

"Creating is an innate part of human nature"

*A selection personal and professional projects*

# AMAY KATARIA

2023

"The infamously hidden knowledge is called intuition"

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# CHAO!

My name is Amay Kataria and I like to create new forms of media interventions that fuse warmth, empathy, and communal interaction with cutting-edge technologies. In the past 11 years, I have worked as a software engineer at Microsoft, developing frontend and backend systems for Skype, as well as an independent new-media artist, developing interactive experiences that tell personal stories by remediating industrial technologies.

For this portfolio, I have carefully curated five projects that demonstrate my unique blend of engineering expertise with computer graphics. I'm interested to apply these skills to an engineering team that values creative mindset.

### INTRODUCTION

### SUPERSYNTHESIS

Communal light & sound experience

### THE LOST PASSAGE

Artificial swarm of an extinct species

### BLOB MAKER

Parametric audio-visual NFT

### LIARBIRDS

Fake birds augmenting physical space

### TIMEKEEPERS

Immersive social virtual reality experience



# SUPERSYNTHESIS

2022

*Personal*

24 LED lights, raspberry pi, vinyl, 3x8 relay channels, 3D printed blocks, 100 ft electrical cables, speakers, custom software



## ABOUT

Supersynthesis is an interactive audio-visual installation that utilizes the medium of light and sound to craft a communal experience.

## ROLE

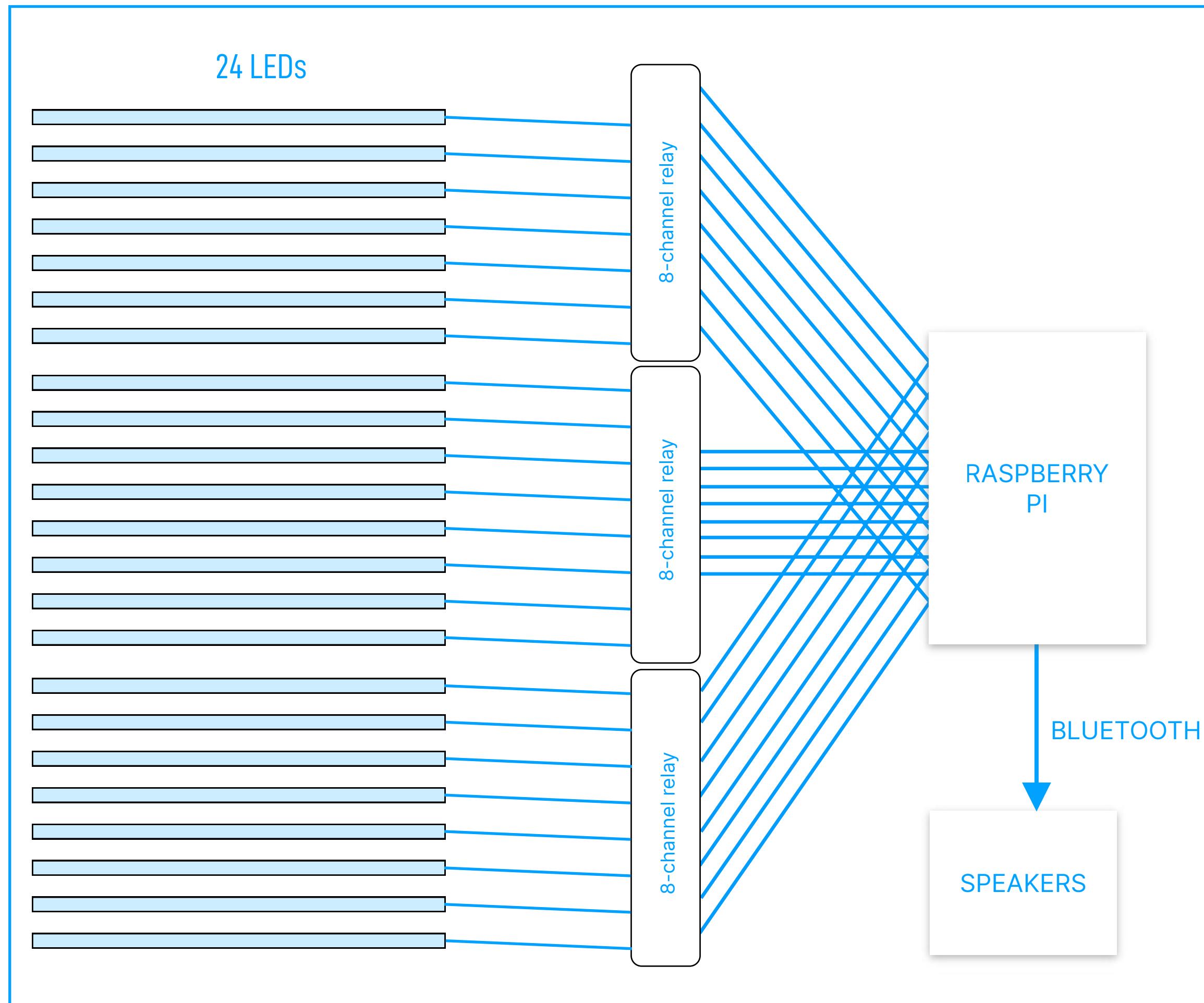
concept, parametric architecture, fabrication, web design, frontend, backend, hardware, engineering

## KEYWORDS

#waves #sound #light #publicart #performance #instrument  
#reactjs #p5js #python #socketio #nodejs #heroku #puredata  
#raspberrypi

## COMMUNAL COMPUTING

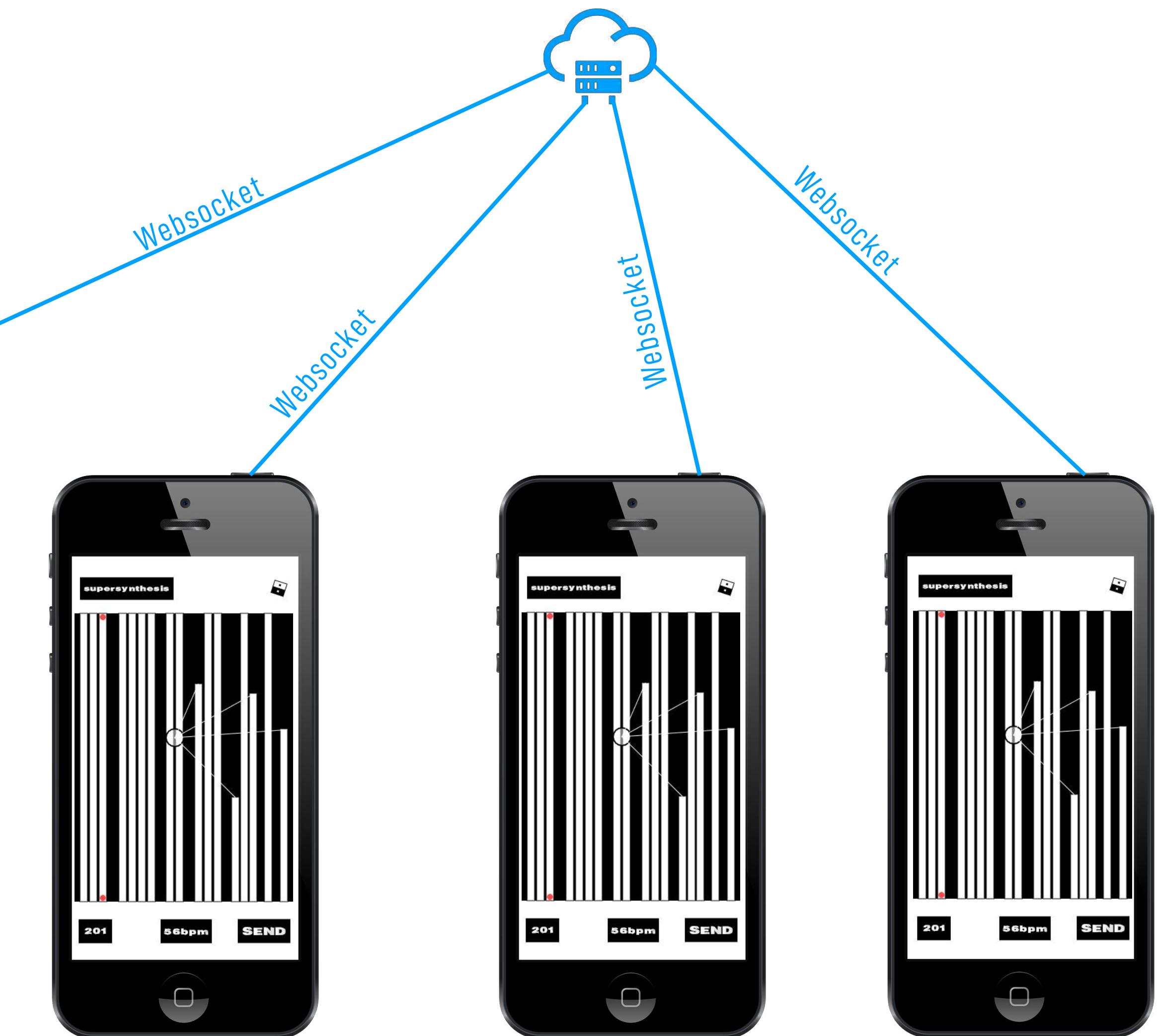
The network architecture runs a master sequencer in the cloud that coordinates communication between multiple clients that connect with it.



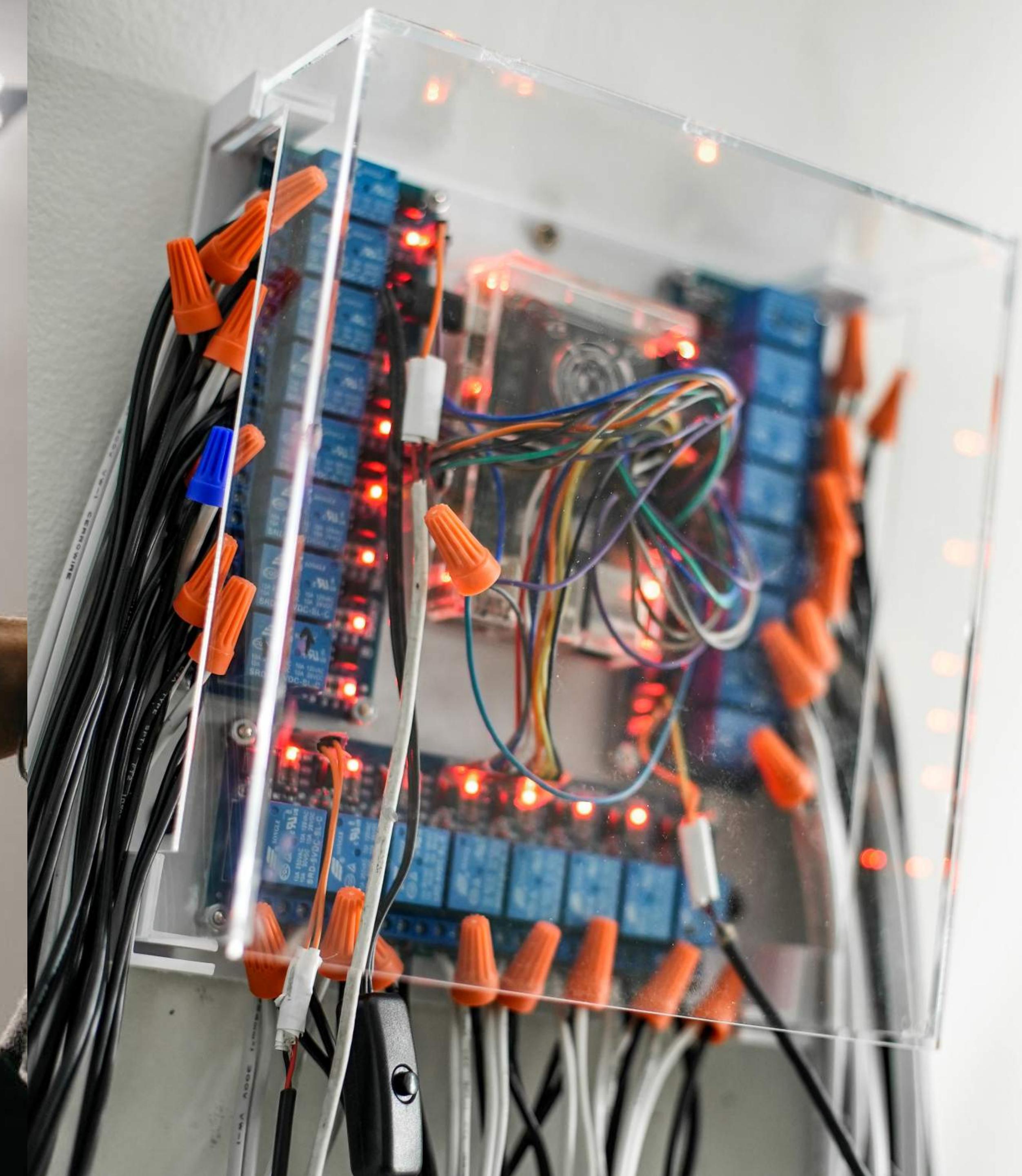
PHYSICAL INSTALLATION

## SEQUENCER IN THE CLOUD

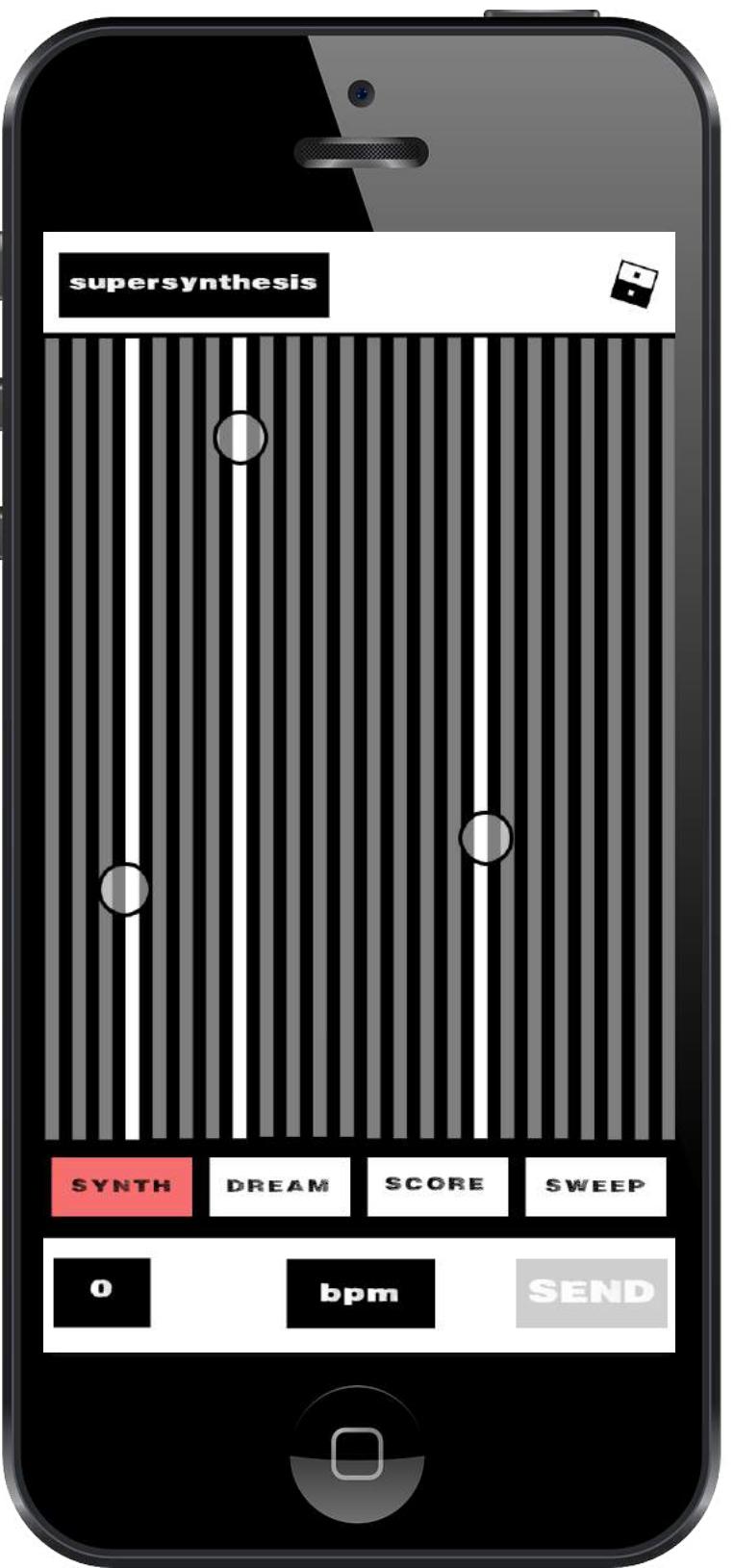
Database stores user generated templates



<https://supersynthesis.art>

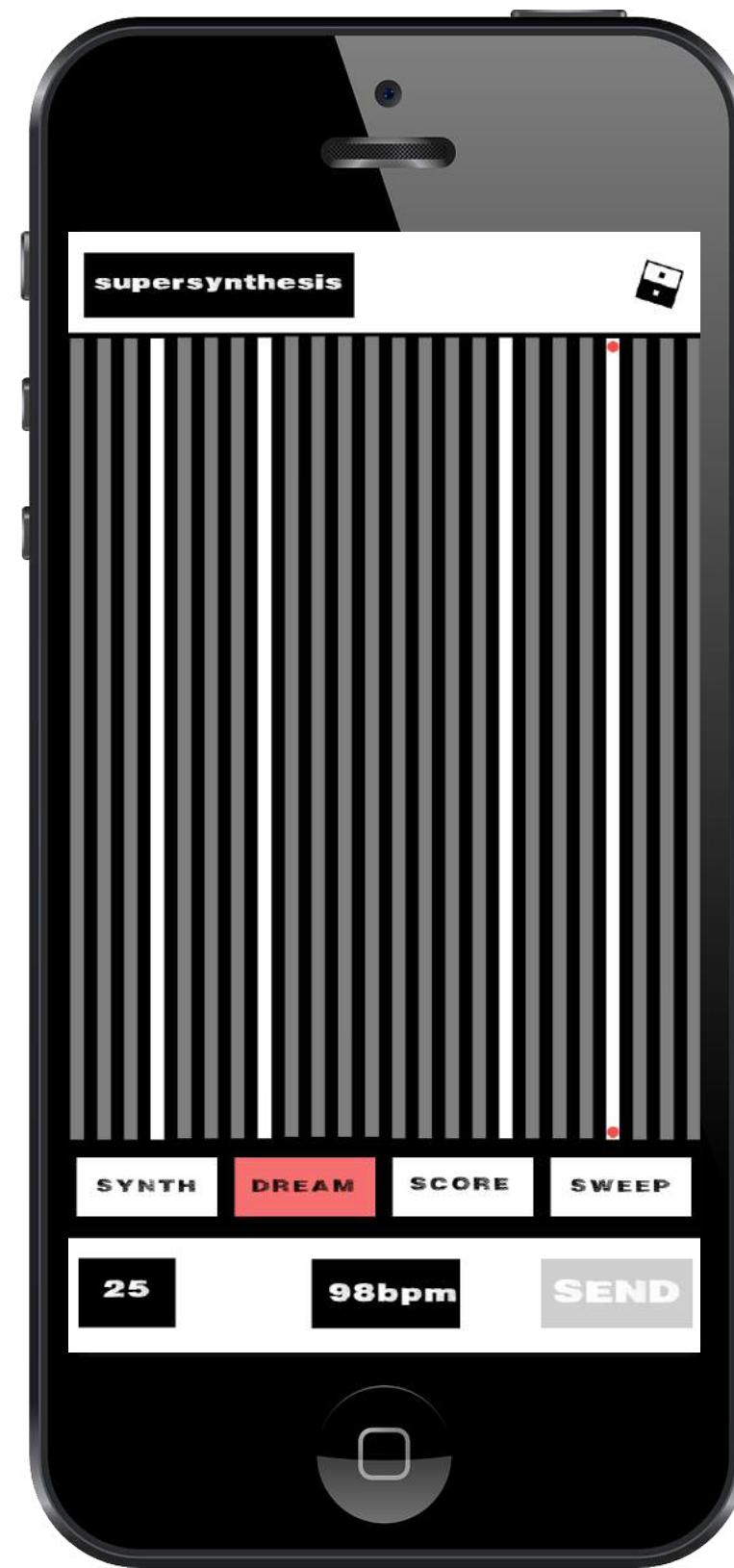


## USER INTERACTION MODES



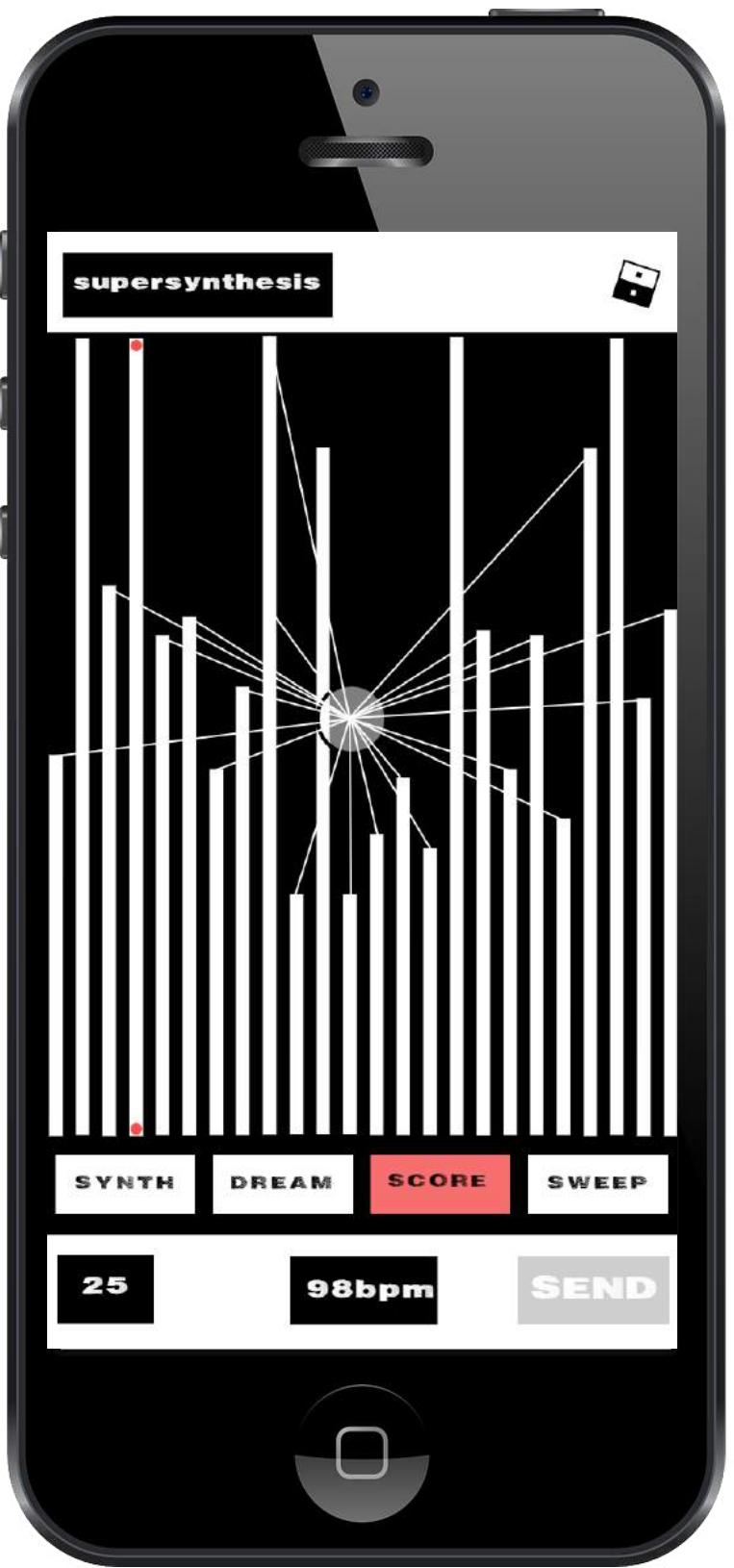
### SYNTH

Multitouch interaction like a synthesizer, with multiple clients



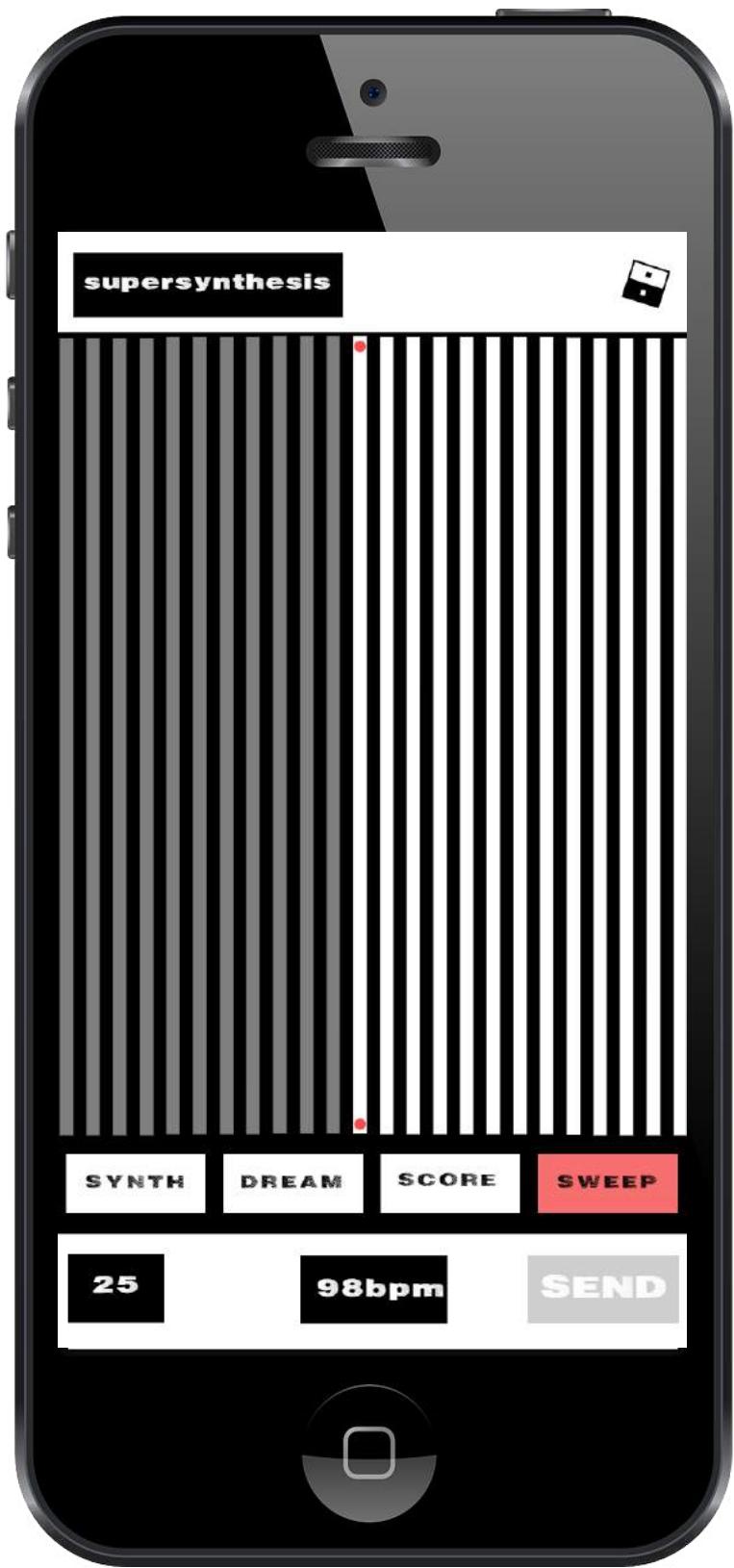
### DREAM

Randomly sequence previous scores created by others, stored in the database



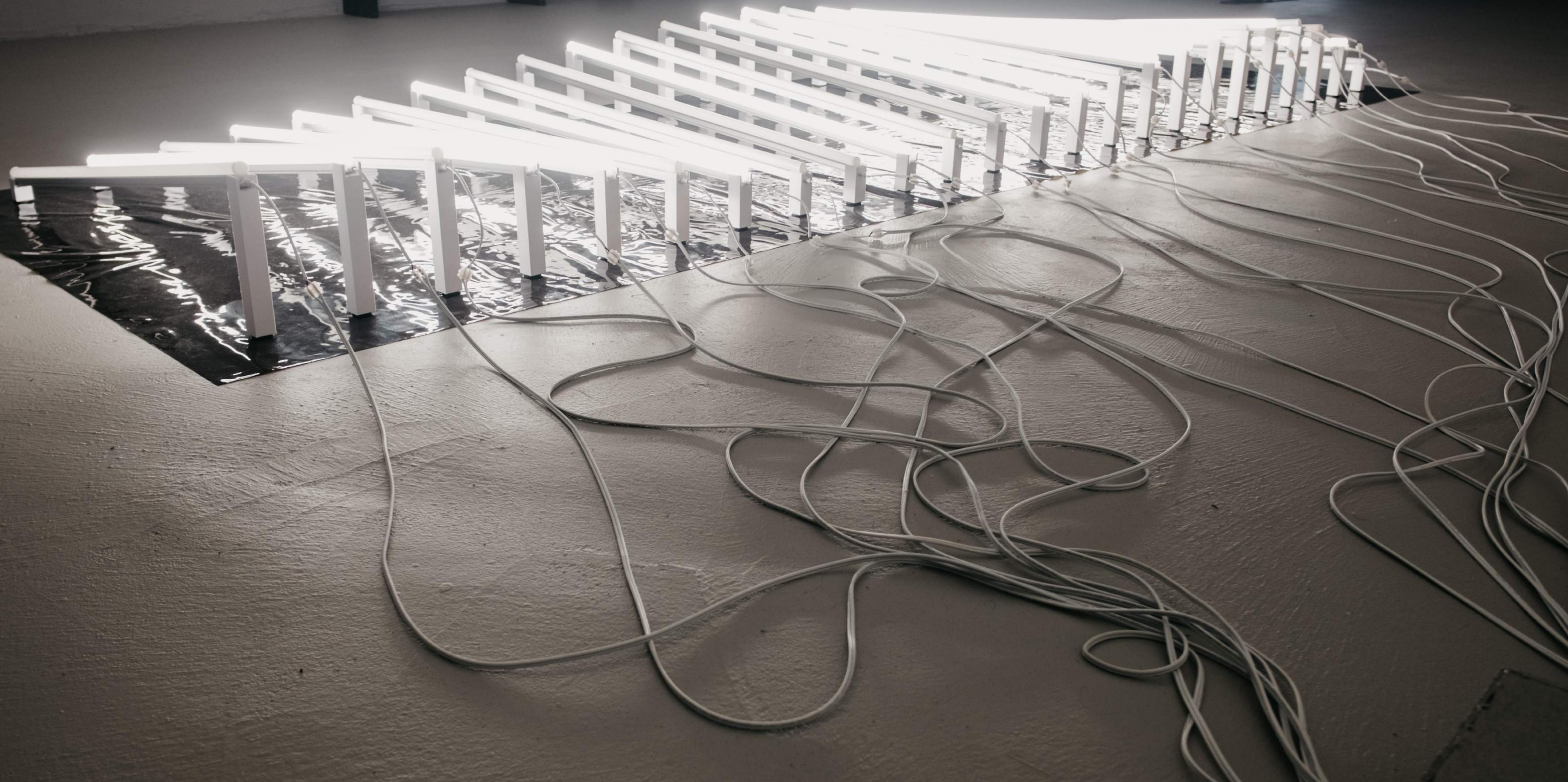
### SCORE

Create a new custom score and store it in the database



### SWEEP

Run hardcoded scores sequenced randomly between each other



THE LOST PASSAGE

ABOUT  
CLIMATE  
TEAM



THE LOST PASSAGE

2021  
*Personal*

artificial intelligence, machine learning, 3D model, custom software





ARTWORK BY T. HOYKE  
CINEMAGRAPH BY THE LOST PASSAGE



## ABOUT

The Lost Passage is a digital world, where an extinct species called passenger pigeon is resurrected as a swarm of artificial pigeons, navigating an aesthetic box painted with sublime imagery.

## ROLE

concept, 3D modelling, 3D animation, 3D software development, frontend, software architecture, gaugan extraction, user experience

## KEYWORDS

#extinction #digitaltwin #artificiallife #blender #webgl #reactjs #threejs #gaugan #machinelearning #interactive #residency

## PASSENGER PIGEON

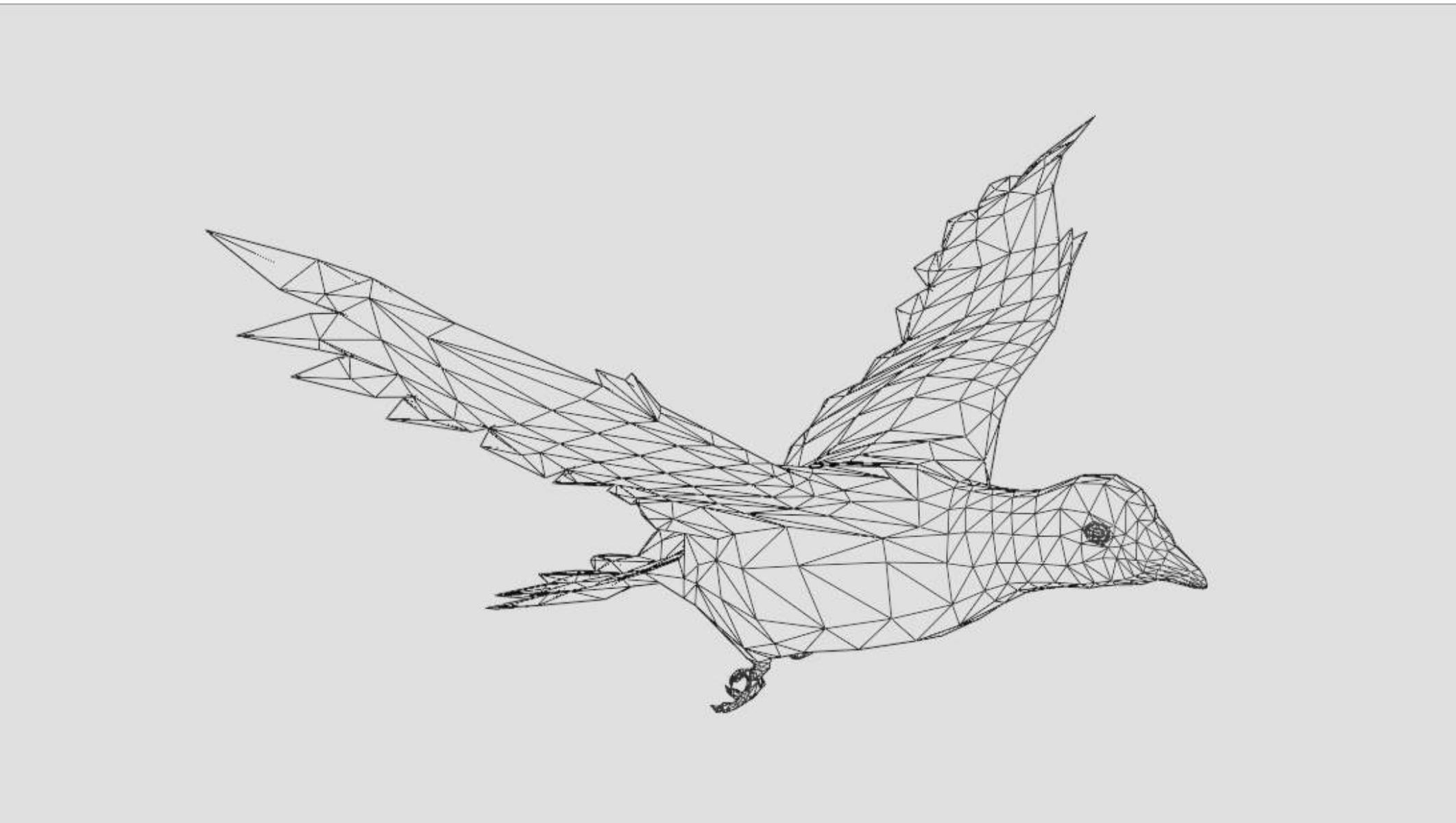
It was a grim awakening in 1914 when the passenger pigeons faced extinction. "The Lost Passage" reflects upon this historical moment of Holocene extinction by recreating a ghost of this extinct species using cutting edge 3D technology and Machine Learning.

**Passenger Pigeon**  
*(Ectopistes migratorius)*



Length: 32 cm (13 in)

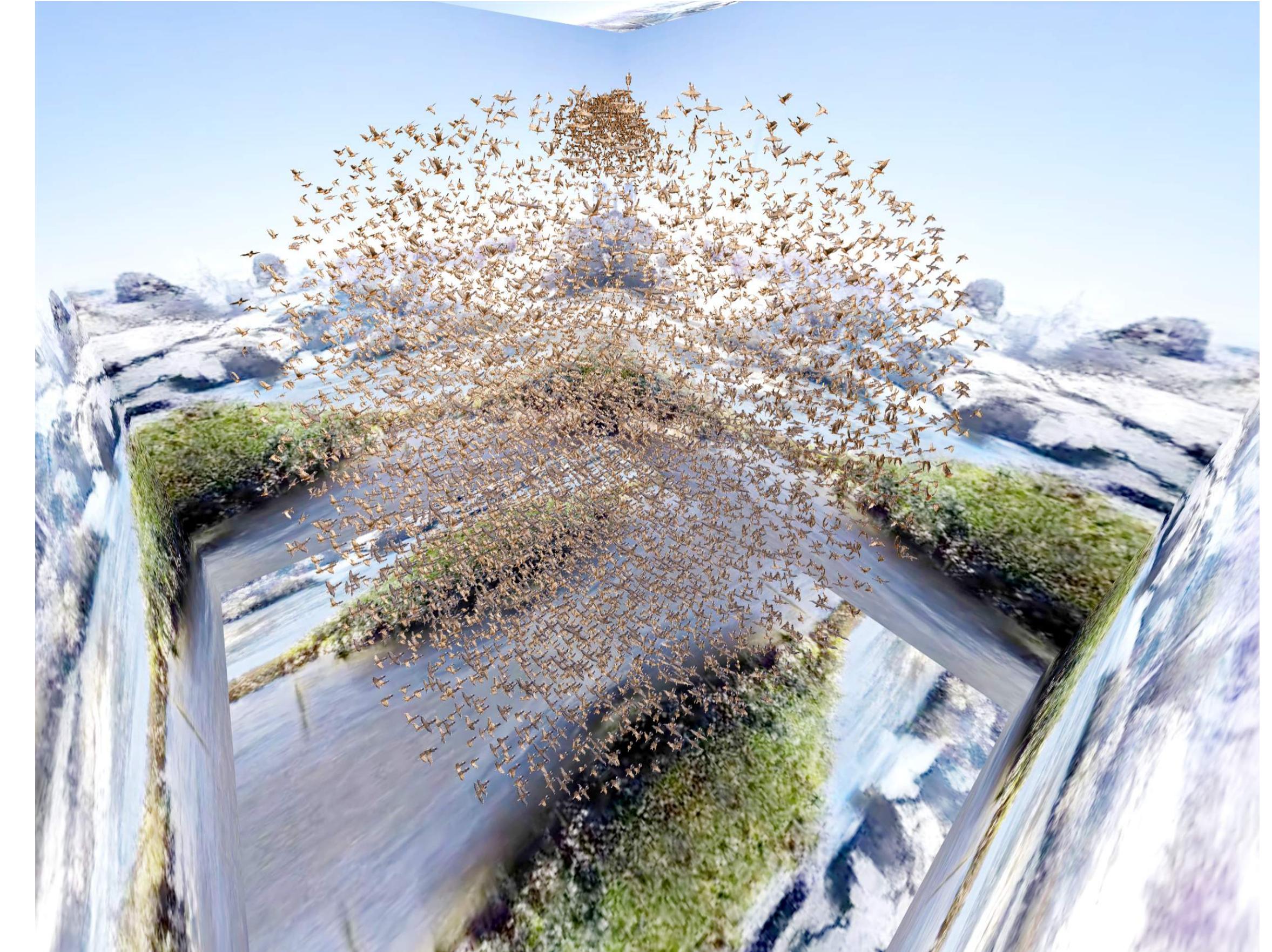
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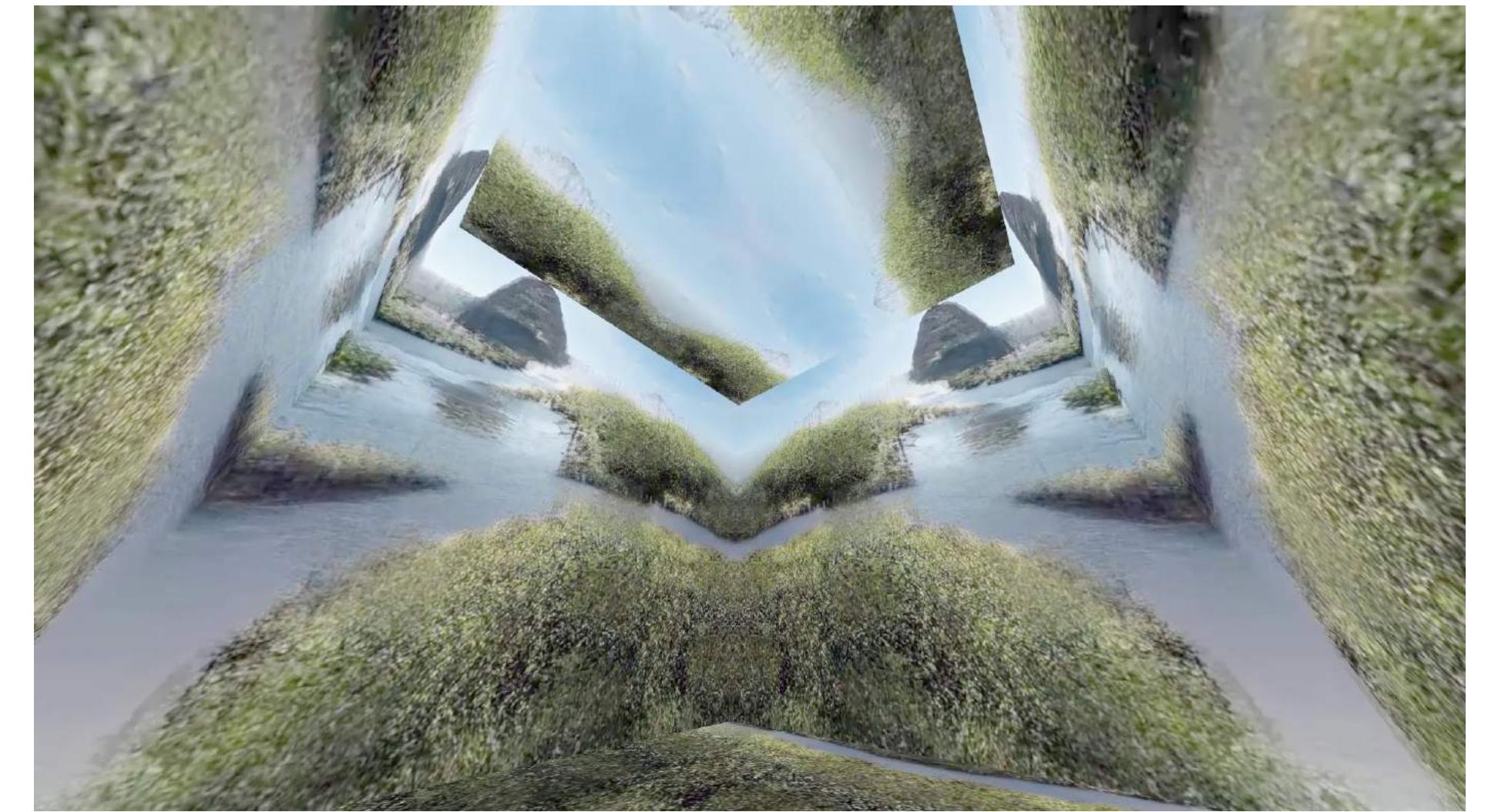
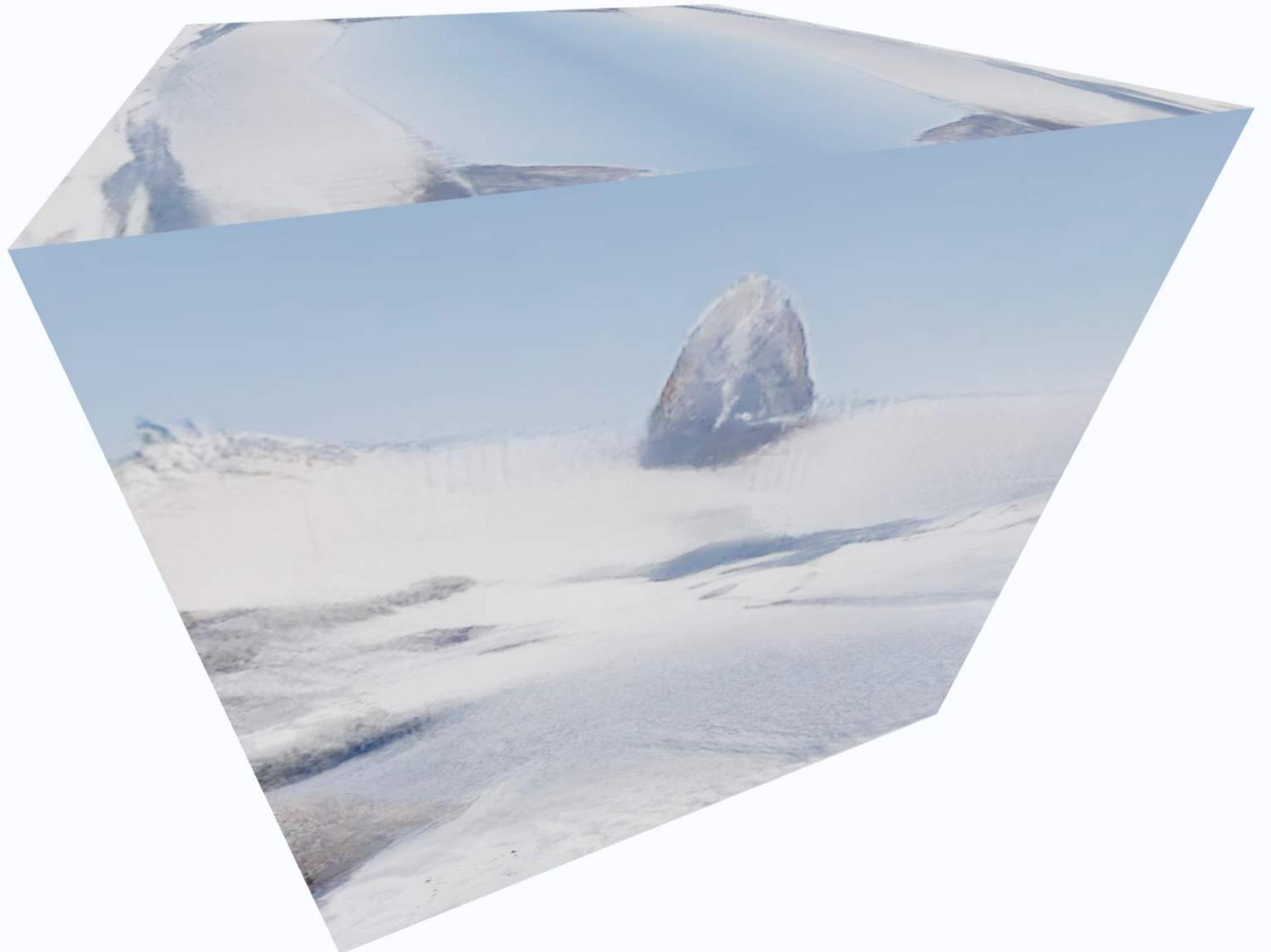
## REAL WORLD

Depiction of shooting in Northern Louisiana by Bennett Smith (1914)



## DIGITAL WORLD

A new habitat for a swarm of passenger pigeons bounded by artificial walls.



Walls of this reconstructed environment are painted with a moving image generated by machine learning algorithms.

# USER INTERACTION



"A cruel and blind human intervention led to the extinction of this species."

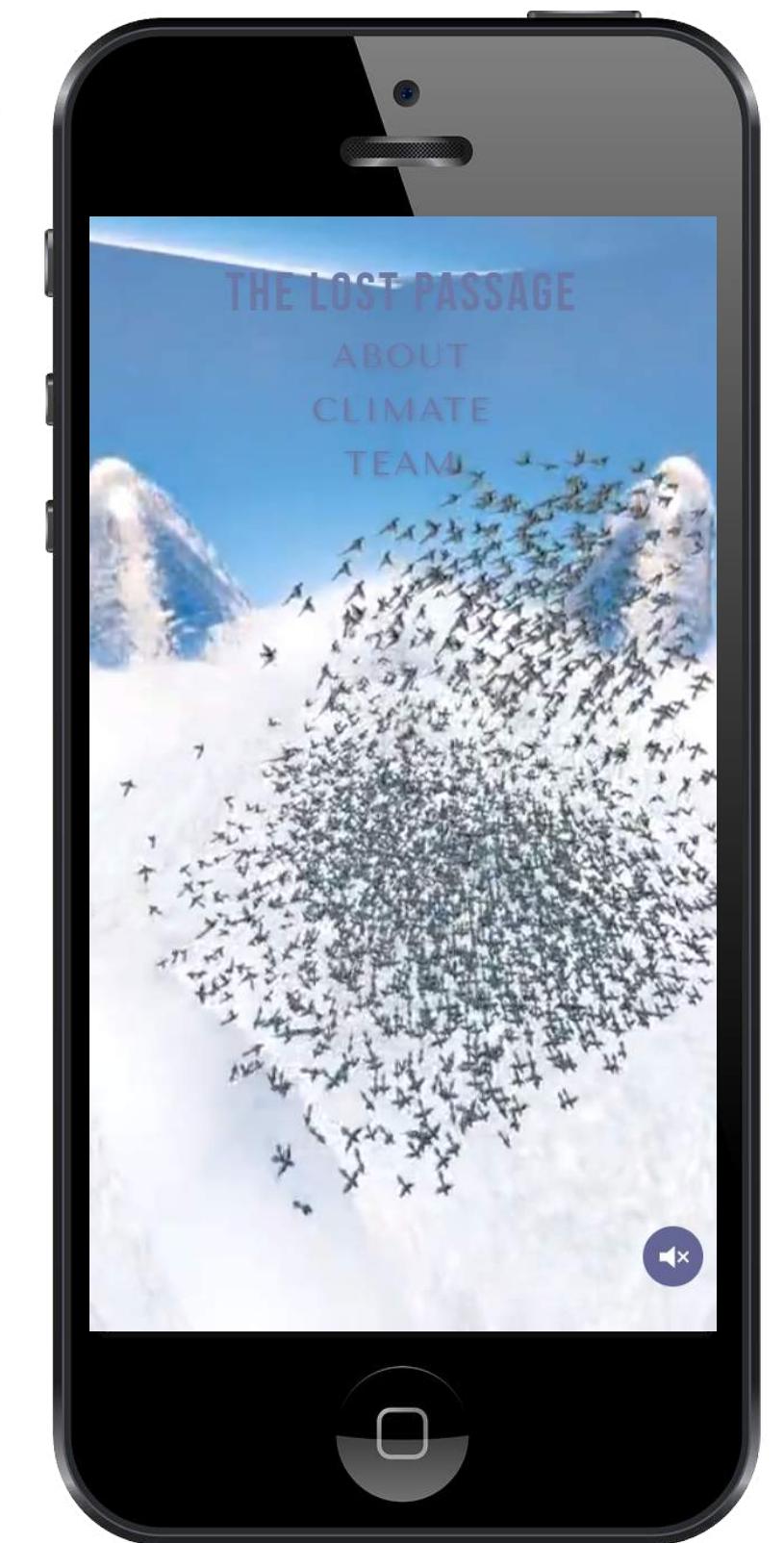
"They existed in billions, but today they are lost and revered only in museums."

THE LOST  
PASSAGE

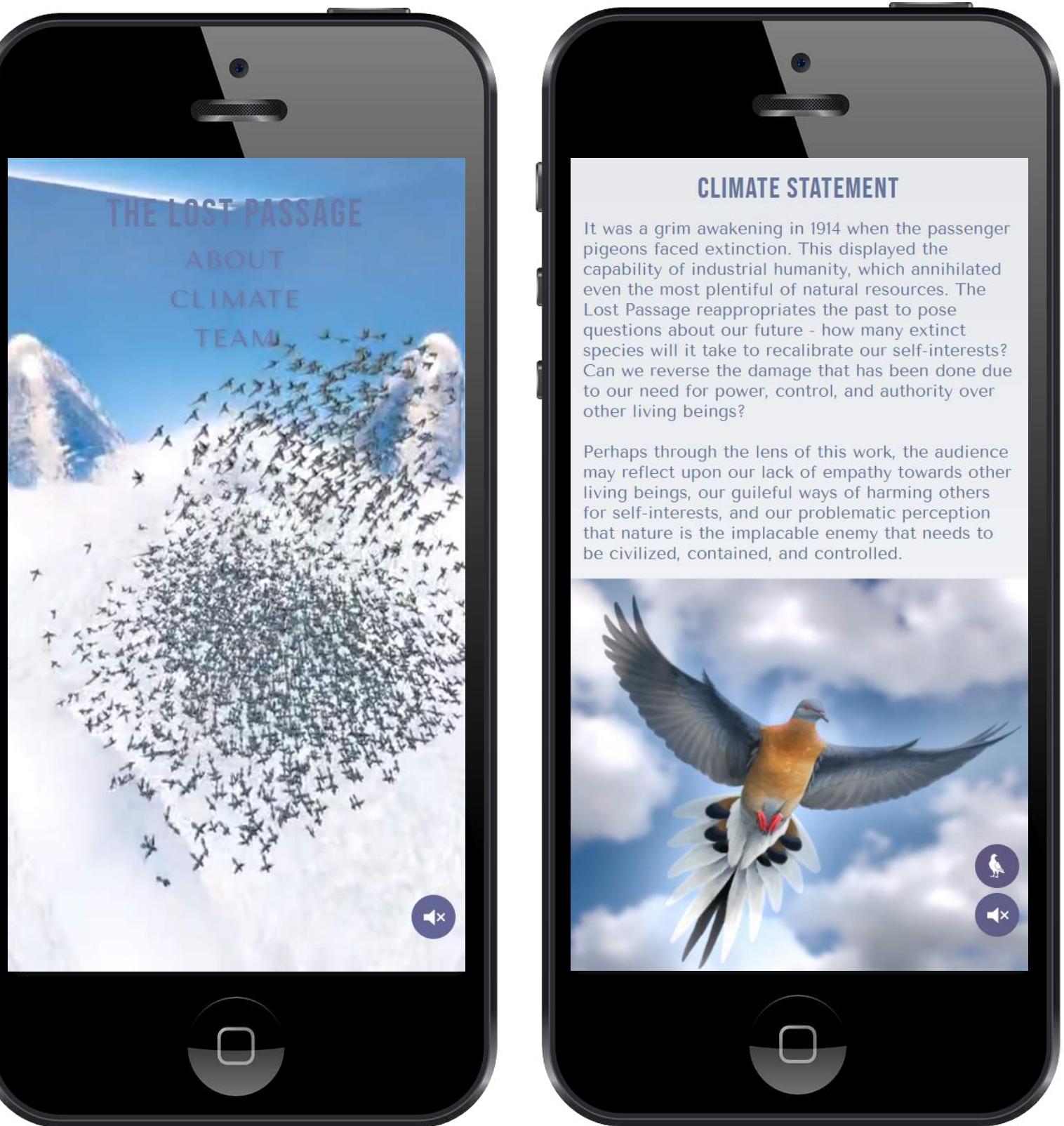
ENTER

Using a mobile device?  
For the full interactive experience,  
use desktop or laptop.

"May we gather the strength to confront the reality of our climate condition."

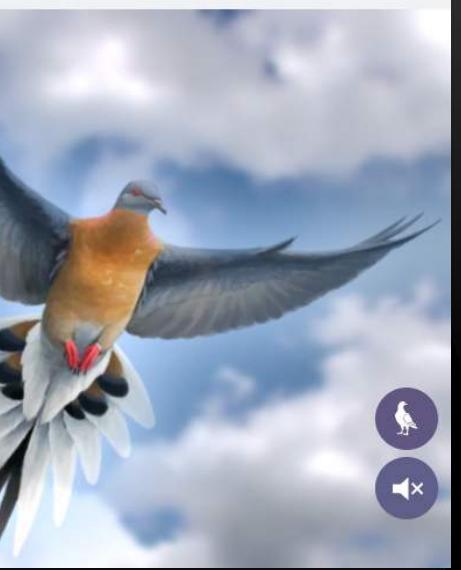


"No matter how abundant something is-if one can lose it, one can lose it."



It was a grim awakening in 1914 when the passenger pigeons faced extinction. This displayed the capability of industrial humanity, which annihilated even the most plentiful of natural resources. The Lost Passage reappropriates the past to pose questions about our future - how many extinct species will it take to recalibrate our self-interests? Can we reverse the damage that has been done due to our need for power, control, and authority over other living beings?

Perhaps through the lens of this work, the audience may reflect upon our lack of empathy towards other living beings, our guileful ways of harming others for self-interests, and our problematic perception that nature is the implacable enemy that needs to be civilized, contained, and controlled.



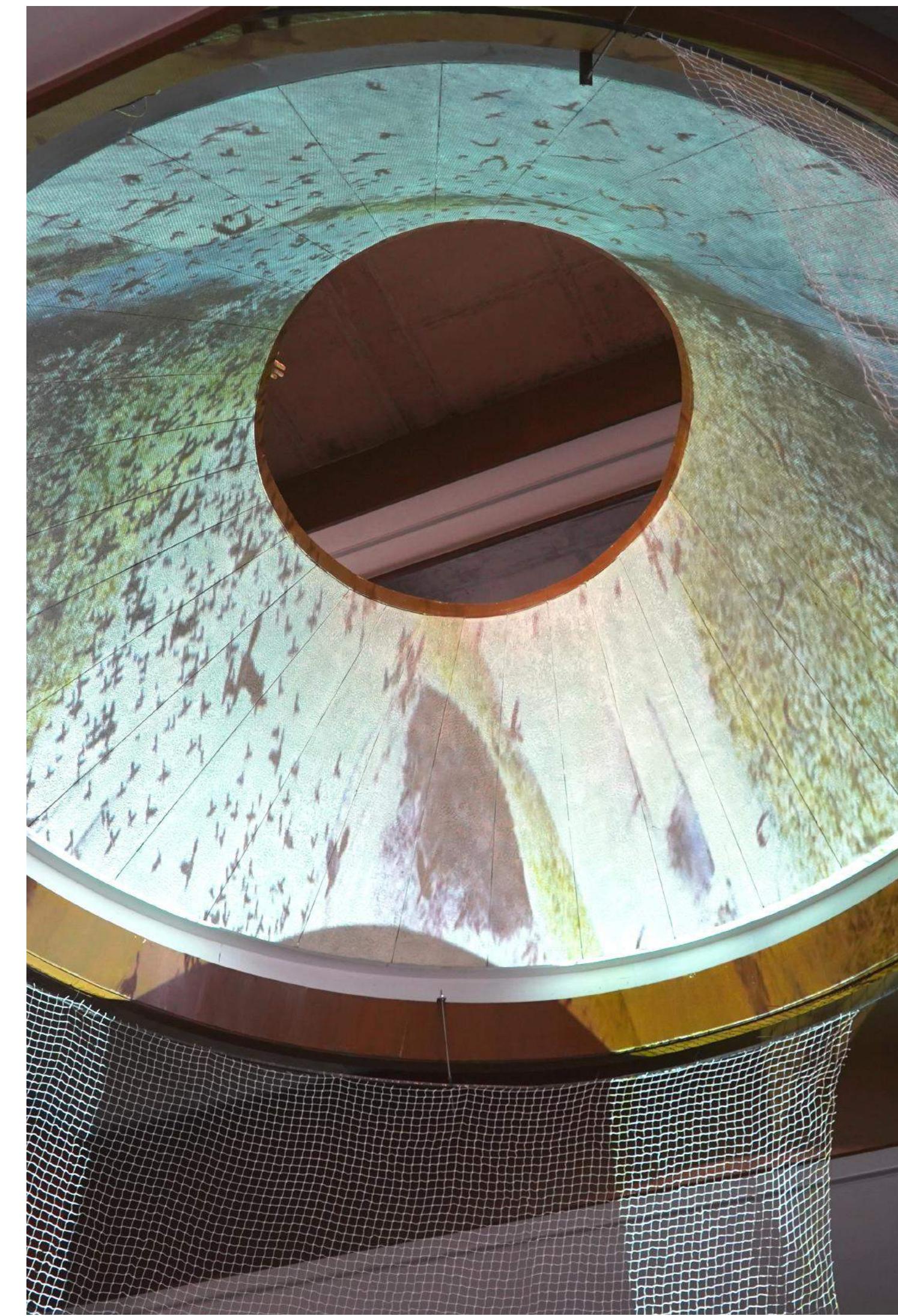
"May we gather the strength to confront the reality of our climate condition."

THE LOST PASSAGE

ENTER

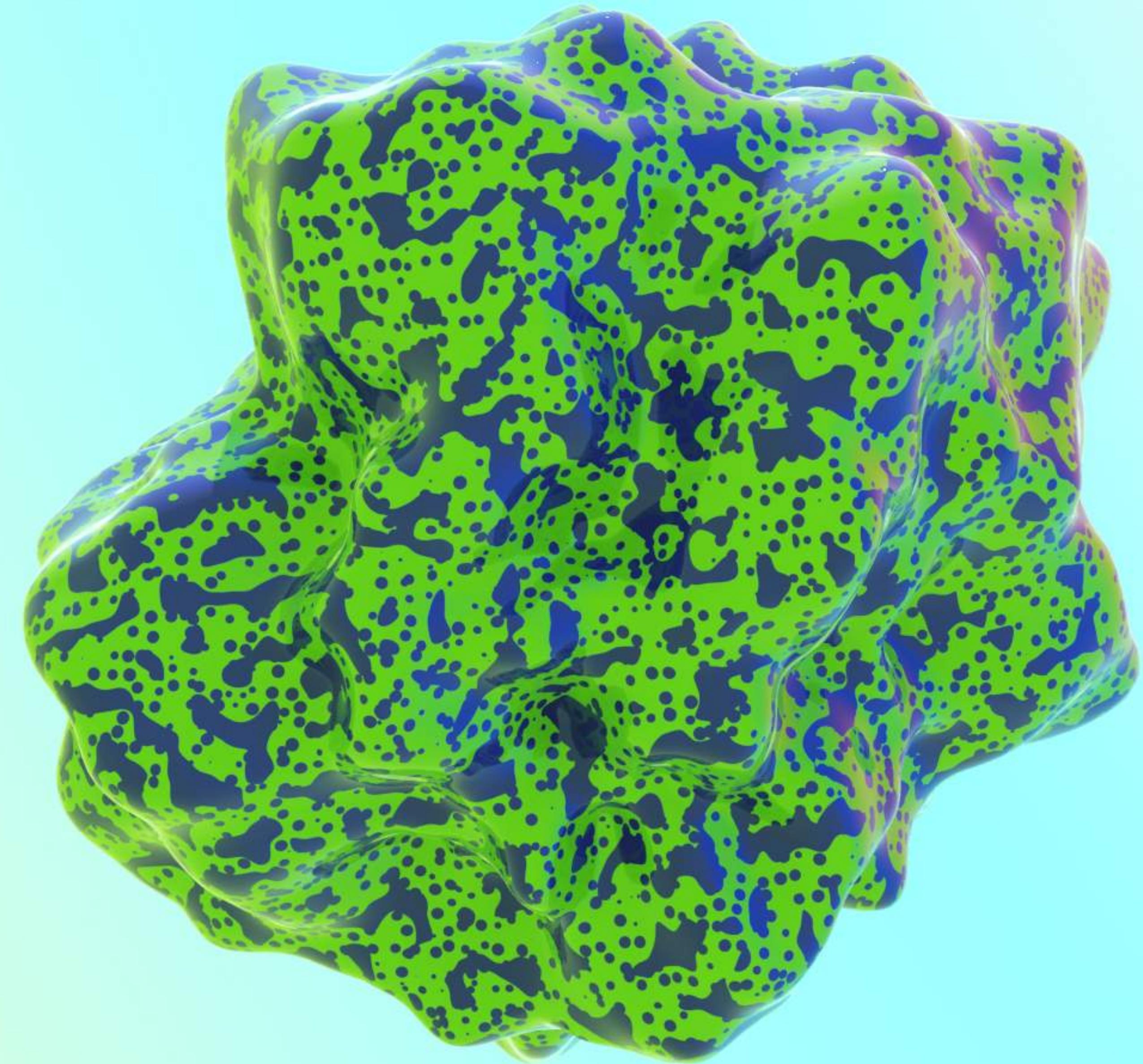
"They existed in billions, but today they are lost and revered only in museums."

"No matter how abundant something is-if one can lose it, one can lose it."



The Lost Passage, installation view  
FutureFestival, 2023

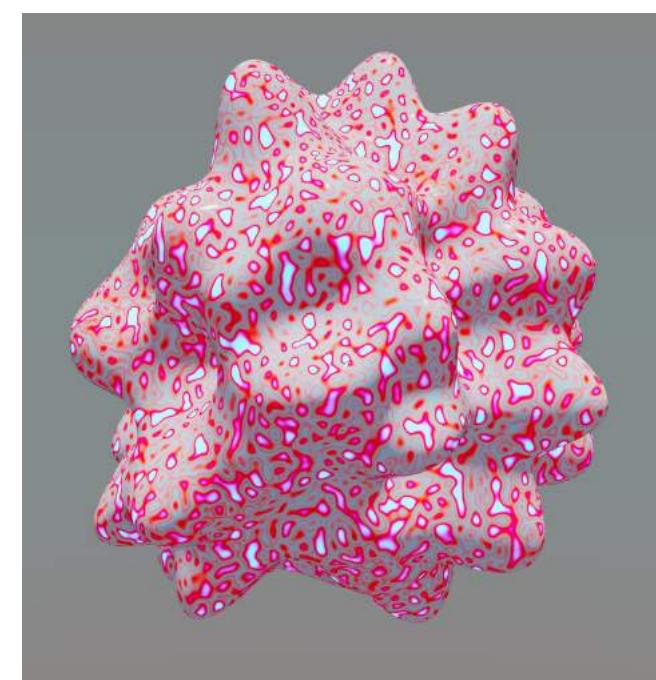
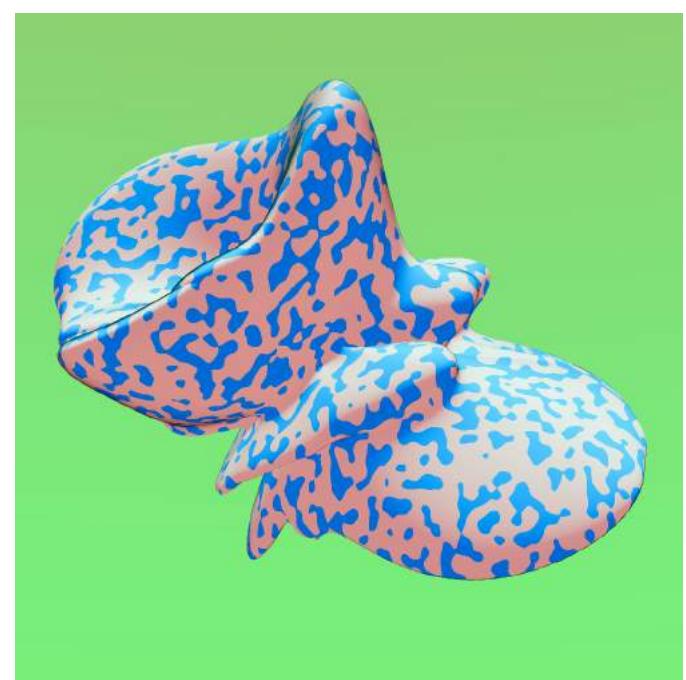
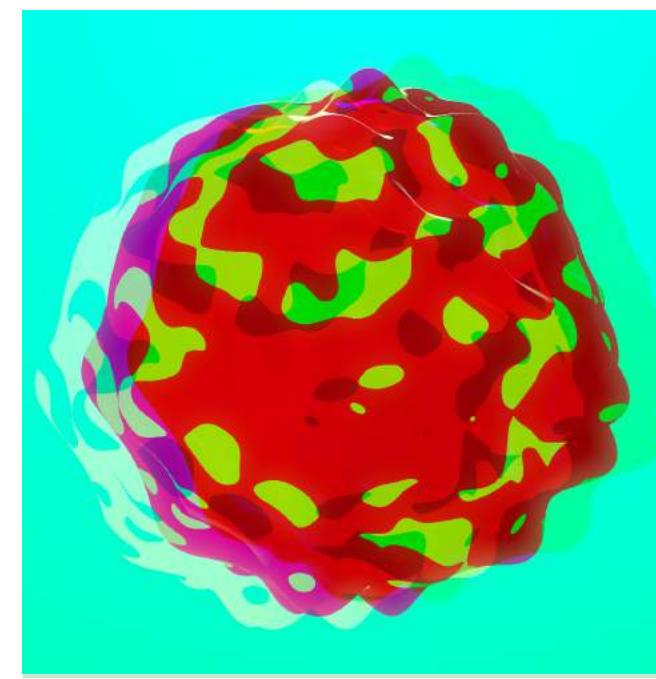
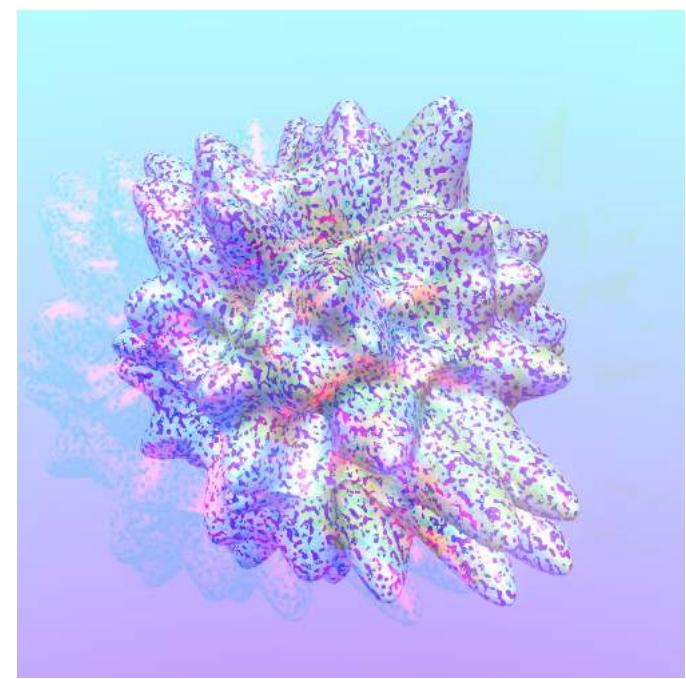
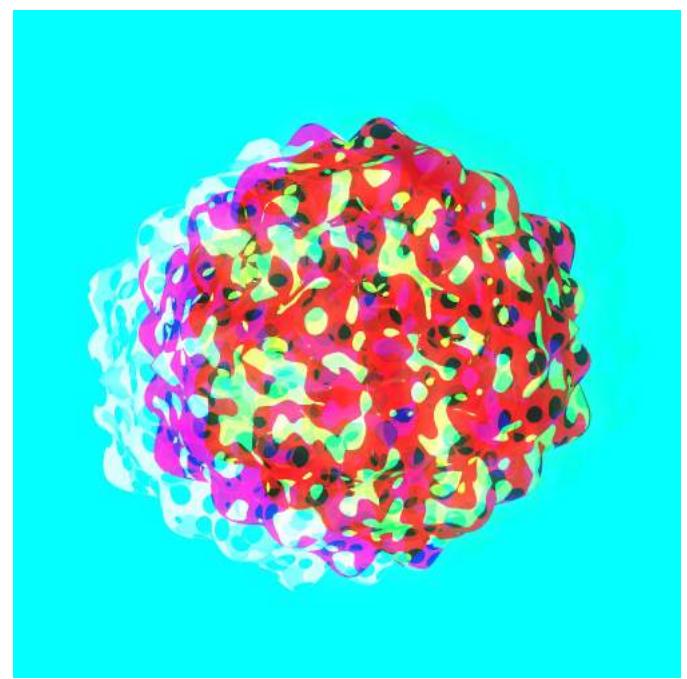
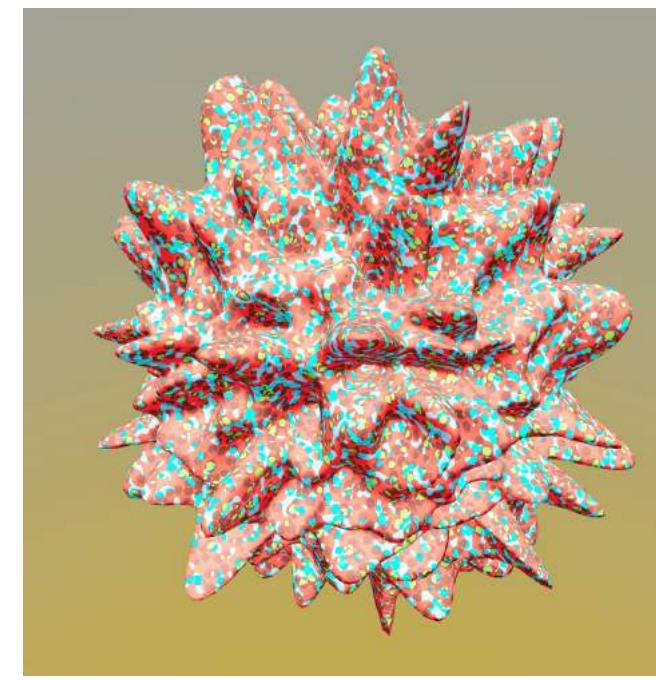
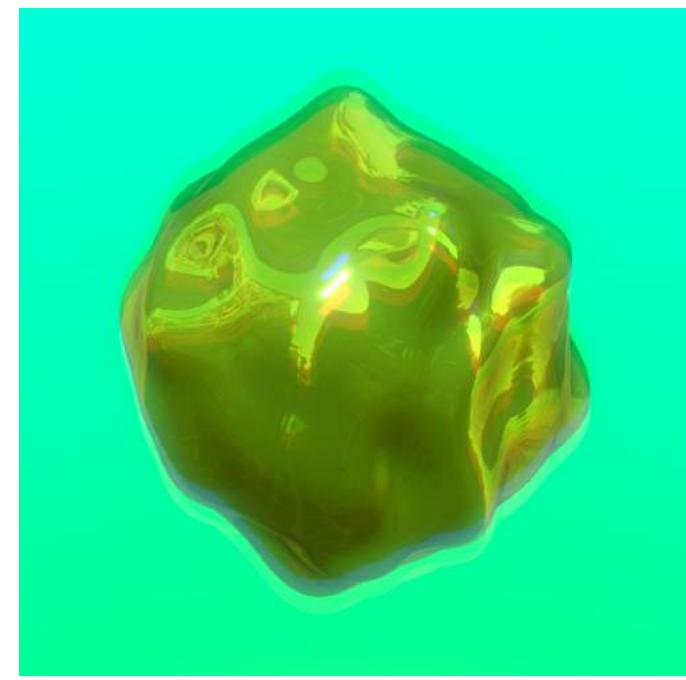
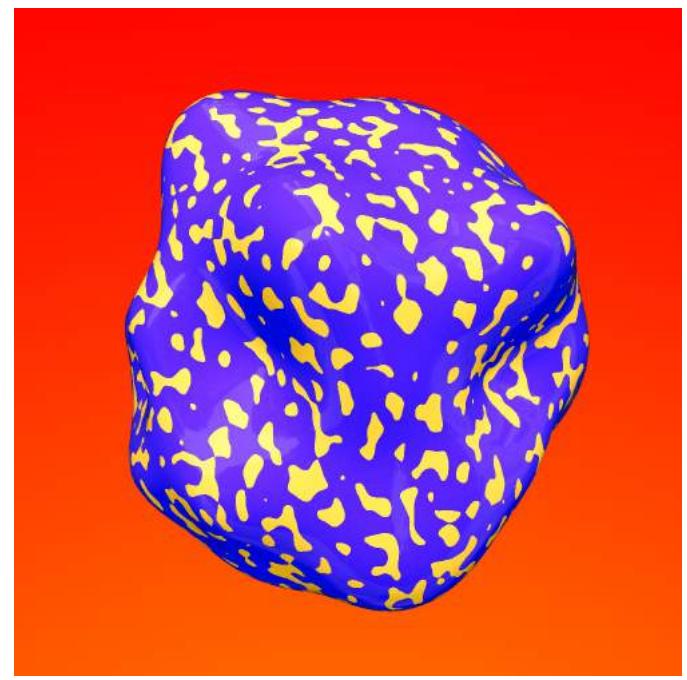




# BLOB MAKER

2022

client: Vibe Inc. (NFT Startup)  
parametric 3D, real-time, custom software



## ABOUT

A web-based interactive audio-reactive plugin, where users can upload their favorite tracks and create unique real-time visualizations, which can be minted as an NFT.

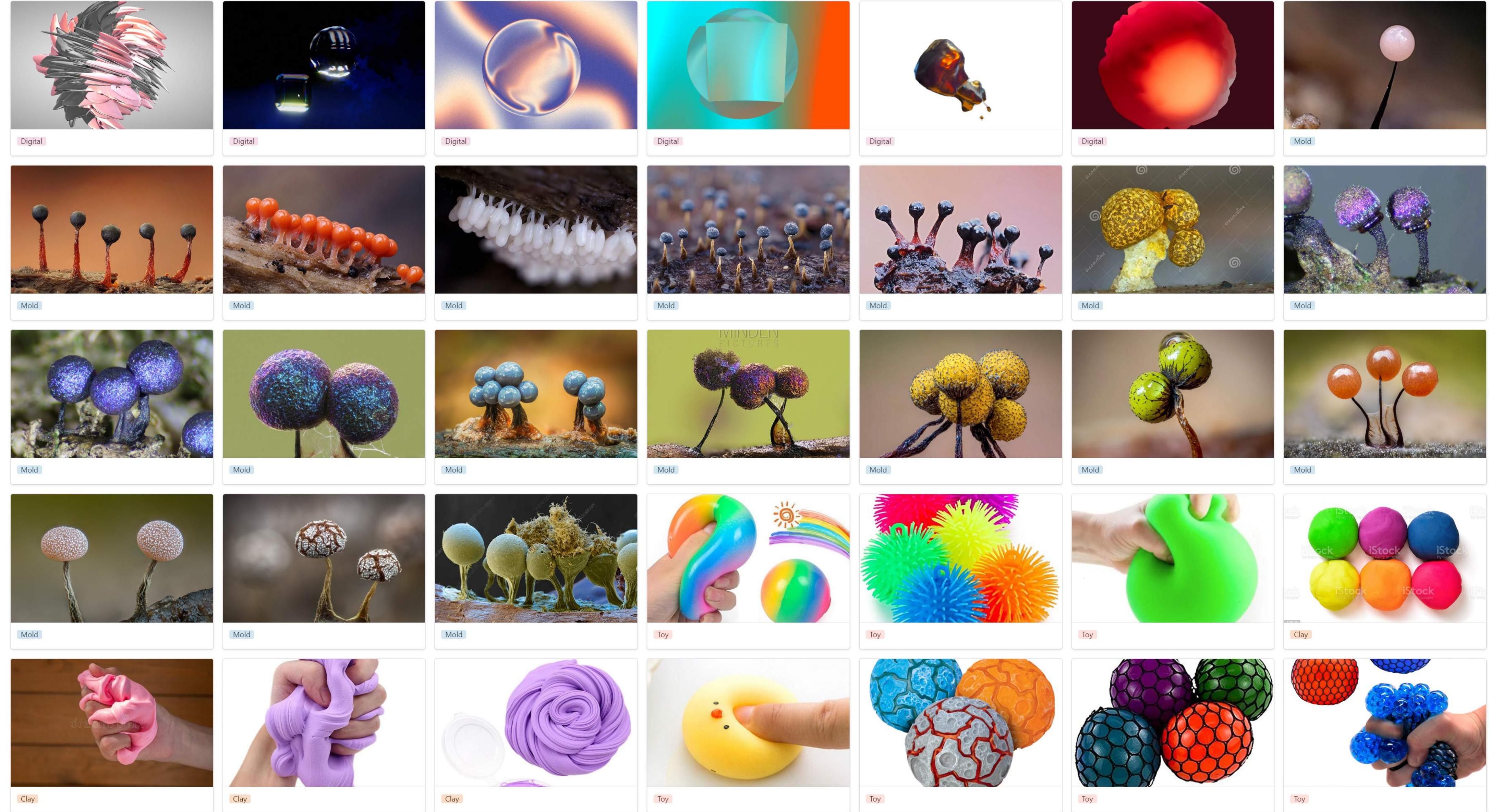
## ROLE

creative direction, 3D software development, software architecture

## KEYWORDS

#commission #startup #nextjs #react-three-fiber #threejs #glsl  
#blender #nft #audiovisual #interactive

# RESEARCH BOARD





Select Song

Step 1 Step 2 Step 3

**SONG SELECTOR**  
Custom or Pre-Existing Songs

Upload Audio Blue Jeans (Gesaffelstein Remix)

0:00 / 0:15

Blue Jeans (Gesaffelstein Remix)

Open

Desktop > audio

Name

sound1.wav

sound2.mp3

File name: New

Audio Files (\*.opus;\*.flac;\*.webm)

Open Cancel

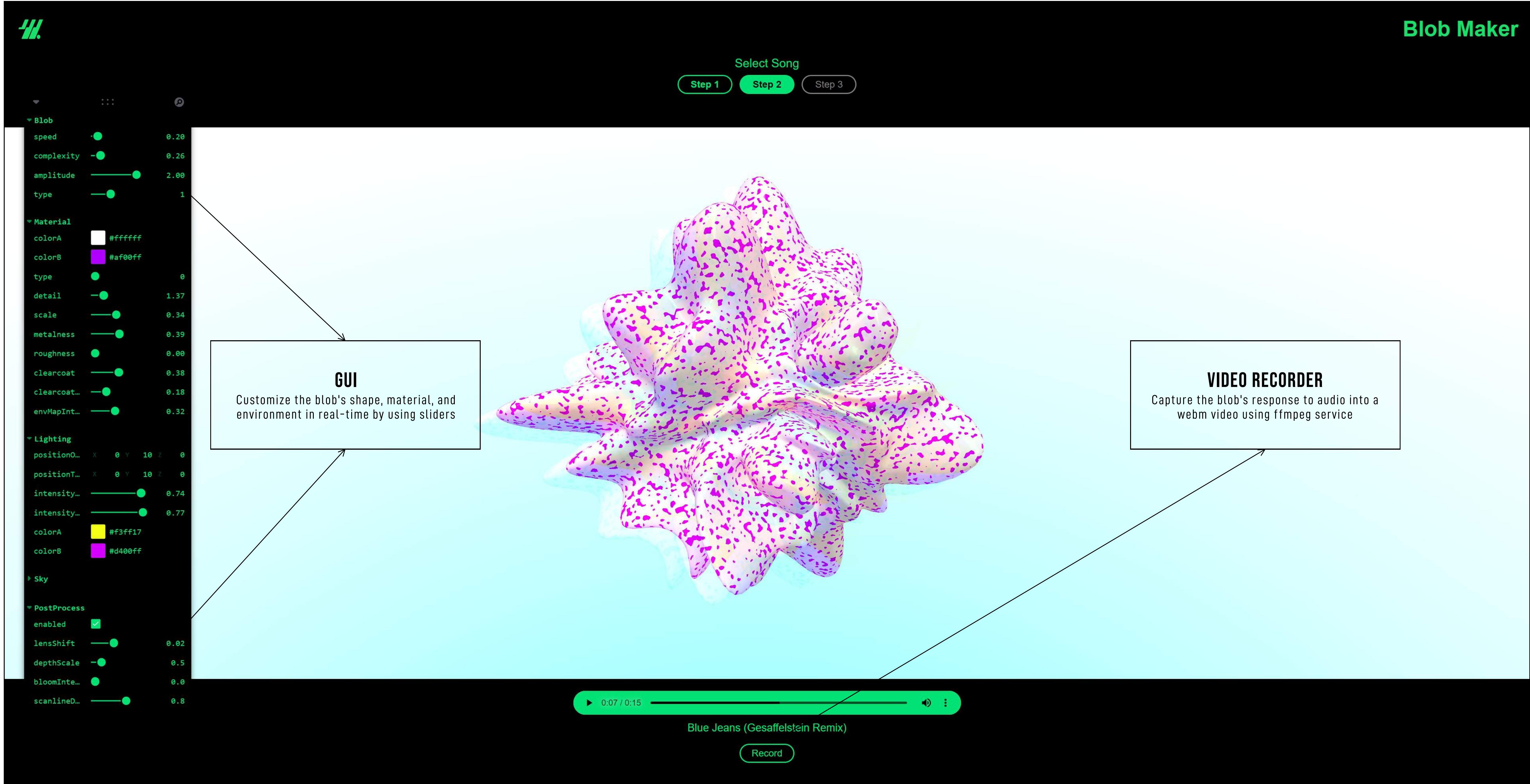
**AUDIO ANALYSER**  
Converts audio frequencies (bass, treble, mid, high) into Amplitude and Complexity of the blob

0:04 / 0:15

Blue Jeans (Gesaffelstein Remix)

Record

This diagram illustrates the Blob Maker application's workflow. It starts with a 'Select Song' step, divided into three sub-steps: Step 1 (highlighted in green), Step 2, and Step 3. In Step 1, the 'SONG SELECTOR' allows users to choose between custom or pre-existing songs. A file selection dialog shows a folder path 'Desktop > audio' containing files 'sound1.wav' and 'sound2.mp3'. An 'Upload Audio' button and a preview bar showing '0:00 / 0:15' and the song title 'Blue Jeans (Gesaffelstein Remix)' are also present. Step 2, labeled 'AUDIO ANALYSER', converts the selected audio's frequency components (bass, treble, mid, high) into the blob's amplitude and complexity. The resulting blob is a complex, red and white 3D shape with jagged, organic edges, where white areas represent higher amplitude and complexity. Step 3 includes a playback bar at the bottom showing '0:04 / 0:15' and a 'Record' button.





Select Song

Step 1

Step 2

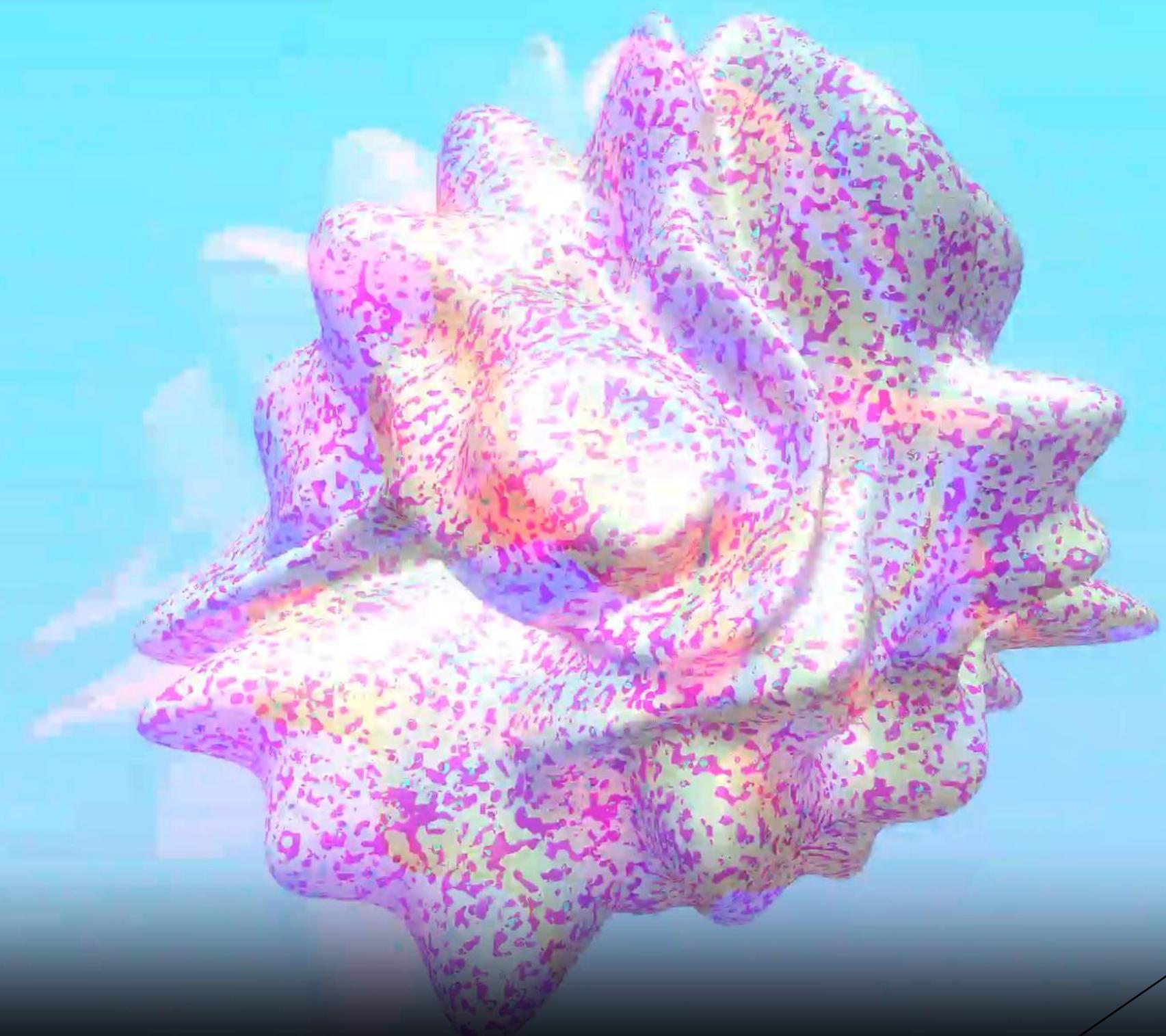
Step 3

## PREVIEW

Preview the real-time screen capture.

## UPLOAD & MINT

Upload the recording and mint it as an NFT.

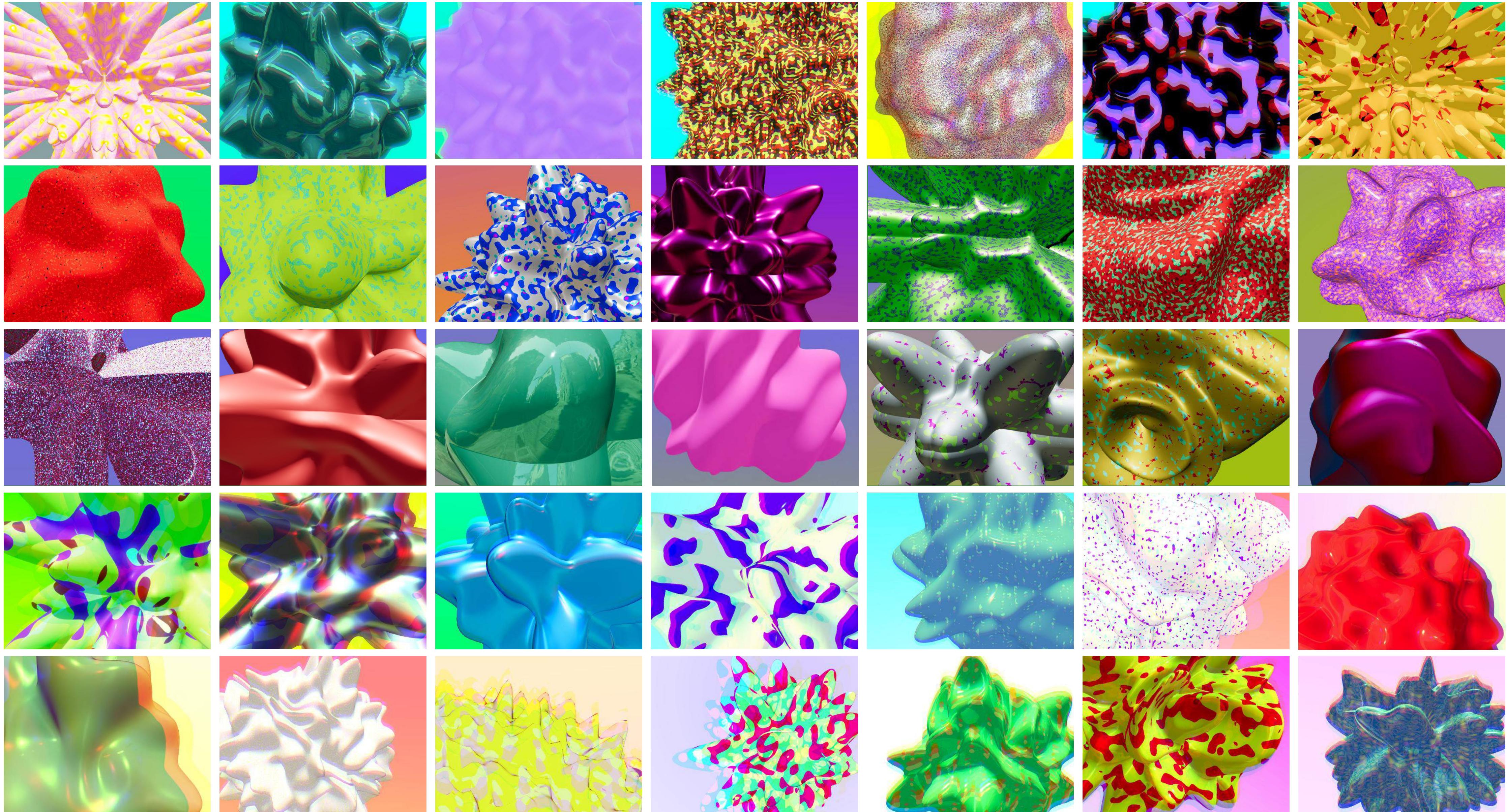


II 1:56 / 2:39

Speaker icon, full screen icon, and three-dot menu icon.

Preview

Upload

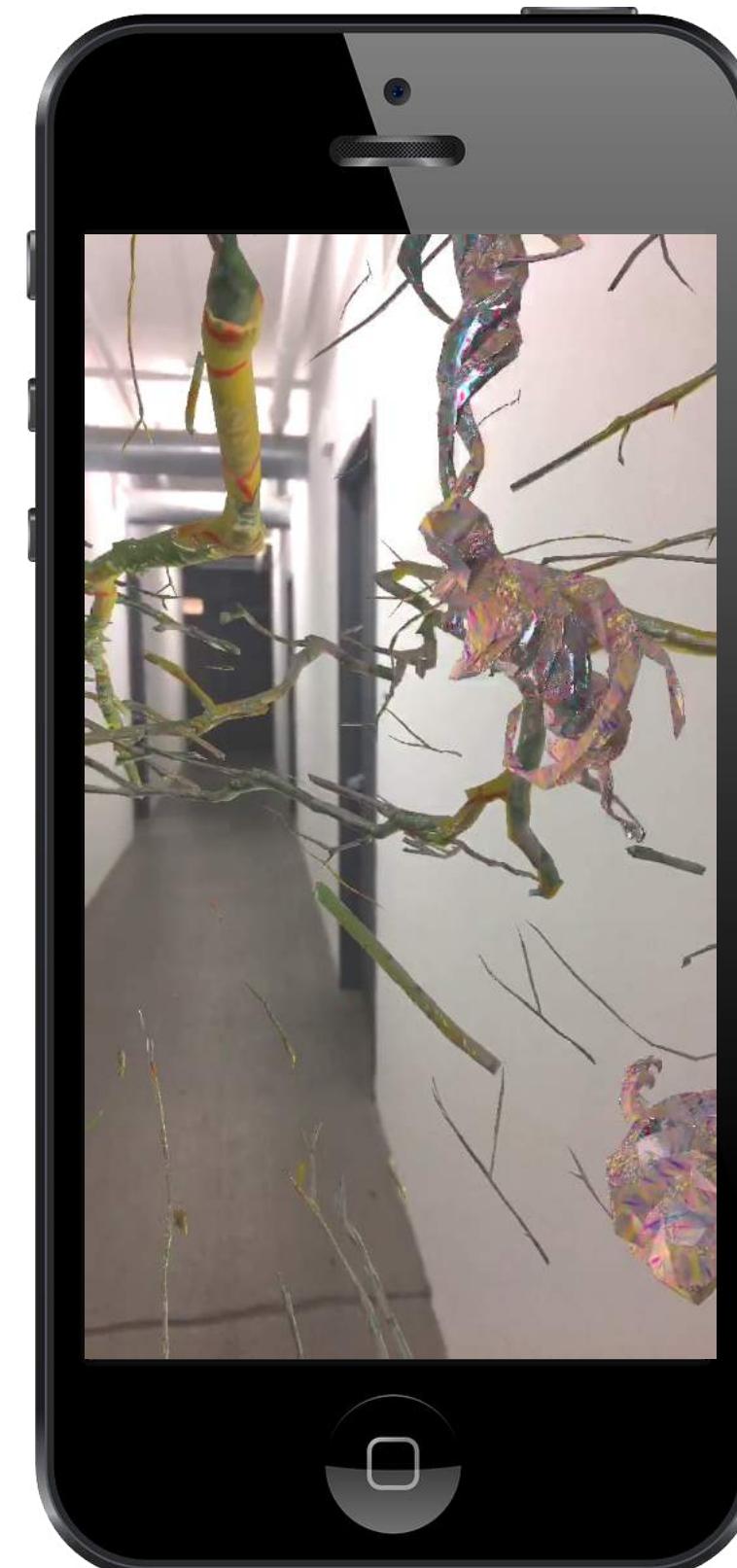
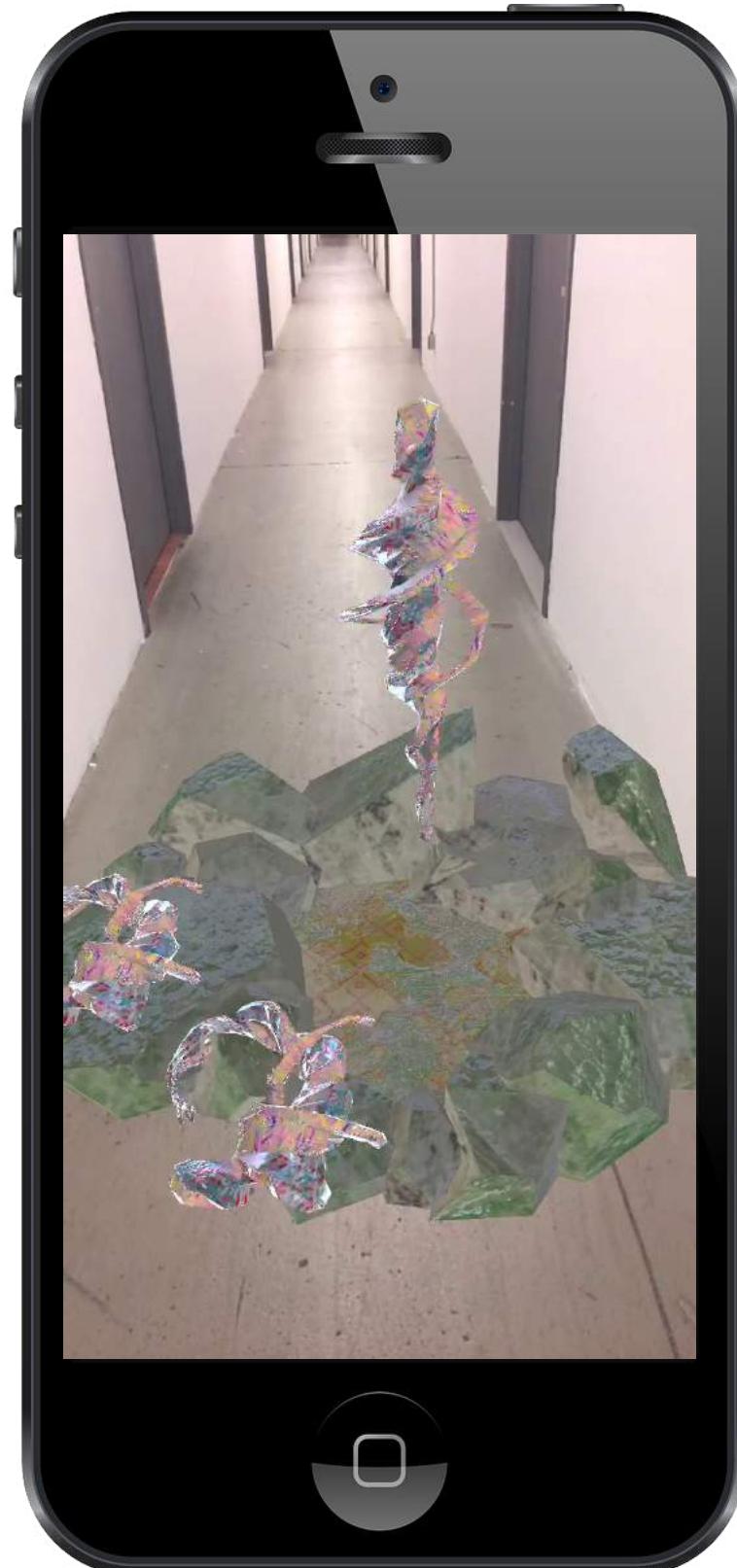




# LIARBIRDS

2020

client: Hyde Park Art Center, Chicago  
augmented reality, 3D, real-time, custom software



## ABOUT

An interactive augmented reality game developed as an Instagram filter, which makes fake birds real by superimposing a swarm of digital creatures in one's physical space.

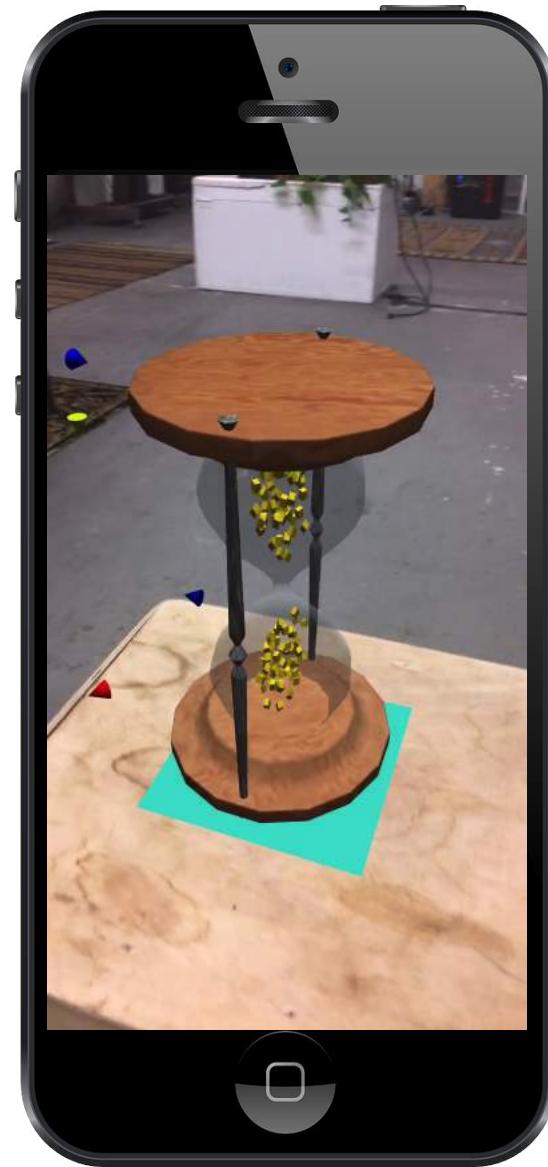
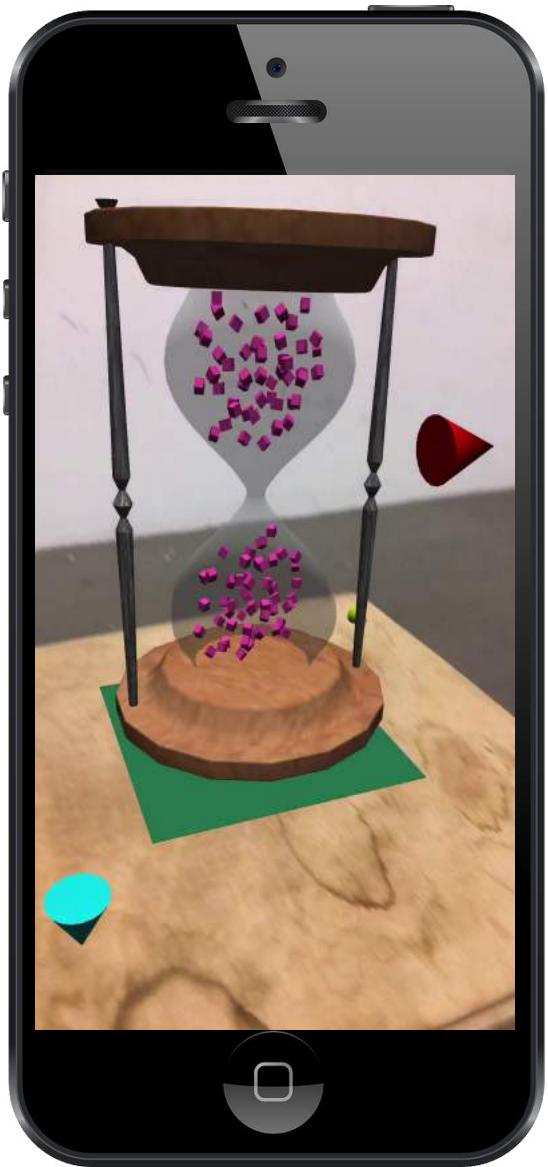
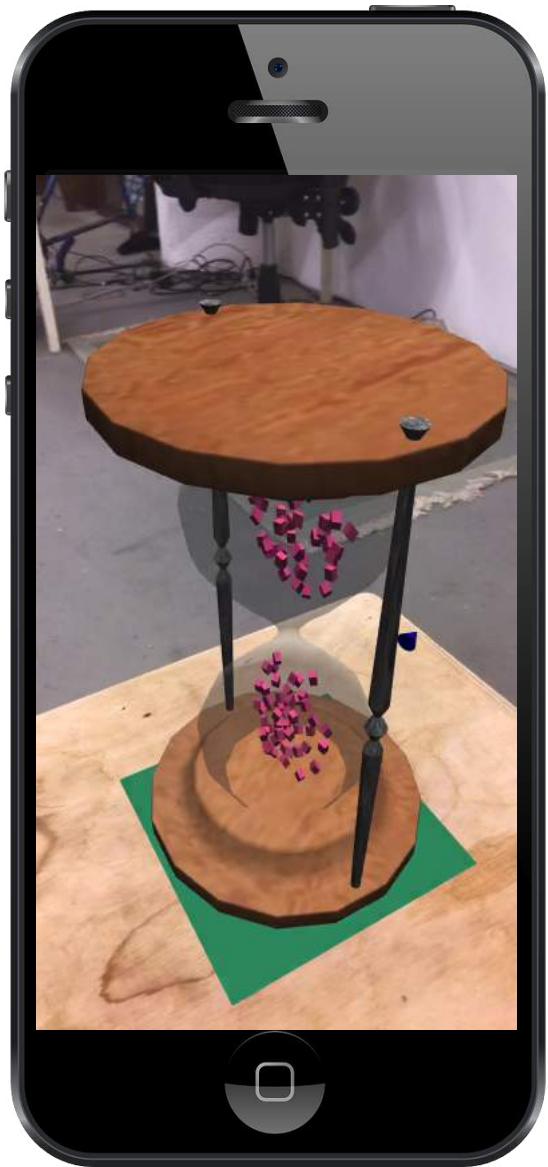
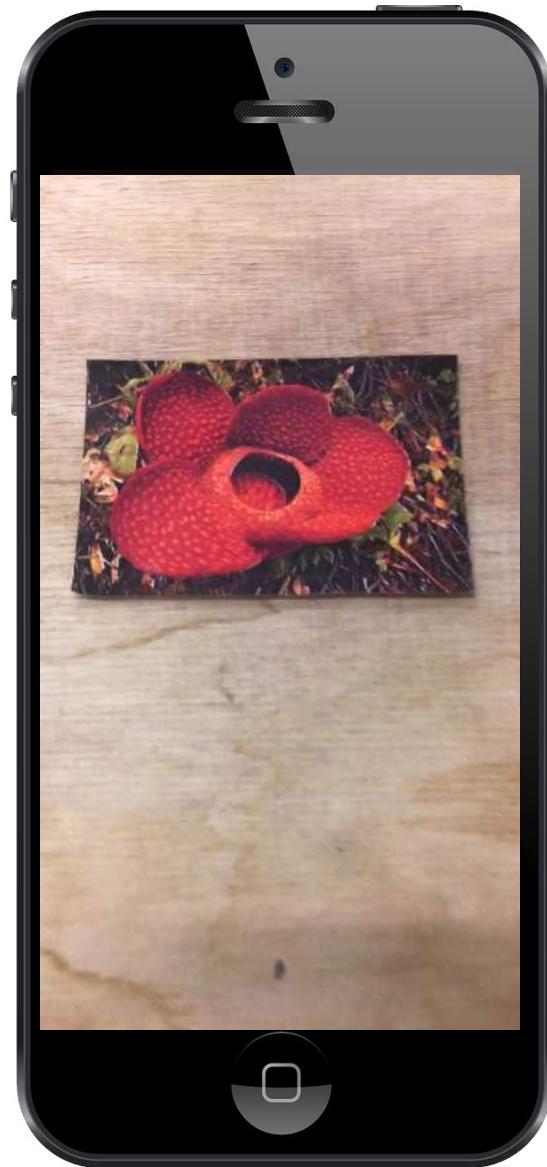
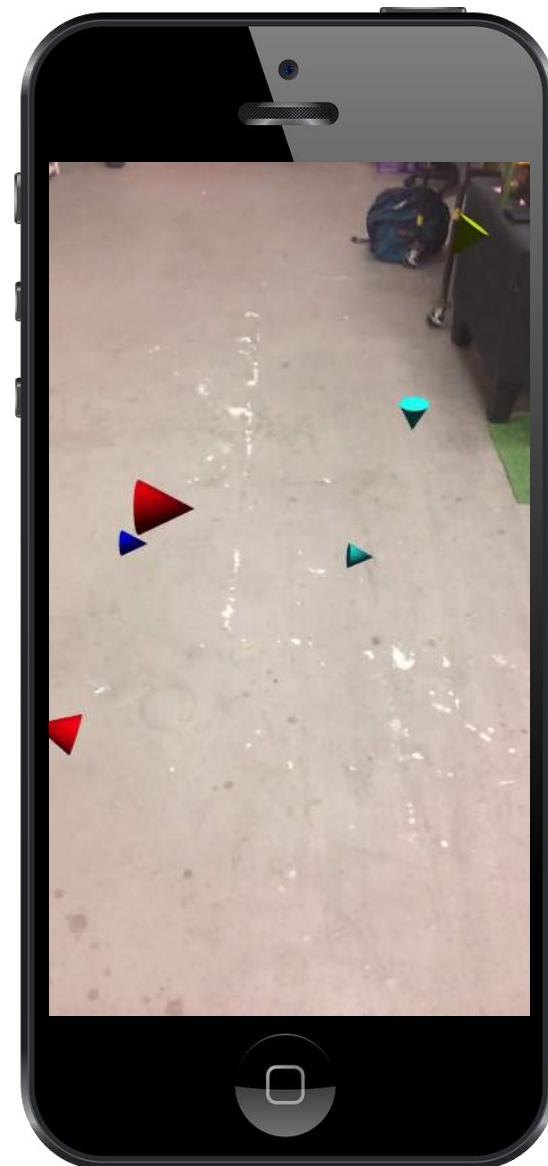
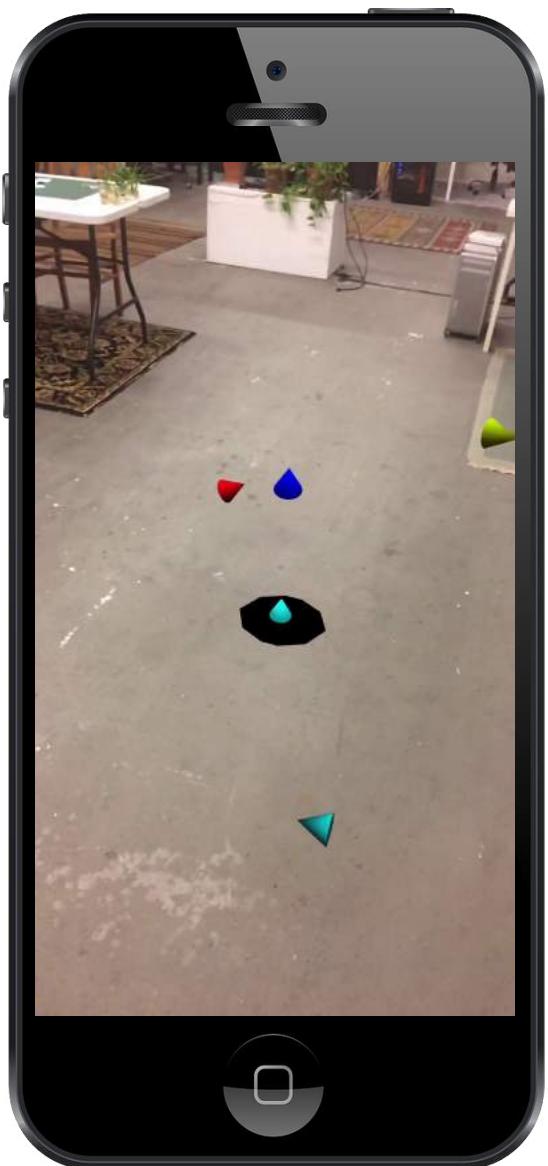
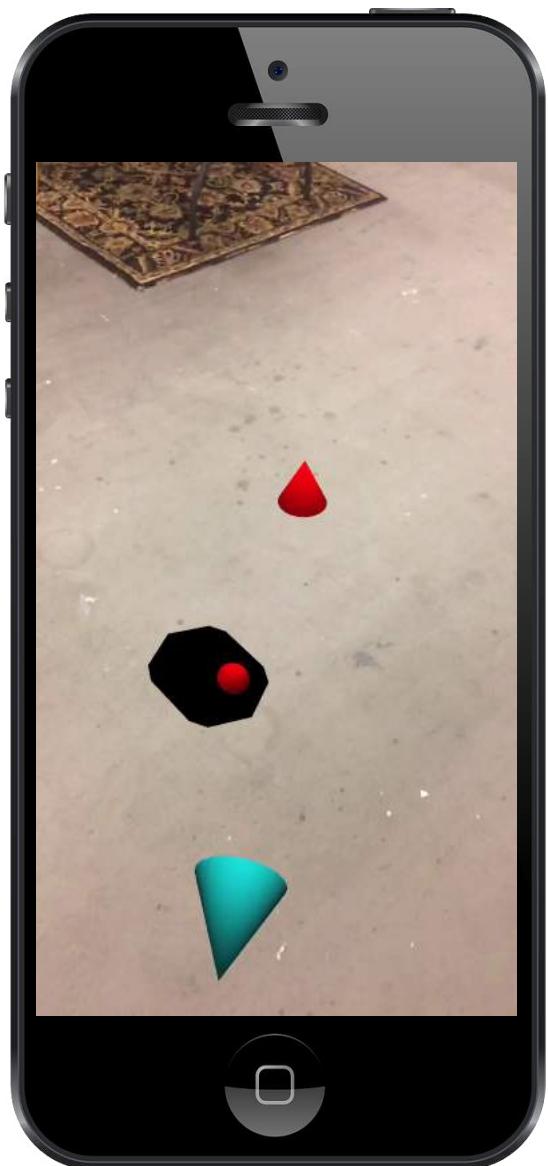
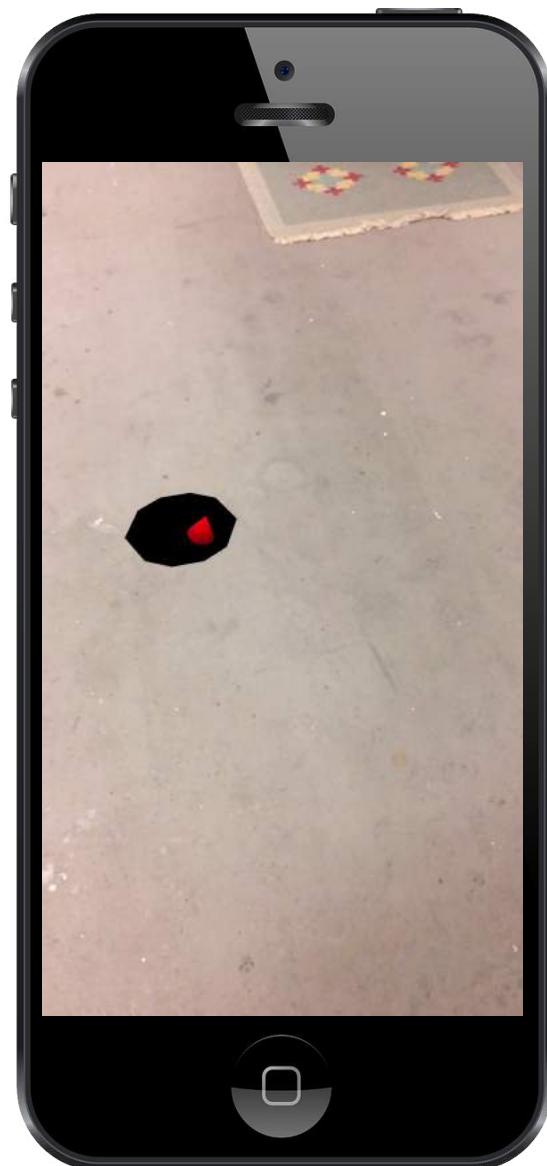
## ROLE

3D software development, software architecture, research & development

## KEYWORDS

#collaboration #alife #audiovisual #augmentedreality  
#instafilter #houdini #blender #sparkar #javascript #interactive

## RESEARCH & DEVELOPMENT



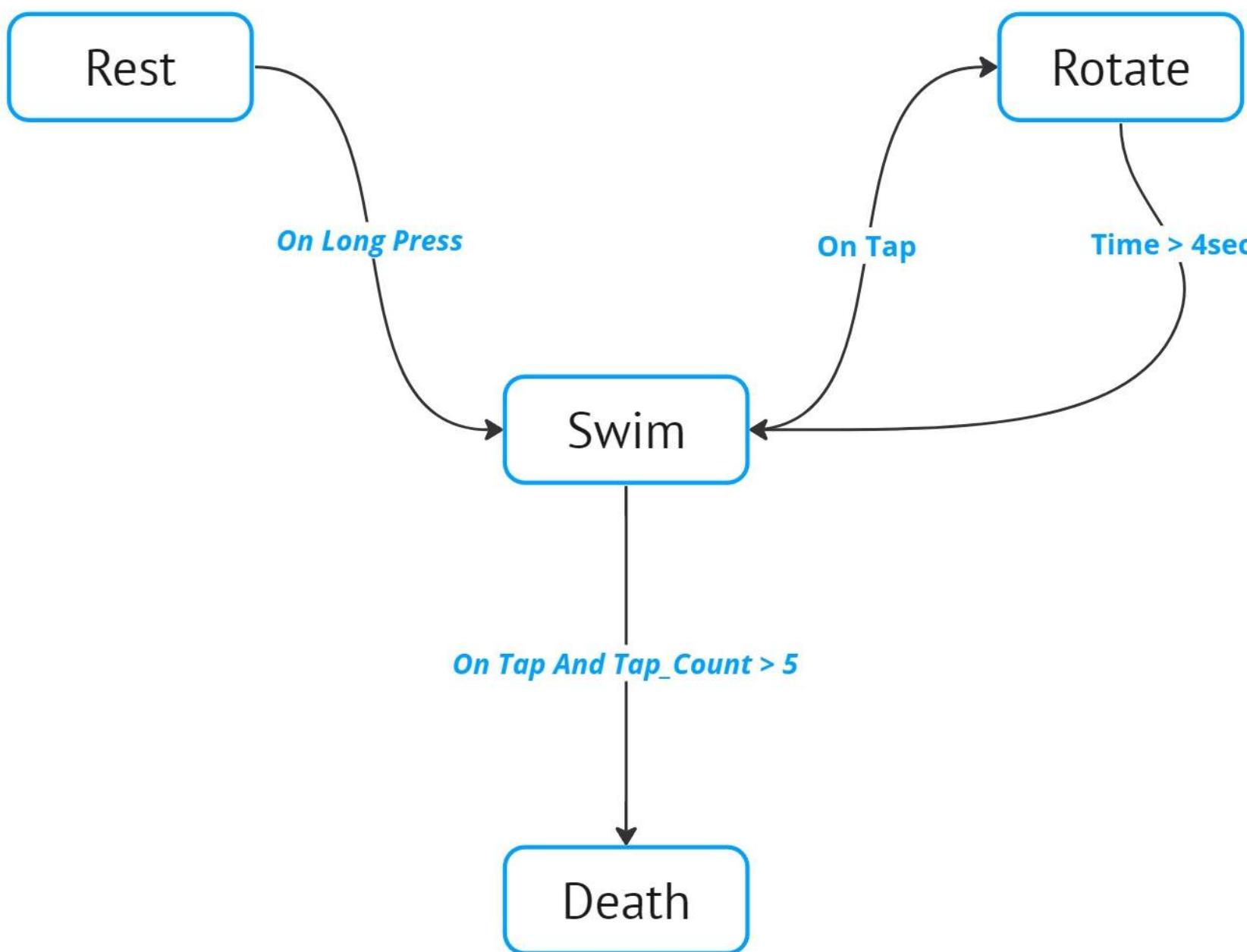
## IMAGE MARKER

Spawn a prefab and the agents on top of an image marker.

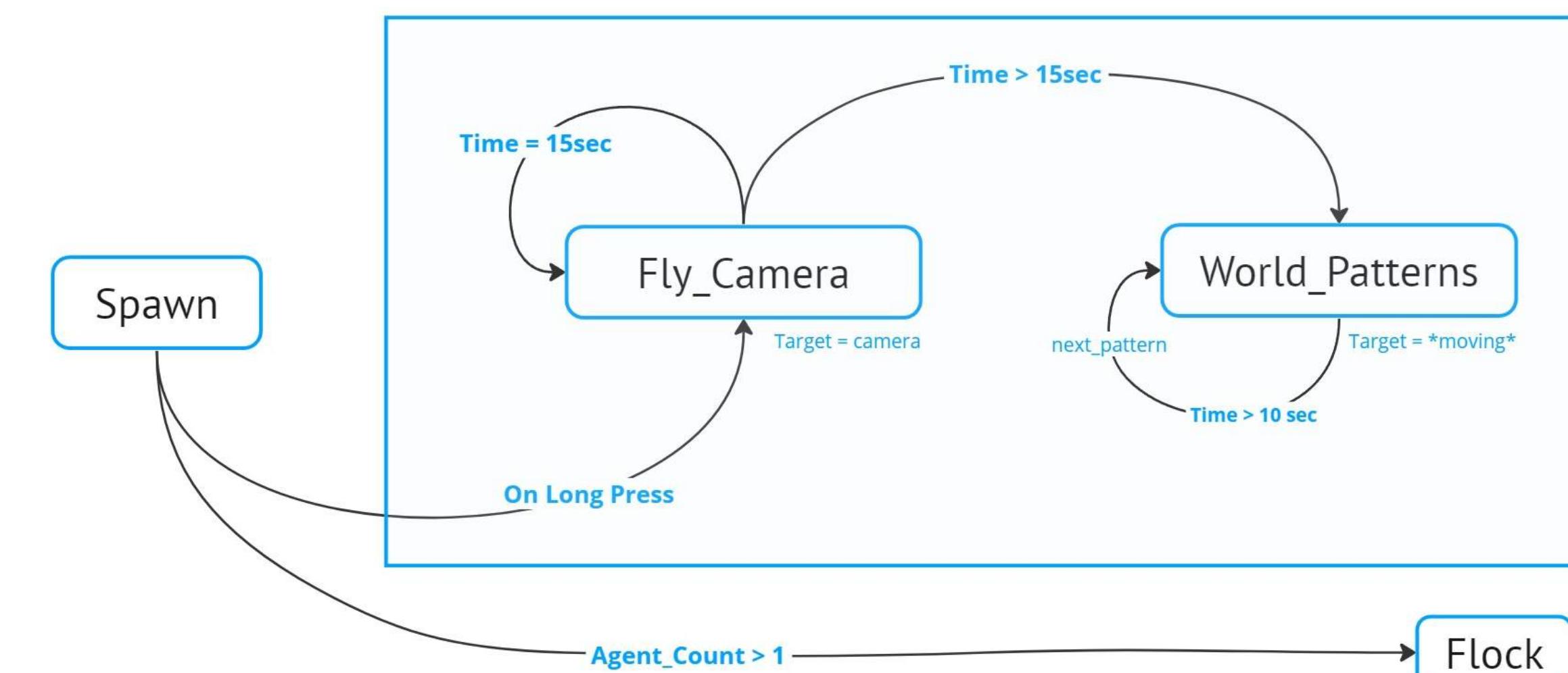
## PORTAL

Spawn new agents through a portal that opens and closes when a user taps the screen.

# GAME MECHANICS

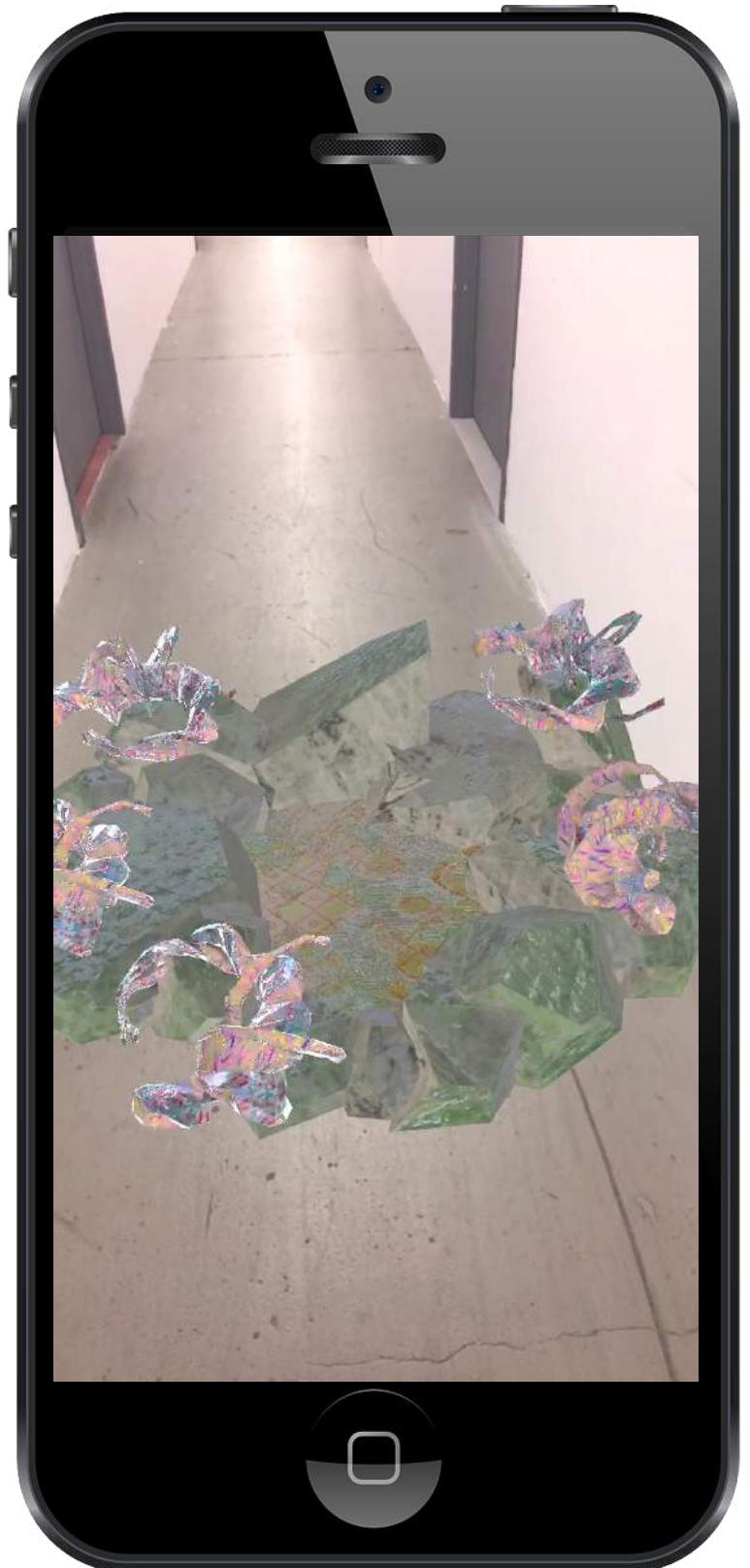


AGENT STATES

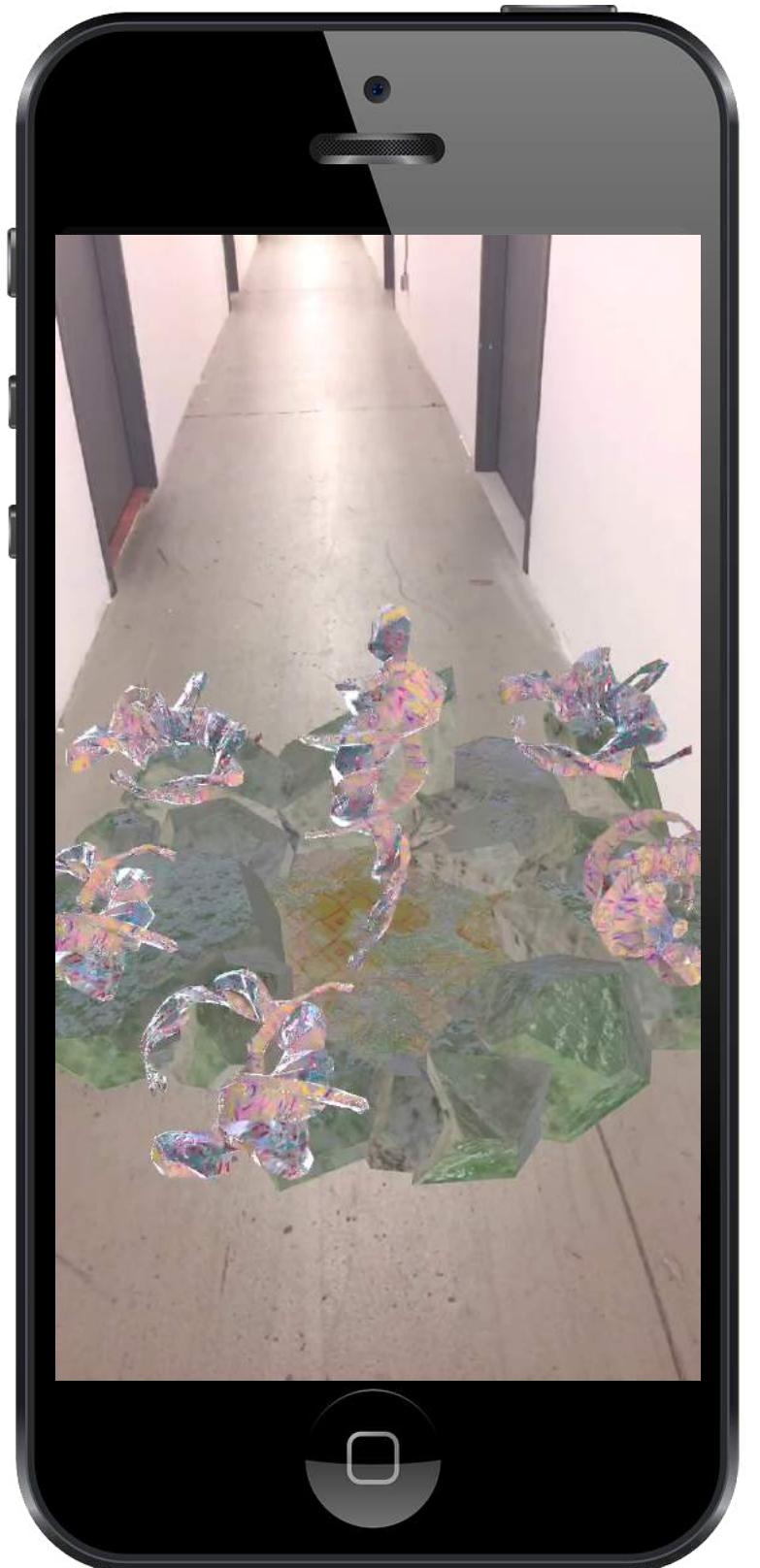


GAME STATES

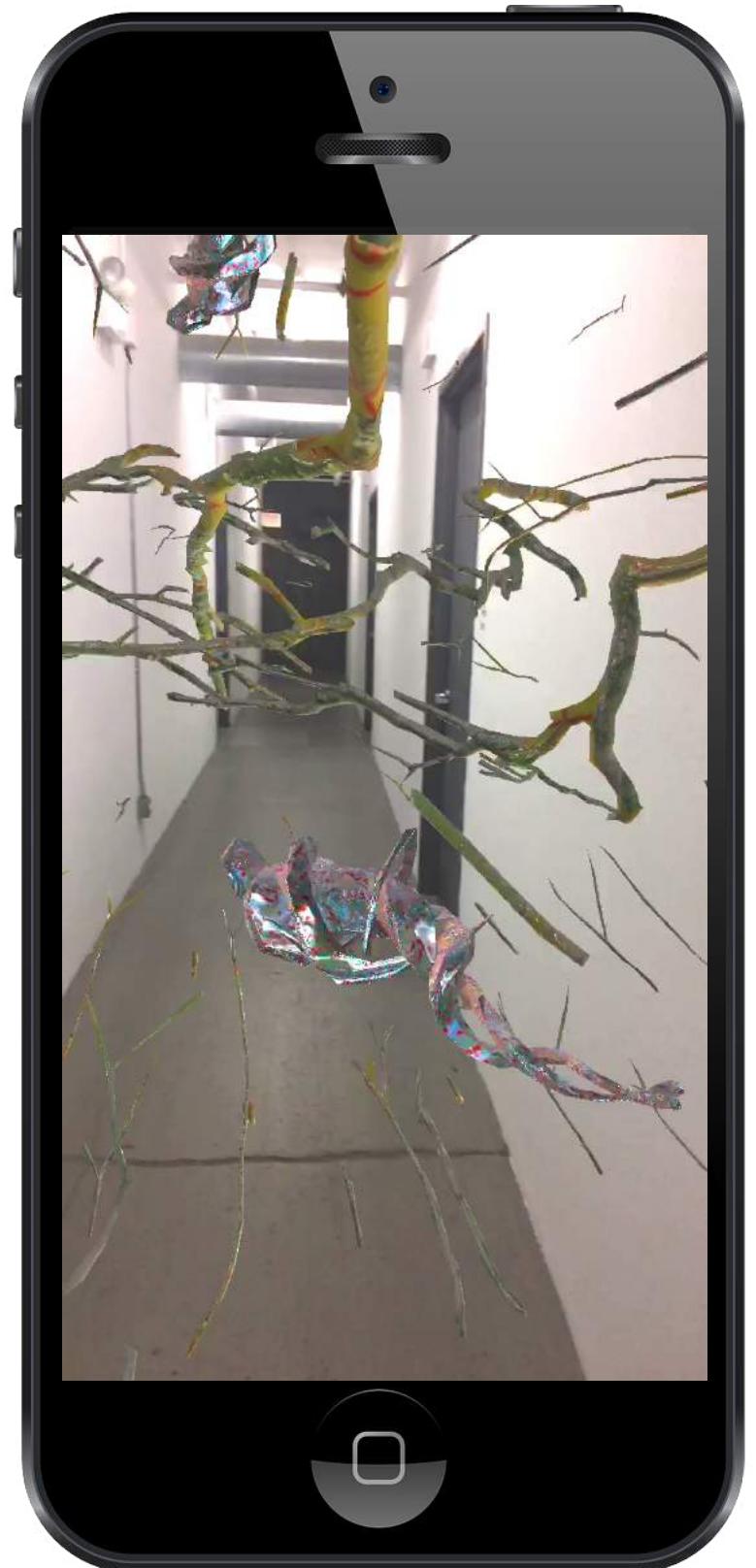
## GAME VISUALS



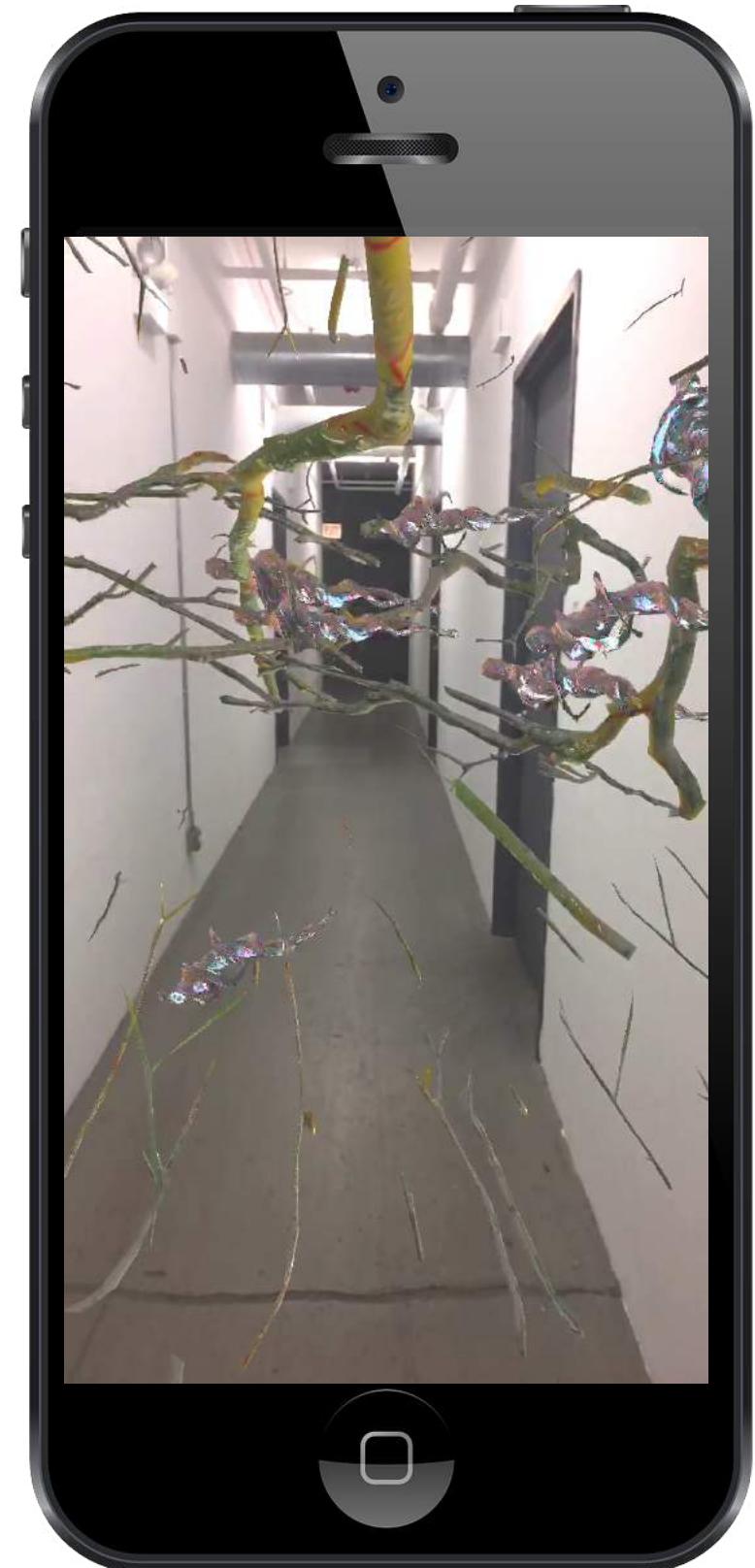
REST



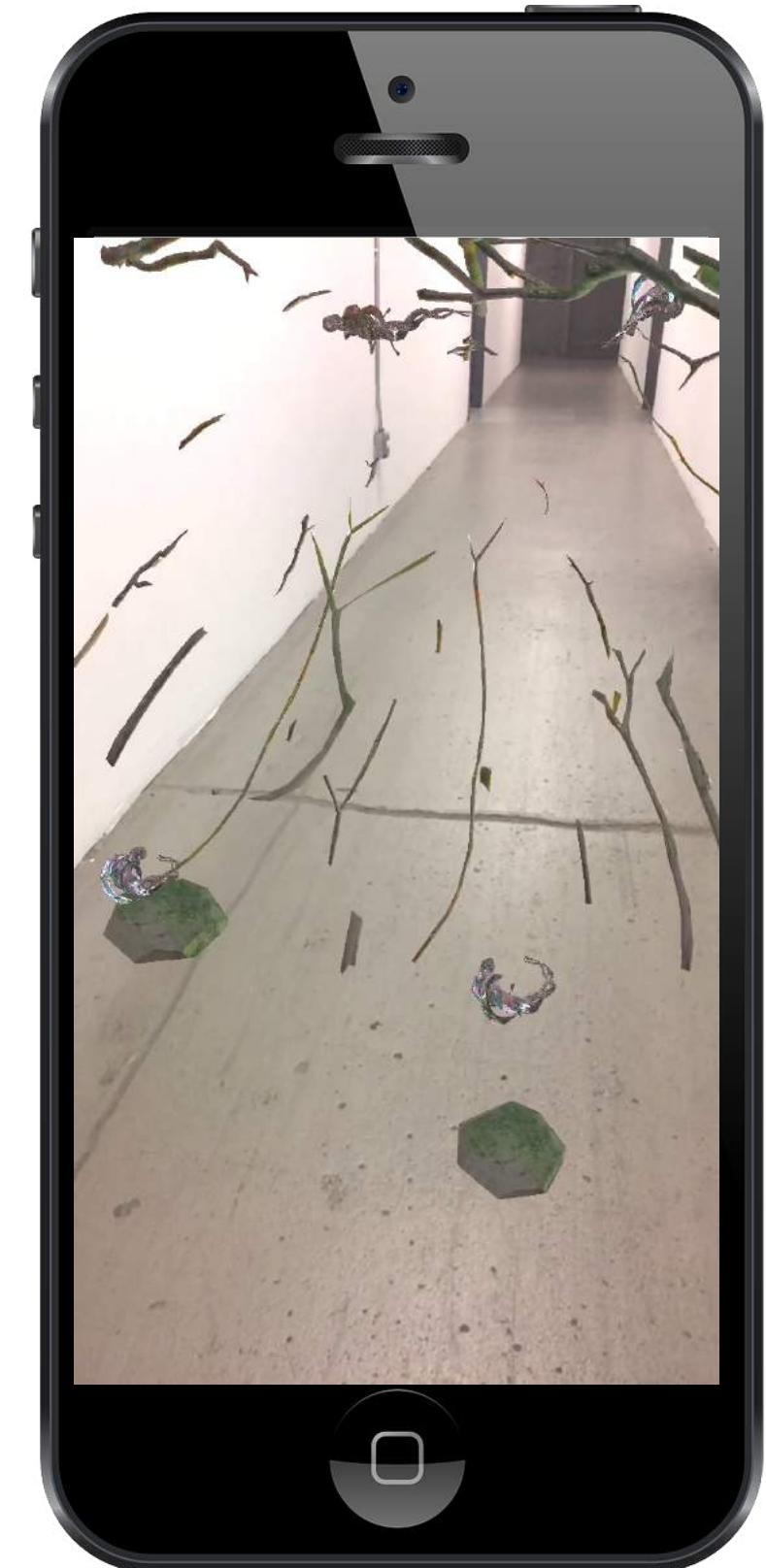
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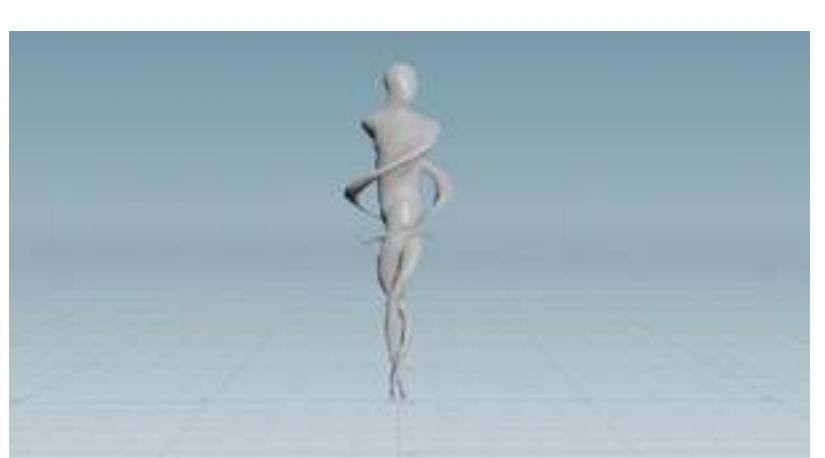
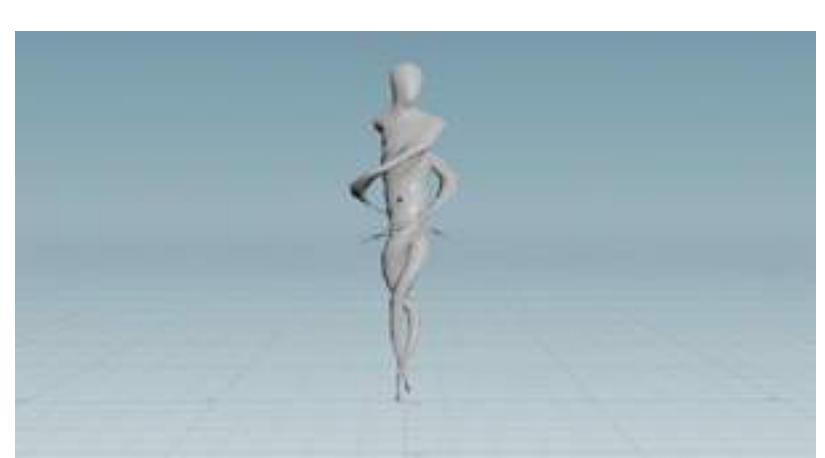
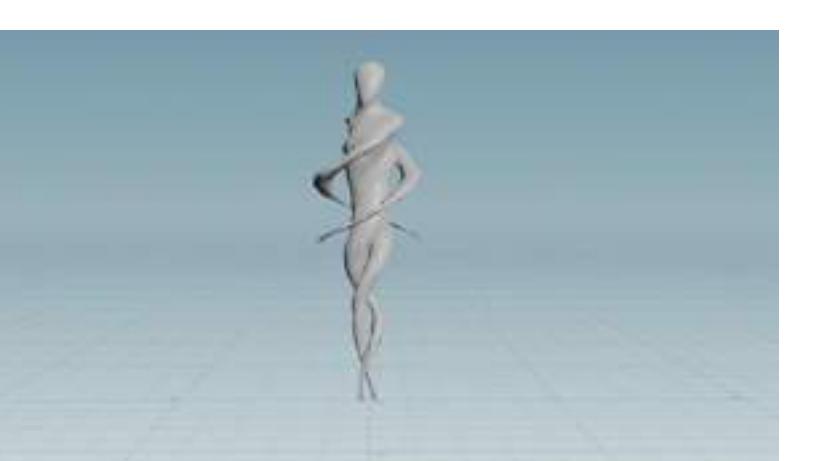
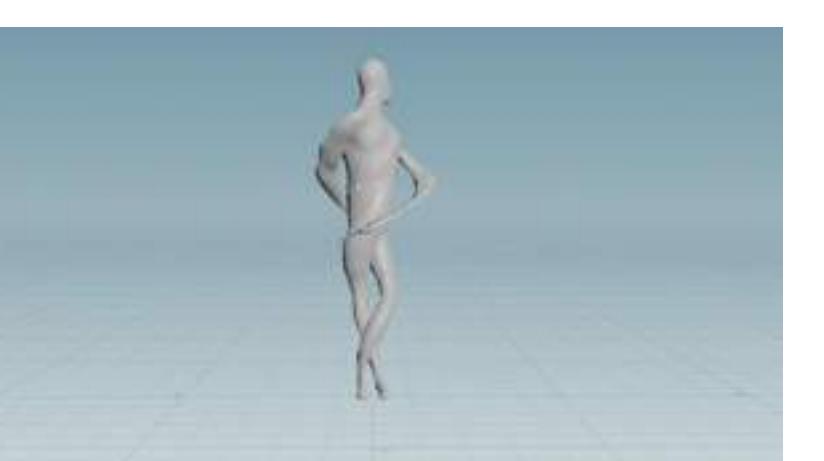
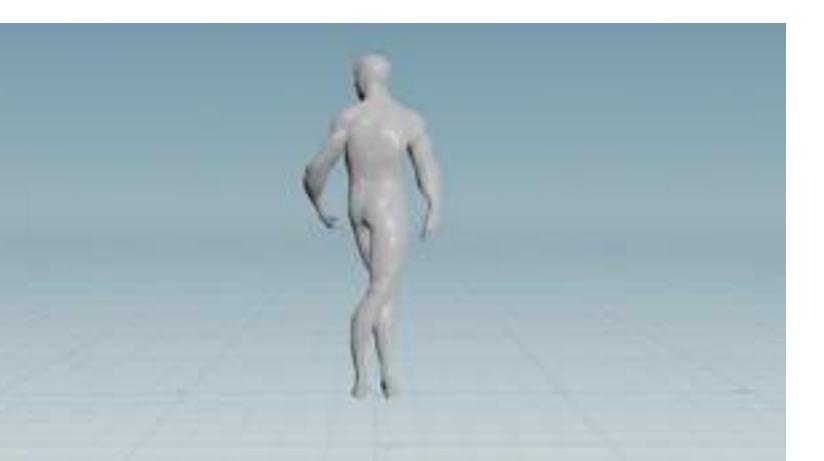
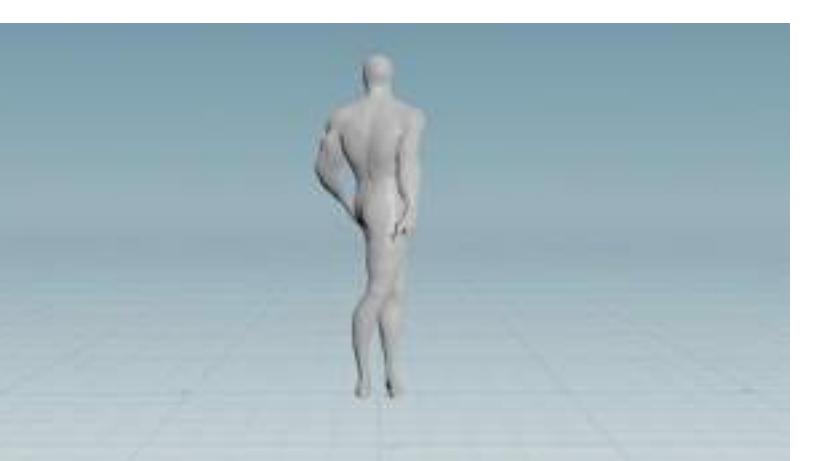
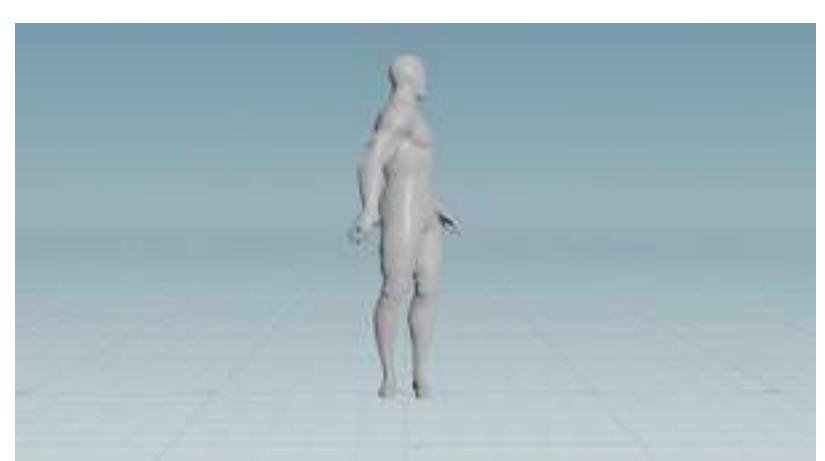
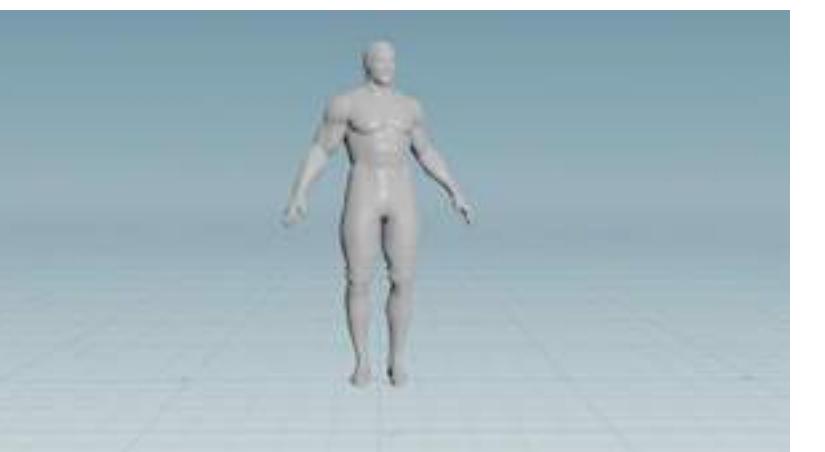
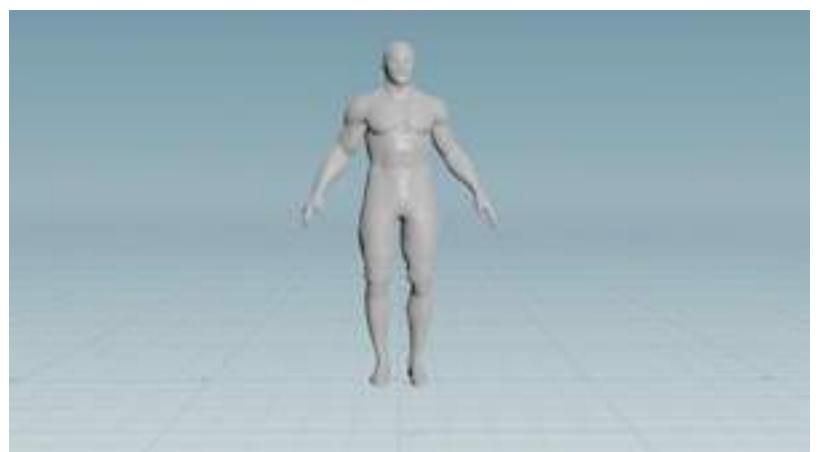
SWIM

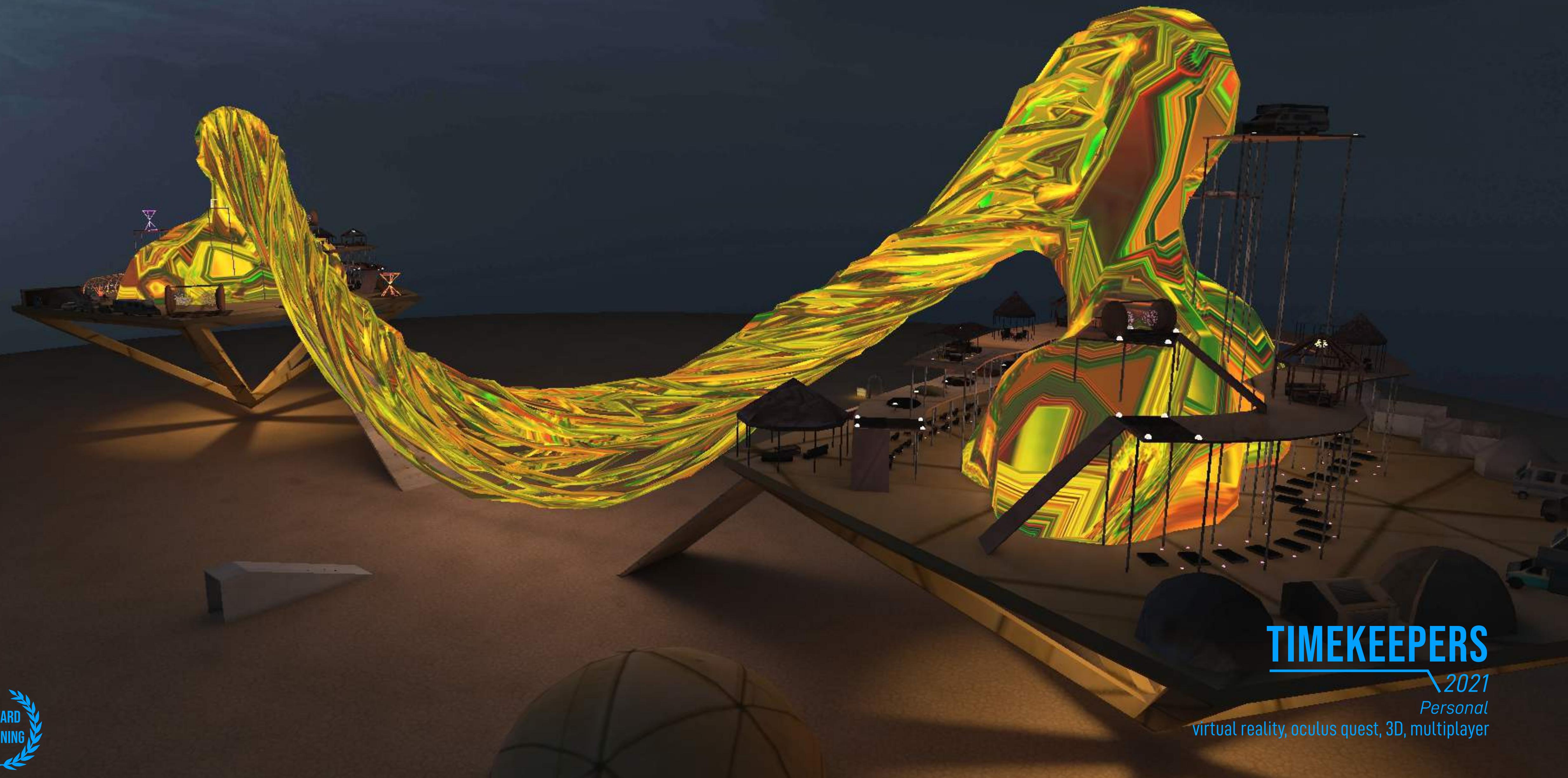


FLOCK



DEATH





# TIMEKEEPERS

2021

Personal

virtual reality, oculus quest, 3D, multiplayer





## ABOUT

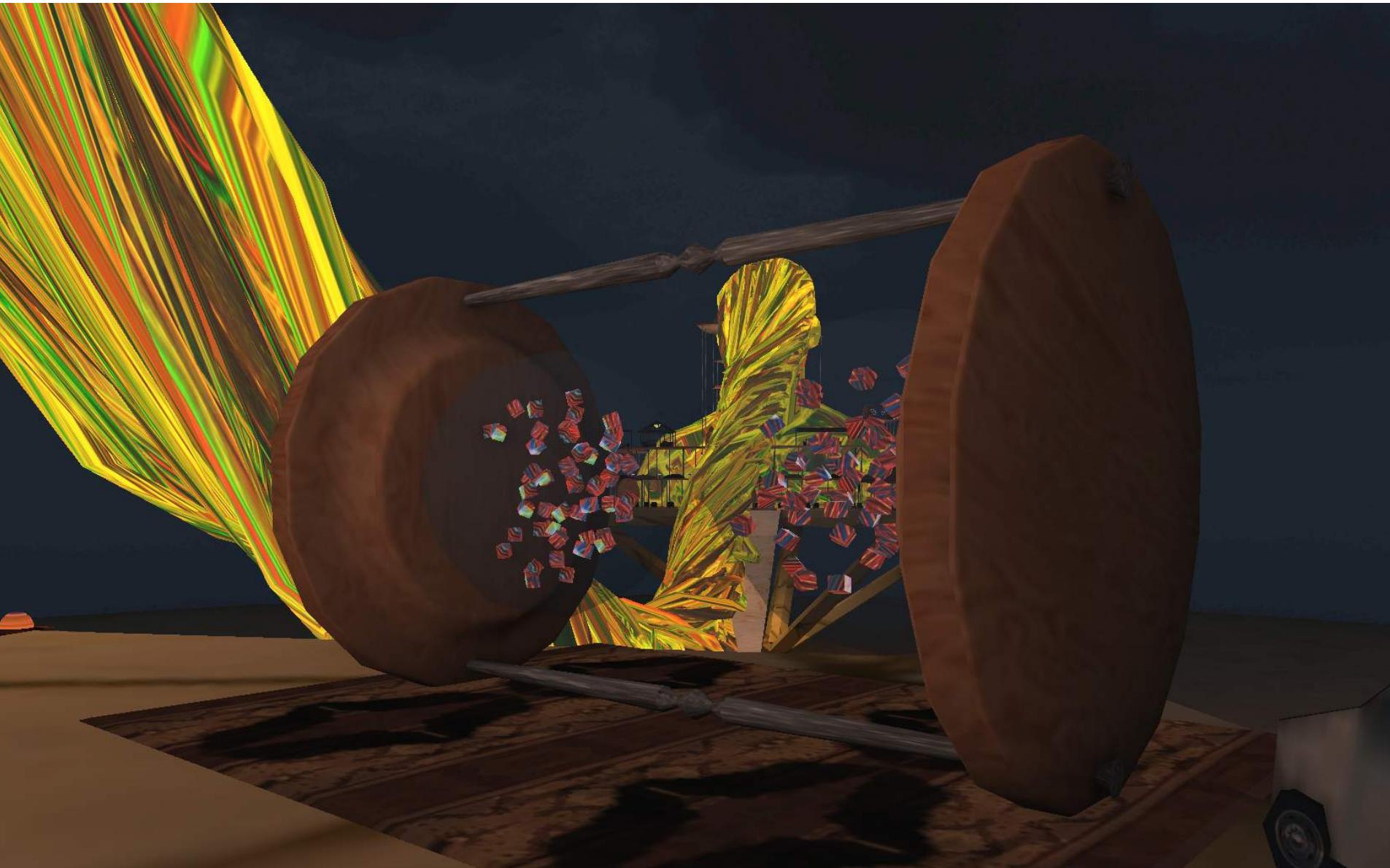
Timekeepers is an immersive virtual reality world inspired by the historical symbols of time. It repurposed these symbols to create a site of philosophical introspection and play in a multiplayer social platform called Altspace VR.

## ROLE

creative direction, world-building, environment, lighting design, 3D modelling, HLSL shader development

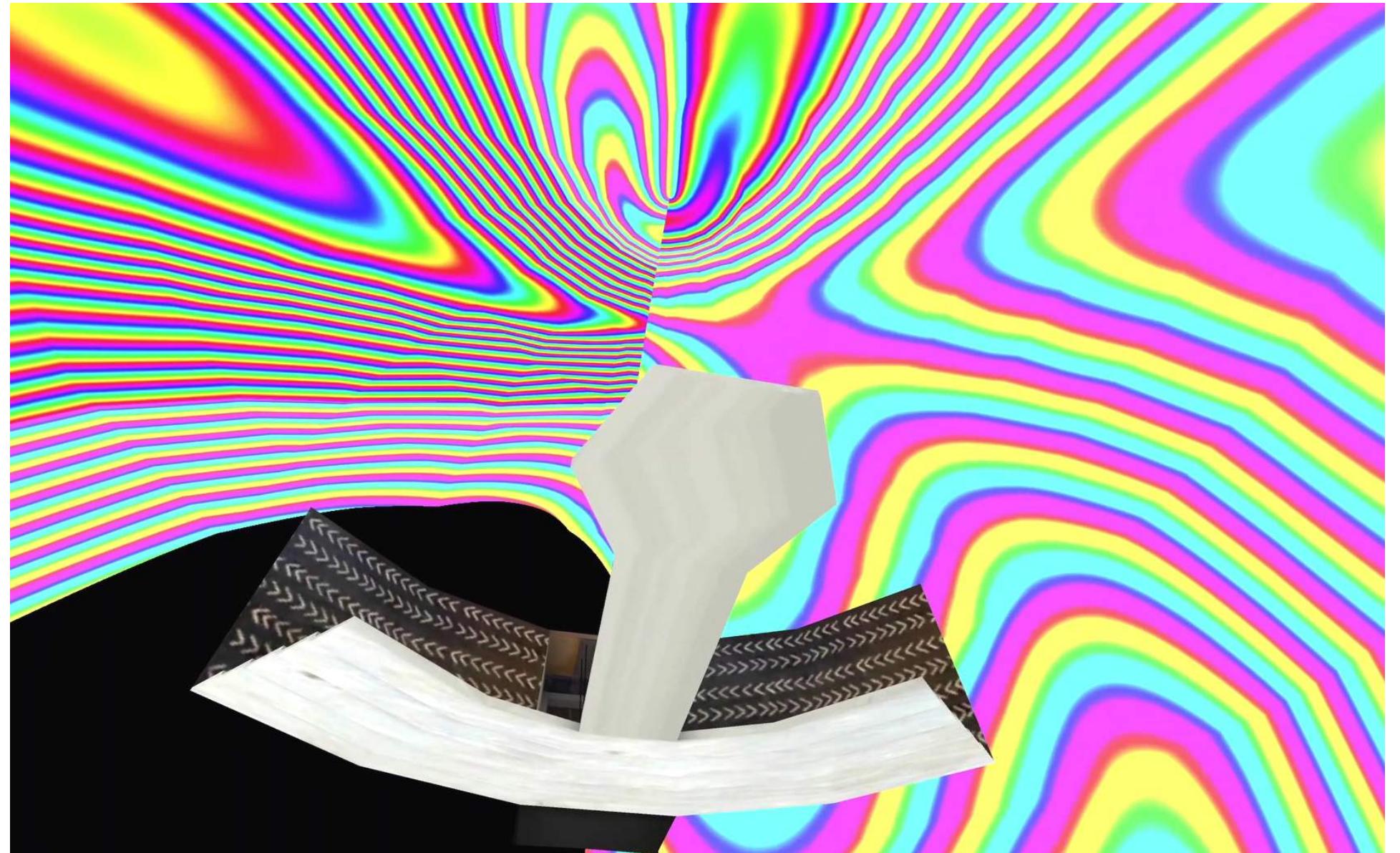
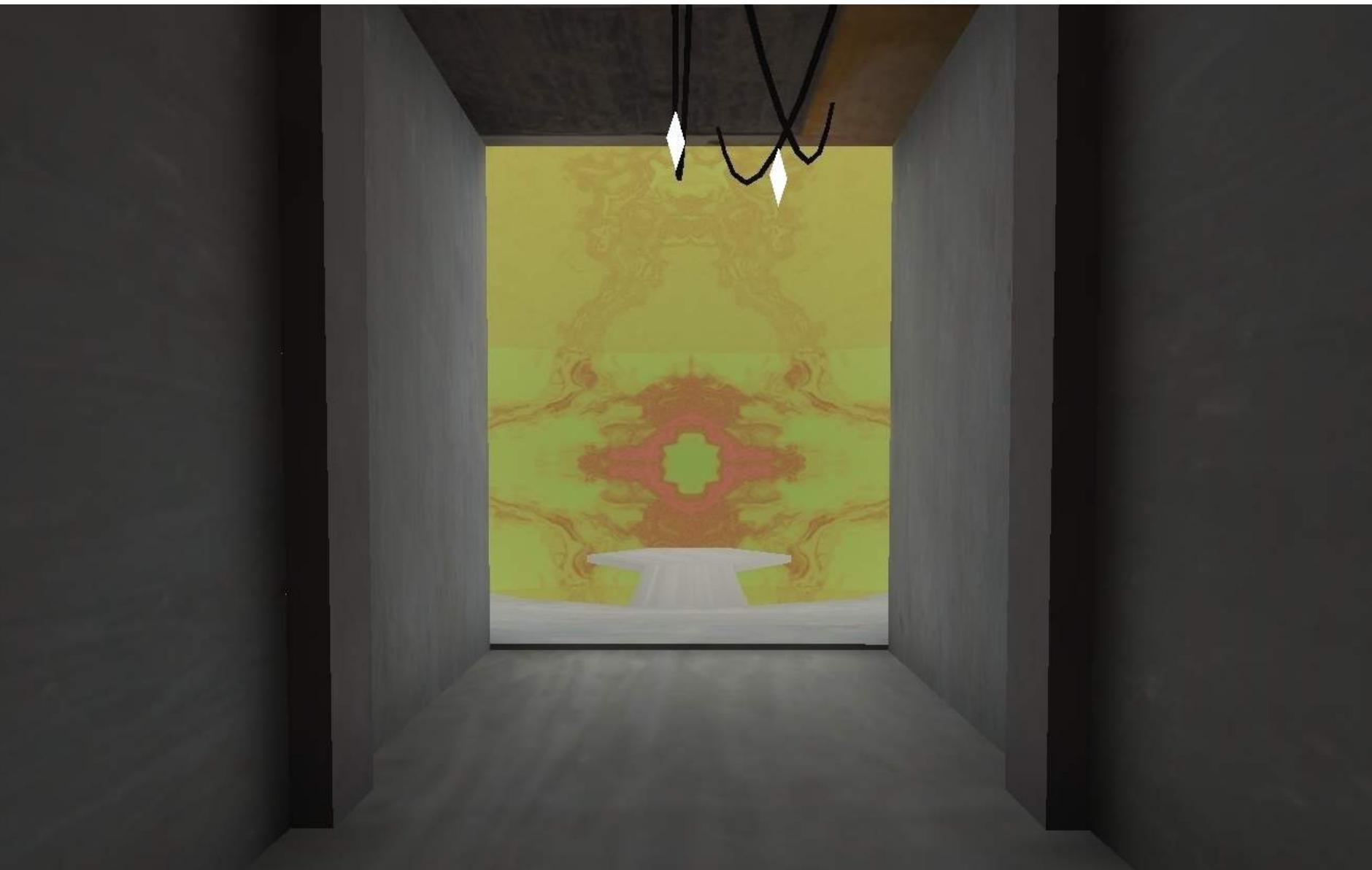
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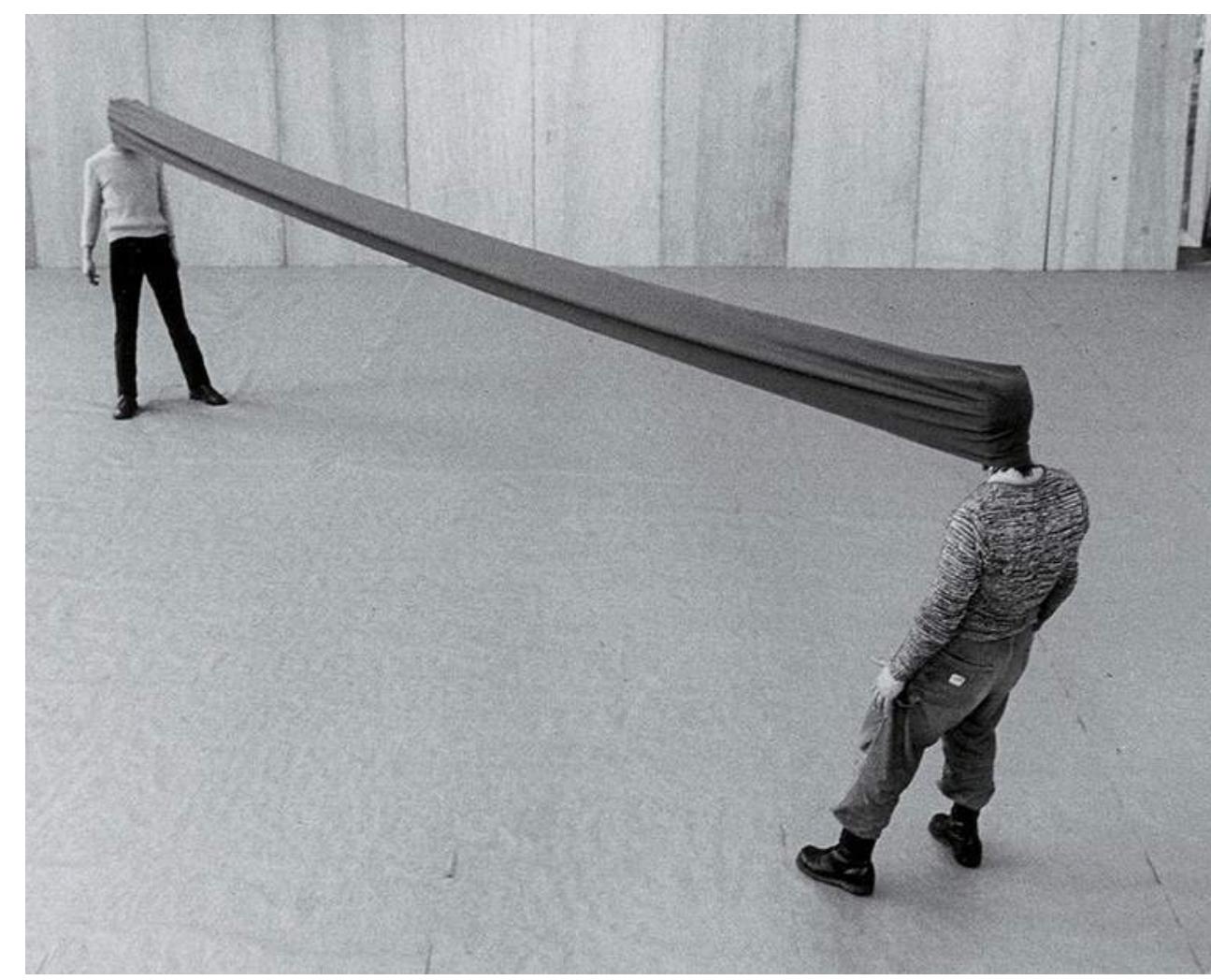
#collaboration #janus #time #burningman #altspacevr #houdini  
#blender #hlsl #unity #interactive



On the ground sits the mammoth Janus sculpture surrounded by architectural scaffolding to provide viewers a resting place.

Below the ground is a bunker with three immersive viewing rooms with self-evolving organic Timescapes.



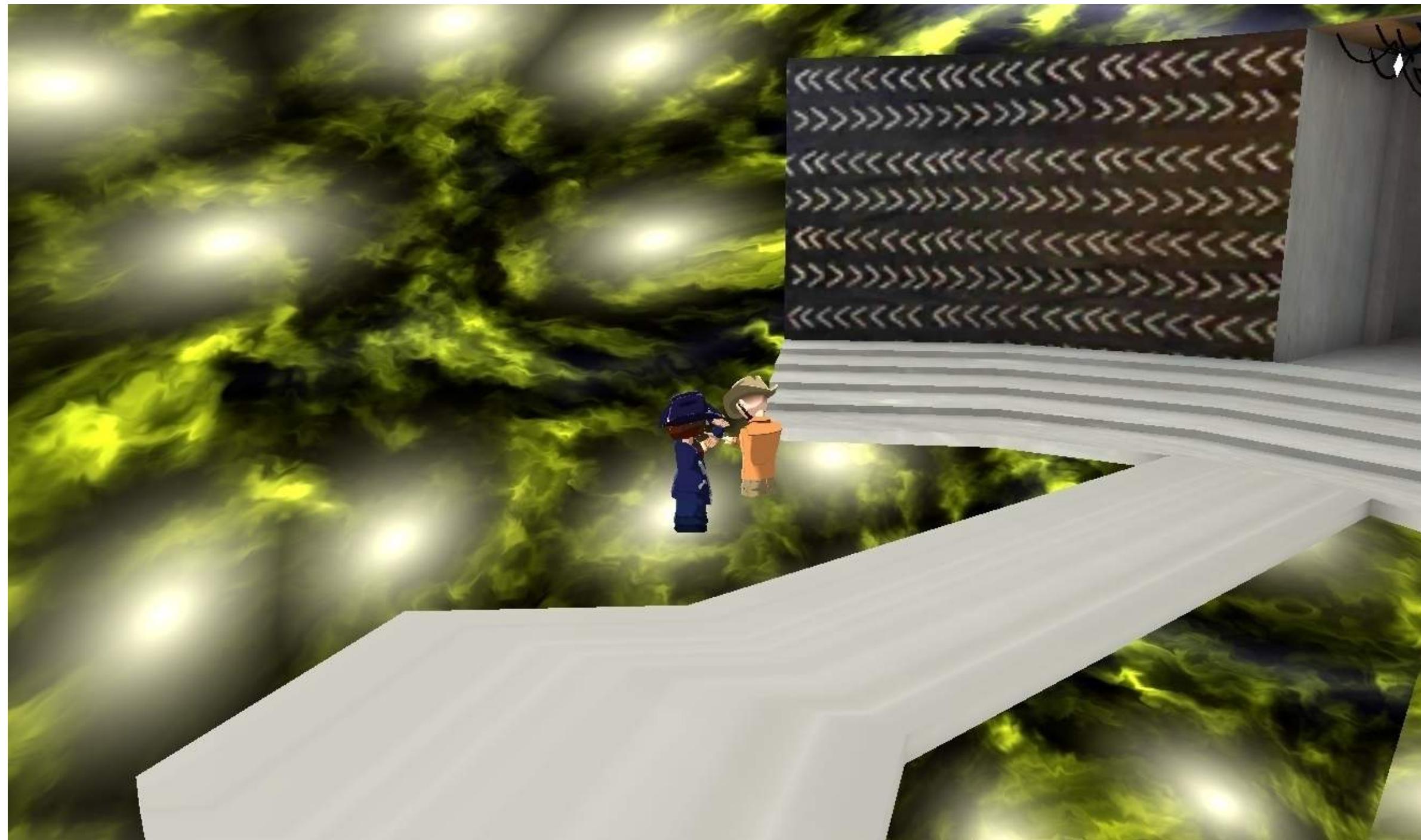
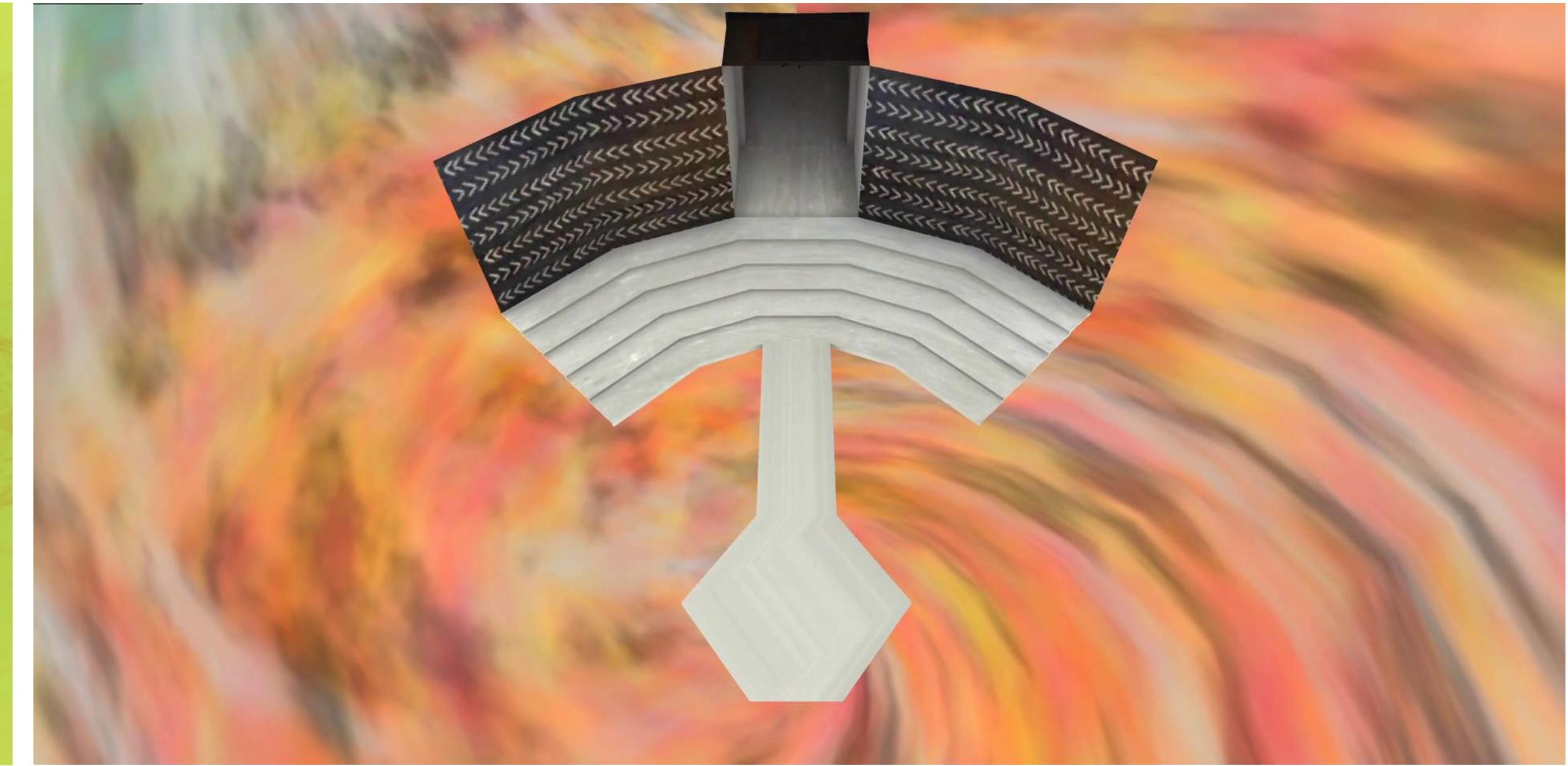
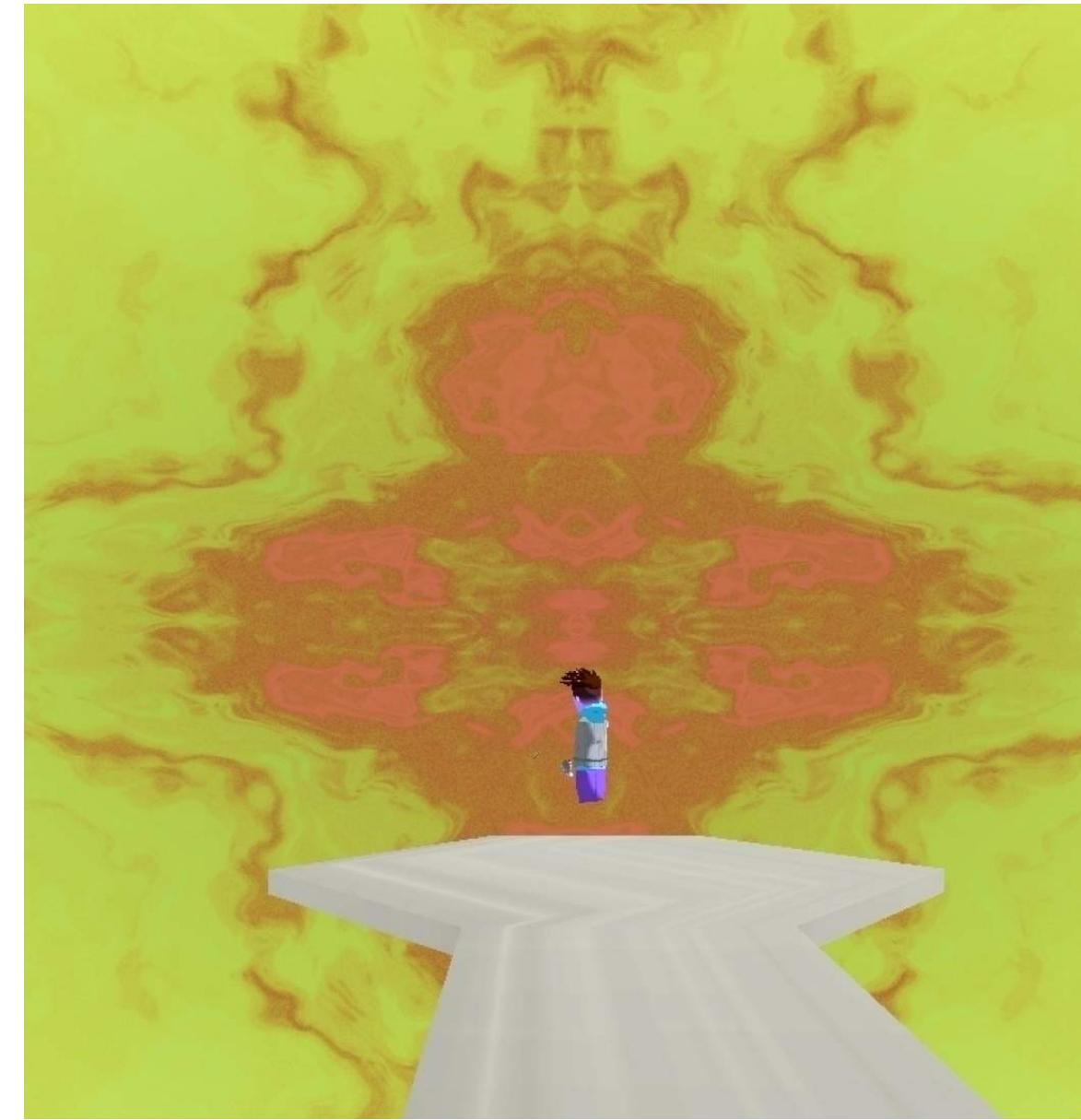


## JANUS

The digital sculpture is a reinterpretation of Janus - a two-faced mythological figure considered a guardian of doorways, transitions, and time. It's one of the oldest symbols of time and temporality.

## STORY

The two heads are flipped, drawn apart, and twisted into each other. The organic entanglement was a metaphor for the complexity of the present moment during the lockdown, when this work was developed.



## BUNKER

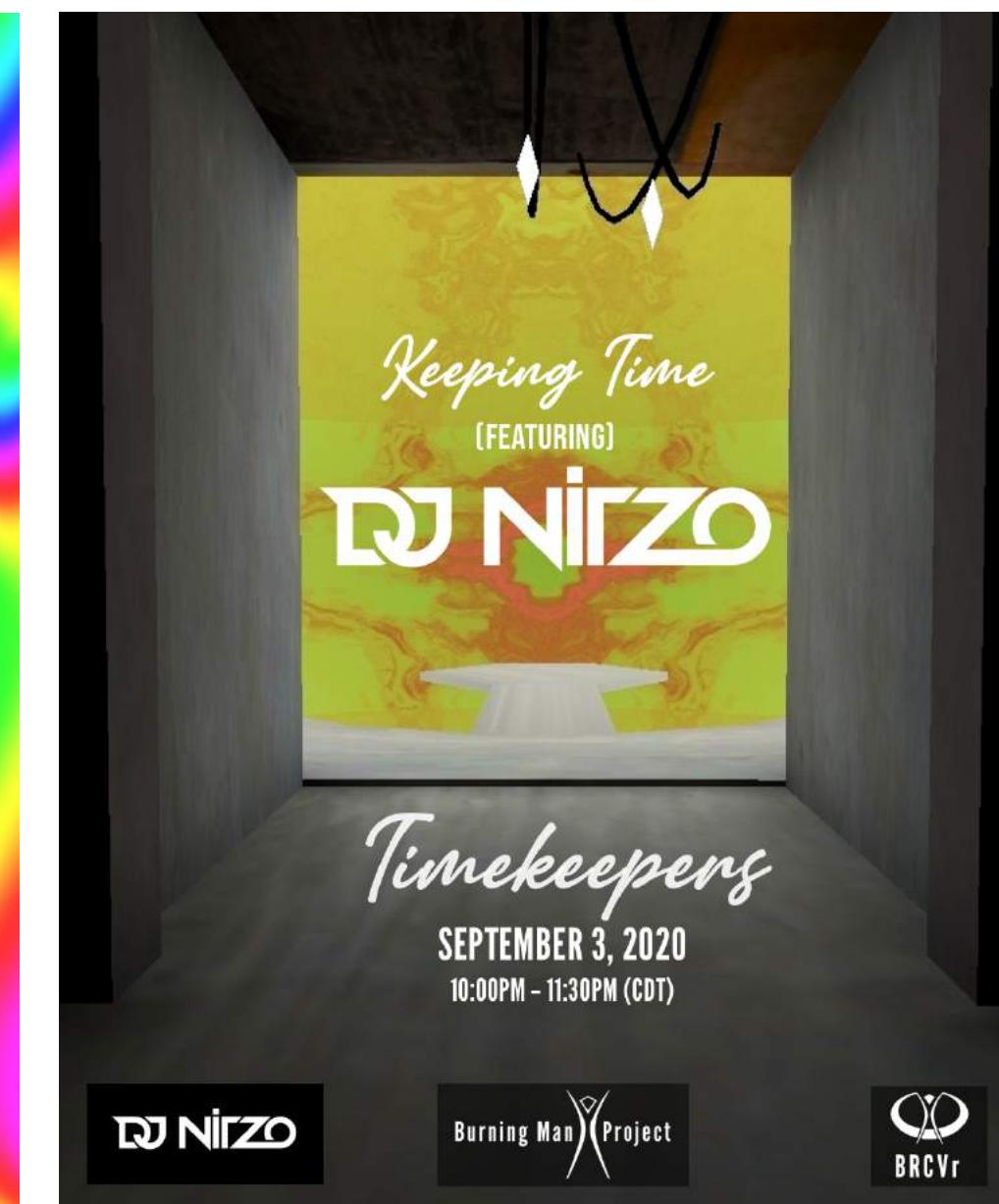
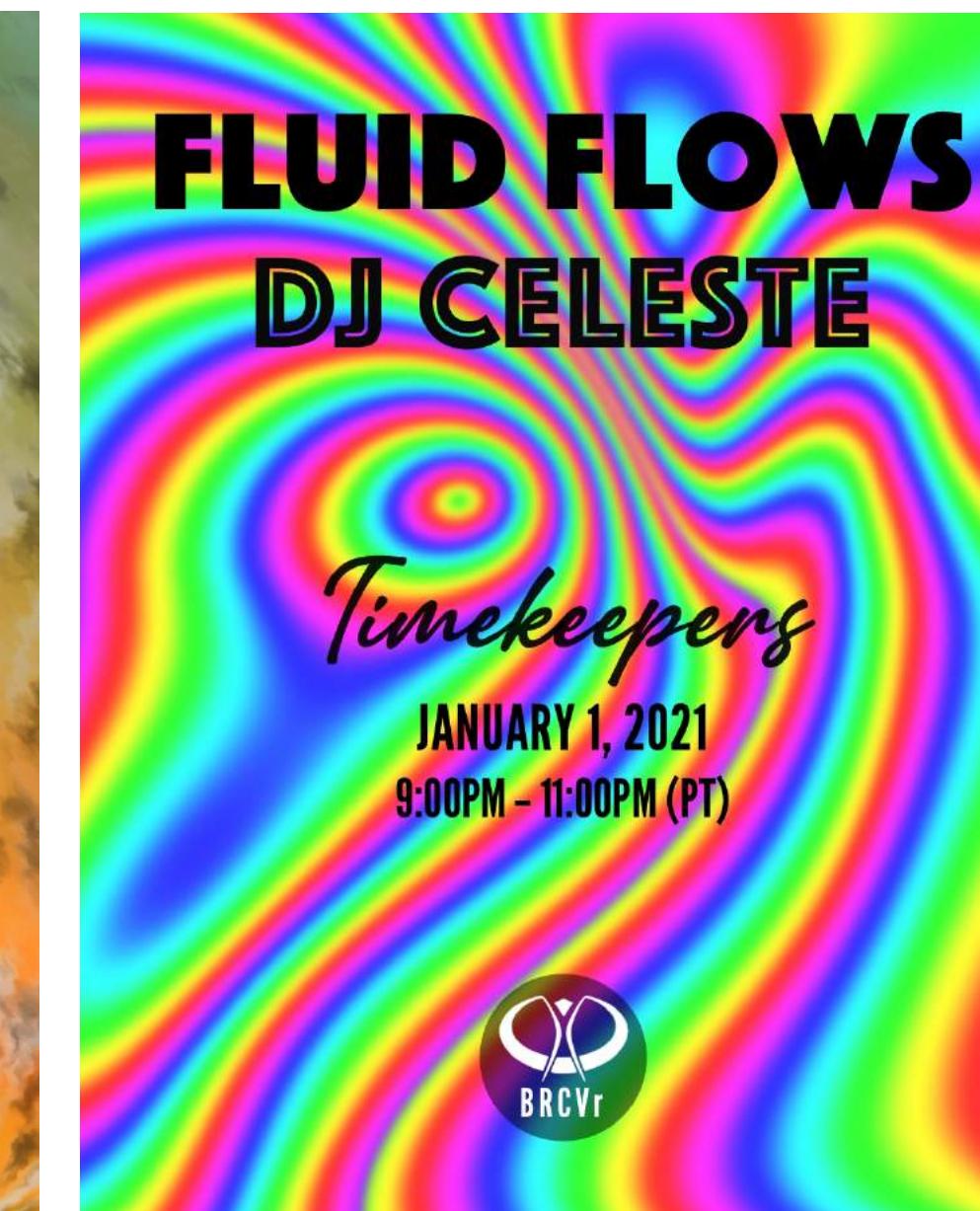
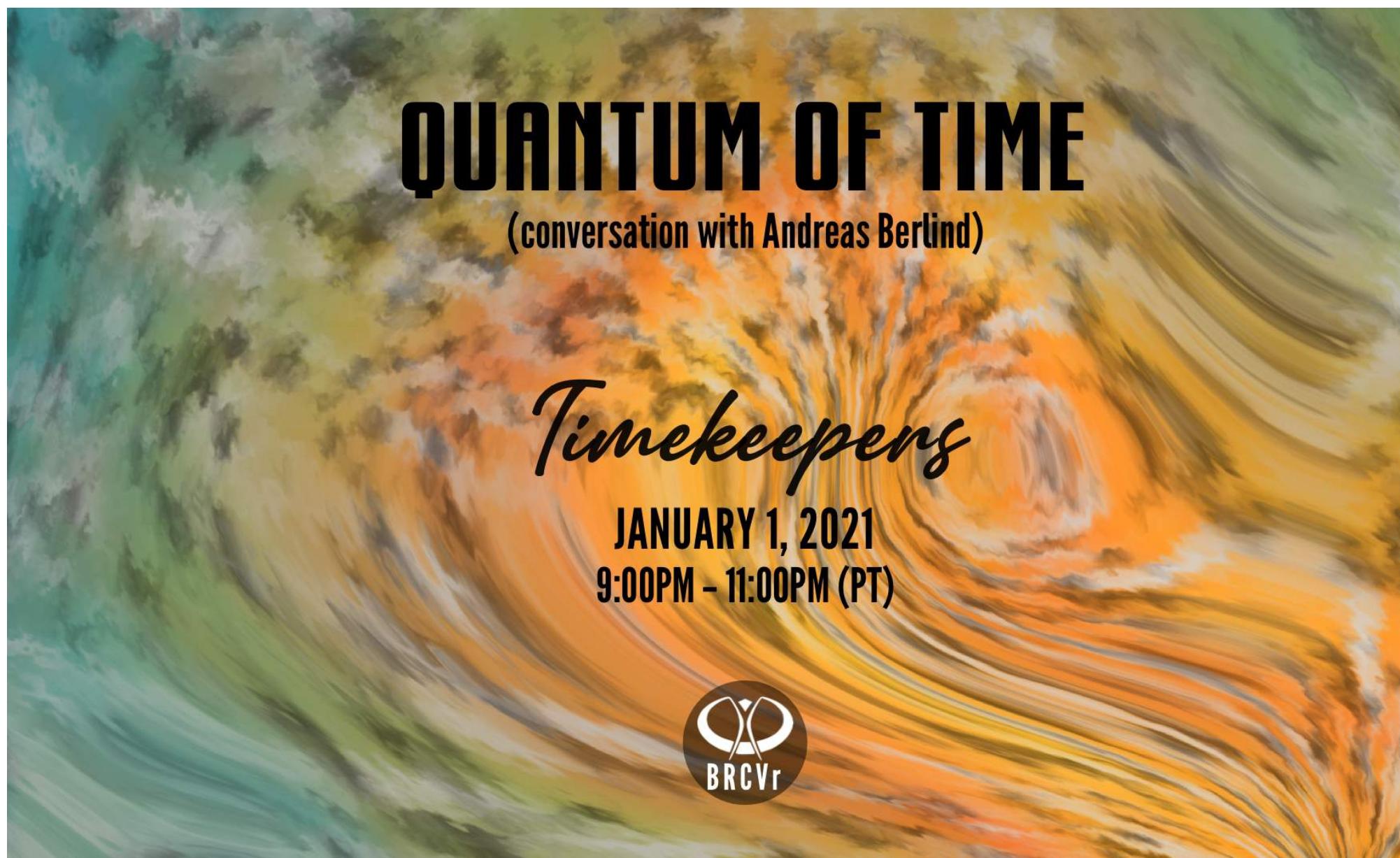
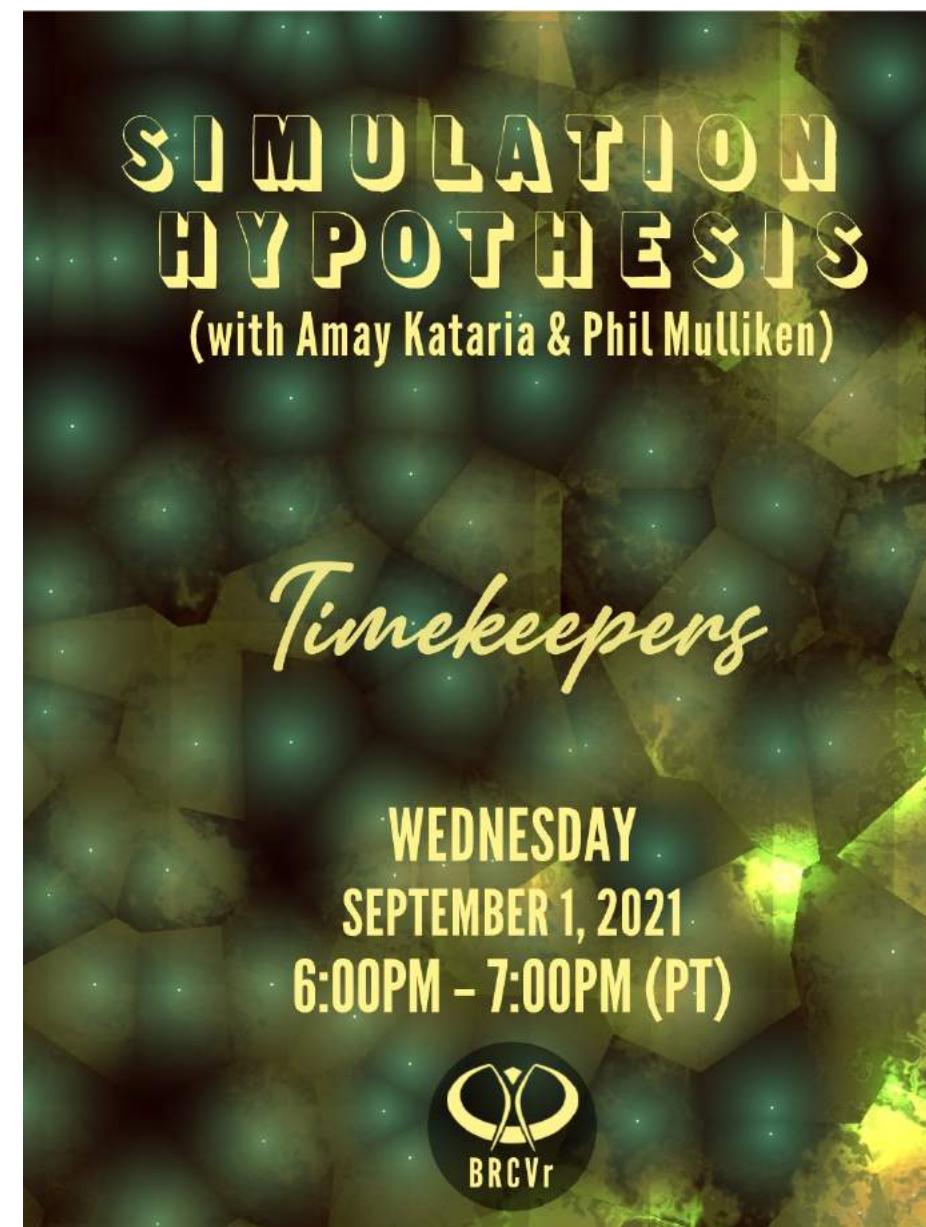
The bunker exists below the ground with three immersive viewing rooms running generative visuals called Timescapes. This duality of these two spaces (above and below) is inspired by the duality of past and present experienced in time.

## ALTSPEACE

This world was first exhibited as part of the Multiverse Theme of Burning Man 2020, which was hosted in Altspace VR (a social Virtual Reality platform), where multiple avatars could access this space.

## EVENTS

Timekeepers has become a site to program a number of public events ranging from artist talks, discursive meditations, and music events to create an interactive, social, and engaging environment.





## GET IN TOUCH

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