022), still image

Figure 42: "Remembrance: Magma" (2022), storyboard

Figure 43: On the left is "Remembrance: Magma" (2022), chapter 0+1 storyboard, on the right is "Remembrance: Magma" (2022), chapter 3 storyboard

Figure 44: On the left is "Remembrance: Magma" (2022), mother's portrait, on the right is "Remembrance: Magma" (2022), character making progress

Figure 45: "Remembrance: Magma" (2022), still image

Figure 46: "Remembrance: Magma" (2022), installation at The Jack Straw Cultural Center, Seattle WA

Figure 47: "Remembrance: Magma" (2022), screening show at The downtown building in Denver CO

Figure 48: "Remembrance: Coral" (2022-), diagram

# LIST OF TABLES

## Chapter 1. INTRODUCTION

*By movement of the film's body or bodies and things on screen, we are made to reckon with our perpetual immersion in and inspiration by something that moves beyond, beneath, and within us all. In these moments, our tactile engagement with the cinema allows us to recognize through embodied, perceptive and expressive acts our situation in something larger; "to move through the body to an experience of its possibility."*

-Jennifer M. Barker<sup>1</sup>

### 1.1 Overview

*Remembrance: Magma* is a 3D animation displayed in an immersive video installation that addresses the imaginaries of a mind as it is dying of dementia. The work was exhibited at The Jack Straw Gallery in Seattle through a solo show in April to June 2022. *Remembrance: Magma* incorporates machine learning, cutting-edge research on the aging brain, East Asian crafting aesthetics, and Korean shamanic traditions as it examines the nature of the brain as a sensor that desires data even as it slowly fails. Culturally intersectional, *Remembrance* explores world-building through the poetic and painful processes of memory degeneration. The goal of this project is to explore more deeply the nature of dementia, beyond simply its medicalization. It seeks to provide a lens through which the confusion and suffering of our loved ones with dementia can be experienced as something as beautiful as it is excruciating. In preparation for the

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<sup>1</sup> Barker, Jennifer M. (2009). *The Tactile Eye: Touch and the Cinematic Experience*. University of California Press. p. 157.

likelihood of my own early onset dementia, I have developed a poetic understanding of the process which finds an aching beauty in degeneration. The narrative of *Remembrance*, is a rumination on the inevitable chain of family and disease, centering first on my mother in Korea before moving back through our matrilineal heritage- her mother and her grandmother both of whom also had dementia, and then at last it moves into the present, to me.

*Remembrance: Magma* examines these propositions through the basic research trajectories that constitute the technical and artistic foundations for the study of art. This document supports the motive, concept, conceptual impact and technical development of *Remembrance: Magma*. Chapter 1 gives an overview of the introduction and concept of this dissertation project, and the second chapter explains the aesthetics and philosophy behind the cinematography and narrative that is designed to immerse the audience in the subject matter from the artist's perspective. Chapter 2 addresses the aesthetics of surrealism, Surrealism and Machine Learning, Experimental Film, and Cinematic Immersion in Contemporary Art. Chapter 3 focuses on past projects that led to the creation of *Remembrance: Magma*, and Chapter 4 culminates in a detailed description of the methodology for this project as well as a study of the exhibition installation at the Jack Straw Gallery. In chapter 5, I will conclude this dissertation and outline future plans.



Figure 1: “Remembrance: Magma” (2022), still image

## 1.2 Research Context

This dissertation is the first step in what will be a life-long research project. It has been very meaningful to me to have this time and guidance in formulating the trajectory of my current and future studies.

I began my career in the arts by studying traditional Korean craft design, to which I remain devoted. However, I also have a very passionate relationship to the realm of concepts and social progress, and a temperament that leads me to want to break molds. Due to these qualities, I soon found the culture of traditional crafts in Korea to be too confining and chose to transition into the fine arts, within which I am free to share my thoughts on societal changes, and to explore the nature of the sublime as well as the significance of humanity’s place within existence. Once I moved into the fine arts, my background in crafts led me naturally into video design and multimedia art, both of which have many similarities to traditional handicrafts. As a Korean-American immigrant, a feminist, an artist, and an individual, my perspectives on these issues represent a relevant contribution to the

widening of breadth of this dialogue which has historically been dominated by a very narrow subsection of humanity. I hope my voice inspires others to recognize these topics as accessible, when they might not have otherwise.

This research consists of the results of my study of 3D animation and video game interaction simulation using Unity and other character generator software, Unity is a video game engine and provides many advantages when making animations that include the potential of added interactivity because it is a coding based program but it can also be used without a knowledge of coding. Unity is very useful in reducing rendering times as well as manipulating the lighting and the character's movements. I researched the use of Unity in making VR or spatial screen videos, and this research will emphasize the utility of the software in making interactive animation. This dissertation will also address how storyboarding and cinematography techniques commonly used in the video production and animation industries are used in the field of video art, and how these methods have been useful to my animation projects.

This dissertation will discuss the inspiration for *Remembrance*, focusing most especially on poetry, paintings, and films, as well as the fusion of various art genres and methodologies which contributed to its production. Many disparate threads were combined to create the aesthetic of Surrealism around which this animation centers. It is Surrealist methodologies and aesthetics that unite all the genres referenced by this project. This writing will also show how A.I. and Machine Learning were used cooperatively in the production of *Remembrance*:

*Magma*. The way in which these new data-driven techniques of productions were mixed with traditional human-crafted animation is a point of focus in this work. The pedagogical goals of this dissertation project will also be discussed, along with previous projects. The concepts and methodologies used in the formulation of these projects may suggest new teaching methods or avenues for research through which students can produce their own creative work.

Finally, this dissertation project will also include my research into the nature of disability and its treatment within the arts. My own work focuses specifically on dementia and how it might be considered outside the context of its medicalization. This work considers the topic of dementia not with the intention of seeking a physical remedy, but rather in order to recontextualize its experience into the realm of religion, poetry and philosophy. Dementia is used as a lens through which to reconsider the nature of our mortality.



Figure 2: “Remembrance: Magma” (2022), still image

## Chapter 2. PROJECT FRAMEWORK

### 2.1 Aesthetics of Surrealism

The Surrealist movement is a major influence on my work but I felt that of all aesthetic traditions, it would be best suited to representing the confusion of memory in the functioning of the brain, so I drew heavily upon its resources in making *Remembrance: Magma*. One narrative states that Surrealism was first begun by the French poet and writer André Breton.<sup>2</sup> He was the author of *The Surrealist Manifesto* in 1924, and curated the exhibition *Le Surréalisme* in Paris in 1947, including the work of his notorious gang of surrealist friends. He quoted: “Nothing that surrounds me is object, all is subject.” Surrealism stretches beyond the common human experience into the gap between rationally accepted activities or aesthetics and the unconscious, unruly energy of dreams. If Realism communicates the socially agreed-upon rules of reality, then Surrealism inverts or subverts these rules, inventing uncanny beauty to fill the space left by the rejection of societal conventions. Perhaps it is surreal that you see the world in one way and I see it in another. If surrealism is in fact a component of subjectivity, then the fantastical thinking of the Surrealist art movement is of a much bigger, much grander nature than this everyday strangeness. Like when dreaming, the Surrealist world can seem quite ordinary at first glance, as if it is operating on the

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<sup>2</sup> Dempsey, Amy. (2019) *Surrealism*. Thames & Hudson Ltd. p. 6

common plane of understanding, but then, as if upon waking up, you realize it is set deeply askew.<sup>3</sup>

For my work with *Remembrance: Magma*, I took particular inspiration from René Magritte and Maurits Cornelis Escher. Magritte's work is known for challenging observers' preconditioned perceptions of reality, while Escher's work features mathematical objects and operations that include impossible objects, explorations of infinity, reflection, symmetry, perspective, truncated and stellated polyhedra, hyperbolic geometry, and tessellations.<sup>4</sup> Inspired by these artists, I created a fantastical environment by inverting and twisting spaces and objects, presenting the audience with a bizarre and unsettling experience.

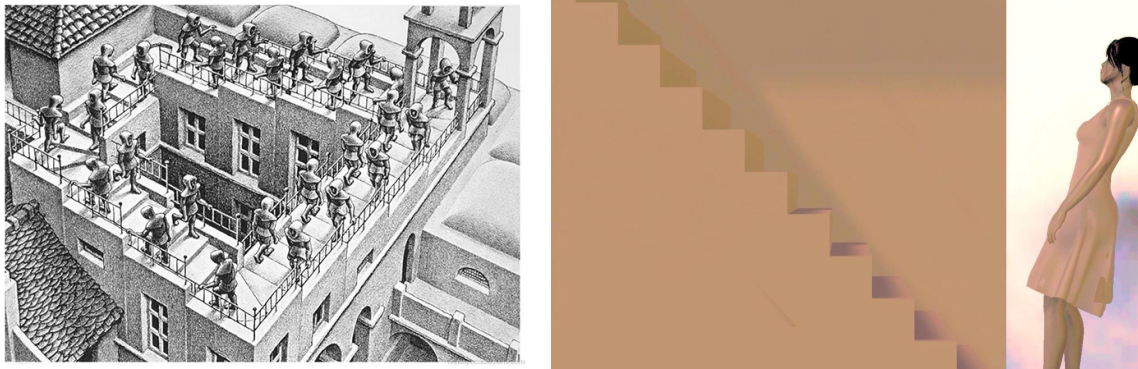


Figure 3: On the left is M.C. Escher, "Relativity" (1953), on the right is "Remembrance: Magma" (2022), still image

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<sup>3</sup> Chan, Stephanie Ellen. (2017, April 20). *Meeting surrealism: An obsession with escher then and now*. Stephanie Ellen Chan. Retrieved August 11, 2022, from <https://stephanie-chan-pzsm.squarespace.com/blog/2017/4/19/meeting-surrealism-an-obsession-with-escher-then-and-now>

<sup>4</sup> Wikimedia Foundation. (2022, August 7). *M. C. Escher*. Wikipedia. Retrieved August 11, 2022, from [https://en.wikipedia.org/wiki/M.\\_C.\\_Escher](https://en.wikipedia.org/wiki/M._C._Escher)

## 2.2 Surrealism and Machine Learning

*Breton's flash of inspiration would coalesce into the inaugural Surrealist method of automatic writing, the attempt to outflank the conscious mind by scribbling words or doodles down faster than the speed of thought. For Breton, this radical abdication technique was a breakthrough; it allowed writers to seemingly repudiate intentionality and ambition and become "simple receptacles" and "modest recording instruments." Not only did this thwart any debasing, approval-seeking tactics on the part of the artist, it offered the "superior reality of certain forms of previously neglected associations, in the omnipotence of dream, in the disinterested play of thought.*

*Uninhibited by a rationalistic need to make sense or link causes to effects, automatic writing can surprise us with the intentions and connections we discover retroactively in what might otherwise seem like random gibberish or the product of sheer coincidence. Breton claimed that automatic writing, for one thing, "tends to ruin once and for all all other psychic mechanisms and to substitute itself for them in solving all the principal problems of life.*

-Rob Horning 2022<sup>5</sup>

Bretón transcribed the dreams<sup>6</sup> of his unconscious mind through the automatic writing method that Surrealists called automatism. It is a method not entirely

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<sup>5</sup> Horning, R. (2022, April 28). *Word processing*. ARTnews.com. Retrieved August 11, 2022, from <https://www.artnews.com/art-in-america/features/word-processing-surrealism-artificial-intelligence-1234625624/>

<sup>6</sup> *La Escritura automática de André Bretón, Una Transcripción de Sus Sueños*. Fahrenheit Magazine. (2019, April 23). Retrieved August 11, 2022, from <https://fahrenheitmagazine.com/arte/arte-letras/la-escritura-automatica-de-andre-breton-una-transcripcion-de-sus-suenos>

dissimilar to stream-of-conscious writing, but as Bretón said “surrealism is based on the belief in the superior reality of certain forms of previously neglected associations in the omnipotence of dreams, in the disinterested play of thought”<sup>7</sup> and it is this perspective that makes it distinguishable from other methodologies. In automatic drawing was another method used by the Surrealists to express the subconscious. Drawing in this way one may move randomly or lose control while following coincidences as they arise. Artists who have practiced this style of automatic drawing include Joan Miró, Salvador Dalí, Jean Arp, and Picasso. It is my supposition that artists can now use machine learning for the same purpose. This may seem counterintuitive because when most think of machine learning or artificial intelligence, they think of the control of automation rather than Surrealist unconscious freedoms.<sup>8</sup>



Figure 4: Morgan, Chaelene, “Automatic drawings” (1960s)

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<sup>7</sup> Poetry Foundation. (n.d.). *André Breton*. Poetry Foundation. Retrieved August 11, 2022, from <https://www.poetryfoundation.org/poets/andre-breton#:~:text=Thought%2C%20in%20the%20absence%20of,the%20disinterested%20play%20of%20thought.%E2%80%9D>

<sup>8</sup> Hebron, P. (2019, March 1). *Rethinking design tools in the age of machine learning*. Medium. Retrieved August 11, 2022, from <https://medium.com/artists-and-machine-intelligence/rethinking-design-tools-in-the-age-of-machine-learning-369f3f07ab6c>

For example, in natural language processing models such as GPT-2 and GPT-3 from OpenAI, when a certain prompt (topic) is input, the statistical data sets pervasive on the internet related to that topic are used to create new words. I would argue that while automatic drawing and automatism source from the data in the artist's personal unconscious mind, these language processing models function very similarly while drawing from a kind of online collective mind. In other words, it can be said that it is Surrealist because it produces an average answer using these statistics, and the average answer creates a text not bound by any rules and outside the control of the artist. For this project, I created text using GPT-2 and OpenAI's Dall-E, and completed my animation storyboard and composition with images resulting from text prompt input. Another artist who successfully uncovered the potential of Surrealist methodologies hybridized with machine learning technology is Refik Anadol. His work *Machine Hallucinations* is an ongoing exploration of data aesthetics based on collective visual memories of space, nature, and urban environments to transform the processing of data into surreal hypnosis.<sup>9</sup>

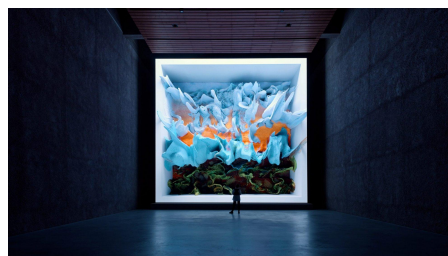


Figure 5: Refik Anadol, "Machine Hallucination" (2020)

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<sup>9</sup> *Machine hallucinations - nature dreams*. Refik Anadol. (2021, December 17). Retrieved August 11, 2022, from <https://refikanadol.com/works/machine-hallucinations-nature-dreams/>

## 2.3 Surrealism and Experimental Film

*Animation, in the broadest sense of the term, constitutes a fundamental, possibly unique, means of representing dreams: of translating them, at least for a few minutes, into something utterly real and tangible. It is a workshop whose sole limitations are of a technical nature... It is, at this point, absolutely necessary to underscore an essential element of animation: authentic animation is not and must not be a mere display of technical perfection ... . It should also be remembered that a character, even when it is drawn in a peculiar way, cannot live without a soul.*

- Fava, Luca 1998<sup>10</sup>

*One of the most compelling aspects of animation is its power to remind audiences of the importance of play and imagination in a world that increasingly sidelines such necessities .... animation is one of the most popular forms in which the spirit of true anarchy and the antic spirit live on. In Native American mythology, the coyote figure is a central force, playfully and wilfully at odds with the established order that it seeks to mock and undermine. Animation plays this same coyote-like role .... [It] is a liberating force that free associates like crazy and makes audiences see the world afresh and, clichéd though it sounds, with the eyes of a child again. -James Clarke 2007 <sup>11</sup>*

Salvador Dalí, and Luis Buñuel's 1929 experimental silent film *Un Chien*

*Andalou* is the archetypal Surrealism and Experimental film. There had already been experimental fantasy films by pioneer filmmakers such as Georges Méliès, but Dalí and Buñuel wanted to focus on the images of suppressed human emotions. They shared the imagery from their dreams with each other, and together they focused on

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<sup>10</sup> Cavallaro, Dani. (2009). *Anime Intersections: Traditional and Innovation in Theme and Technique*. McFarland & Company

<sup>11</sup> Cavallaro, Dani. (2009). *Anime Intersections: Traditional and Innovation in Theme and Technique*. McFarland & Company

the content which was the most absurd and unrealistic. They wanted freedom in all forms, freedom for the suppressed realities of their dreams, on film.

The chronological order of the narrative is disorganized and inexplicable, the viewer must understand using their own imagination. They hoped that the audience would simply understand all these structures rather than rationally accept them.

They offered them a chance to interpret the film in their own way.



Figure 6: On the left is Luis Buñuel, and Salvador Dalí, "Un Chien Andalou" (1929), on the right is "Remembrance: Magma" (2022), still image

*Un Chien Andalou* is regarded as one of the most influential works of the Surrealist movement. It has influenced many popular films, such as Lynne Ramsay's film *We Need to Know Kevin* (2011), and David Lynch's *Blue Velvet* (1986) which both contain direct references to shots from the original surrealist work. Many more films have been influenced by Surrealism more generally, and it is two of these that I have looked to more specifically in making *Remembrance: Magma: Being John Malkovich* (1999) by Spike Jonze for the room chasing scene and Susan Pitt's *Asparagus* (1979).

In the film *Being John Malkovich*, there is a scene in which John Malkovich is chasing two women as they flee.<sup>12</sup> The two women run frantically through a space that divides Malkovich's unconscious memories into rooms. In each space, Malkovich witnesses his memories, some of which feel shameful or traumatizing as he pursues the women from scene to scene. As they move from the space of one memory to another, the orientation of space and gravity shifts. I was inspired by this scene as it uses physical orientation to describe the loss of awareness of space, which is one of the symptoms of dementia patients. As this action fits perfectly into my own narrative, I reference it in the scene when the female character in *Remembrance: Magma* busily wanders through space in chapter three, 'Tide'.

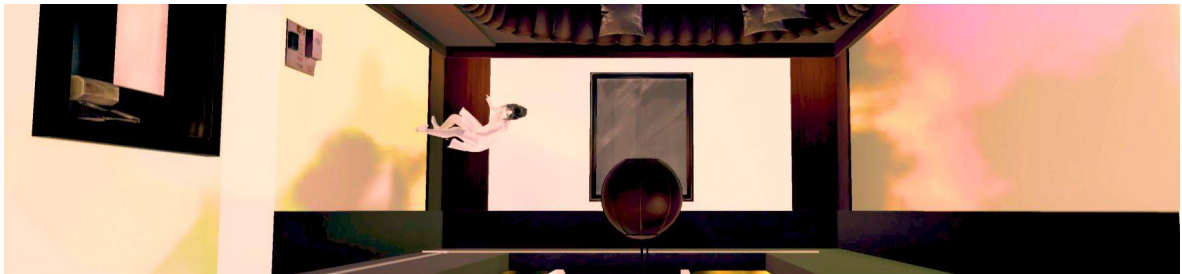


Figure 7: "Remembrance: Magma" (2022), still image

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<sup>12</sup> YouTube. (2017, July 2). *Being John Malkovich - chase scene through Malkovich's subconscious*. YouTube. Retrieved August 11, 2022, from <https://www.youtube.com/watch?v=LxYyr2aOm4A>

Animation is included in the Field of Film.<sup>13</sup> Paul Wells suggests that abstract animated films always prioritize “abstract forms in motion”. In 1948 Norman McLaren stated that motion is not a given in animation, and that discontinuous and continuous, as well as single- and multiple-frame, approaches often appear within the same experimental film. Susan Pitt’s animation *Asparagus* (1979) was another source of inspiration for *Remembrance: Magma*. As Jackie Leger mentions in her article on Pitt’s work, her images probe the female psyche using whimsy, imagination, wit, and nightmares, as she depicts human fears and delusions.<sup>14</sup> Like surrealism, her animation narrative is straight-forwardly incomprehensible, with dreamlike images that lead the subconscious mind. Her video content hides the potentially violent narrative with cute props and feminine decorations, and an elegant gaze. The style of the video is as colorful and cute as a candy shop. I referenced the exquisite harmony of her tone and the gap between her style and the content of her film’s narrative in chapter two: ‘Love’ in *Remembrance: Magma*.

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<sup>13</sup> Aleksandr Bushkin noted that it was a live-action film that involved the shooting of “multiple” frames with each turn of the camera’s handle, in contrast to the frame-by-frame fixing of every constituent part of a movement typical of animation. In that sense, Bushkin argues, animation would more precisely be termed “frame shooting” (kadro-s’ëmka), where the basic units of the film are taken to be frame-sized modules, rather than shots of unpredictable duration - Beckman, Karen (2014). *Animating Film Theory* © 2014 Duke University Press

<sup>14</sup> Leger, Jackie. (1997). *Suzan Pitt: An Animator’s Journey*. *Animation World Magazine* 1. 11



Figure 8: On the left is Suzan Pitt, "Asparagus" (1979) still image, on the right is "Remembrance: Magma" (2022), still image

## 2.4 Cinematic Immersion in Contemporary Art

It's possible to watch all kinds of moving image content at home via a computer monitor, TV, or home projector. To experience the three dimensional space of a moving image, augmented reality or virtual reality are available at home if one has access to the required technology. I decided not to make *Remembrance: Magma* in a format that would make it available for home viewing because I wanted it to be experienced in an immersive room, where a group of people would experience it at the same time together. I would not want anyone to experience this work isolated at home, and feel as though they were left alone with the challenge of dementia. This content is meant to be shouldered together by a group. For this reason I chose an installation work that encloses the entire room with video. The video and sound repeat infinitely in the room without specific instructions so the audience may feel as if they were in a fishbowl, they can sit anywhere, or simply stand. The sound of the video is produced by more than 5 speakers which are suspended from the ceiling. There are many different ways to show the moving images, and each format has a clear purpose. Jennifer M Barker said, "What we do see is the film seeing: we see its own (if humanly enabled) process of perception and expression unfolding in space and time."<sup>15</sup>

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<sup>15</sup> Barker, Jennifer M. (2009). *The Tactile Eye: Touch and the Cinematic Experience*. University of California Press. Page 9

“A phenomenological approach to the cinematic experience, then, focuses neither solely on the formal or narrative features of the film itself, nor solely on the spectator’s psychic identification with characters or cognitive interpretation of the film. Instead, phenomenological film analysis approaches the film and the viewer as acting together, correlationally, along an axis that would itself constitute the object of study.<sup>16</sup> “

There are many projects using an immersive projection space by artists such as Refik Anadol, but my first inspiration for this immersive structure was a project called "Sleep No More," a real-time immersive theatrical experience that I saw performed in Chelsea, New York in 2016. This theatrical piece invited a limited number of audience members every few hours. The audience wore masks reminiscent of a white grim reaper, and we witnessed the performers in the space as we walked through every floor of the building, which was decorated like a haunted hotel, an asylum, and like hell. The masked audience was allowed to see this performance from any position as if they were invisible. We were asked not to make a sound, take photographs, or touch the performers, but were left to wander around like ghosts, savoring every space and witnessing a modern-day adaptation of Shakespeare's Macbeth. I was deeply impressed by this experience

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<sup>16</sup> Barker, Jennifer M. (2009). *The Tactile Eye: Touch and the Cinematic Experience*. University of California Press. Page 78

and I have endeavored to recreate aspects of this experience using 3D animation in an immersive environment.



Figure 9: Felix Barrett and Maxine Doyle, “Sleep No More” (2011-), still image

## Chapter 3. PREVIOUS WORKS

### 3.1 Polaris

#### 3.1.1 Description

*Polaris* is an operatic sculptural installation of immersive light and interactive video which creates a space that encourages us to discover the signal hidden within each of us that connects us all. *Polaris* was inspired by starlight and my questions about our existence in the universe. Named after the North Star, *Polaris* considers the possibility that we each have a signal within us through which we can communicate with other worlds. Even if this introspective signal that connects all of us is in a dead zone temporarily, it is beautiful to see what happens when we believe in it. If our signal connects us to the universe in a way that we can see, feel, or touch, what would we experience? Like footsteps echoing in a cave, movements through *Polaris* are echoed in the light the sculptures shine as they react to a presence.



Figure 10: "Polaris" (2019)

### 3.1.2 Conceptual axis

*Polaris* is an interactive installation inspired by William Morris' story of a romantic utopian socialist society of the future. *Polaris* tells the story of the Imjin War, the 16th-century Japanese invasion of Korea, through the perspective of a woman from the year 2500AD using dance, video game-play, and sculpture. The story of the Imjin War is not commonly known outside of Asia, but it played an important role in shaping modern Korean culture, so a little history is necessary; 500 years ago, the Joseon dynasty of Korea had a strong bond with the Ming dynasty in China. The Ming was very dominant economically and culturally, so it seemed prudent to obey them and maintain close ties. Japan, in contrast, was relatively poor, often seeking aid from the Joseon, so it was never imagined that they would have the audacity to invade. Due to their bureaucratic mindset and neo-Confucian hierarchy, the Joseon felt safe from the Japanese, who they considered less civilized, and were taken off guard by their aggression. When the Japanese landed on the coast, the Joseon believed that their king would protect them, as he should have done according to Confucian principles, but he fled, along with the upper classes, allowing the Japanese soldiers to kill many vulnerable women and children. Eventually, with the help of the Chinese, the Joseon succeeded in expelling the Japanese military, but the actions of the Joseon leadership exposed the neo-Confucian class system for its hypocrisy and the lower classes began to see the upper classes as irresponsible, greedy and sneaky. It is a contradiction that persists

into the present day, as Korea has never succeeded in shaking off the pernicious elements of its neo-Confucist hierarchy, and continues to be plagued with misogyny, ageism, and classism. *Polaris* asks: How will our culture have developed 500 years from now?



Figure 11: Anonymous painter, “Japanese Siege of Busanjin” (1592)<sup>17</sup>

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<sup>17</sup> 보물 부산진순절도 (釜山鎮殉節圖, Japanese Siege of Busanjin) : 국가문화유산포털 - 문화재청. 문화재청 국가문화유산포털. (n.d.). Retrieved August 11, 2022, from [https://www.heritage.go.kr/heri/cul/culSelectDetail.do?VdkVgwKey=12%2C03910000%2C11&pageNo=5\\_1\\_1\\_0](https://www.heritage.go.kr/heri/cul/culSelectDetail.do?VdkVgwKey=12%2C03910000%2C11&pageNo=5_1_1_0)

### 3.1.2 Methodology

I began research for *Polaris* by studying the paintings depicting the Imjin War by unknown artisans from the Joseon Dynasty. These works were usually in reference to the Buddhist Heart Sutra, a sutra which they believed might help heal the damage of war and perhaps even provoke Korean society into developing into a future utopia. The Buddhist Heart Sutra is as follows:

Avalokiteshvara,  
when practicing the profound perfection of wisdom,  
did light up and saw that  
the five aggregates were of emptiness  
and he overcame all suffering and misfortune.

Sariputra!  
Form is emptiness  
and emptiness is form.  
Form is not other than emptiness  
and emptiness is not other than form.  
So is the same for feeling,  
perception, mental formation,  
and consciousness.

Sariputra!  
The mark of emptiness of all phenomena  
is not of birth, not of death,  
not of impurity, not of purity,  
not of increase, not of decrease.

Therefore, in emptiness  
there is no form, feeling, perception,  
mental formation, and consciousness,  
no eye, no ear, no nose,  
no tongue, no body, and no mind,  
no form, no sound, no odor,

no taste, no touch, and no mental object,  
no eye sphere, and further no consciousness sphere,  
no ignorance, and also no cessation of ignorance,  
further no aging and death,  
and also no cessation of aging and death,  
no suffering, no origin of suffering,  
no cessation of suffering,  
and no path to enlightenment,  
no wisdom, and also no attainment.

Since there is no attainment, and  
all Bodhisattvas rely on the perfection of wisdom,  
there is no obstacle in their mind.  
Since there is no obstacle in their mind,  
they have no possession of fear,  
completely abandon wrong and illusory perception,  
and arrive at the ultimate of Nirvāṇa.

Since all Buddhas in the past, present and future  
rely on the perfection of wisdom,  
they attain unsurpassable complete enlightenment.

Therefore, one should know that  
the perfection of wisdom is  
truly the profound mantra, truly the luminous mantra,  
the highest mantra, peerless mantra  
that put an end to all the suffering,  
that is true and is not untrue.

It was challenging to find a way to interpret the Heart Sutra into visual language, but when I discovered the surrealistic and abstract painting collection in the book 'Patterns' by Gerald Richter, I felt that there was an immediate connection between the two. Richter's division and repetition of his previous paintings create patterns that seem to transcend materiality and gesture toward the sublime. I saw these works when they were shown at The Shed in collaboration with the composer Steve Reich, and it was this collaboration that inspired my solution for how to make a visual language around the Heart Sutra. This way of repeating patterns made the

installation and the performance more harmonious. The translation of a painting into a pattern, and the distillation of life into ritual, share the ability to essentialize and preserve something vital and mysterious about our existence, and to facilitate our connection to that thing, whatever it might be.

*Polaris*, as it is, came into being through the contemplation of these issues, and through attempts to communicate them earnestly, in seriousness, and with respect to the gravity of the historical content, while also reaching toward the shining emptiness of the Heart Sutra.



Figure 12: Gerhard Richter and Steve Reich "Reich/Richter" (2019) photo by Hamer, Katy Diamond<sup>18</sup>

*Polaris* borrows the basic story-structure from William Morris' utopian sci-fi novel *News from Nowhere*, in which the main character travels in a time machine to the past, in this case to the Joseon Dynasty. I then decided that the most effective

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<sup>18</sup> A new collaboration at the shed offers a reflection on the work of Gerhard Richter. Galerie. (2019, April 16). Retrieved August 11, 2022, from <https://galeriemagazine.com/gerhard-richter-steve-reich-the-shed/>

format would consist of elements such as interactive animation, game-play and performance.

I chose the story of the aftermath of the Imjin War as the subject of *Polaris*, because of an unrelenting curiosity as to why modern day Korea is still subsumed by the contradictions of neo-confucianism inherited from the Joseon dynasty. I wonder why people still support this problematic belief system in which the individual's pursuits and personal happiness are meant to be sacrificed to maintain a rigid hierarchy and the status quo. Does this kind of stability truly keep us safe? From my perspective, arriving at death having seen as little change as possible is not a worthwhile trade for the freedom to pursue individual happiness. I wanted to show this story articulated from my point of view, as in William Morris' novel, which depicts the gaze of a person from the future. Rather than showing the war story as it happened, this narrative unfolds through the perspective of a visitor from the future.

The interactive animation is an intense, aestheticized expression of the continuous cycle of war and life of the Joseon period as seen by people from the future. The participating audience member moves the animation from one scene to the next by using a kinetic controller to grasp the animated objects. Almost all of the objects in the animation are embroidered forms, lifted from the folk paintings of the Joseon Dynasty, such as dogs, tigers, trees, warriors, landscape paintings, etc... which were then scanned and animated. An old world aesthetic was given to the piece by first constructing the characters with embroidery. M Barker also wrote: In many cases, the image is held long enough to transcend its narrative meaning and

become significant solely as texture upon our skins. Figure and ground mingle continuously in this film with the help of cinematic effects that flatten the image into pure surface and texture.<sup>19</sup>

This is meant to give the same effect as the phrase “Once upon a time” at the beginning of a fairytales and induce an open minded flexibility or suspension of disbelief in the audience. The embroidery also gives the artwork an archaic feminine feel, thereby differentiating it from the military histories in which this subject matter is usually contained as well as contributing to the work the tone of richness and beauty inherent in the medium. Finally, I found that embroidery had the ability to express the vulnerability and emptiness of the Heart Sutra through the open spaces left between the stitches.

*Polaris* is more than just an interactive animation; it is an embodied project consisting of interactive lights built into sculptural chandeliers, and performers who move through the audience. When coming to *Polaris*, visitors were encouraged to participate by playing a game on a large display projected on a wall. The video game is motivated by the concept of “Samsara”, which is from Buddhist theory: the beginningless cycle of repeated birth, mundane existence and dying again. It’s a motion game played by shaking a wearable controller with your hand. It has 5 different levels created with embroidered elements. It was projected onto two rounded screens that were facing each other in the middle of the gallery. The ending scene of this interactive animation shows the repetition of the visual images on the

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<sup>19</sup> Barker, Jennifer M. (2009). *The Tactile Eye: Touch and the Cinematic Experience*. University of California Press. p. 42.

screen, mixed up in a loop (inspired by Gerald Richer's patterns) which then lead the story to loop back and begin from the first scene endlessly.

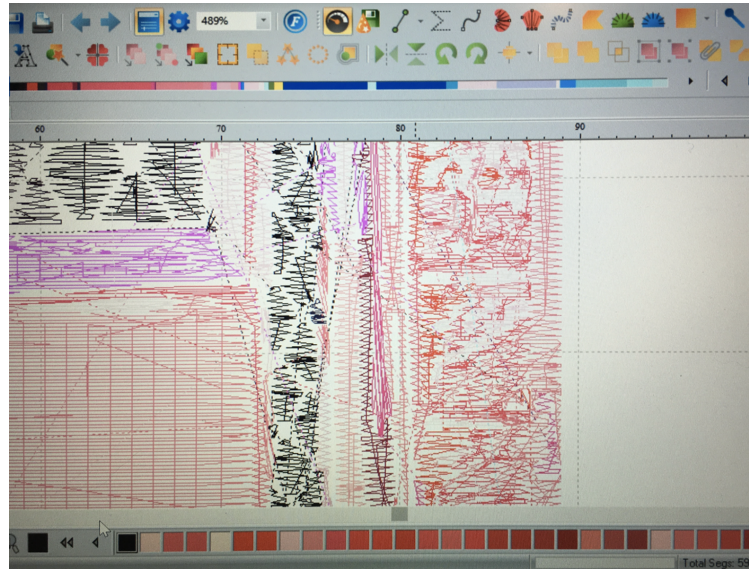


Figure 13: "Polaris" (2019), computer embroidery software, making progress

As the visitor played the game projected on the wall, the Korean Seung mu (승무(僧舞)) and Japanese Butoh (舞踏, Butō) dancers performed around and within the installation wearing LED, and POV dresses that respond to the choreography. The mingling of these two dance forms symbolizes healing and movement towards an inclusive future utopia. The dancer's costumes were a feminized mix of Ming Dynasty-Joseon Dynasty and Japanese samurai armor, and the style of the armor was fabric wire, suggesting a form like a tortoise, which is hard like armor.



Figure 14: “Polaris” (2019), performance at the Good Shepherd Center, Seattle WA

The design of the lighting sculpture references the lotus-shaped candles used in Korean Buddhism. At the Doseonsa Temple in Bukhansan there is a collection of lotus candles. Each candle has the name of a local family written on it, and these candles are lit semi-permanently, like a fire that does not go out and does not melt away. They are meant to serve as a protection for the families. The local families have to pay for the maintenance of these candles, these flickering lights seem to depict the very lives of the area’s hard-working residents, and the tens of thousands of small lights at night are so warm, beautiful, and filled with magic. This inspired the 8’ x 4’ sculpture containing motion-activated LEDs with IR receivers in the shape of the artist's profile, which invited visitors into the Polaris experience.

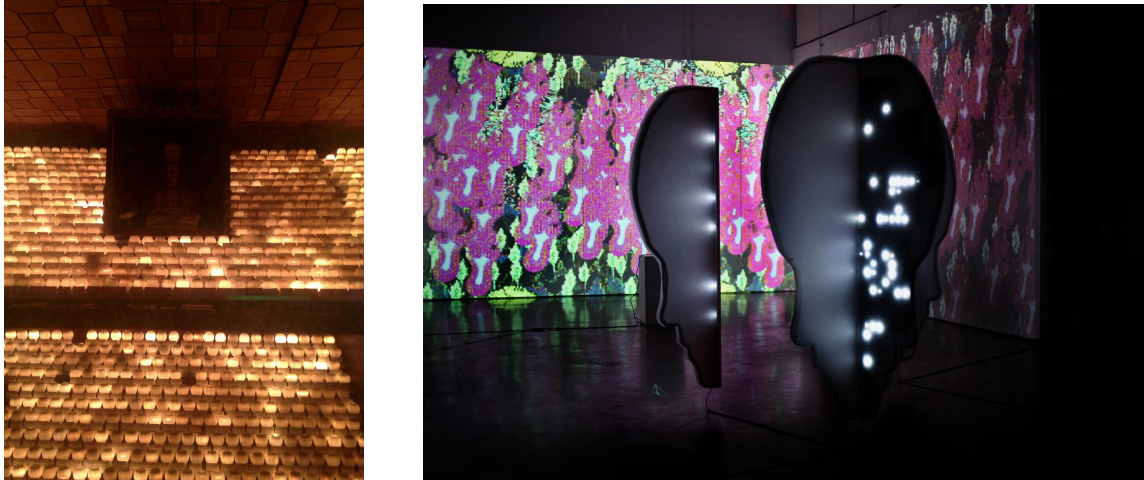


Figure 15: On the left is the candles at The Do-Seon Sa (Do-Seon Temple), Seoul South Korea, on the right is *Polaris* (2019)

The first performance of *Polaris* was shown at [DXARTS:Iterations] Good Shepherd Center in March 2019. I also had a solo exhibition of *Polaris* at the Georgetown Oxbow gallery in April 2019. The third showing of *Polaris*, was at the Bellevue Art Museum and Bellevue City Hall in September 2019.

*Polaris* was awarded the Judson-Morrissey Excellence in New Media Award 2021 in The New Media Caucus, by The College Art Association (CAA).

## 3.2 PANDEMIC

### 3.2.1 Description

*PANDEMIC* is a first-person, 3d, environmental art game about the ongoing coronavirus pandemic. This project was designed to bring awareness to the many incidents of discrimination, xenophobia, racism, and violence experienced by Asian Americans during the 2020 COVID-19 pandemic. In 2020, it was estimated that over 30 percent of Americans had witnessed bias against Asians due to COVID-19 (Ellerbeck, 2020)<sup>20</sup>. In my own experience, these moments tend to slip by unnoticed by non-Asians, even when experienced by close friends. *PANDEMIC* was a response to this myopia. It allows a player of any racial or cultural background to experience the atmosphere of xenophobia with which the Asian American community has been contending. I collected these seemingly playful or careless demonstrations of Xenophobia and juxtaposed them with scenes of the bloody aftermath of racist attacks. This pandemic has reminded humanity that we as human beings are very fragile. In our desire to feel strong, throughout our history, we have used scapegoating as a mechanism for catharsis and in-group bonding. *PANDEMIC* functions as a tool for people to confront and process the surrealistic violence of the covid-19 pandemic. Each room functions as a level might in a more traditional video

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<sup>20</sup> NBCUniversal News Group. (2020, April 28). *Over 30 percent of Americans have witnessed covid-19 bias against Asians, poll says*. NBCNews.com. Retrieved August 11, 2022, from <https://www.nbcnews.com/news/asian-america/over-30-americans-have-witnessed-covid-19-bias-against-asians-n1193901>

game, but in *PANDEMIC*, there is nothing to achieve or defeat. The player simply moves through the space of each room, observing.

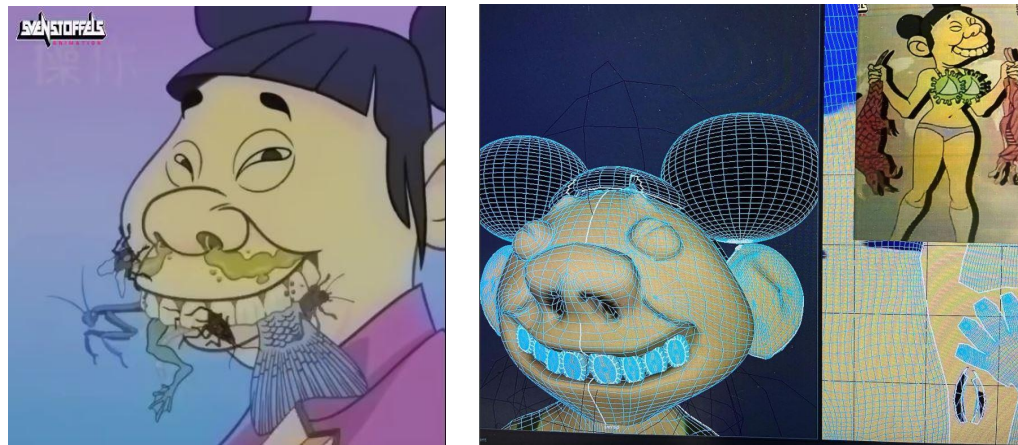


Figure 16: On the left is Sven Stoffels, "Corona CHingChan" (2020-), still image, on the right is "PANDEMIC" (2020), 3D modeling and UV mapping, making progress

The first room, or level of *PANDEMIC*, contains videos of non-Asian people on karaoke and theater screens, wearing Chinese costumes, pretending to eat bats, and singing “kung flu” or “ching cheng virus” songs. At the height of the action the player cannot walk freely without being attacked by a crowd of such people as they emit both insults and physical violence. The next room contains a group of politicians, past and present, arguing amongst themselves who take no notice of the player. As the player moves into the next room they are confronted with an enormous q-tip. At one end of the q-tip people who are demonstrably frustrated have gathered around a corpse-filled hole. On the other end, the player finds a group

of people who are not wearing masks or maintaining the recommended social distance, as they protest the lockdown measures outside the White House. As the player moves into the next room they find themselves confronted with multiple iterations of George Floyd. These George Floyds are positioned on gurneys that surround a group of protesters and police. The next room is a dramatic inferno, a hellscape where arson has left streets and buildings ablaze. In the sixth room the player finds a more uplifting scene as anthropomorphized plants are walking into the Barcelona Opera house. Finally, the player enters the last room to find themselves within the same opera house, opulent and peaceful, surrounded by hybrid plant-people that represent hope for the future.

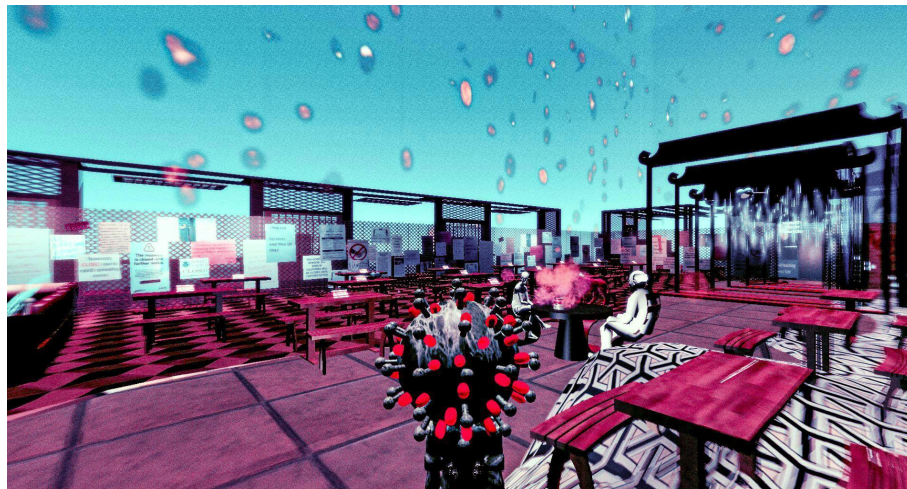


Figure 17: "PANDEMIC" (2020-), still image

In 2020, it was estimated that over 30 percent of Americans had witnessed bias against Asians due to COVID-19 (Ellerbeck, 2020)<sup>21</sup>. In my own experience, these moments tend to slip by unnoticed by non-Asians, even when experienced by close friends. *PANDEMIC* was a response to this miopia. It allows a player of any racial or cultural background to experience the atmosphere of xenophobia with which the Asian American community has been contending. I collected these seemingly playful or careless demonstrations of Xenophobia and juxtaposed them with scenes of the bloody aftermath of racist attacks. This pandemic has reminded humanity that we as human beings are very fragile. In our desire to feel strong, throughout our history, we have used scapegoating as a mechanism for catharsis and in-group bonding. *PANDEMIC* functions as a tool for people to confront and process the surrealistic violence of the covid-19 pandemic.

### 3.2.2 Conceptual axis

Work on *PANDEMIC* began in March of 2020 as the virus was mostly limited in spread to East Asia. Urgent concern had already been raised within these countries but had not yet been recognised as a serious threat in the United States. Most Americans were not yet wearing masks, but many Asian people, more aware

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<sup>21</sup> NBCUniversal News Group. (2020, April 28). *Over 30 percent of Americans have witnessed covid-19 bias against Asians, poll says*. NBCNews.com. Retrieved August 11, 2022, from <https://www.nbcnews.com/news/asian-america/over-30-americans-have-witnessed-covid-19-bias-against-asians-n1193901>



the surface of everyday civility. The cracks in the brittle social contract that we think of as civilization showed themselves to me as they never had before.



Figure 19: On the left is Frau fährt durch Wien mit "Ich bin kein Virus"-Schild (2020), on the right is "PANDEMIC" (2020-), still image

I started to track and record any xenophobic attacks or expressions of bigotry that seemed related to the coronavirus, and I found a clear pattern. Attackers do not behave as though they are afraid of contracting the virus, as they are often touching their victims. These recordings seem to reveal that the appeal of a punching bag far outweighs their ostensible fears of contracting the virus. These attacks intensified as time went by because the lockdowns continued much longer than we had expected and unemployment rose during this time.<sup>22</sup>

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<sup>22</sup> *Unemployment rates during the COVID-19 pandemic - congress.* (n.d.). Retrieved August 11, 2022, from <https://csreports.congress.gov/product/pdf/R/R46554>



Figure 20: "PANDEMIC" (2020-), still image

Initially, I scanned the internet for videos of insults to Asians that had been recently uploaded, as well as interviews with victims of COVID-19 fueled racist attacks, and mentions of the “Chinese Virus” on TikTok and other live video apps. I then mined this content for imagery which was used to create a series of virtual reality rooms within a space.

I think games allow people to think about themselves in unfamiliar ways, reflect on their lives, and learn about new subjects. It gives them a point of reference outside the pathways of their daily lives. To play a game, people have to engage. This engagement puts them into a more receptive mental state and allows games to resonate with an audience in a way other mediums can't. I'd like to give everyone the experience of being a minority in America. In this way, media has an incredible

amount of influence over the tides of xenophobia and racism that ebb and flow in our culture.



Figure 21: On the left is Lisa Li, and Sheng Peng, "Smashed windows and racist graffiti: Vandals target Asian Americans amid coronavirus" (2020), NBC News, on the right is "PANDEMIC" (2020-), still image

I felt deeply disillusioned by these conditions but as I began to question my life as an immigrant in the United States, I found myself becoming more and more curious about the dynamics of immigration in general. What does it mean to live in a place where you are not a citizen? I no longer feel entirely foreign here, and gradually I have come to find that I feel less and less at home in South Korea. I found myself occupying an ambiguous place, leading to questions about the nature of culture, statehood, and belonging. I wondered if I had been correct to choose to live my life as part of a minority or if I should have stayed in South Korea. I was contemplating the viability of my life in the United States, but this contemplation was complicated

by the surrealism of my experience of the pandemic. As my life seemed to shrink itself to be contained within my monitor, I felt such questions of nationality lose their validity.



Figure 22: On the left is Jason Fang, Samuel Yang and Bang Xiao, "Racist coronavirus graffiti sprayed on Chinese-Australian family's home in Melbourne" (2020), ABC News, on the right is "PANDEMIC" (2020-), still image

It was this experiential state which led to my decision to make a video game. I craved the sense of solidity that can be achieved by describing a state of insecurity or confusion, and sharing that description with others who can relate to it. The chaos of that moment in time, the approaching election, and the widening cultural divide made many Americans wonder what we could expect from the future. *PANDEMIC*, explores the nature of the xenophobia that was exposed by covid-19. I ask, where are we? What are we doing here?

### 3.2.2 METHODOLOGY

*PANDEMIC* is set in an abstract reality that consists of seven different levels or stages, each taking place in a different location. The beginning of the game represents racist coronavirus tropes and other racist clichés. The intensity of this xenophobia gradually gets more harmful level by level and is followed by commentary on politics, classism, and the elite's indifference toward lower socioeconomic groups. Finally, at the end there is a space of beauty and hope.

When making *PANDEMIC*, I was inspired by two art games: *Passenger* by Jason Rohrer, and *Dys4ia*, by Anna Anthropy. *Passenger* is a side-scrolling game that has no levels, no reward or death system. You can't go faster or slower and there are few choices which you're allowed to make, but I found the meandering drift of it to feel true to life. It provoked existential questions about the nature of our existence, in the slow scrolling slide. *Dys4ia* is a short autobiographical art game about gender dysphoria. In its narrative you are a trans woman, which allows the player a first person experience of the simulation of Anna Anthropy's experience of being transgender, such as HIV testing, and shaving her mustache. Somehow it no longer feels like a personal story as it's shared with the players, these experiences are spread out between each of the players, and we learn to have empathy with a minority to which we don't belong, or feel less alone in our shared experiences.

*PANDEMIC* has two primary audiences. The first is anyone who wishes to understand what it's like to be Asian in America during the 'COVID-19' pandemic. The second is anyone who enjoys 3-d animated art games.

Art games have a unique place in the little-overlapping worlds of art and gaming. They do not generally have widespread exposure in the public, but they influence the culture of more popular genres. Art games are powerful. Even though they do not reach large audiences, they do influence popular genres.

*PANDEMIC*, has been featured, and partially published in UW News, UW College of Arts & Sciences, GeekWire, T.ART, International Examiner, Joy Seattle News, Seattle Times, KUOW National Public Radio, The Sul Ponticello in Chile, CETI<sup>23</sup>, American Studies: Our Share Planet, KING5 TV, and WIRED.

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<sup>23</sup>(n. d.). In March 8th, 2020. *System Failure. Please Restart*. Virtual MozFest 2021. from <https://ceti.institute/mozfest2021/>



Figure 23: Virtual MozFest, "System Failure. Please Restart"(2021) poster

## 3.3 DARKNESS

### 3.3.1 Description

*Darkness* is a 3D animated poem inspired by *Wire Movement #9*, a poem by science fiction writer Misha Nogha<sup>24</sup>. This work is an expression of the frustration of desire and physical longing that we all experience as human beings, as well as the fears caused by uncertainty about reality.

#### **Misha**

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#### **Wire**

#### **Movement**

#### **#9**

—for Geri & K.W.

Electronic signals crouch outside your door. Your hands are on fire. You shake them out of your wire hair. Recombinant viruses leap out at you from designer dumpsters. Your careful eyes glow. Metal belches stun your ears. The lead exhaust coats your lungs. Your hand brushes the scales of rust. You irradiated your fruit. Acid sterilizations rain down.

Her concertina. Her wire movement. Her ninth. Her mutilated masks. Her symphonic wings suspend her in a battlement. Her echappe tangled in wire.

She pulls her number from the barb. Stasis signals spear her performance eternally into the cosmos. Gnash the mesh that binds her. Quench the icy iron. Her mind is a matrix of non-stop digital flickerings.

Outside your door her horrible headdress performs wire movement. Her braids of wire reach to your feet. Fifty gallon hand drums. She ghost dances. You handgame out of sync.

They steal the coils. They dance pas de deux. The instruments are barbed. These children of science perform the ninth movement. In wire.

Figure 24: Nogha, Misha. "Wire Movement #9" (1991)

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<sup>24</sup> McCaffery, L. (2012). *Storming the reality studio a casebook of Cyberpunk & postmodern science fiction*. Duke University Press.

### 3.3.2 Conceptual axis

This project was produced for the general examination of my Ph.D. program at the end of my 3rd year. The purpose of the general examination is to assess the breadth and depth of the student's knowledge and critical analysis of major areas in the Digital Art field. The examination is also used to evaluate the student's potential to complete a doctoral dissertation successfully, including the development of the student's independent intellectual voice. Once shown the prompt, the student has only 7 days to complete their project.

The general examination prompt from Professor Afroditi Psarra was as follows:

Read "Wire Movement #9" poem by science fiction writer Misha, and create a three-channel video artwork inspired by it.

The work may contain fragments of the text, but it has to deviate from the original, incorporating your personal world-building techniques without following the exact imagery of the poem.

You can use any technical media you desire to craft the videos, but you cannot re-use any of the material you have incorporated in previous works (i.e. "Pandemic 2020"), nor can you make a video-game.

### 3.3.2 Methodology

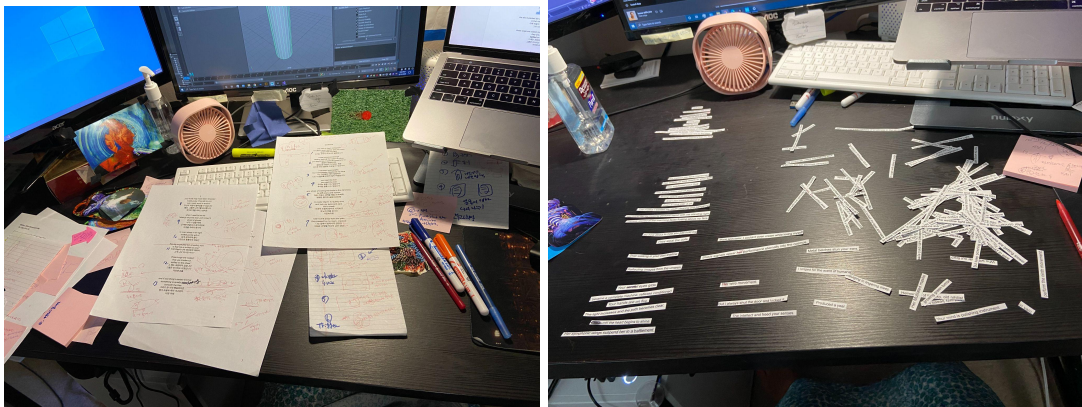


Figure 25: On the left is "DARKNESS" (2020) new poem making progress, on the right is "DARKNESS" (2020) organizing words and sentences

After being given this poem, I contacted Misha, the author, via email. I explained to Misha that I was taking an exam and needed to make a video work that reinterpreted her poem. I needed more context from her before working her poem into something of my own. On the second day of the test, Misha very generously agreed to Facetime with me. During our conversation, she explained to me which part of the poem was the most meaningful to her, how she imagined it, and her technique for assembling the poem. After considering this conversation, I made a new poem using hers.

To write the new poem, I collected words that are similar to or related to the words from Misha's Wire Movement #9, and collected words that are similar to or

related to these words. I first wrote in Korean, and then my English teacher advised me as I translated it into English. I put all these words into small sentences, and then rewrote them. After printing it, I cut it again with scissors to reconstruct it, and here I made a new poem:

## Darkness

1

the wall of dawn collapsed  
we didn't even realize who we were  
새벽의 벽이 결국 무너졌고  
우리는 우리가 누군지도 몰랐습니다

hope becomes strange  
death waiting like coiled snakes  
you might be as cold as sheared iron  
소망이 결국 낫설어지고  
휘휘감은 뱀같이 기다리는 죽음만이 남았기에  
실로 당신의 모습은 강철같은 차가움 같습니다

I've been long awake,  
but I cannot find my face my face  
나는 실로 오랫동안 깨어쳐 있었으나  
나의 온연한 모습을 잊어 버리고 있습니다.

we might be lost  
we might be lost  
우리는 모두 다 잃을 수 있다는것을 알고 있지만  
우리는 모두 다 잃을 수 있다는것을 알고 있지만

and afraid of waking the buds in the darkness,  
to stiff scars and sorrow  
그 가득찬 흉터와 슬픔으로부터  
추운 어둠 속에서 작게 버티는 새싹 하나를 그저 지키고자

my body begins to quietly shut  
and lock my eyes and ears  
into a mask  
내 몸을 서스름히 접고  
내 눈과 귀를 스스로 잠근 채  
서서히 가면속으로 젖혀집니다.

I didn't drift away from the path  
they passed by my room, cracked  
나는 사실 그 길에서 벗어나지 않고 기다렸건만  
그들이 그대로 지나쳐, 마음속 금이 내었습니다.

2

your fruits may have been dropped  
made pulpy, they ask to exit  
but I really want to avoid it  
당신의 썩은 과육들이 푹푹 하나씩 떨어져나갈때  
그들은 당신을 쫓아낼 기회를 얻지만  
나는 그저 그들을 피해갈 뿐입니다.

when I used to be me  
I always shut the door and locked it  
afraid of ghosts  
내가 나로서 살던 그 시절  
나는 내방문을 항상 잠그고 살아왔습니다  
단지 유령이 무서울 뿐이라,

to cram sleep in at night  
stuffed plump with it

그 밤에 고통으로 잠자리에 들다  
고통이 하나 둘 채워지게 되니

the sky is packed too smoothly now  
is that me or is that no one?

이제서야 하늘은 부드럽게 꽉 채워져 있는데  
그것이 과연 나인지 이젠 갈피를 잡지 못합니다.

those lungs are coated  
they are inside-out  
spilled on the street

왜냐하면 그것의 폐와 장기는  
이제 겉과 속이 뒤집어져  
길거리에 흩뿌려졌기에

and if one thing's certain it's that  
something is quietly dying  
beneath the tiles

그리고 한 가지 단언할 수 있는 것은  
그 바닥 타일 아래에서  
무언가가 조용히 잠식되고 있다는 것입니다

3

your eyes were still careful  
while your face was on fire  
당신의 모습이 화염에 감싸여 불타는 중에도  
당신의 눈동자는 걱정에 사로잡혀 있습니다.

stasis signals spear the performance  
a muddy, non-stop flickering  
정체 신호,  
조잡한 깜박임

to stop walking in my own shadow

나는 그저 나의 낯선 그림자 속에 홀로 안주하고 싶지 않아서

pray for the monsters of our imagination  
tell them to hunt for us  
we could really use their help  
가끔은 상상 속 동물들에게  
아주 간절히 그들을 잡아달라고, 처치해달라고  
바라고 있어왔습니다.

or polish your heart until it becomes like a mirror  
reflecting images from the unseen  
그게 아니면 마음을 거울처럼 비춰질 때까지 반들하게 만들어  
보이지 않았던 것들을 알 수 있게 된다면...

no, let it break  
the world is still tilted  
but when I wake I long for the scent of other people  
아니요, 결국엔 세상은 기울어져 있을테니  
차라리 이 마음을 부수어 버리겠습니다  
그래도 정말 그날이 오게 되면 나는 진정 사람의 체취를 그리워 하겠지요.

After making the new poem, I began sketching ideas, then after very few I began animating in earnest. I chose to continue in Misha's cyberpunk style, but changed the scenario in order to create a more personal story, suffusing it with my experience of losing my sense of reality during the pandemic lockdown. The main character is a person in a wooden box, who represents my experience of being trapped alone in lockdown. This part relates to Misha's caged and controlled ballet doll. As the doll in Misha's poem is manipulated and restricted by another, this character confines itself in a box. I imagined the cyberpunk city as Seoul and the

main character as a figure with a mirrored exterior, without any color or characteristics, wearing a mask.



Figure 26: "DARKNESS" (2020), making progress

The climax of Misha's poem comes in the third stanza:

She pulls her number from the barb.  
Stasis signals spear her performance eternally into the cosmos.  
Gnash the mesh that binds her.  
Quench the icy iron.  
Her mind is a matrix of non-stop digital flickering.

It seemed important to express this atmosphere of flickering stasis in my own way while maintaining her original intensity. I decided that the figure in this poem must not have a heart in order to survive in this world. In order to depict the internal abyss of a person without a heart as a 3D animated character, there is a large hole drilled into the chest of the character. The missing heart is elsewhere, rendered in 2D where it grows endlessly, like a fractal animation, and the character's body itself burns with fire.



Figure 27: "DARKNESS" (2020), still image

The *Darkness* animation was shown for my exam, as well as the 2021 Graduate Screenings: Film/Video, Animations, & New Genres for the 109th CAA Conference virtual conference<sup>25</sup>. It was then I published it on my Youtube channel.

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<sup>25</sup> (n.d.). In *2021 Graduate Screenings: Film/Video, Animations, & New Genres for the 109th CAA Conference virtual conference*.

## 3.4 Unreal Window

### 3.4.1 Description

*"I wish I could be creative. You have a great talent for creating difficult situations. Like staying here all night uninvited."*

-Generative Pre-trained Transformer-2 (GPT2 )<sup>26</sup>



Figure 28: "Unreal Window" (2021), still image

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<sup>26</sup> Generative Pre-trained Transformer-2 (GPT2), collaborated with *The Rear Window* (1954)'s script by John Michael Hayes

*Unreal Window* is a real-time virtual animation inspired by the experience of confinement and virtual communication during the COVID-19 pandemic. The animation is a recording of a continuously existing AI environment created through machine learning. The video's narration was produced by a machine learning system using the script of Hitchcock's *Rear Window* and a recording of Jimmy Stewart's voice. *Unreal Window* addresses the slippery sense of reality in a world of media consumption, Zoom meetings, and AI animation.

### 3.4.2 Conceptual axis

*Unreal Window* was inspired by zoom meetings during the covid-19 pandemic, the loneliness produced from the sense of being monitored, and the painful absence of rapport that politeness dictates. We have to pretend not to feel the despair and creeping terror of not being able to connect with others physically, their smell, their touch, their heat, and longing for that which can only be shared through physicality.

```
▶ gpt2.generate(sess, run_name='run1')  
↳ What do you need before you can search?  
Tell me now, what do you need?  
Bloody footsteps leading up to the door?  
One thing I don't need is heckling. You called me and asked for help.  
Now you're behaving like a taxpayer.  
How did we ever stand each other in that plane  
For three years during the war?
```

Figure 29: "Unreal Window" (2021), GPT-2 Machine Learning system generates the new script from The Rear Window's original.

I wonder how far down this path of physical isolation and online communication we might go. If this situation continued until I died, then what would it mean for my identity? Who can I be under these circumstances? I asked myself where it is that I exist. If a part of the answer is into the digital, what does that mean for our understanding of AI?



Figure 30: "Unreal Window" (2021), StyleGAN(<https://arxiv.org/abs/1812.04948>) generated the new rooms from 2,000 random room photos on Flickr.

Along with my own experience of the covid-19 pandemic, I also borrowed content and inspiration from Paul Moorhouse’s writing about Cindy Sherman’s work on Hitchcock’s *Rear Window*:

---

“You feel as though you’re looking into a window: a rear window of Alfred Hitchcock’s film. And in that window, you can see characters and you know nothing about them. You don’t know who they are, you don’t know what they’re doing, why they’re doing it. And something is going on, we sense. But it is your responsibility to figure out what’s going on. And that relates directly to the scenario of *Rear Window*, where the character says: ‘Tell me everything you saw and what you think it means. Beyond that, there is almost in the *Film Stills* a manifesto for all of her subsequent

preoccupations, which is the creation of a world of appearances, a world of appearances in which there are constantly visual clues or at least enticements on which to hang an interpretation. But what meaning we bring to those photographs throughout the exhibition is entirely up to us, it's entirely subjective. And that returns us again to our human condition of having to figure out what's going on in the world and in our relations with other people purely on the basis of the way things appear."<sup>27</sup>

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During lockdown I often wondered whether we were actually in conversation when telecommuting. I could see the person I spoke to only in a square box. Sometimes I felt confused about whether I was speaking to a real person or not, and I noticed that I would watch myself as I spoke as much as I looked at the other. I wanted *Unreal Window* to express this wandering between reality and unreality, and although it deals with a confinement of a different variety, immobilization due to a broken leg, the film, *Rear Window* (1954), provided the ideal content for triggering these ideas, sensations, and associations.

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<sup>27</sup> Madeley, A. T. (2019, June 27). *Looking through Cindy Sherman's Rear Window*. Miscellaneous Details. Retrieved August 11, 2022, from <https://miscellaneousdetails.com/2019/06/22/looking-through-cindy-shermans-rear-window/>



Figure 31: "Unreal Window" (2021), still image

### 3.4.2 Methodology

In *Unreal Window*, I manifest myself fifteen to twenty times in animated embodiments of different ages and forms. I appear as a baby, a toddler, an adult, an elderly woman, and as a human-computer hybrid, a woman with a monitor for a head, forever in a zoom meeting. All versions of me are following after this hybrid as she flees - attempting to stay in the frame of the webcam, competing, desperate to show that they exist. I also tethered a surveillance camera to each character, creating a scenario in which they are all constantly spying on each other.

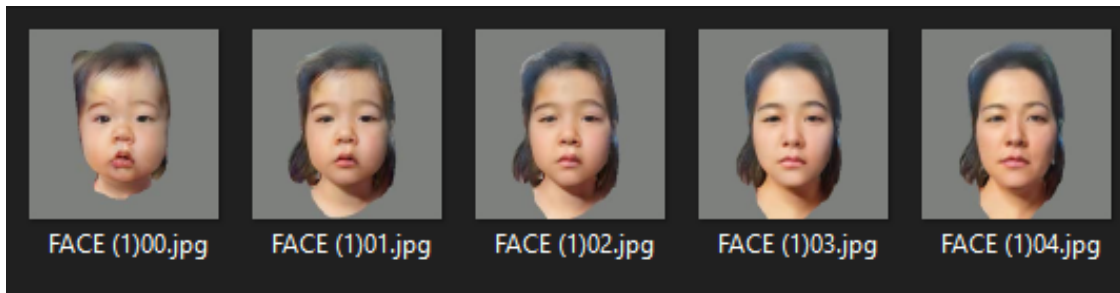


Figure 32: "Unreal Window" (2021), Lifespan\_Age\_Transformation\_Synthesis GAN (<https://arxiv.org/pdf/2003.09764.pdf>) generates different ages of my face

*Unreal Window* is a real-time virtual animation video that is designed to simulate a video game, but this game has no player. The computer's systems play each character without the need for further input. These characters are doomed to watch each other and chase the camera infinitely in the auto-gameplay of machine composition (NPC) set to a chasing and fleeing game scenario. I wanted to create a situation without an end as a reflection of my feeling of endlessness in this pandemic, but also so that the machine learning system could develop the action in ways that might surprise me. For example if the characters learn to chase and flee using obstacles and tools, what kind of relationships and environments might that produce? What kind of dynamics might develop between the characters?



Figure 33: "Unreal Window" (2021), still image

I hoped this experiment might help me envision and therefore prepare for a future in which this pandemic never ends and we end up living our lives online. I wondered, would I feel like I could breathe in a place where everything is made with AI, or will there be no end to this sense of deprivation and isolation? Is there a bottom to this abyss, or is it infinite sliding?

I feel very anxious that communication and relationships between people might be lost in the absence of physical presence, and this virtual world will persist, existing online even as generations come and go. *Unreal Window* is a way of thinking about the real meaning of confinement.



Figure 34: "Unreal Window" (2021), captured image from the video game engine

The *Unreal Window* animation has been featured, and partially published for The New Barcelona, The Barcelona Secreta, betevé TV the main exhibition<sup>28</sup> at the International Symposium on Electronic Art (ISEA) 2022 held at the Santa Monica center, Barcelona, and at the ACM SIGGRAPH SPARKS on zoom, on May 27, 2022.

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<sup>28</sup> (n.d.). In 2022 Main exhibition at the International Symposium on Electronic Art (ISEA) 2022 Barcelona.

## Chapter 4. REMEMBRANCE

### 4.1 OVERVIEW

This 4th chapter will consist of a detailed explanation of the visual, auditory, conceptual, and technological development of *Remembrance: Magma*, as well as a description of how this process proceeded. The project, *Remembrance*, is currently divided into two parts: *Magma* and *Coral*. This writing will give a very detailed account of *Remembrance: Magma*, which will be finished for this dissertation, while *Remembrance: Coral* will be completed after this defense. Therefore this chapter will focus on the aesthetic perspective and methodology of *Remembrance: Magma*.

*Remembrance* was inspired by my family's history of dementia, therefore in order to fully elucidate the conceptual axis of this project, I will need to provide some personal history. When I was a child and my family visited my maternal grandmother's home I was able to observe that she suffered from severe dementia. I also observed the complexity of my mother's feelings towards her. I could see in her facial expressions regret, resentment, and sadness. My grandmother didn't raise my mother, and she felt discriminated against in comparison with her siblings, so she didn't feel as much of an obligation to care for her when she began to get sick. I noticed then that my mother was worried that she would develop this disease as well, and I began to understand that this is something passed down generationally. It appeared to be a disease that is passed down from mother to

daughter, and I realized that this process would bring dementia to me as well. When my mother developed the disease in her late 50's, the inevitability of its progress through the generations began to feel inevitable. I feel it is likely to be my fate to join them, and in only a relatively short period of time.

When she began to develop dementia in 2015, my mother visited the Seoul National University Hospital for a detailed examination including an MRI without telling our family. In Korean, the word dementia 치매 (癡呆): means foolishness and there is the perception that it is a demeaning disease that causes people with dementia and their families to lose respect. Korea has a very communal culture in which people frequently compare themselves and their families with others. My family was successful both socially and financially during this time, and she was concerned that her diagnosis would damage my family's social dignity and economic prospects. I can imagine the fear she must have felt when she received her diagnosis, and how that fear must have extended to me, as her only daughter. If only she had told us her diagnosis when she received it, she could have begun treatments to slow the progression of the disease.

My mother's disease began to progress to the point where she could no longer hide it in 2017. I had already begun my doctoral studies in Seattle, and was forced to watch from afar as the mother I knew began to slip away. When the pandemic began my access to my mother became even more limited due to travel restrictions. I was experiencing feelings of guilt, regret, resentment, and fear for

my own health. As of May 2022, my mother is currently in the final stages of Alzheimer's.

Watching my mother die of dementia, and knowing it is likely I will repeat the same pattern, has caused me to consider the nature of my existence from a variety of diverse perspectives. I also began to feel differently about the time I have left. I want to live my life in a way that won't give me regret when the time comes to begin to fade out as she has done. I want to explore this situation with my artwork, and find a way to transcend my fears that I can pass on and share with others.

At the beginning of this project, I thought I would focus on the neuroscience behind dementia, considering how to use AI and machine learning to work cooperatively with a mind with dementia. However, as my mother's illness progressed, I watched my father quit his job and dedicate himself to her care. I came to feel that the relational aspects of the disease are much more interesting than the physical. I could understand what my mother was thinking just by looking into her eyes. She believed that my father would be able to understand her even once she lost her memory. This made me consider issues of resonance, recognition, and the sublimity of love. I find that I don't feel a resonance with my mother anymore, due to the four years I've been away. I feel like a bad daughter. I have many voice and video recordings of her, but it hurts me to hear them. She's always expressing how much she loves me. Instead of keeping them to myself,

where they were causing me to ache with shame and loneliness, I used them to make *Remembrance*.

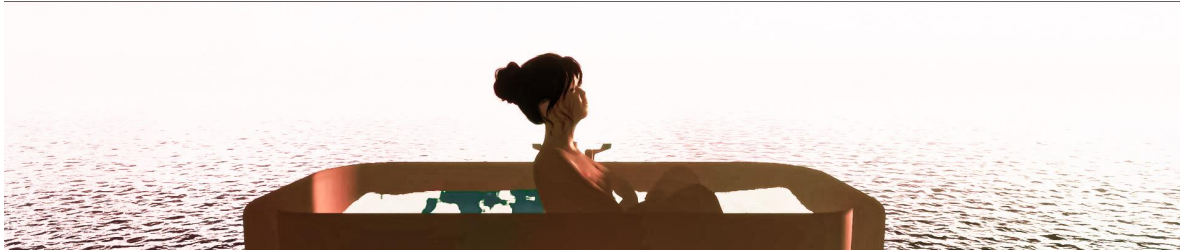


Figure 35: "Remembrance: Magma" (2022), still image

## 4.2 Conceptual axis

Dementia has previously been represented in the field of visual arts either through diaries of patients' lives or from a medical perspective. In contrast, *Remembrance* takes on the challenge of portraying dementia as a work of art rather than a medical condition. Rather than questioning the human disease, it interprets the emotional relationship of how we live with the disease by viewing it through the eyes of the patient. This project is a surrealist, immersive video work in which the audience can sit back and enjoy the experience without questioning the meaning behind it.



Figure 36: "Remembrance: Magma" (2022), still image

### 4.3 METHODOLOGY

*Remembrance: Magma* is a project designed to help me interpret the distortion of memory and space between myself and my mother. I decided to approach memory from a literary perspective. The classic narrative form is an exceptionally useful container for conceptual and emotional content because it is so familiar. Most people are very willing to suspend disbelief and open their minds within the bounds of this familiarity. When I read my mother's translation of W.B.

Yeats' poetry<sup>29</sup> in Korean as a child I found it boring and unattractive, but when I rediscovered his work in English after moving to the United States I realized how rich and beautiful his poetry really is. The fact that my mother loved him a long time ago, gives my own enjoyment a sense of being lifted out of time, and I felt that his work would be the appropriate source of narrative for *Remembrance*.

I created a new poem in English in collaboration with the Natural language processing (NLP)<sup>30</sup> text generating program GPT-2.<sup>31</sup> After feeding a volume of Yeats' collected works into GPT-2<sup>32</sup> it produced a poem in Yeats' style, which I then edited into a finalized form.

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<sup>29</sup> Collected Poems of WB Yeats (Wordsworth Poetry Library) Collected Poems of W.B. Yeats (Wordsworth Poetry Library) : Yeats, W. B., Watts, Cedric: Libros - Amazon. Tapa blanda – 1 septiembre 2000

<sup>30</sup> Natural language processing (NLP) concerned with giving computers the ability to understand text and spoken words in much the same way human beings can.  
<https://www.ibm.com/cloud/learn/natural-language-processing>

<sup>31</sup> GPT-2 is an unsupervised deep learning transformer-based language model. The model is open source and is trained on over 1.5 billion parameters to generate the next sequence of text for a given sentence. <https://dzone.com/articles/gpt-2-gpt2-vs-gpt-3-gpt3-the-openai-showdown>

<sup>32</sup> [https://colab.research.google.com/github/ilopezfr/gpt-2/blob/master/gpt-2-playground\\_.ipynb](https://colab.research.google.com/github/ilopezfr/gpt-2/blob/master/gpt-2-playground_.ipynb)

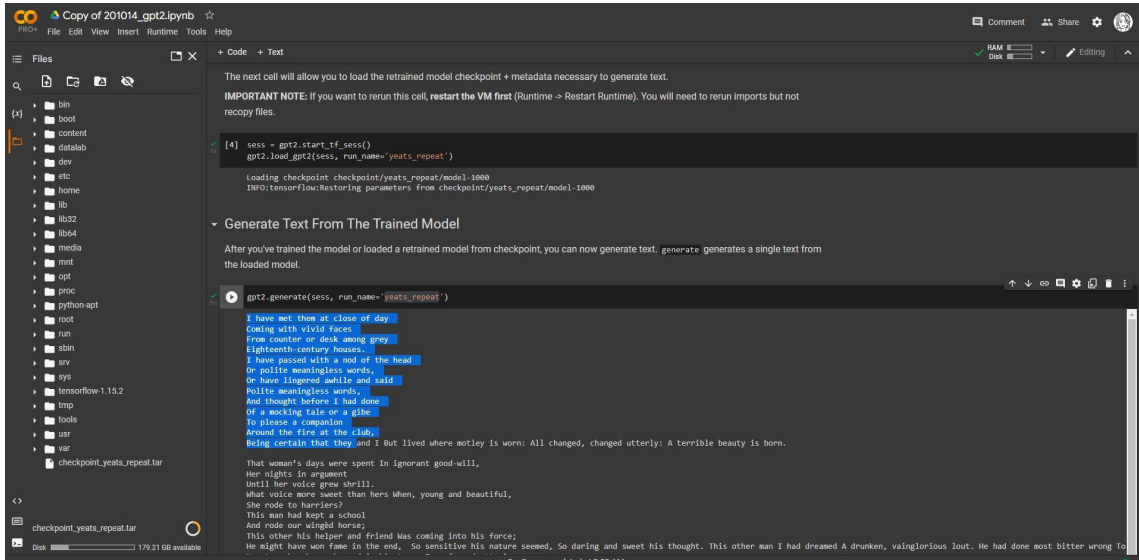


Figure 37: "Remembrance: Magma" (2022), new poem, and GPT-2 Machine Learning system, making progress

After printing it, I cut it with scissors to reconstruct it, and here I made a new poem. I had to edit the generated poem so that it flowed more naturally. , I divided the writing into 4 different parts depending on the mood and temperature of a single line. The first part includes a prologue, so that the direction of the topic could be clearly seen. poetry was born:

1

I have met her at close of day  
 between counter and desk

among gray houses  
 around the fire at the yard

this woman's days were spent  
in ignorant good-will

her nights in argument until her voice grew shrill  
that the future years had come

what voice more sweet than hers  
when young and beautiful with intensity

she has resigned her part  
in the casual comedy

all changed, changed entirely  
a terrible beauty is born

a gaze blank and pitiless as the sun  
she moves her slow thighs

2

when all the wells are parched away  
there's nothing but our own red blood

and under the arches of the bridge  
there we endured her fingers' feeding

did she in touching become an abstract thing  
bitter and blind or at last aching

the stone's in the center  
but when is it sufficient?

enough to know they  
dreamed and are dead?

our rose had already withered when  
she shook the blossom from the bud

a shadow of cloud on the stream  
a mother's hand slides along the brim

3

enfold me in those who seek me  
in the tumult of defeated dreams

by a pale shore where the wind never blew  
she lost the world in a kiss

and in a hundred mornings flowered red  
feasted, and wept her dead

the proud dreamer flung the threads  
and sought numberless years

men have named beauty depth  
her great swallowing leaves golden

until she found, with laughter and with tears,  
a little stolen tree, bent and tender by the sea

I, too, await the hour of the great wind of love and hate  
when the stars will be blown about the sky,

like the sparks blown out of a furnace, and die  
surely your hour has come as the scorched wind blows

4

imagination troubles my sight  
somewhere in the sands of a desert

though the lights bowed in their dance and wept  
the south serpent slept black and sodden

powers of falling wave and windy fire with harmonious choir  
unfold your flaming reach and cover the nets of day and night

place twenty centuries of stony sleep  
before the haystack- and roof-leveling wind

when winds have gathered the sun and moon  
burned dim in the slipping river of sky

lilies of death-pale hope, roses of passionate dreaming  
poets plead with elemental power

far-off, most secret, and inviolate rose  
our hearts endure the plaited thorns

the wounds in palm and side  
the flowers by the ravine stream, heavy

trade that foul thing out of her own heart  
a shape full of passionate gleaming

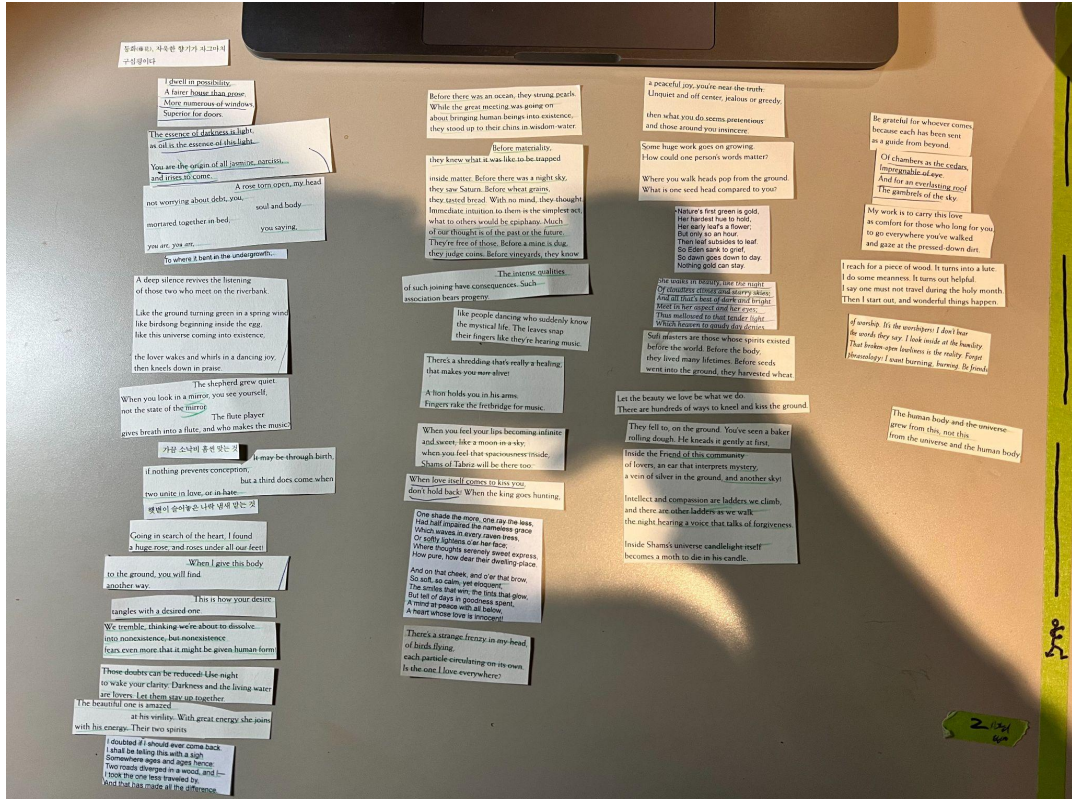


Figure 38: "Remembrance: Magma" (2022), new poem making progress

Next, I used the text from this poem to create images using a text to image AI program, which ended up being exceedingly surreal.

This was exceedingly welcome to me because I feel that Surrealism is perhaps the most effective method of conveying the realities of the unconscious mind. Its ways of twisting, separating, and synthesizing the mundane and realistic objects or situations into the most surprising forms is very similar to elements of the function of human memory.

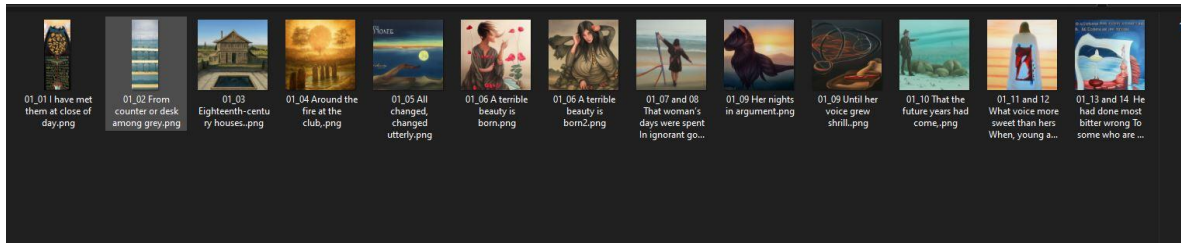


Figure 40: "Remembrance: Magma" (2022), new poem and images making progress

The name Magma was inspired by one of these images. I was then able to make the moving images from the generated picture :

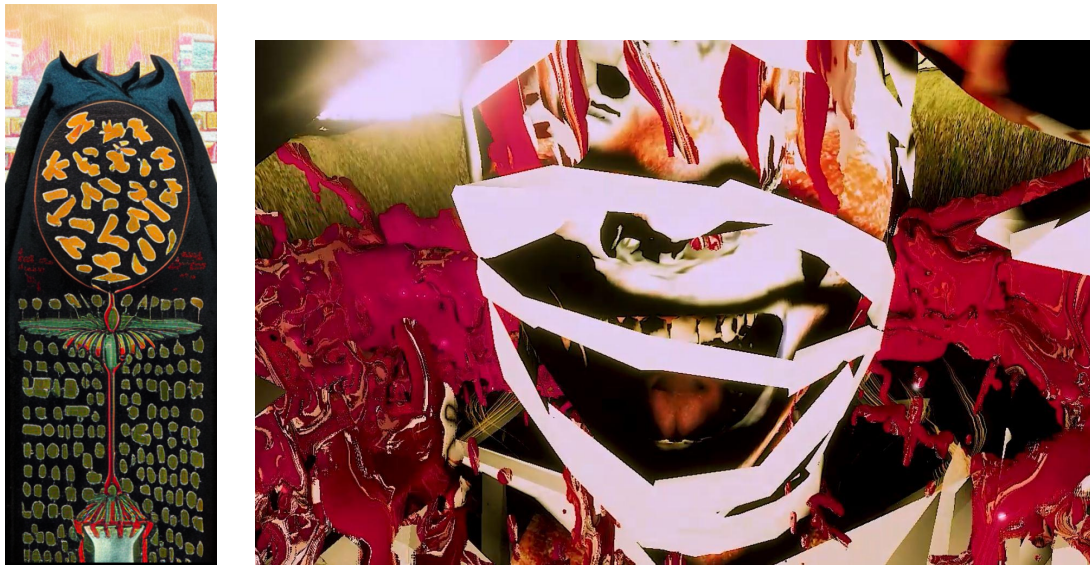


Figure 41: On the left is a generated image by text-image A.I. generator, on the right is "Remembrance: Magma" (2022), still image

After each section of the poem was translated into an image by GPT-2, I selected the most aesthetically successful and arranged them in order. I then began to storyboard, planning the scenes, timing, lighting, and sound in detail. At first I used the storyboarding techniques of the film industry, but I found that this left quite a lot of room for explanation or dialogue, but was insufficient to record all the minute moving details necessary for animated characters, and I ended up adjusting this technique to allow me to articulate the detailed movements of this animated film.

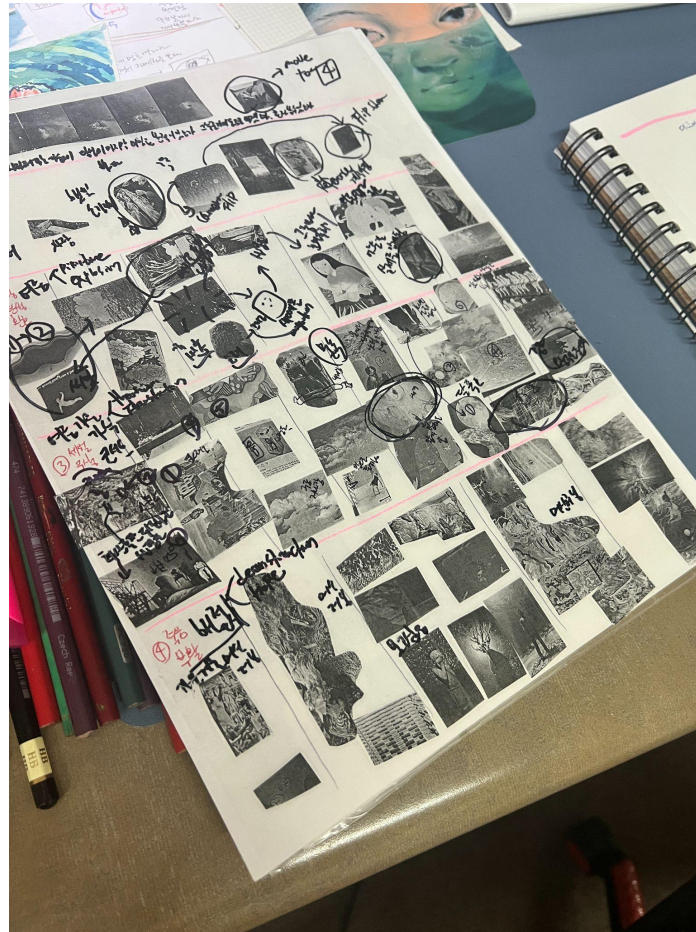


Figure 42: "Remembrance: Magma" (2022), storyboard

3D animation was the ideal format for this work because of the way the “camera” can move within the hexahedral space of the animation. It allowed me to create a dream-like perspective, moving in ways unfamiliar to traditional cinema cameras. This kind of 3D animated world building is an amazing resource for artists and animators who don’t have access to filmmaking crews, budgets, and equipment.

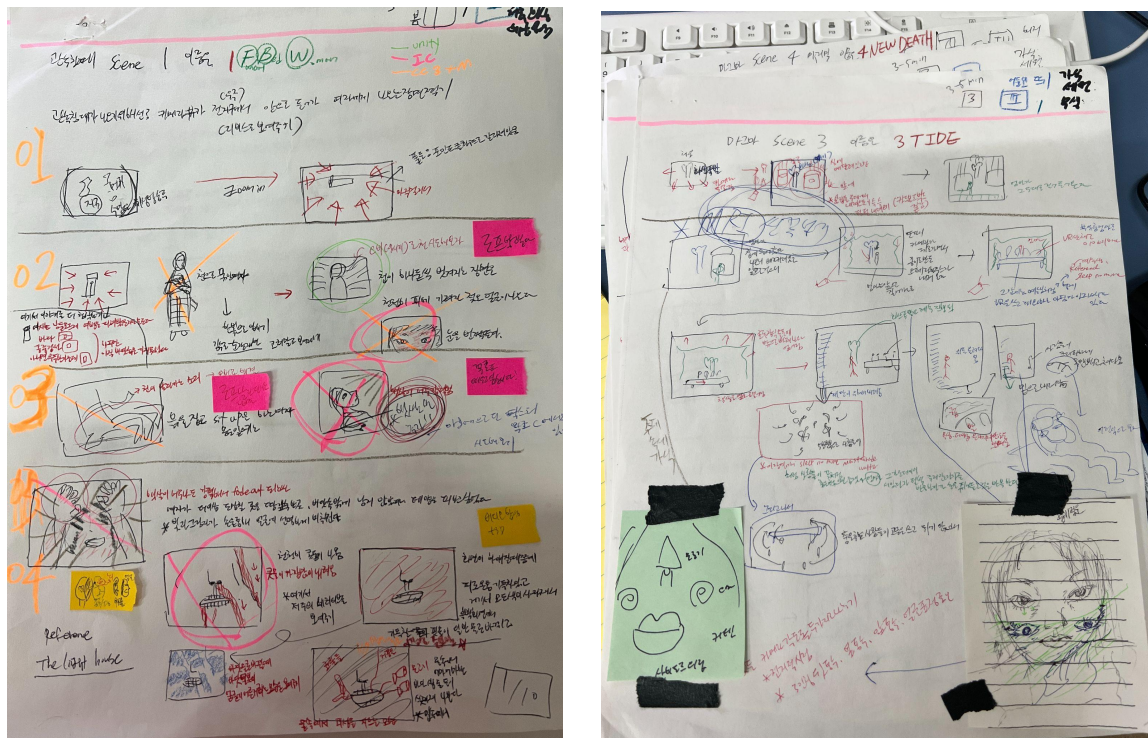


Figure 43: On the left is "Remembrance: Magma" (2022), chapter 0+1 storyboard, on the right is "Remembrance: Magma" (2022), chapter 3 storyboard

It was necessary for this world that I had created in collaboration with machine learning to be experienced by the viewer through the first person and third person perspective of one main protagonist so that they would have a point of

orientation within the chaotic surrealism of the scenes. This should be a familiar style for many viewers as they are classic perspectives of the protagonist of a video game. This protagonist is patterned after images I found of my mother at my own age. When I first modeled a 3d figure based on these images I found I had rendered a character that seemed unrealistically perfect, so I adjusted her face to include aspects of myself from a photograph, and the character became a hybrid.



Figure 44: On the left is "Remembrance: Magma" (2022), mother's portrait, on the right is "Remembrance: Magma" (2022), character making progress

Face Caption technology was used to create 3D-animated facial expressions which were produced using software called IClone. Since motion capture is only a part of my character animation, in order to connect this technique with body

movements, I mobilized a multi-animation layer technique in which animations are layered on top of each other, with body, face, and head movements.



Figure 45: "Remembrance: Magma" (2022), still image

For the body movements, I used multiple motion capture techniques. The hand movements and major body movements were made by matching key points using open source programs Mixamo and Leap Motion. Other body movements were made with a motion capture method using Microsoft Kinect v2.

Camera motion was the most time-consuming task in this project. I used the built-in program "Cinemachine" in Unity3D software to move the camera in accordance with the characters and the background.

For the installation at The Jack Straw, the same method used in "Polaris" was used for the video installation; three projections were synched together to display on three walls. For the three projections, a Short Projector model called W316 st was used, and for mapping, QLab software was used to synchronize the sound.

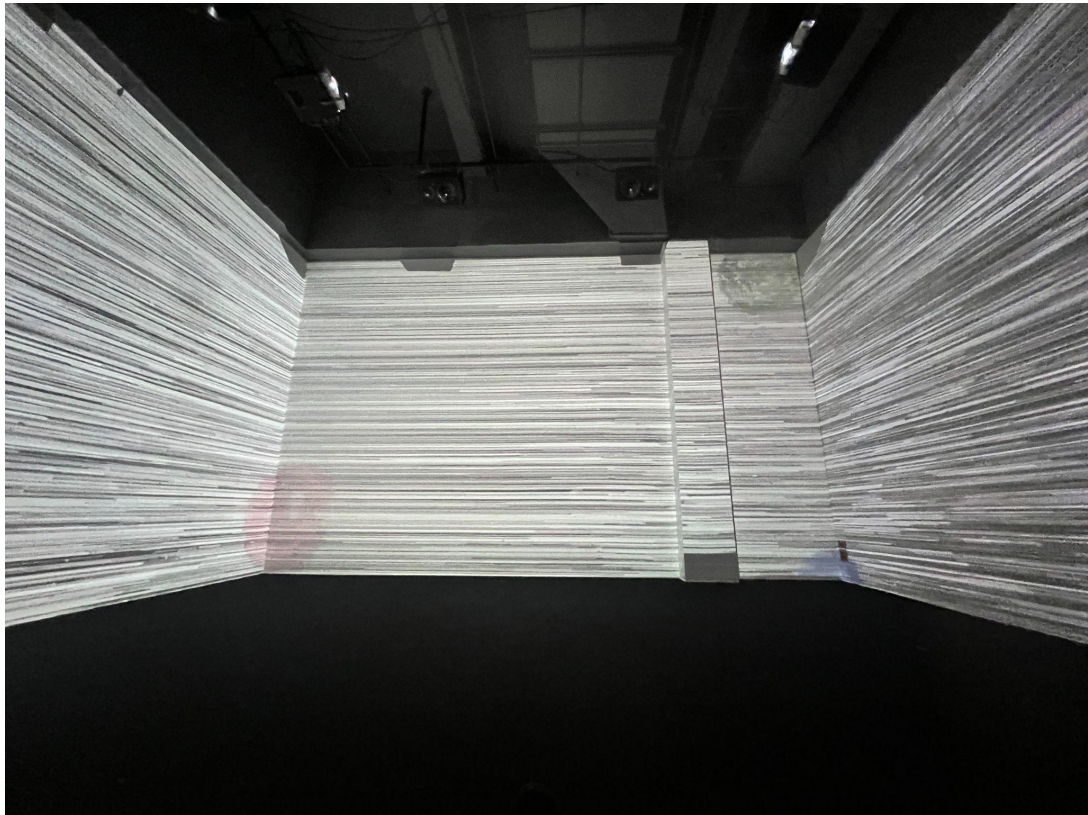


Figure 46: "Remembrance: Magma" (2022), installation at The Jack Straw Cultural Center, Seattle WA

This project was screened daily as a solo exhibition at the Jack Straw Cultural Center from April 22, 2022 to June 17, 2022, and at City of Denver Screening on the LED building from May 10 to the end of May. It was also

screened daily as a group exhibition from June 1 through August 29 at the Contemporary Center of Art in Cincinnati. This project was also introduced in the article “Chanee Choi’s *Remembrance: Magma* is a poignant simulation of memory degeneration” by Danielle Quenell at The International Examiner.<sup>33</sup>

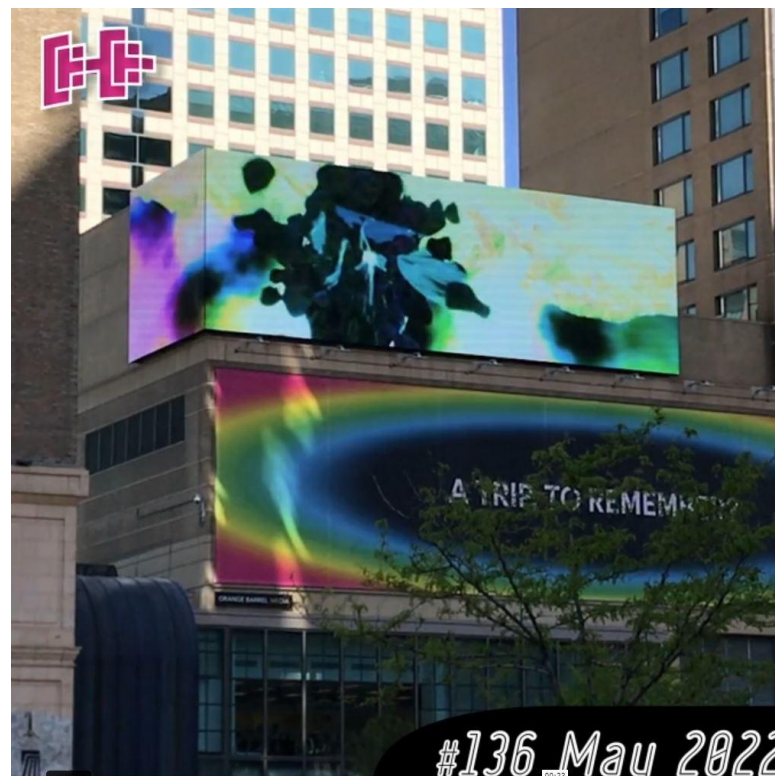


Figure 47: "Remembrance: Magma" (2022), screening show at The downtown building in Denver CO

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<sup>33</sup> Quenell, D. (2022, June 6). *Chanee Choi's "Remembrance: Magma" is a poignant simulation of memory degeneration*. International Examiner. Retrieved August 11, 2022, from <https://iexaminer.org/chanee-chois-remembrance-magma-is-a-poignant-simulation-of-memory-degeneration/>

## Chapter 5. CONCLUSION AND FUTURE WORKS

### 5.1 CONCLUSION FOR REMEMBRANCE

The technique used in the creation of Remembrance included an in-depth exploration of the technologies of 3D graphics as well as the conceptual and practical implications of harmonious machine and human collaboration. I found the aesthetics of this experimentation in creating narrative and visual imagery via machine learning to be very successful. Throughout this collaboration I found myself wondering how much intervention on my part was appropriate. I also found myself conflicted about my roles as an artist and as a daughter, as the topic of this work is a disease within my family. In the end I tried not to connect the character too directly with my family in order to feel more free to make artistic choices. Remembrance is designed to guide an audience to indirectly know and to poetically understand the lived state of dementia not rationally but intuitively, through surrealist animations.

This project also has exciting potential for further practice-based research such as the *Remembrance: Coral* project.

## 5.2 FUTURE WORKS

*Remembrance* has been divided into two parts, *Magma* and *Coral*.

*Remembrance* was originally conceived as a live performance with interactive VR animation that incorporated EEG sensor controls. However, due to the limited time I have available in this program, I found that the development of the technology for the EEG sensor controlled VR was overly-ambitious. I therefore limited the scope of my dissertation project to a non-interactive 3d animation to be screened as a video. I call this work, *Remembrance: Magma*. After graduation I will complete the expanded version of the work, adding the elements of EEG controls and multi-installation. This will be called *Remembrance: Coral*. The research relevant to *Remembrance: Coral* will also be included in this dissertation writing because the plan for EEG interactive controls has shaped the trajectory of the development of the piece from the beginning, and many of my choices would not be able to be understood strategically without its reference. For example, *Remembrance: Magma*, is designed and animated in Unity, in order that the addition of interactivity later on might be as seamless as possible.

*Remembrance: Coral* will combine Electroencephalography (EEG) sensors and Virtual Reality (VR) goggles to create a game-play experience that colorfully explores the physical dynamics of a brain with Alzheimer's as well as the poetic and political implications of this much-feared state of being.

Electroencephalography (EEG) is the measurement of the electrical activity of the brain by electrodes placed on the scalp. Many artists have worked with EEG in the past. Alvin Lucier performed *Music for Solo Performer* in 1965, which is generally considered to be the first musical work to use brain waves to generate sound directly. Richard Karpen and Juan Pampin collaborated with the JACK Quartet in 2019 for the piece, *Human Subjects*, in which they generated and controlled sounds from brain waves using EEG. This DXARTS concert was what triggered my desire to explore the use of EEG headsets in my own work.

Alzheimer's disease is considered a disability because it's an irreversible, progressive brain disorder that slowly destroys memory, thinking skills, and eventually, the ability to carry out simple tasks. More than 5.5 million Americans, most of them age 65 or older, currently have dementia caused by Alzheimer's. Once you are diagnosed with dementia, there is no cure, only therapies to slow its progression.

My future project asks you this: What would it be like to die softly & slowly without hope? Your appearance will be the same as others who do not have dementia, but your insides will be lost--- it starts from your eyes- your eyes will become dull first, so that people notice something is changing. Everyone who loves you will be in pain as you lose your memory, watching you recede like a flower wilting slowly. In the game narrative of this project, you will be an Alzheimer patient so are only present for the same short moment, but you can experience your family surrounding you-- agonizing as they watch you. While the

storyline may be dark, the player of my game will be challenged with a novel kind of problem solving and will see what life is like for millions.

The game is a 1st person VR 3D simulation in which players are asked to make choices that will affect their storyline. The player's character, my mother, is a 3D 60-year-old Korean woman who is beginning to experience the symptoms of Alzheimer's. I use my own mother as the main character in order to stress the tenderness and curiosity of this game, the deep desire to understand the experience of your most beloved family members as they fade away. Without this care and specificity the game could easily become macabre.

I will use feed from the player's EEG sensors to shape the physical space that the player navigates. There is no controller in this game, the player's eyes will select the choices displayed. After 5 seconds of eyes focusing on a button, it will be selected. Depending on the state of development of the dementia, the length of time the player must look at the buttons to achieve a result will vary. As the game progresses, the player will also find it more difficult to control the character's body as she loses spatial understanding. They will begin to have a hard time putting a key in a lock, grabbing an apple, and petting her dog.



Figure 48: "Remembrance: Coral" (2022-), diagram

## APPENDIX

Please check: <https://chaneec.com/Remembrance-Magma> for more information about *Remembrance: Magma*.

## VITAE

Chanee Choi (Chanhee Choi) has developed a ritualistic craft-based art practice that transcends the conservative and isolationist roots of traditional East Asian craftwork by focusing on a celebration of feminist theory and modern tech. Within this hybrid genre, she produces both embodied and virtual immersive experiences exploring the effect of immigration on issues of identity, and the synesthetic processes of corporeal-cognitive space.

She is a transdisciplinary artist. She is originally from South Korea and now lives, works, and studies in Seattle, Washington. She earned her BFA in Craft Design from Dongduk Women's University in 2013 and MFA in Fiber and Material Studies from the Art Institute of Chicago in 2016.

She had solo and double solo shows at School of the Art Institute of Chicago (2014), Knit Hole Gallery, HaeBang Chon, Seoul (2016), Space 776, Brooklyn, NY (2017), PIQUE Gallery Covington, KY (2017), and Oxbow, Seattle, Washington (2019). Her work has been published in UW News, UW College of Arts & Sciences, GeekWire, International Examiner, Seattle Times, KUOW National Public Radio, KING-TV, ISEA2022 Barcelona, and WIRED magazine.

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