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Reanimator/Reflection: Creating Mirrors through Time with AI, Sound, Video and Live-generated Art in the Dark Age of the COVID-19 Pandemic

Eric Millikin
Virginia Commonwealth University

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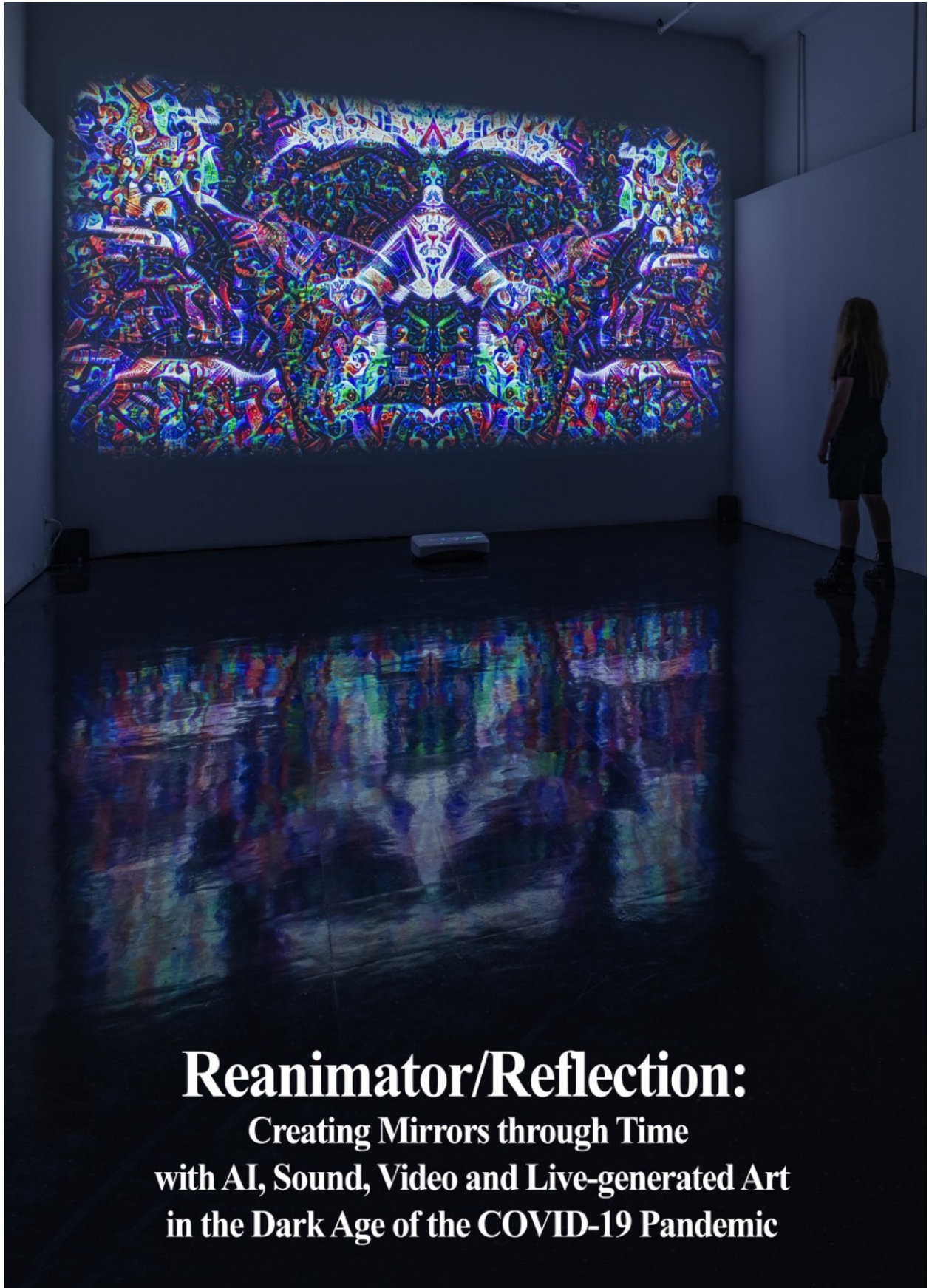
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Reanimator/Reflection:
Creating Mirrors through Time
with AI, Sound, Video and Live-generated Art
in the Dark Age of the COVID-19 Pandemic

**Reanimator/Reflection:
Creating Mirrors through Time
with AI, Sound, Video and Live-generated Art
in the Dark Age of the COVID-19 Pandemic**

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Fine Arts in the Department of Kinetic Imaging
at the Virginia Commonwealth University School of the Arts

By Eric Millikin

BFA Studio Art, Michigan State University, 1998
MFA Kinetic Imaging, Virginia Commonwealth University, 2021

Department Chair:
Stephen Vitiello, Professor of Kinetic Imaging

Graduate Program Director:
Orla Mc Hardy, Associate Professor of Kinetic Imaging

Thesis Committee:
Bob Paris, Associate Professor of Kinetic Imaging
Paul Rucker, Assistant Professor, Curator for Creative Collaboration
Semi Ryu, Associate Professor of Kinetic Imaging and Internal Medicine
Wes Taylor, Assistant Professor of Art Foundation, Professor of Graphic Design

Virginia Commonwealth University
Richmond, Virginia
May 7, 2021

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Stephen Vitiello

Graduate Director and first person I met in this MFA program:
Orla Mc Hardy

My Dream Team of an MFA Thesis Committee:
Bob Paris, Paul Rucker, Semi Ryu, Wes Taylor

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Jared Duesterhaus, Martha Glenn, Bella Kubo, Chad Mundie,
muthi reed, Brook Vann, Yonghun Jung

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Josh Rodenberg, Russell White, Kim Zaninovich

Virginia Museum of Fine Arts:
Ingrid Stump, Advancement Services Coordinator

Among the monuments I got to see torn down in Richmond, VA:
Jefferson Davis

On the Cover:
the place chosen for purely symbolic and fantastically aesthetic reasons. Eric Millikin, 2021.
Media: Live-generated video, AI trained on images adapted from H.P. Lovecraft texts, ultra short
throw laser video projection. Duration: Infinite. Dimensions: Variable, here 204” x 115”.

Cover photo and figures 9, 10 and 11 by Terry Brown. All others by Eric Millikin.

Abstract

**Reanimator/Reflection:
Creating Mirrors through Time
with AI, Sound, Video and Live-generated Art
in the Dark Age of the COVID-19 Pandemic**

By Eric Millikin, MFA

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Fine Arts in the Department of Kinetic Imaging
at the Virginia Commonwealth University School of the Arts

Virginia Commonwealth University, 2021.

Graduate Program Director: Orla Mc Hardy, Associate Professor of Kinetic Imaging

For my MFA thesis exhibition entitled *Reanimator/Reflection*, I used artificial intelligence to create three new works of sound and live-generated video art, each based on mirror reflections and 100-year-old racist post-pandemic horror literature by early 20th century American author H. P. Lovecraft. The themes of these writings mirror the issues of our current time. The primary works of Lovecraft that I referenced in the exhibition are “Herbert West: Reanimator,” (1922) a serialized tale about graduate school experiments which attempted to return the dead to life during a plague, and “Nyarlathotep,” (1920) a prose poem that suggests even our dreams might become infected as with a fever. These two particular texts were written shortly after the early 20th century influenza pandemic that lasted from 1918 to 1920; they directly address that pandemic and its associated fears; and, then as now during the time of COVID-19, these pandemic fears are often expressed in racial terms.

Eric Millikin
May 7, 2021

**Reanimator/Reflection:
Creating Mirrors through Time
with AI, Sound, Video and Live-generated Art
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“Terror stalked him when he reflected ...”

— H. P. Lovecraft,

“Herbert West: Reanimator”¹

A year ago, in my MFA candidacy paper, I wrote: “Now is the time ... to make interesting art that reflects and shapes these strange times we live in, before we may possibly die in them.” In all my artwork over the course of my past two years, I have often used new media to create works exploring how cultural fears are reflected in popular mass media and in political propaganda. In early fall 2019, in almost a premonition of our lives under COVID, I created *For Katharina Kepler*, which invited people to wear a special mask to experience a virtual reality and video projection mapping installation on the theme of racial fear, all created from AI-animated human blood cells. In late 2019, I created *Electronic Exorcism*, an augmented reality performance project to ritually exorcise AI-generated tentacled demons growing from my body as I visited the monument to the President of the Confederacy, Jefferson Davis, that is on the

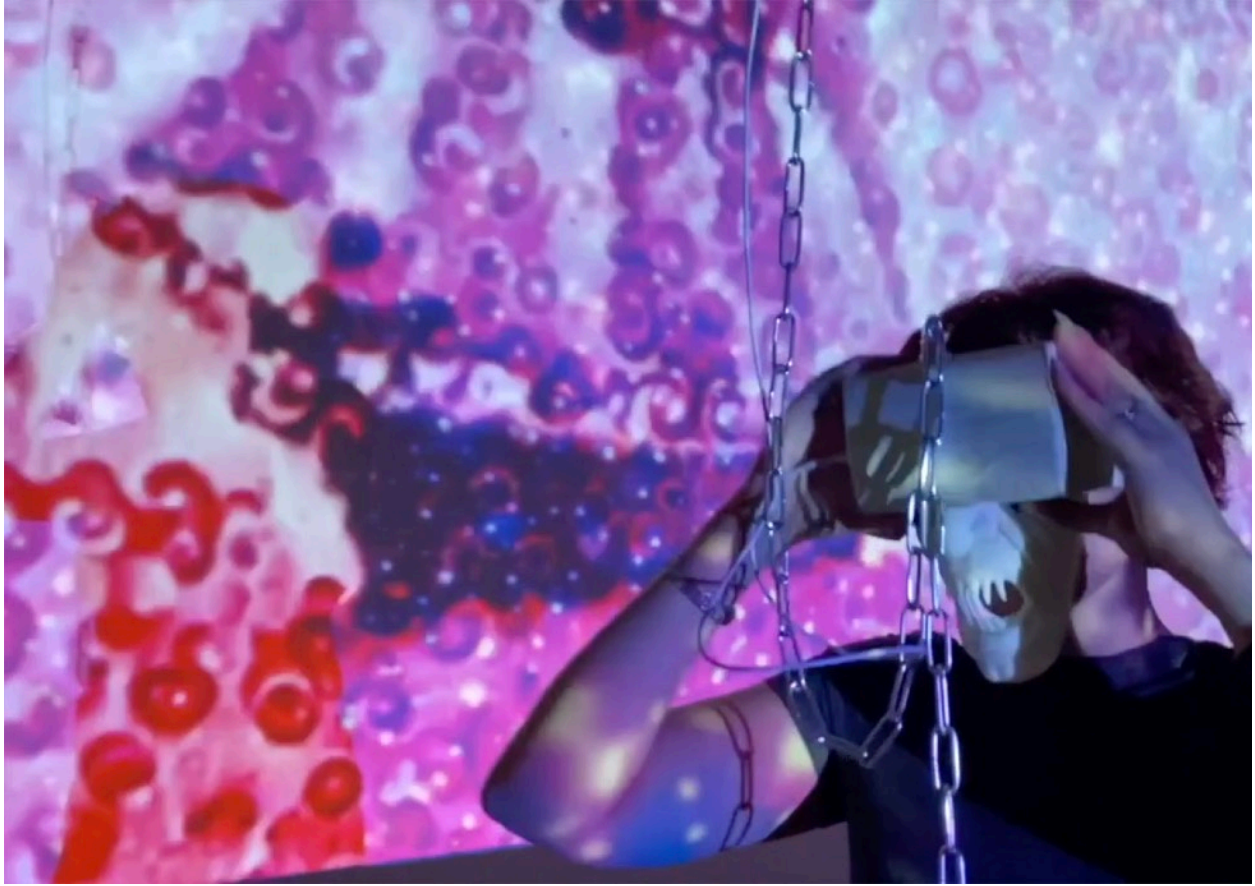


Figure 1. Photo documentation of *For Katharina Kepler*, using AI to address fear in mass media, and how that fear reflects its time and culture. Eric Millikin, 2019. Media: Two-channel video projection mapping, 3D-modeled virtual environment, AI trained on red blood cells and astronomical objects, cardboard VR viewer, phosphorescent 3D bioplastic print, phosphorescent duct tape, chain, your body, your body's shadow. Dimensions: Variable.

street where I live here in Richmond, Virginia. In late spring of 2020, I created *VIRONOMICON* as an AI-constructed artist book of incantation poetry, divination cards, and magic summoning circles. For my MFA thesis exhibition entitled *Reanimator/Reflection*, I used artificial intelligence to create three new works of sound and live-generated video art, each based on mirror reflections and 100-year-old racist post-pandemic horror literature by H. P. Lovecraft as the culmination of all of my prior work from the previous two years at Virginia Commonwealth University School of the Arts.

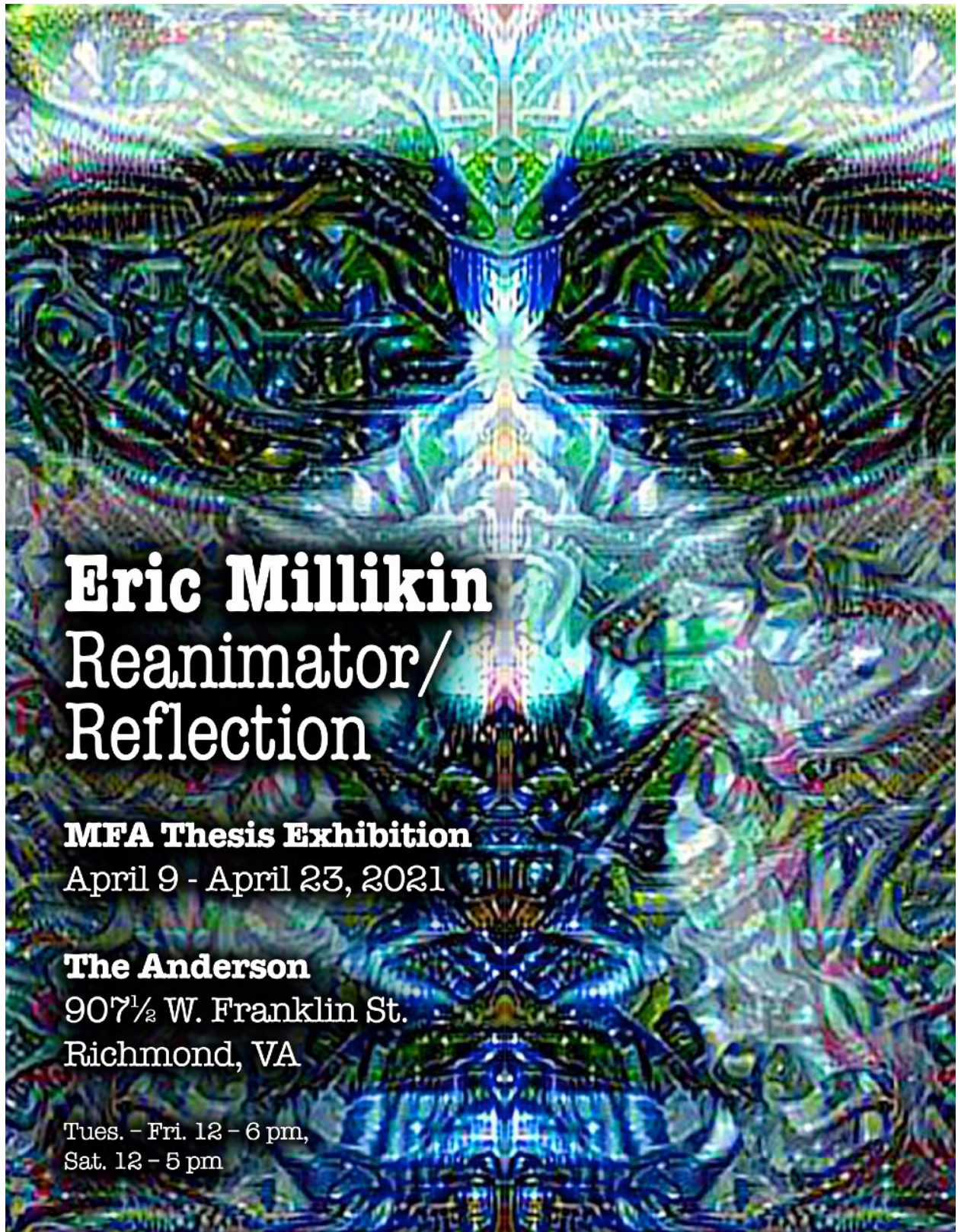
REANIMATOR/REFLECTION

My MFA thesis exhibition, titled *Reanimator/Reflection*, was held April 9 to April 23, 2021, in the The Anderson gallery on the Virginia Commonwealth University campus. My show was in The Anderson's "A" space, which is the entry foyer and the first room of the building. Each of the three works in the show is based on my research into 100-year-old post-pandemic racist science fiction and horror writing from American author H. P. Lovecraft. The themes of these writings mirror the issues of our current time. The primary works of Lovecraft that I referenced in the exhibition are "Herbert West: Reanimator," (1922) a serialized tale about graduate school experiments which attempted to return the dead to life during a plague, and "Nyarlathotep," (1920) a prose poem that suggests even our dreams might become infected as with a fever.

I am interested in these two particular texts for several reasons. They were written shortly after the early 20th century influenza pandemic that lasted from 1918 to 1920; these texts directly address that pandemic and its associated fears; and, then as now, these pandemic fears are often expressed in racial terms.

For example, in "Nyarlathotep," Lovecraft describes a growing evil in pandemic-like terms, as a "hideous physical danger" that is "widespread and all-embracing":

"The general tension was horrible. To a season of political and social upheaval was added a strange and brooding apprehension of hideous physical danger; a danger widespread and all-embracing, such a danger as may be imagined only in the most terrible



Eric Millikin **Reanimator/ Reflection**

MFA Thesis Exhibition

April 9 - April 23, 2021

The Anderson

907½ W. Franklin St.

Richmond, VA

Tues. - Fri. 12 - 6 pm,

Sat. 12 - 5 pm

Figure 2. Flyer for the MFA thesis exhibition *Reanimator/Reflection*, by Eric Millikin.

phantasms of the night. I recall that the people went about with pale and worried faces, and whispered warnings and prophecies which no one dared consciously repeat or acknowledge to himself that he had heard. A sense of monstrous guilt was upon the land ... and everyone felt that the world and perhaps the universe had passed from the control of known gods or forces to that of gods or forces which were unknown.”²

Lovecraft describes the title character of “Nyarlathotep” in racial terms, writing that “Nyarlathotep came out of Egypt. Who he was, none could tell, but he was of the old native blood and looked like a Pharaoh. ... Into the lands of civilisation came Nyarlathotep, swarthy, slender, and sinister.”³ Nyarlathotep’s followers are also described in racist terms, in a way that parallels the anti-Asian racism we’ve seen during the COVID-19 pandemic. In another parallel to the racial divides of our times, Lovecraft writes of social change being visible through the destruction of monuments. Lovecraft writes: “I saw hooded forms amidst ruins, and yellow evil faces peering from behind fallen monuments.”⁴

Lovecraft’s “Herbert West: Reanimator,” written two years after “Nyarlathotep,” further builds upon these themes. The story is a sort of *Frankenstein* tale, with the title character of Herbert West as a medical student seeking to reanimate the dead. Portions of the story are set during a typhoid epidemic. Herbert West’s method of reversing death is not through electricity as it was in Mary Shelley’s *Frankenstein; or, The Modern Prometheus* (1818), but instead a method that is evocative of our current vaccination programs, “reanimation of the dead through injections of an excitant solution.”⁵ In the second chapter, “The Plague-Daemon,” Lovecraft writes:

“I shall never forget that hideous summer sixteen years ago, when like a noxious afrite from the halls of Eblis typhoid stalked leeringly through Arkham. It is by that satanic scourge that most recall the year ... Taking advantage of the disorganisation of both college work and municipal health regulations, [Herbert West] managed to get a recently deceased body smuggled into the university dissecting-room one night, and in my presence injected a new modification of his solution. The thing actually opened its eyes ...”⁶

As a Master of Fine Arts graduate student, I am particularly interested in “Herbert West: Reanimator” as a work not only set during a pandemic, but as a work about graduate school experimentation. That this story is partially set in a medical school dissection lab is of interest to me as I helped pay my way through undergraduate art school at Michigan State University by working in the school’s human anatomy lab.

Earlier in this paper I referenced a few recent art projects that were somewhat related to the works of Lovecraft, such as the augmented reality monster tentacles of *Electronic Exorcism* and the AI-generated artists book of incantations, divination cards, and summoning circles that was *VIRONOMICON*. More recently, during this past year and a half of COVID-19, I have been thinking about how our current pandemic and its related rise in racist attacks — from the crimes against Asian-Americans to white supremacists attacking the US capitol on January, 6, 2021 — are eerily similar to the 1918-1920 influenza pandemic, the accompanying rise in white supremacist racist attacks during the “Red Summer” of 1919, the increase in nationwide KKK membership of the 1920s, and the racialized post-pandemic fears expressed in the horror literature of H. P. Lovecraft from that time. Earlier this year on January 29, 2021, I attended a

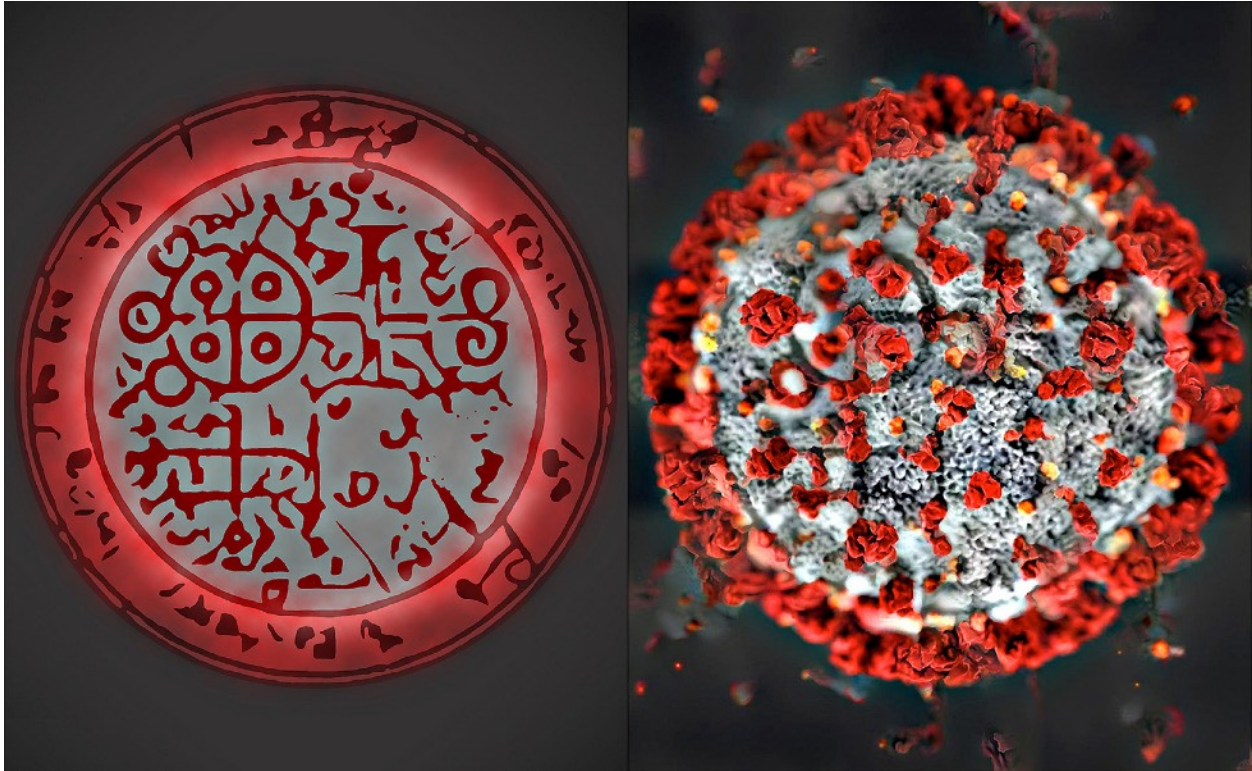


Figure 3. “The 70th Seal,” two-page excerpt from *VIRONOMICON*, one of my works related to COVID-19 from my MFA candidacy, from spring of 2020. My artist’s book *VIRONOMICON* includes AI-generated magic circles of summoning and protection based on spell books from Medieval and Renaissance plague times, accompanied by renderings of re-engineered viruses as potential future pandemics and/or vaccines, cut-up incantation poems assisted by an AI trained to study writings about and during plagues and pandemics, and QR code tarot Death cards that unlock secret sound experiences. Eric Millikin, 2020. Media: Artist’s book AKA “quaranzine.” Dimensions: 17” x 11”.

lecture on “Contagion Aesthetics: Modernist Literature and the Influenza Pandemic” by Dr. Elizabeth Outka, as part of VCU’s Humanities Research Center’s Race, Ethnicity and Social Justice Speaker Series. Outka is a professor of English at the University of Richmond and the author of the book *Viral Modernism: The Influenza Pandemic and Interwar Literature*. Outka’s lecture and book are primarily focused on works by writers like Virginia Woolf, T.S. Eliot, and W.B. Yeats, but she also points to how “Lovecraft’s early zombies embody widespread fears of contagion ... these zombie figures offer terrifying material embodiments of the rage and horror left over from the viral tragedy.”⁷⁷ She describes “Nyarlathotep” as a tale of “a nightmarish world

saturated in disease, corpses, and anxiety,”⁸ in which “reflected is both Lovecraft’s paranoia that hordes of immigrants were infecting Anglo-Saxon genetic lines and the grotesque prejudicial ways disease metaphors may be harnessed to justify racism.”⁹ Of “Herbert West: Reanimator,” Outka writes:

“The dead in ‘Herbert West’ embody the horror of their particular historical moment ... ‘The Plague-Daemon’ seems lifted right from newspaper accounts of the pandemic ... As the episodes unfold, the atmosphere of contagion from the plague episode morphs into the racist vision of infection ...”¹⁰

As a reference to the way this early 20th century horror literature mirrors our current pandemic times, I designed my entire *Reanimator/Reflection* exhibition to function as mirrors within mirrors. Since the exhibition was in the first space that the visitors would enter when visiting the four-story gallery, I could expect that people would be in the unusual position of always seeing my exhibition twice: once on the way into the gallery, and then again on their way out, and that the second time they would visit my space, they would experience the works in the reverse order from the initial encounter, like a mirror-image. Each of the individual works also includes multiple instances of mirroring. These include a video mirrored horizontally like a Rorschach test, a kaleidoscopic mirrored video, reversed audio as a form of mirroring, reflections of the videos on the floor, and reflections of video both on the surface of a mirror and bouncing off of a mirror. All of this mirroring in the design of the exhibition space and in the artworks themselves is a reference to the way that H. P. Lovecraft’s early 20th century post-pandemic racism from 100 years ago is almost a mirror reflection of the current times in the United States of pandemic fears and racial scapegoating and attacks. It is also a reference to how the characters

in “Herbert West: Reanimator” try to use the presence of visible breath on a mirror to determine whether they have successfully brought life back to the dead.

Each of the works in this exhibition is created with the assistance of artificial intelligence and machine learning. This is similar to previous works of AI art that I have created both before and during my time as an MFA student. I have been working with AI for several reasons. I am interested in how AI allows us to think about the ways that we as human beings are often “programmed” through fear, racism, propaganda, etc., as well as the ways that AI is often used as a predictive technology, where if a machine looks at enough past data it might be able to predict the future. I am interested in AI as a type of other-than-human and non-living intelligence, somewhat similar to other inhuman and non-living intelligences like that of a zombie or a Frankenstein’s monster. In my *Reanimator/Reflection* exhibition, I am also thinking of my use of AI here in a similar vein as the mechanistic theories of artificial life and death described by Lovecraft in “Herbert West: Reanimator.”

“[Herbert] West had already made himself notorious through his wild theories on the nature of death and the possibility of overcoming it artificially. His views, which were widely ridiculed by the faculty and his fellow-students, hinged on the essentially mechanistic nature of life; and concerned means for operating the organic machinery of mankind ...”¹¹

Two of my works in *Reanimator/Reflection* — *mist appeared on the mirror inclined above the body’s mouth* and *the place chosen for purely symbolic and fantastically aesthetic reasons* — include live-generated videos. Unlike most of my previous AI projects where I have used AI to create artwork in advance of an exhibition, here I have allowed gallery visitors to



Figure 4. Kinetic video sculpture *mist appeared on the mirror inclined above the body's mouth*, showing one of two live-generated AI videos from this exhibition, both based on the same input but ending up with very different results. Eric Millikin, 2021. Media: Live-generated video, AI trained on images adapted from H. P. Lovecraft texts, laser video projection, antique mirror, electric motor. Duration: Infinite. Dimensions: 23" x 21" x 21".

watch my AI as it is doing its type of mechanical “thinking,” making its own artistic decisions, and creating artistic output in real time. Creating these live-generated videos has also allowed me to create work that infinitely redraws itself; that is, these are animations about reanimations that constantly reanimate themselves. These are videos that create themselves live, during a pandemic, when this artificial intelligence might continue generating live videos indefinitely and outlive any one of us.

I should explain here my long history of reading H. P. Lovecraft. I first read Lovecraft’s stories while I was in elementary school, and I recall that when I went to check them out from my small town’s local public library, my librarian questioned whether they were appropriate for a reader of my age, and whether I should be allowed to check them out at all. I found myself trying to explain to my librarian that Lovecraft’s works were simply like children’s ghost stories, but for somewhat more advanced readers, when I began to realize that my librarian thought the books with “Lovecraft” in large letters on their covers were some type of sex guide books, as if “Lovecraft” were “The Craft of Making Love.” It of course says something about our culture that my librarian finally allowed me to read Lovecraft’s books once they understood that these were not books about sex but instead simply tales of horrific diseases, creeping madness, and the dead returning to kill the living. When I later understood how racist these stories were, I began to question the ways in which these racist horror stories could have programmed or infected me.

So, for many reasons including my reading Lovecraft’s horror stories as a child, their appropriateness as a mirror for our current pandemic, their appropriateness as a mirror for our current racist violence, their themes which fit within my work related to the use of fear in mass media, the appropriateness of these themes for my experiments in AI-generated artwork, and

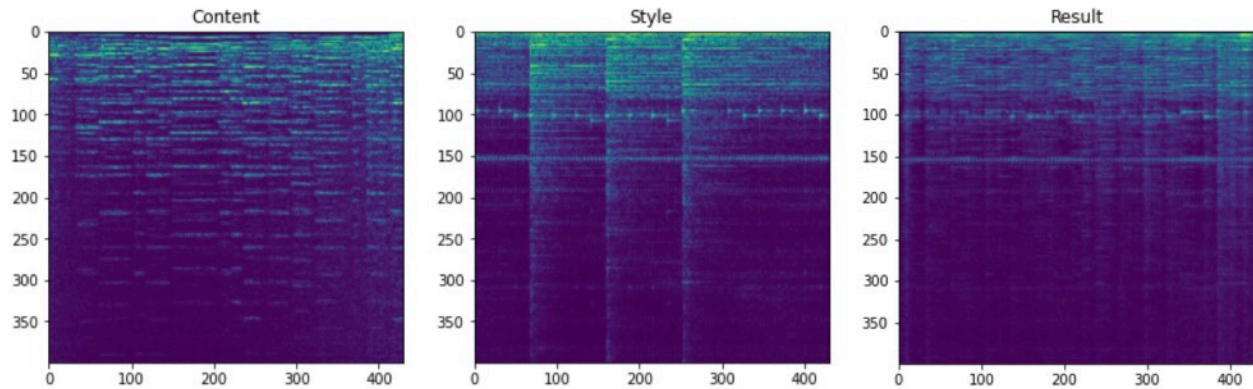


Figure 5. Spectrograms showing part of the process of creating my sound piece *blasphemous flutes from inconceivable, unlighted chambers*. Each of these graphics is a visualization of an audio sample. In each graphic, the time goes from left to right, the frequency of the sound goes from top to bottom, and then the intensity of the color represents the amplitude of the sound.

On the left is a portion of the *The Star-Spangled Banner* content, and in the middle is a portion of the theme from the film *Halloween* style, and on the right is the AI generated output which sort of tries to play the *The Star-Spangled Banner* in the style of the theme to the film *Halloween*. The AI-generated audio was then stretched to about the 32 times its original length, noise removed, mixed with pitch-shifted and reversed versions of itself, and spatialized. Eric Millikin, 2021. Media: 7.1 channel sound, AI trained on the US national anthem and horror film soundtracks. Duration: 42:30 loop

Lovecraft’s horror stories having at times a setting within a graduate school and its related experiments, for these reasons and more I created *Reanimator/Reflection* as my MFA exhibition. What follows is a closer analysis of each of the three works in this exhibition.

***BLASPHEMOUS FLUTES FROM
INCONCEIVABLE, UNLIGHTED CHAMBERS***

The first work that visitors encountered in the exhibition was my 7.1 channel sound piece titled *blasphemous flutes from inconceivable, unlighted chambers*. Visitors could hear the piece before they entered the inner doorway to the gallery. The title is taken from a passage from H. P.

Lovecraft's prose poem "Nyarlathotep," which describes the music created by insane cultists in a disease-ridden apocalyptic world:

"... through this revolting graveyard of the universe the muffled, maddening beating of drums, and thin, monotonous whine of blasphemous flutes from inconceivable, unlighted chambers beyond Time; the detestable pounding and piping whereunto dance slowly, awkwardly, and absurdly the gigantic, tenebrous ultimate gods—the blind, voiceless, mindless gargoyles whose soul is Nyarlathotep."¹²

This work is part of a series of sound art pieces that I have been creating, each based on an AI that I have trained on the national anthem of the United States (*The Star-Spangled Banner*) and soundtracks to horror films. For this particular piece I used the soundtrack to the 1978 film *Halloween*. What I end up with is an AI that believes there are only two songs in the world, *The Star-Spangled Banner* and the theme to the film *Halloween*. I then ask that AI to write a new song, where it might play a song with the content and structure of *The Star-Spangled Banner*, but with the style and instrumentation of the *Halloween* theme.

I then slowed that AI-generated song down to about 32 times its original length, removed noise from it, reversed portions of it, added some reverb and harmony to it, converted it from stereo to full-sphere ambisonic and then to 7.1 surround sound as a 42 minute and 30 second loop, so that it turns into a sort of ambient, hypnotic soundscape, reminiscent of Lovecraft's "blasphemous flutes." This audio transformation removes the orchestral hits and "stabs" that are present in both the U.S. national anthem and horror film soundtracks, creating a sound art piece that is less about a visceral response of adrenaline pumping bodily fear, and is instead more of a

looping hypnotic experience where we might perhaps think about horror within longer stretches of time, and how that horror might echo and repeat throughout those times.

I used the soundtrack to the film *Halloween* for this piece because I am fascinated with the depictions of race, class, gender, and regionalism in that series of horror films, where the unkillable monster is a white man in an even whiter mask who wears blue-collar coveralls while stalking female babysitters in a small midwestern town. I purposefully chose to work with a well-known horror film theme — the theme from *Halloween* is consistently ranked among the best horror film themes, topping the list of *Rolling Stone*'s “35 Greatest Horror Soundtracks”¹³ — because my using a familiar horror film theme had the potential to emphasize how transformed and unrecognizable my AI and I have made it.

I used *The Star-Spangled Banner* in reference to the long history of the national anthem being used as a sort of protest song, from U.S track athletes Tommie Smith and John Carlos raising their fists in a “Black power” salute from the medals podium during the playing of the US national anthem at the 1968 Olympics, to Jimi Hendrix using it as a psychedelic anti-war song at Woodstock in 1969, to quarterback Colin Kaepernick taking a knee during the national anthem before NFL football games in 2016. Here I am also thinking about the national anthem itself as possibly a horror soundtrack.

Occasionally, the sounds of this piece move clockwise around the space, taking roughly one minute and 15 seconds to rotate completely around the exhibition's two rooms. This slow and subtle rotation and timing roughly correspond to the speed of the kinetic video sculpture in the exhibition, *mist appeared on the mirror inclined above the body's mouth*.



Figure 6. Detail of moving mechanical mirror with a live-generated, kaleidoscopic video projection visible within the antique mirror, as well a being reflected off the mirror, from *mist* appeared on the mirror inclined above the body's mouth.

MIST APPEARED ON THE MIRROR INCLINED ABOVE THE BODY'S MOUTH

The second artwork that visitors encounter in my MFA exhibition is a kinetic video sculpture titled *mist appeared on the mirror inclined above the body's mouth*. This sculpture consists of live-generated video projected onto an antique mirror that is rotated by an electric motor. The projection is visible on the surface of the mirror and reflected on the walls of the gallery, moving clockwise about the space.

The title of the piece is based on a passage from “Herbert West: Reanimator”:

“West, who had his hand on the pulse of the left wrist, suddenly nodded significantly; and almost simultaneously a mist appeared on the mirror inclined above the body's mouth. There followed a few spasmodic muscular motions, and then an audible breathing and visible motion of the chest. I looked at the closed eyelids, and thought I detected a quivering. Then the lids opened, shewing eyes which were grey, calm, and alive ...”¹⁴

The video projection is in the form of a series of animated, ever-changing stars, created through a sort of kaleidoscopic mirroring, where images are repeatedly reflected around a central point. Here I am referring to the long history of using mirrors in machines for creating animations, such as the early optical device the praxinoscope, invented in 1877, a sort of zoetrope that uses a circle of spinning mirrors to create the illusion of animated movement. The program that I made to create these kaleidoscopic star shapes can create over 1.4 million possible stars. My system creates a new star approximately once every 30 seconds, so if you were to watch the video continuously without interruption, on average it may take about 488 days, or 1 and 1/3 years, before you see the exact same star twice.

I think of each of the machine-made stars as a sort of chaos magick sigil created through scientific chaos theory, perhaps a magic symbol of summoning and/or protection, often taking the form of what looks like a talisman against the evil eye, staring back at you from both inside the mirror and from the walls as it circles the room around you, watching ...

The mirror that I used for this piece was a vintage mirror that the seller described as being from the 1920s, the time that Lovecraft was publishing “Nyarlathotep” and “Herbert West: Reanimator.” The design of the mirror features elements — such as the repetitive, circular designs around the mirror and on the base — that echo the repetition of the kaleidoscopic star images created in the live-generated video.

My original plan was to suspend a larger, heavier, standard projector in a different space within the gallery building, so that part of the piece would perhaps be a sense of unease, danger or unpredictability, in that the heavier projector might seem about to fall at any moment. However, when the Anderson offered me the two-room “A” space, I switched to a smaller laser projector that would be bright enough to be able to travel across the length of both rooms, and because the laser light is always coherent, it would always be in focus no matter whether it was projecting on a closer or more distant surface.

During the course of my thesis exhibition, three of those laser projectors died. Two died, one after the other while I was using them myself in the show, and a third which was my “Plan C” backup died while in use by another artist elsewhere. As a result, I switched to a more traditional LED projector rather than a laser projector. This LED projector was not as bright, and designed as more of a short-throw projector, so for about three-quarters of the show, the projected image was less visible (both less bright and more blurry) the farther it was projected.

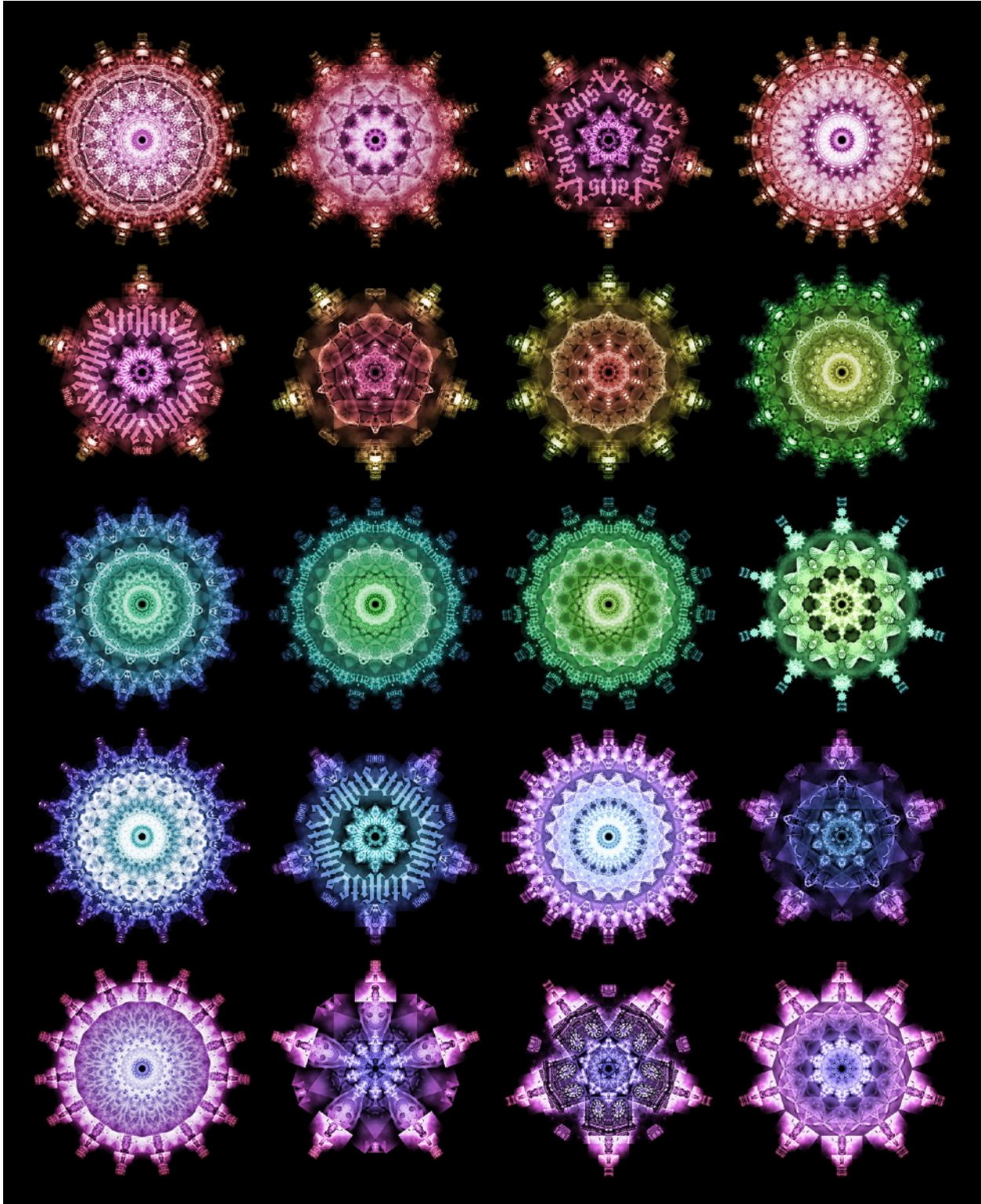


Figure 7. 20 stills from the live-generated video projection from the kinetic video sculpture *mist appeared on the mirror inclined above the body's mouth*. These are 20 of the over 1.4 million possible different stars that this program might produce, based on the logic I have programmed it with and the inputs I have given it.

This was not what I originally intended but it did have the effect of making the piece more about the unusual reflection visible in the mirror and less about the reflection on the wall. The projected image going out of focus and losing visibility was also somewhat like Lovecraft's mist on a mirror, making the image less visible.

The live-generated geometric star shapes are created by an AI using images that are loosely adapted from Lovecraft's texts. For example, I included specific animals such as monkeys that Lovecraft describes Herbert West experimenting on. In scenes where the type of experimental animal subject was not specifically named, I felt free to choose my own, such as owls or frogs. Other inputs I used included front-page newspaper photos of 1920s Ku Klux Klan rallies, internal organs from human anatomy, and my own designs for mirror-image ambigram words related to the racial themes of Lovecraft's texts. These images served as the input data which my program used to create the animated kaleidoscopic star shapes. After the first few rounds of creating output with this system, I started feeding some of the output kaleidoscopic stars back in as new inputs, so from then on the system would occasionally decide to make stars out of previous stars.

I used the same image input data to create the other live-generated video work in this show, but although they used the same input data, I coded each AI video to be created in a completely different way. I think of this as similar to how two different human intelligences might take the same informational input and end up with completely different conclusions. My second live-generated AI video is a large-scale wall projection titled *the place chosen for purely symbolic and fantastically aesthetic reasons*.



Figure 8. The kaleidoscopic projection from the video sculpture *mist* appeared on the mirror inclined above the body's mouth seen moving across the wall above the live-generated, morphing and mirrored video projection the place chosen for purely symbolic and fantastically aesthetic reasons.

THE PLACE CHOSEN FOR PURELY SYMBOLIC AND FANTASTICALLY AESTHETIC REASONS

The third and final work that I will describe from my *Reanimator/Reflection* exhibition is a live-generated video projection, projected large on the wall by an ultra short throw projector. This video is mirrored horizontally, designed as a sort of Rorschach test, and is also mirrored a second time in a reflection on the floor. The title of this work is a nod to site specificity of this work as well as the others in the exhibition: *the place chosen for purely symbolic and fantastically aesthetic reasons*.

The title is taken from a phrase from “Herbert West: Reanimator”:

“West’s last quarters were in a venerable house of much elegance, overlooking one of the oldest burying-grounds in Boston. He had chosen the place for purely symbolic and fantastically aesthetic reasons, since most of the interments were of the colonial period and therefore of little use to a scientist seeking very fresh bodies. The laboratory was in a sub-cellar secretly constructed by imported workmen ...”¹⁵

The ultra short throw projector that I used here allowed me to create an extremely large video image on the wall, with the projector positioned quite close to that wall. This allows viewers to get close to the image and look at and point out the details in the video without getting in front of the projector. This way they avoid casting a shadow on to the protected image. The size of the projected image was 204 inches x 115 inches, or 17 feet x 9.6 feet. That’s the equivalent of a 234” diagonal TV set, or in other words, roughly equal to the size of sixteen 60” monitors arranged in a 4 x 4 configuration. The projector I used is an HD projector, 1920 pixels x



Figure 9. Installation view of *the place chosen for purely symbolic and fantastically aesthetic reasons*, showing mirror image ambigram of the word "fear." Eric Millikin, 2021. Media: Live-generated video, AI trained on images adapted from H.P. Lovecraft texts, ultra short throw laser video projection. Duration: Infinite. Dimensions: Variable, here 204" x 115".

1080 pixels, making each individual pixel on the wall slightly smaller than an 1/8th of an inch square.

I spent quite a bit of time in my exhibition planning on possible seating iterations in front of this projection, to encourage people to stay with it longer. I ultimately decided against any seating because I wanted to encourage people to look at the piece from different distances and vantage points, as well as be able to move about the space while my sound piece was also moving. I also wanted to draw attention to the reflection of this video on the floor, which would have been lost if there were benches, chairs, or cushions obstructing the view.

The live-generated, animated video is based on an AI which is making choices about what scene to show, what style to draw it in, how long to show it for, and which scene to transition into next. There are over 3 million possible unique animated scenes that the AI could show, and it creates a new scene roughly every 4 minutes. That means that on average a viewer could have to watch continuously for a little over 23 and 1/4 years before seeing the exact same animation twice.

This system uses the same inputs as the video projection sculpture *mist appeared on the mirror inclined above the body's mouth*, but instead of creating a series of kaleidoscopic star-shaped potentially magical symbols, it instead creates a sort of Rorschach test of an experimental animated film. Portraits of Lovecraft might morph into 1920s Ku Klux Klan marches on the U.S. capitol which might morph into scenes of hypodermic needle injections which might morph into grave diggers or hyperparasitic wasps or frogs, or mirror ambigram captions of “white,” “hate,” or “fear.” The film runs in an infinite loop, with the AI continuously replacing sections of the loop.

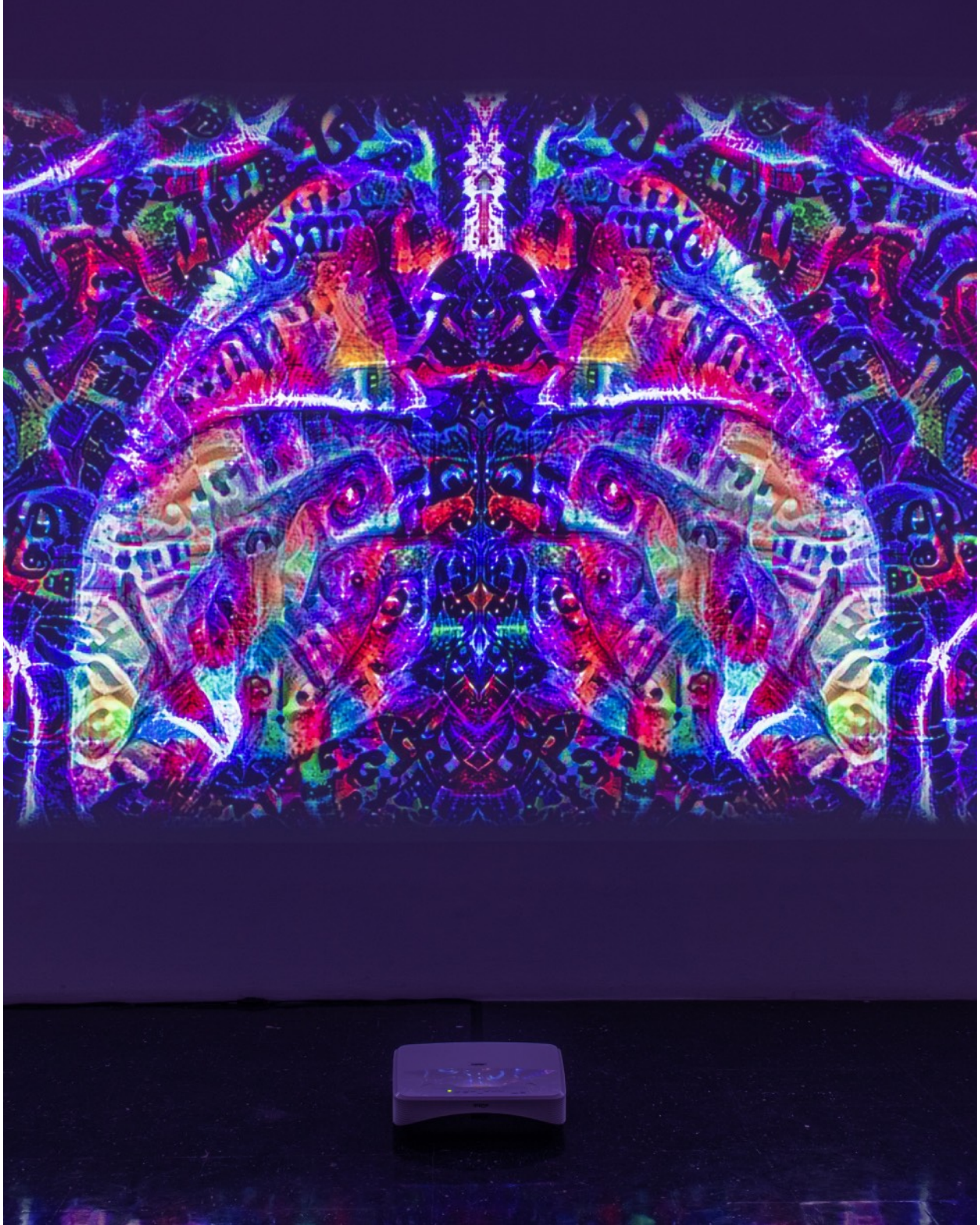


Figure 10. Installation view of *the place chosen for purely symbolic and fantastically aesthetic reasons*, showing human lungs made from multi-colored machinery. Eric Millikin, 2021. Media: Live-generated video, AI trained on images adapted from H.P. Lovecraft texts, ultra short throw laser video projection. Duration: Infinite. Dimensions: Variable, here 204" x 115".



Figure 11. The *Reanimator/Reflection* exhibition, looking in from the entry foyer.

While this is the third and final work I will describe from this show, keep in mind that this is not the final work that people will experience from my exhibition. Again, since my MFA thesis exhibition was in the first space in The Anderson gallery building, visitors will experience the exhibition again in reverse when they exit the building. And when they exit my exhibition — whether to go further into the building to see other exhibitions or to exit the building completely — the last of my works they will experience is the first one they experienced: my looping sound piece, *blasphemous flutes from inconceivable, unlighted chambers*.

CONCLUSION

For my MFA thesis exhibition entitled *Reanimator/Reflection*, I used artificial intelligence to create three new works of sound and live-generated video art, each based on mirror reflections and 100-year-old racist post-pandemic horror literature by H. P. Lovecraft as the culmination of all of my prior work from the previous two years at Virginia Commonwealth University School of the Arts. In late spring of 2020, I created *VIRONOMICON* as an AI-constructed artist book of incantation poetry, divination cards, and magic summoning circles. In late 2019, I created *Electronic Exorcism*, an augmented reality performance project to ritually exorcise AI-generated tentacled demons growing from my body as I visited the monument to the President of the Confederacy, Jefferson Davis, that is on the street where I live here in Richmond, Virginia. In early fall 2019, in almost a premonition of our lives under COVID, I created *For Katharina Kepler*, which invited people to wear a special mask to experience a virtual reality and video projection mapping installation on the theme of racial fear, all created from AI-animated human blood cells. In all my artwork over the course of my past two years, I have often used new media to create works exploring how cultural fears are reflected in popular mass media and in political propaganda. A year ago, in my MFA candidacy paper, I wrote: “Now is the time ... to make interesting art that reflects and shapes these strange times we live in, before we may possibly die in them.”

“Terror stalked him when he reflected ...”

— H. P. Lovecraft,

“Herbert West: Reanimator”¹⁶



Figure 12. These five still images are from the live-generated video *the place chosen for purely symbolic and fantastically aesthetic reasons*. They show a figure holding hypodermic needles who transforms into a scene of the Ku Klux Klan marching in Washington, DC. This transformation occurs over 100 frames in the video.

NOTES

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- ¹ H. P. Lovecraft, "Herbert West: Reanimator," In *The New Annotated H. P. Lovecraft*. Edited by Leslie S. Klinger. (New York: Liveright Publishing Corporation, a Division of W. W. Norton & Company, 2014), 70.
- ² Lovecraft, "Nyarlathotep," In *The New Annotated H. P. Lovecraft*, 30.
- ³ Lovecraft, "Nyarlathotep," In *The New Annotated H. P. Lovecraft*, 30-31.
- ⁴ Lovecraft, "Nyarlathotep," In *The New Annotated H. P. Lovecraft*, 31.
- ⁵ Lovecraft, "Herbert West: Reanimator," In *The New Annotated H. P. Lovecraft*, 63.
- ⁶ Lovecraft, "Herbert West: Reanimator," In *The New Annotated H. P. Lovecraft*, 51-54.
- ⁷ Elizabeth Outka, *Viral Modernism: The Influenza Pandemic and Interwar Literature*. (New York: Columbia University Press, 2020), 201.
- ⁸ Outka, *Viral Modernism*, 228.
- ⁹ Outka, *Viral Modernism*, 230.
- ¹⁰ Outka, *Viral Modernism*, 231-234.
- ¹¹ Lovecraft, "Herbert West: Reanimator," In *The New Annotated H. P. Lovecraft*, 45-46.
- ¹² Lovecraft, "Nyarlathotep," In *The New Annotated H. P. Lovecraft*, 33.
- ¹³ Christopher R. Weingarten, "35 Greatest Horror Soundtracks: Modern Masters, Gatekeepers Choose." *Rolling Stone*, October 18, 2019. <https://www.rollingstone.com/music/music-lists/35-greatest-horror-soundtracks-modern-masters-gatekeepers-choose-126190/xtro-harry-bromley-davenport-1983-105371/>.
- ¹⁴ Lovecraft, "Herbert West: Reanimator," In *The New Annotated H. P. Lovecraft*, 67.
- ¹⁵ Lovecraft, "Herbert West: Reanimator," In *The New Annotated H. P. Lovecraft*, 76.
- ¹⁶ Lovecraft, "Herbert West: Reanimator," In *The New Annotated H. P. Lovecraft*, 70.



Figure 13. Sound and video documentation of Eric Millikin's *Reanimator/Reflection* exhibition is at <https://vimeo.com/546507462>

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VITA

Eric Millikin was born in Lansing, Michigan, and grew up primarily in Lyons, Michigan. He attended Michigan State University with multiple academic scholarships, including a National Merit Scholarship. Millikin was a member of Michigan State University's Honors College, studied Art and English, received the school's Sculpture, Installation and Performance Recognition Award two years in a row, studied poetry writing and poststructuralist film theory, and earned a Bachelor of Fine Arts degree in Studio Art in 1998, graduating with Honors. Millikin's artwork has been exhibited in museums and galleries from Detroit, Denver, and Dubai to San Francisco, Scotland, and South Korea. His artwork has been featured by *WIRED*, *USA TODAY*, *Ripley's Believe It or Not!*, and *The New York Times* Sunday Arts section. Millikin brings a wide range of experiences to his work, including his time as a human anatomy lab technician, theatrical sound and lighting designer, experimental musician, alternative visual journalist, and descendant of Salem Witch Trial victims. Millikin's work in news media has won well over 50 international, national and regional awards, including most recently his illustration work winning an Association of Alternative Newsmedia Award for Cover Design in 2019.

Millikin earned his Master of Fine Arts in Kinetic Imaging from Virginia Commonwealth University, Richmond, Virginia, in 2021. While at Virginia Commonwealth University, Millikin earned the William B. Clopton Scholarship, Arts Graduate Assistantship, Commonwealth Award in Art, and School of the Arts Graduate Travel Grant. His MFA art projects included *Street Portrait: George Floyd* which was featured on the cover of VCUarts' annual *Studio* magazine, his AI-art artist book *VIRONOMICON* which was published in the academic journal *Digital America*, and his memorial artwork for COVID-19 victims which was featured by the City of Detroit as part of their city-wide COVID-19 memorial service. Millikin presented his paper *The Monsters in the Machines: AI Approaches to Researching and Reimagining Horror* at the 2021 Southwest Popular/American Culture Association conference. While studying at VCU, Millikin worked as a teaching assistant for the following Kinetic Imaging classes: Screen Dance, Virtual Interactive Worlds, Animation II, and Senior Studio.

Millikin will begin teaching as an adjunct faculty member at Virginia Commonwealth University School of the Arts in the fall of 2021, where he will teach Augmented Reality.