

Co-Haviation



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Project Statement

Birds navigate using the Earth's magnetic field, just as flights depend on radio waves for communication during take-off and landing. Both are guided by natural forces, essential for precise navigation. In this way, the project explores the co-habitation of human-made and natural environments through a bird's eye view.

This passive interactive experience combines flight data and intercepted air traffic control audio with a boid simulation. The focus is the Geneva airport showing flights take off and land. This flight path is a common scenario where birds often interact with planes. Subtle cues on the ground and more obvious plane congregations guide viewers to switch between birds and discover the central location of this imagined world.

Research

During our fieldwork on electromagnetic waves, we found out that we could intercept radio communications between pilots and air traffic controllers. This discovery excited us and led us to survey the airport and its surroundings.

We found a private parking lot where plane spotters gather to photograph planes as they take off and land. We spent an hour at this location documenting the flights. Our fascination with the airport fence extended our stay, which eventually led to the discovery of wildlife control measures, including the loud gull sounds played to scare away birds.

Further research revealed that airports use various methods to manage bird populations, aiming to avoid inconveniences to passengers and, most importantly, the financial losses airlines face when flights are delayed, canceled or damaged. This narrative is always told from the human perspective, but rarely from the birds' point of view.

Birds are naturally attracted to the airport, for various reasons, including the abundance of food, water, and nature.



Conceptualization

To help frame our ideas, we explored idioms to understand how language shapes our perception of similarities and the natural world. From there, we mapped out four contrasting concepts, ultimately arriving at an idea that is both abstract and poetic, yet approachable.

One and the same

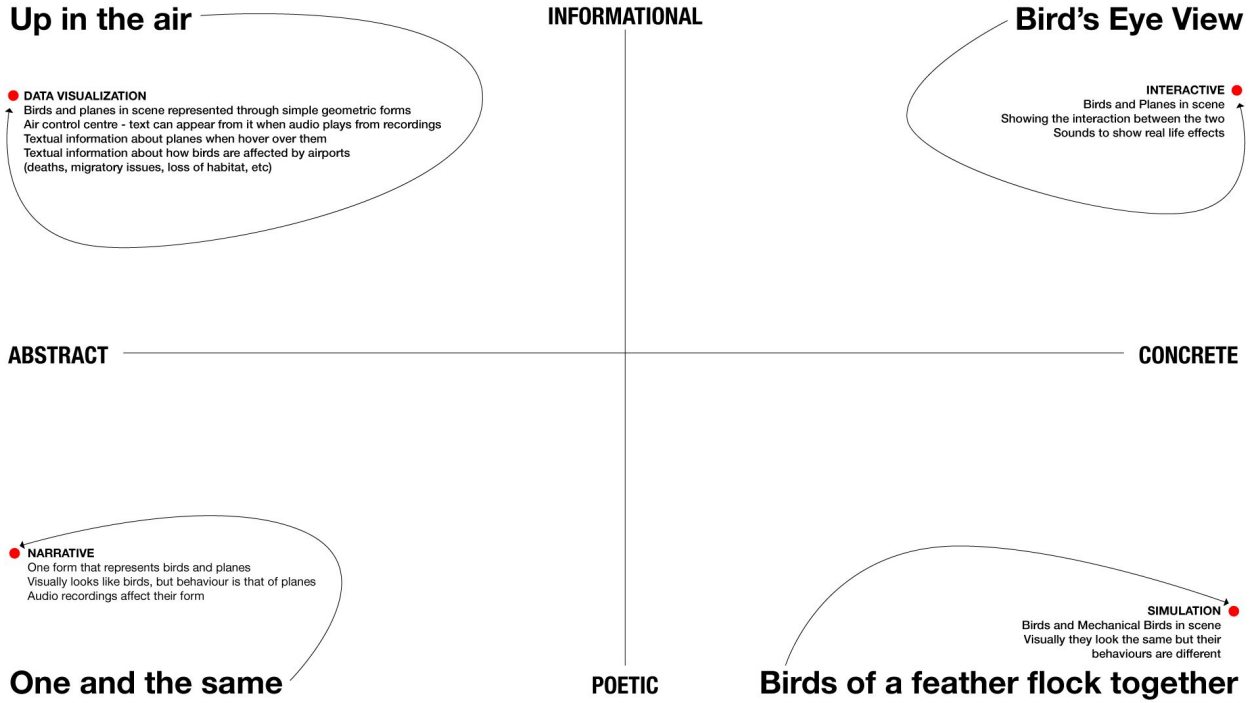
Two sides of the same coin

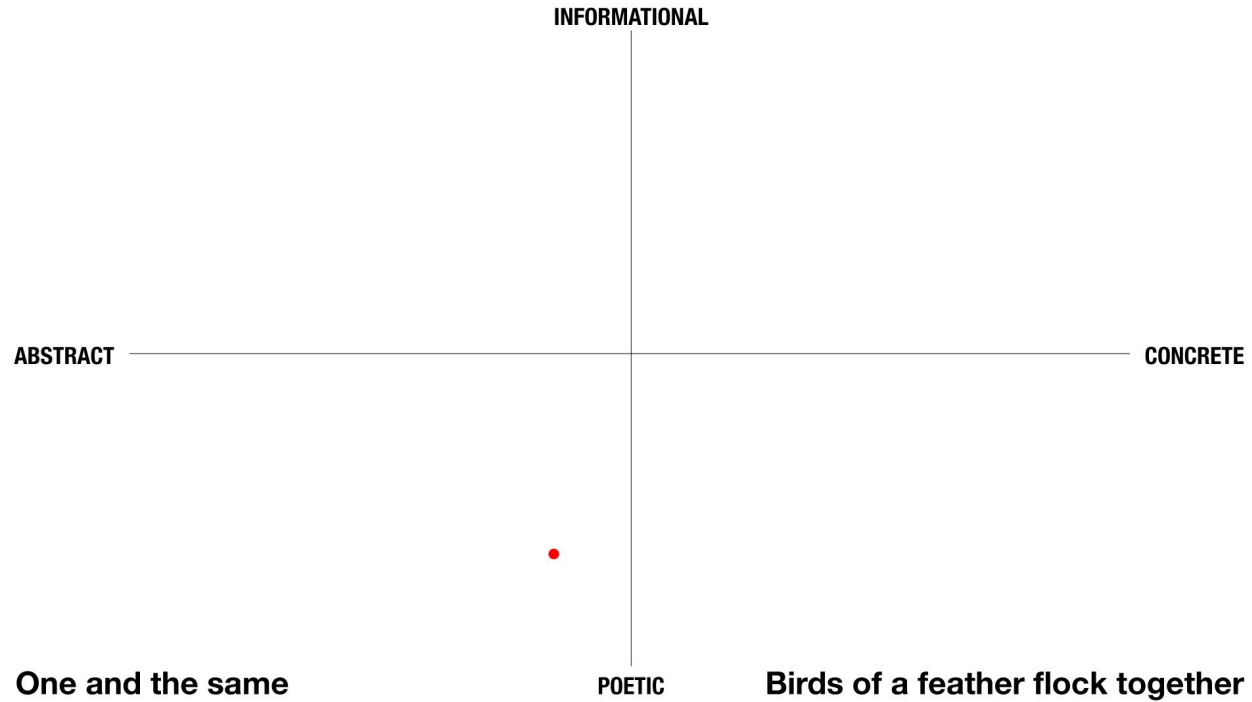
The same difference

Birds of a feather flock together

Bird's Eye View

Up in the Air



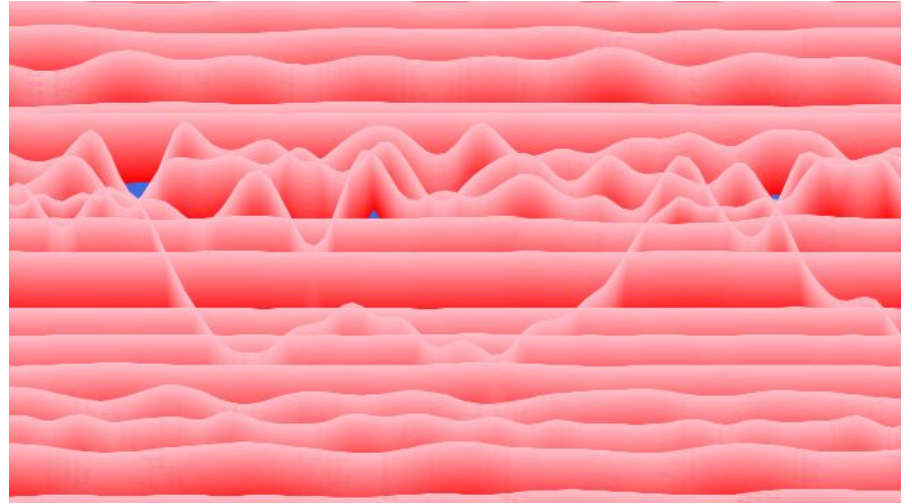
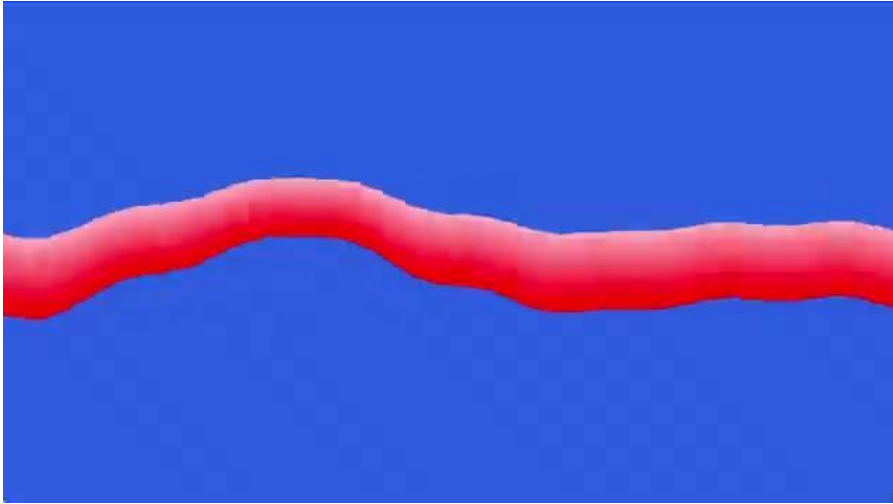


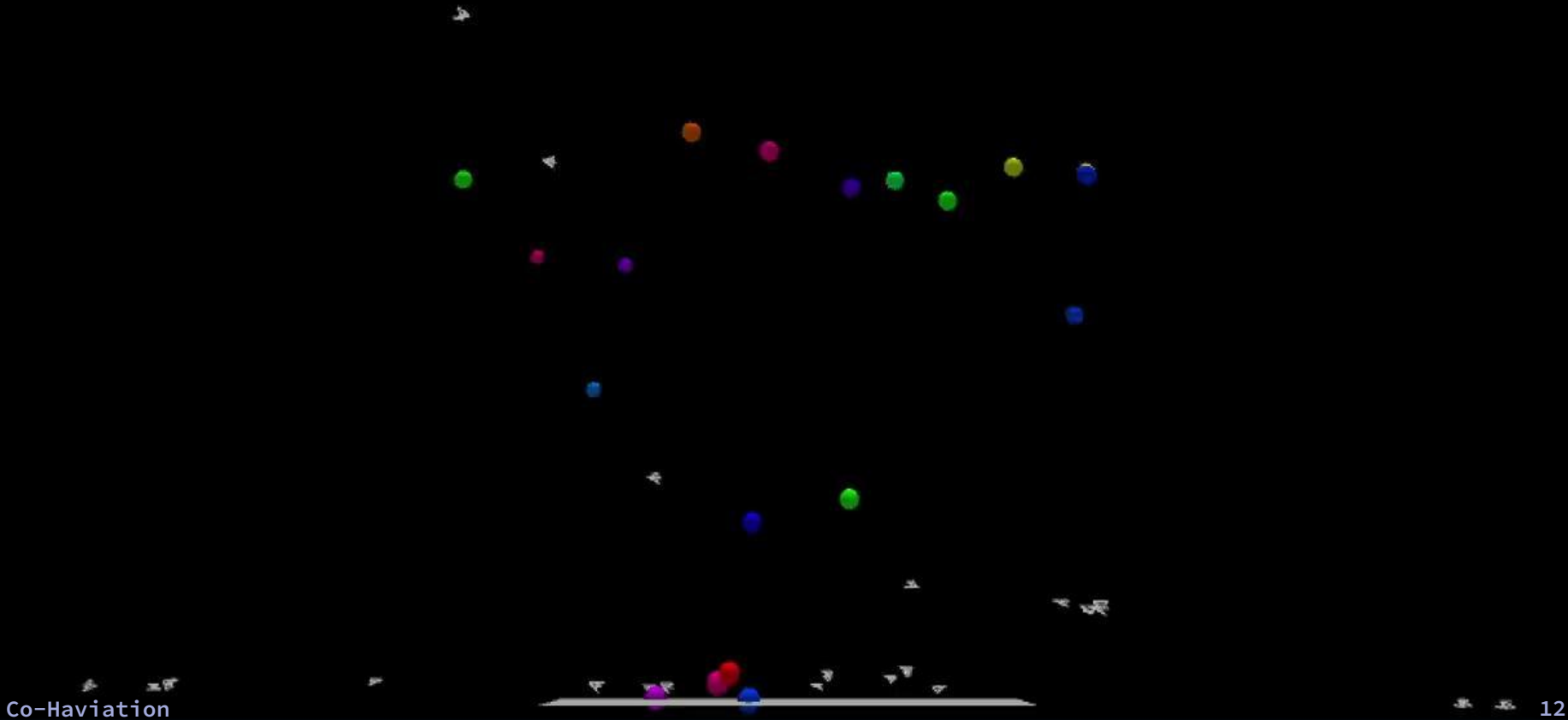
Creative Coding Experiments

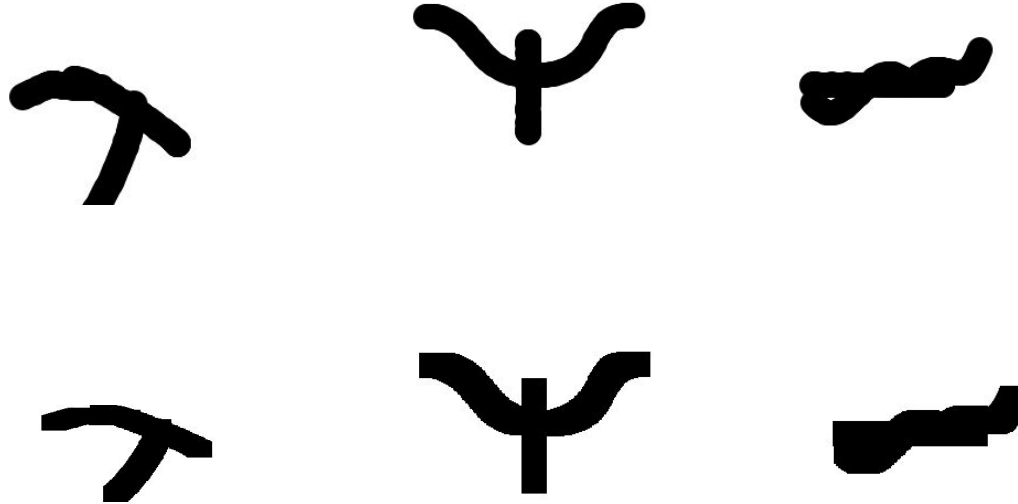
We went through many visual tests to see what worked and what didn't. With each step, we came closer to our final solution.

Creative Coding Experiments

Audio Reactive Visuals





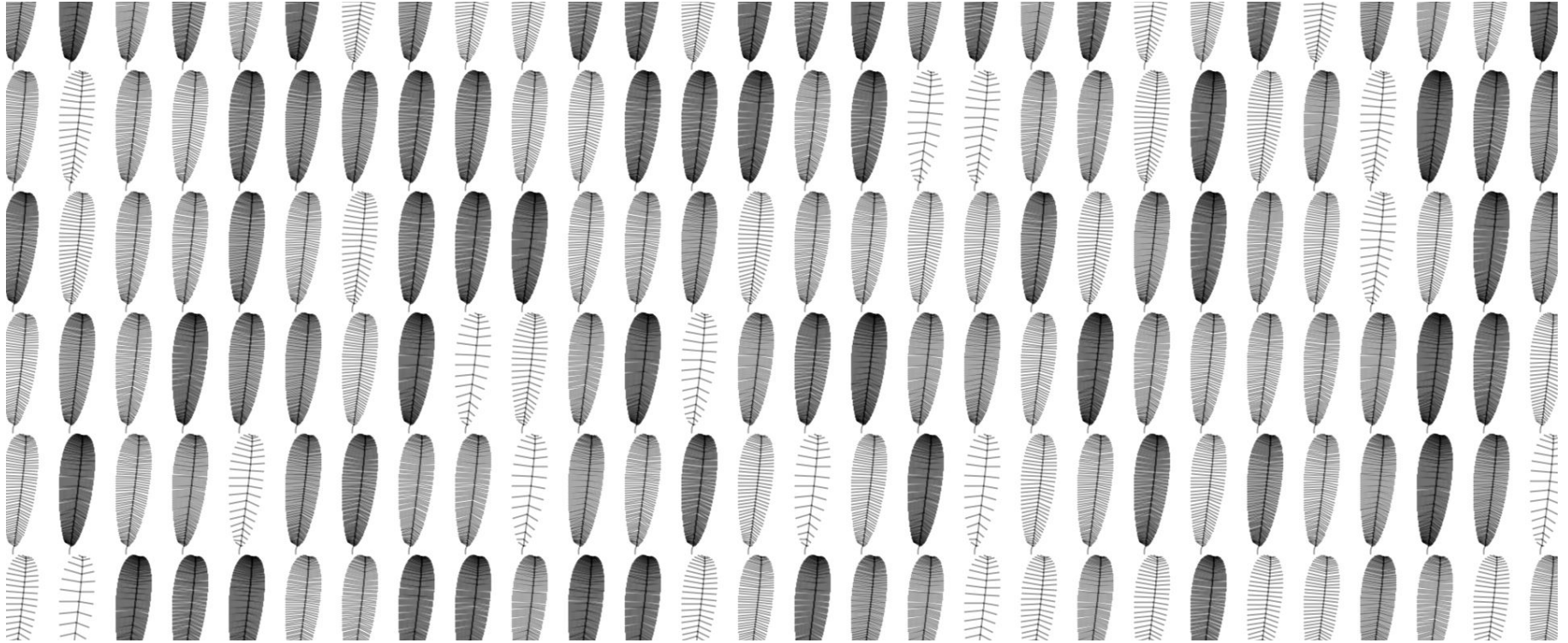


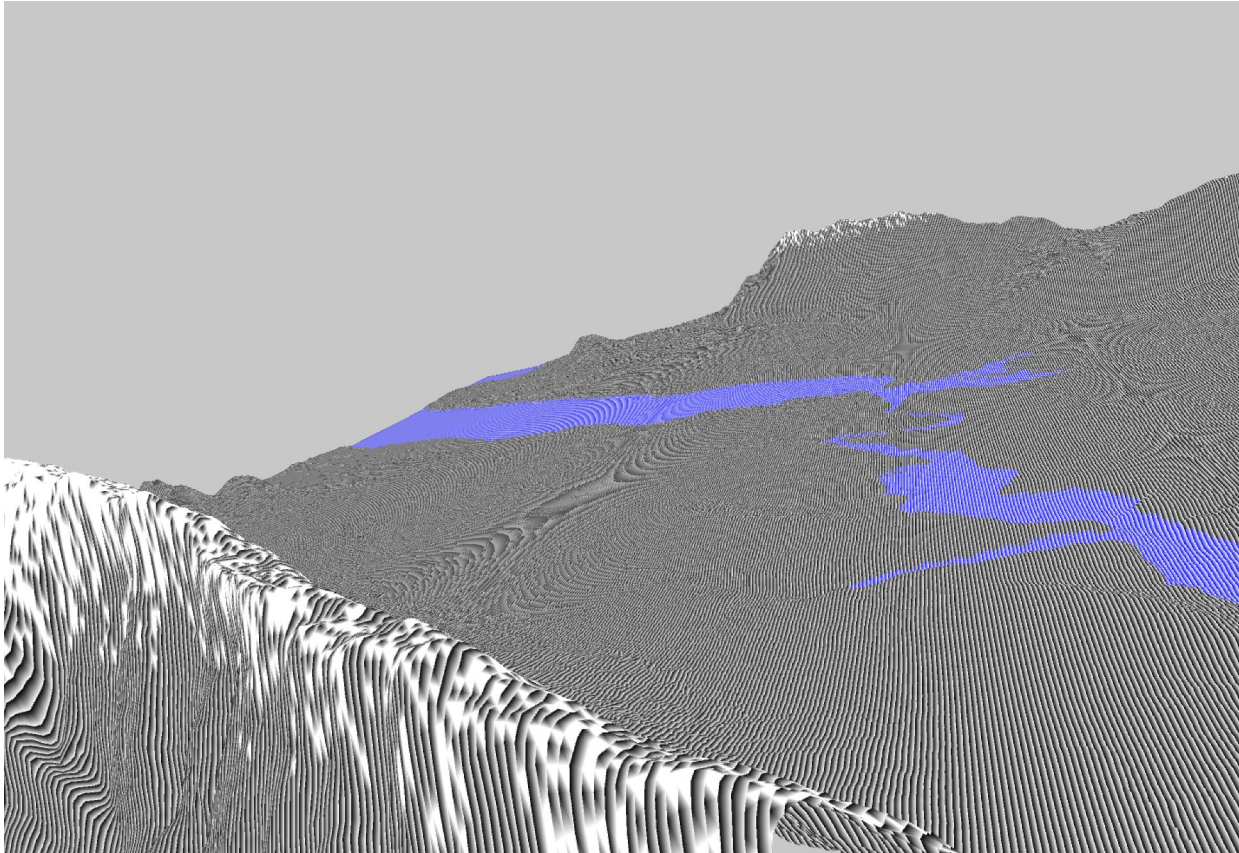




Creative Coding Experiments

Generative Feathers





Bird 1

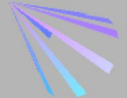
40 EGGRESO



Bird 2

48 BIRDRESO

13 BIRDFEATHERS



Bird 3

0.00 BIRDCOLOR



Final Solution

We designed and developed a passive interactive experience where viewers can bird watch in this strange yet familiar imaginary world. The simulation incorporates real-world data and scenarios with a set of conditions to keep the viewer engaged.

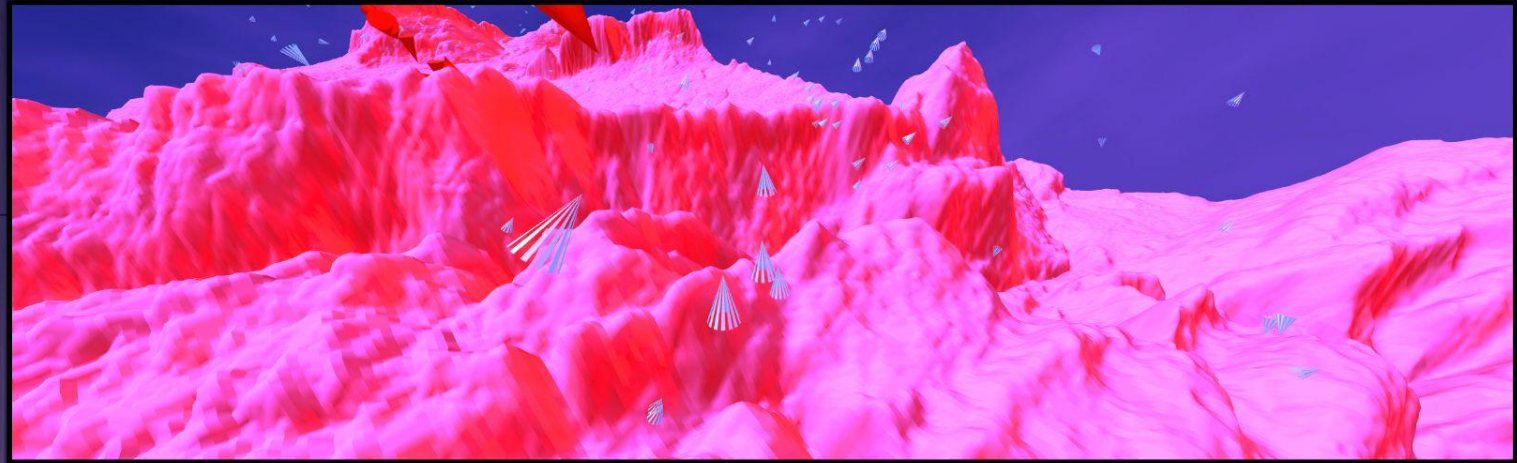
Final Solution

Birds are generated randomly due to the lack of behavioral data. Planes follow real flight data collected with Dump1090 during an hour at the airport, capturing the longitude, latitude, and altitude of 123 planes.

Each plane starts its trajectory with a random offset of up to 5 minutes. As planes appear in the scene, radio communications with the control tower, recorded during field research, are played. The more planes there are, the more frequent the communications.

Like in the real world, birds are attracted to the airport. If many birds gather, an alarm—the one used by wildlife control at the Geneva airport—sounds, causing them to disperse.





Final Solution

When a bird collides with a plane, it either flies away or dies. If fewer than 100 birds remain, new ones are generated based on the number of planes in the scene. The more planes there are, the fewer birds are added. If the bird followed by the camera dies, the camera switches to another one.

The scene loops indefinitely. The user can press any key to switch to another bird. An overlay with project information is accessible via the round button in the top-right corner.



Credits

Project
completed in
the Master of
Media Design
Program at
HEAD-Genève
during the
Creative Coding
Workshop

Data Collected

20.09.2024 Audio from Geneva Air Control Centre
20.09.2024 Audio from Geneva Airport Wildlife Control
02.10.2024 Flight paths at Geneva Airport
07.10.2024 Heightmap of Geneva and Surrounding Area

Assets Used

Ambiant Music : 'Drifting at 432 Hz' from Unicorn Heads (Youtube Audio Library)
Wing flap birds going away : 'Wing flaps doves fly away NOTL 181225.flac' from Pixabay
Wing Flap ambient sound : 'Wing Flap 1' from Pixabay
Birds ambient sound : 'Birds' from Pixabay
Bird hitting a plane : 'hit by a wood' from RibhavAgrawal on Pixabay

Made With

Processing
Gqrx
Dump1090
Google Map to Heightmap

Credits

Big thank you to our teachers,
Nicolas Nova, Félicien Goguey &
Gordan Savičić, who guided us
and broke our brains with each
critique they gave.



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