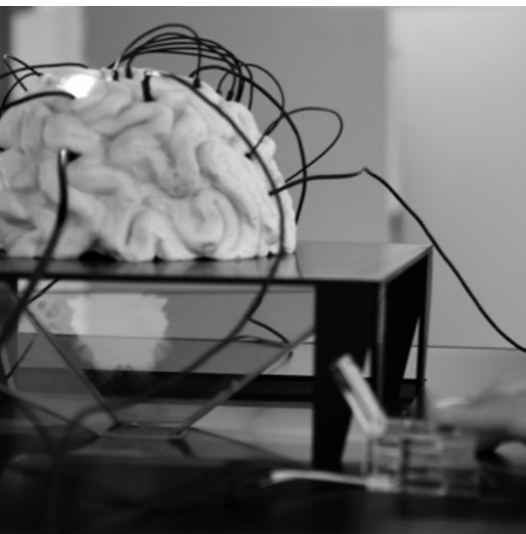


# Creartathon 2022 portfolio

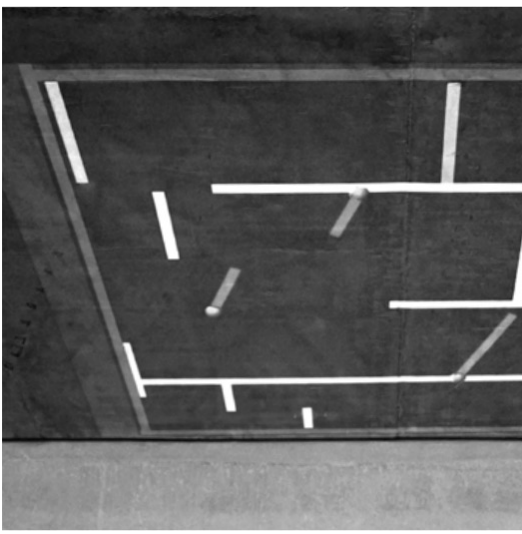
Creartathon is a creative hackathon summer school that combines art, design, human-computer interaction and artificial intelligence.

This year's challenge: Design a creative, intelligent and interactive physical artefact that emphasizes shifting boundaries through interaction, perceivable from different perspectives.

This event is organised by the Université Paris-Saclay, with the Inria Saclay Centre, and Societies, and takes place at La Fabrique, fablab of centraleSupélec.



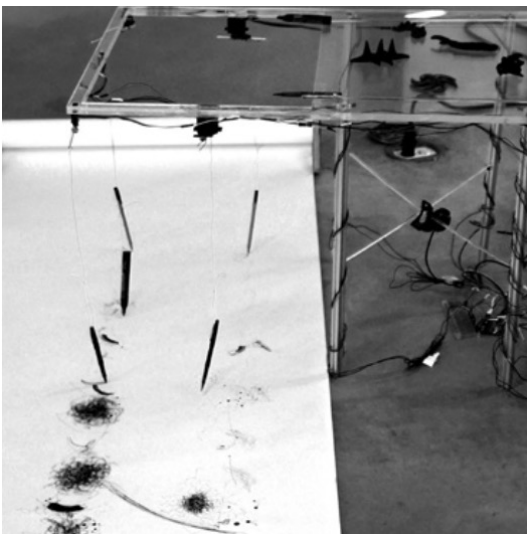
Mother Knows Best



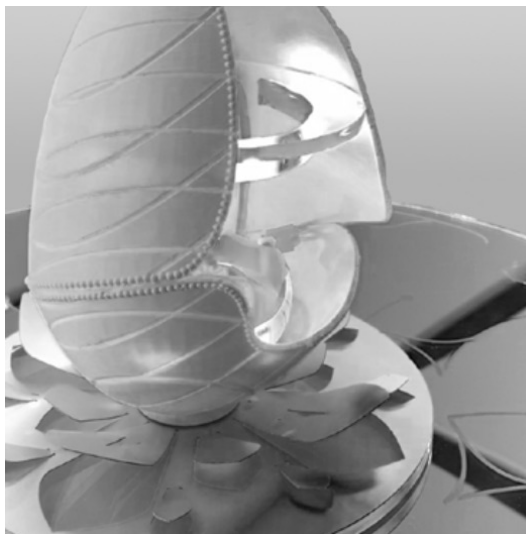
That's Life



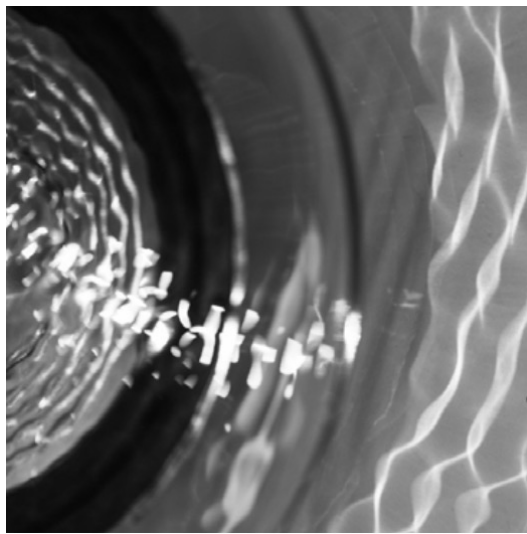




Entanglement



Egon



Réseaunance



Materia Strata

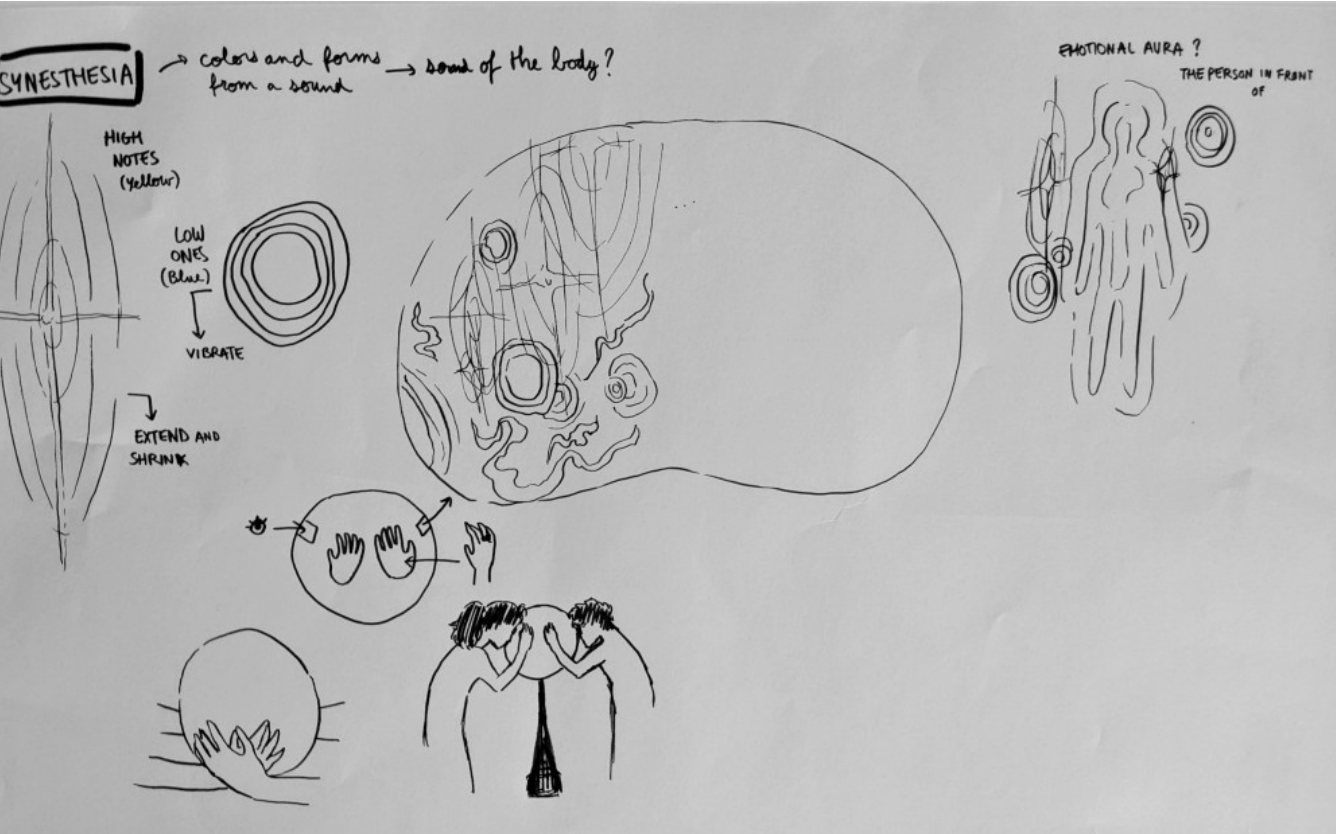
# Mother Knows Best

**GROUP 1:** Elahi Hossain, Muhammad Imran, Lola Gires, Daeseok An, Mahdi Manoochehrtayebi

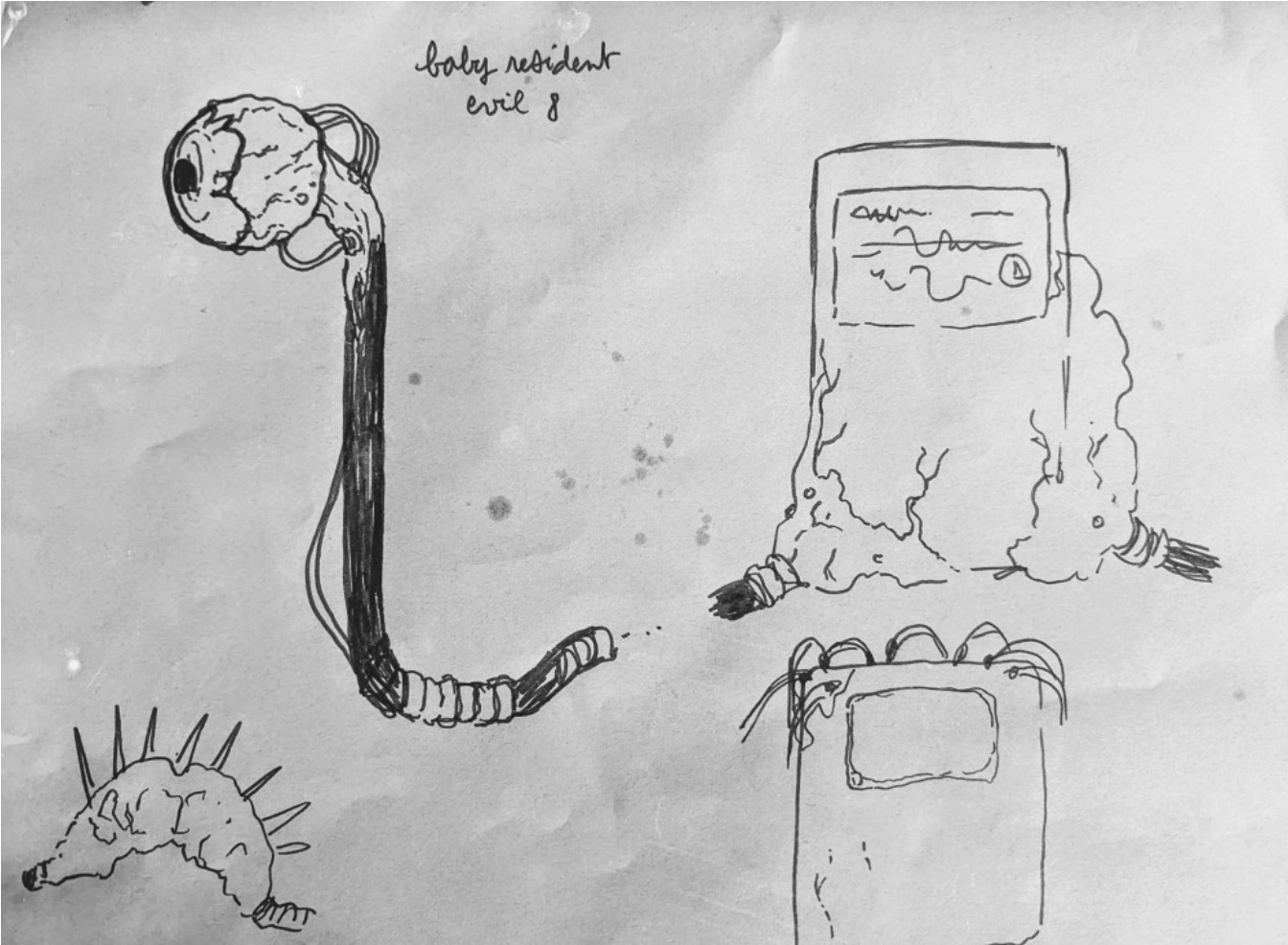
**"Mother Knows Best" highlights the ways in which an individual's data is standardised into a common norm, without their knowledge or control.**

## CONCEPT

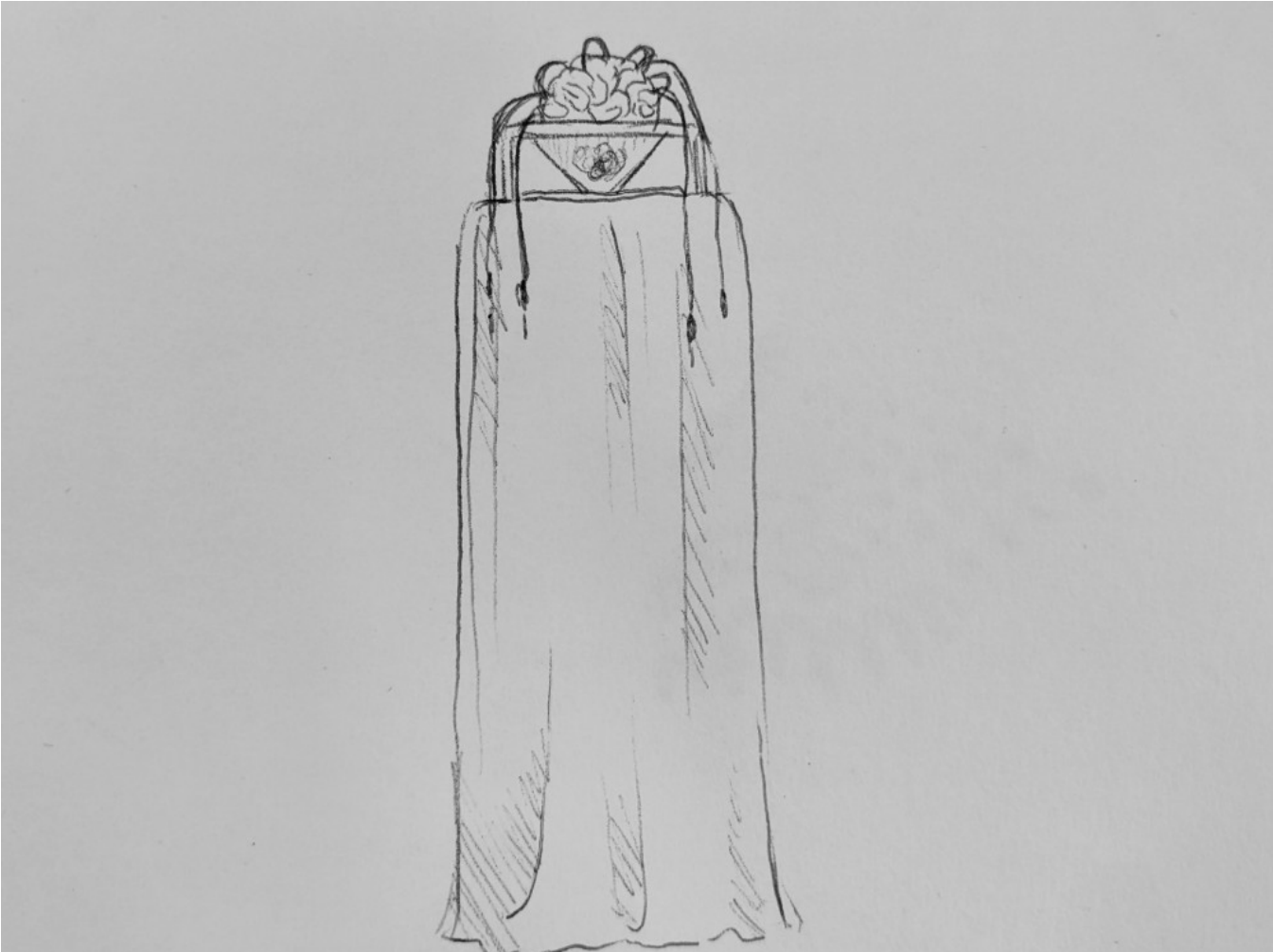
We often see a master/slave relationship between humans and machines, where the amalgamation of human data is treated as more valuable than one person's data. "Mother Knows Best" captures biological data from individual visitors and averages them to create a population norm, which each visitor can then try to manipulate by changing their own heartbeat.



This concept was developing on the idea of co-emotional synchrony through a shared visual experience.



We then developed on the concept where the artefact/machine was more insidious and would be manipulating the viewer.

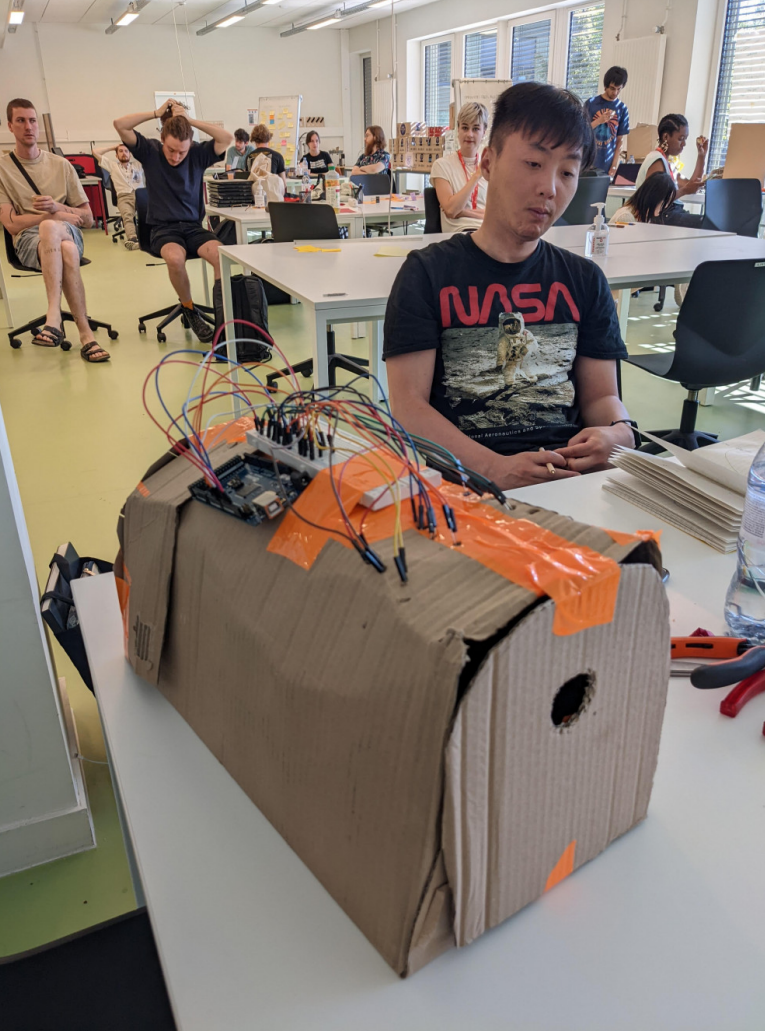


The concept evolved into a final form where the brain would be directly visible to the viewer, the interaction emphasising its beauty and horror.

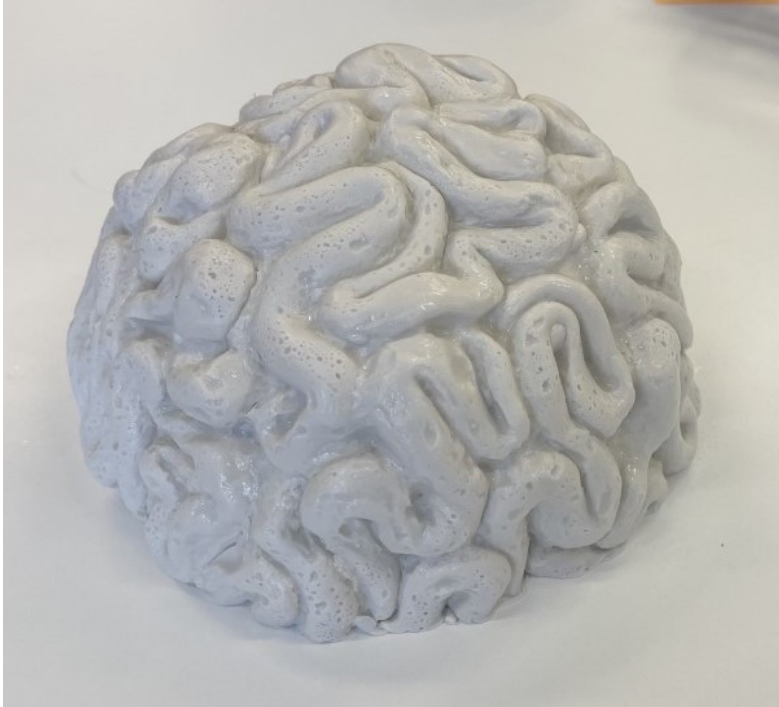
## NARRATIVE

This artefact aims to manipulate the viewers biological state through captivating visuals - with its goal of bringing the users state to the desired average. Its objective of standardising the human experience was borne out of values instilled into it by technologists - and now we must face its unrelenting and devastatingly efficient methods at achieving its goal.

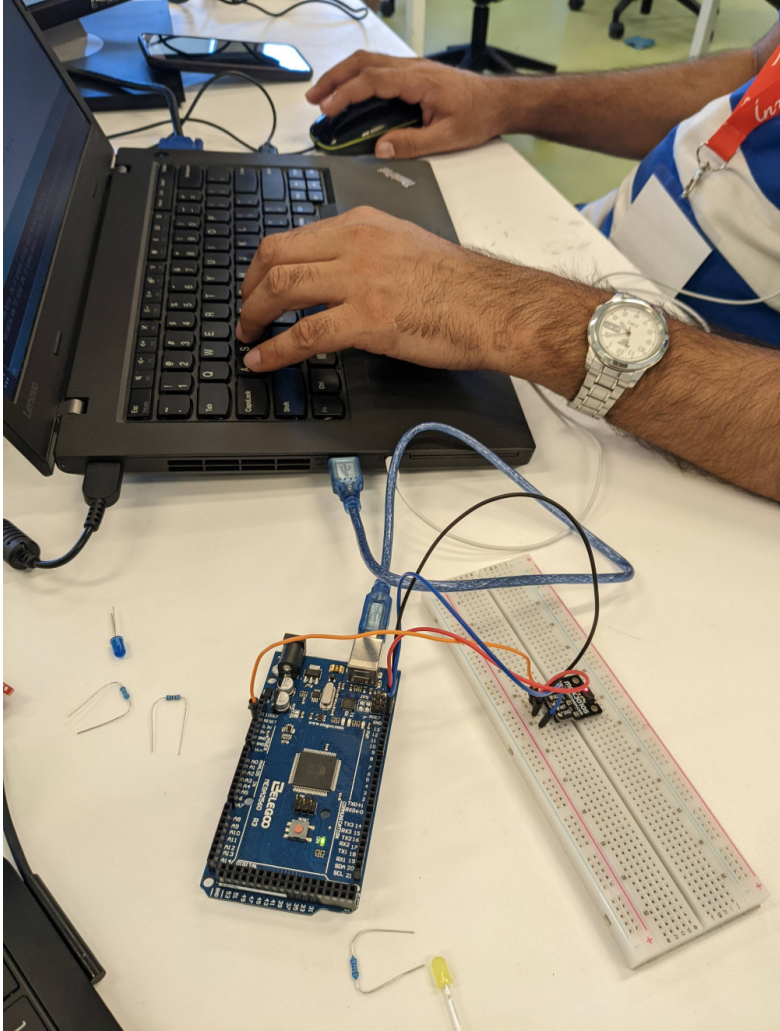
## STORYBOARD



The first physical prototype of our emotional synchrony artefact.



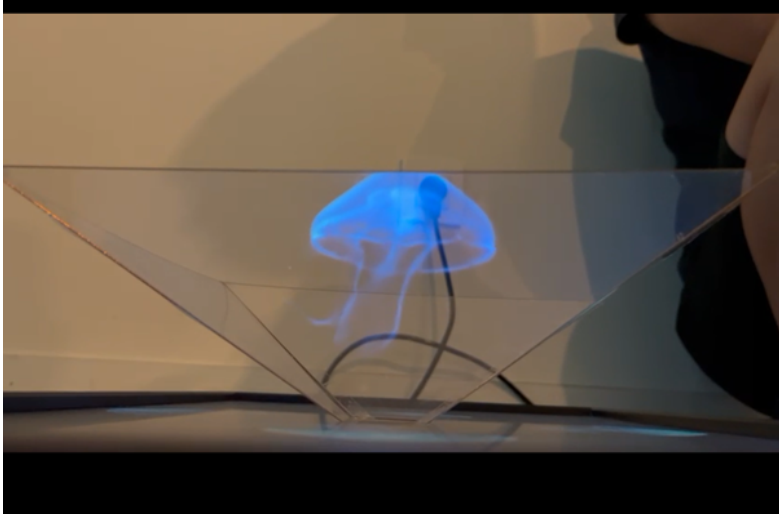
Our conceptual shift to a more insidious narrative behind the artefact led to the creation of a silicone brain.



We worked hard to develop the sensor interaction using Arduino and Processing.



We developed physical aspects that the sensor was planned to be embedded in.



After realising the data visuals using LED's alone was not feasible technically or aesthetically, we decided to use holographic technology.

## HOW IT WORKS

The artefact operates using a heart rate sensor as an input using an Arduino. The heart rate data is then transformed in Processing into a visualisation. At the same time, the viewers average data is compared to the systems defined population average and based on the quantitative difference, the system implements a particular audio (manipulation technique) to alter the users average heart rate.

## MATERIALS

- Heart beat sensors
- Arduino
- LEDs
- Holographics
- Visuals
- Silicone

# That's Life

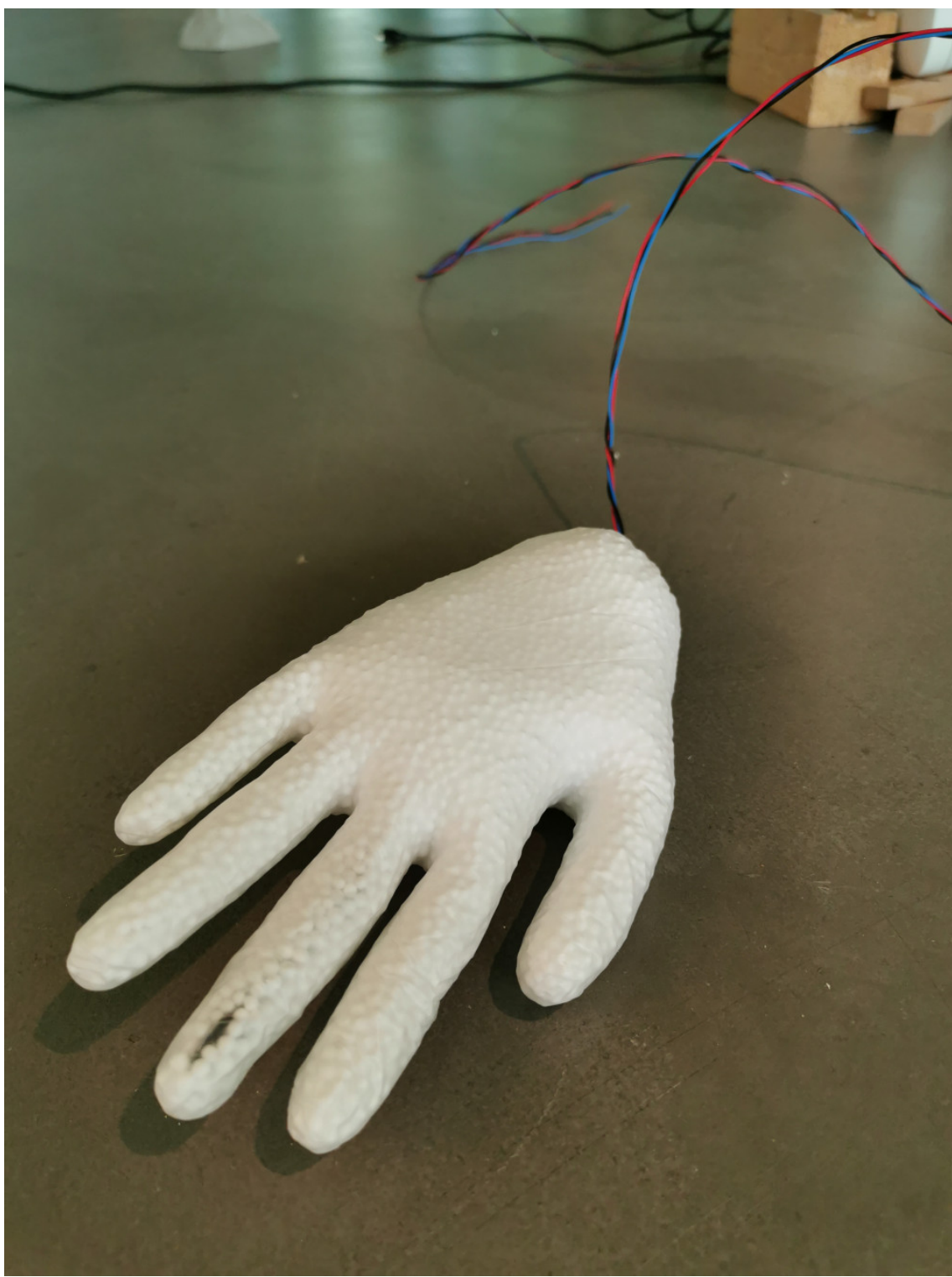
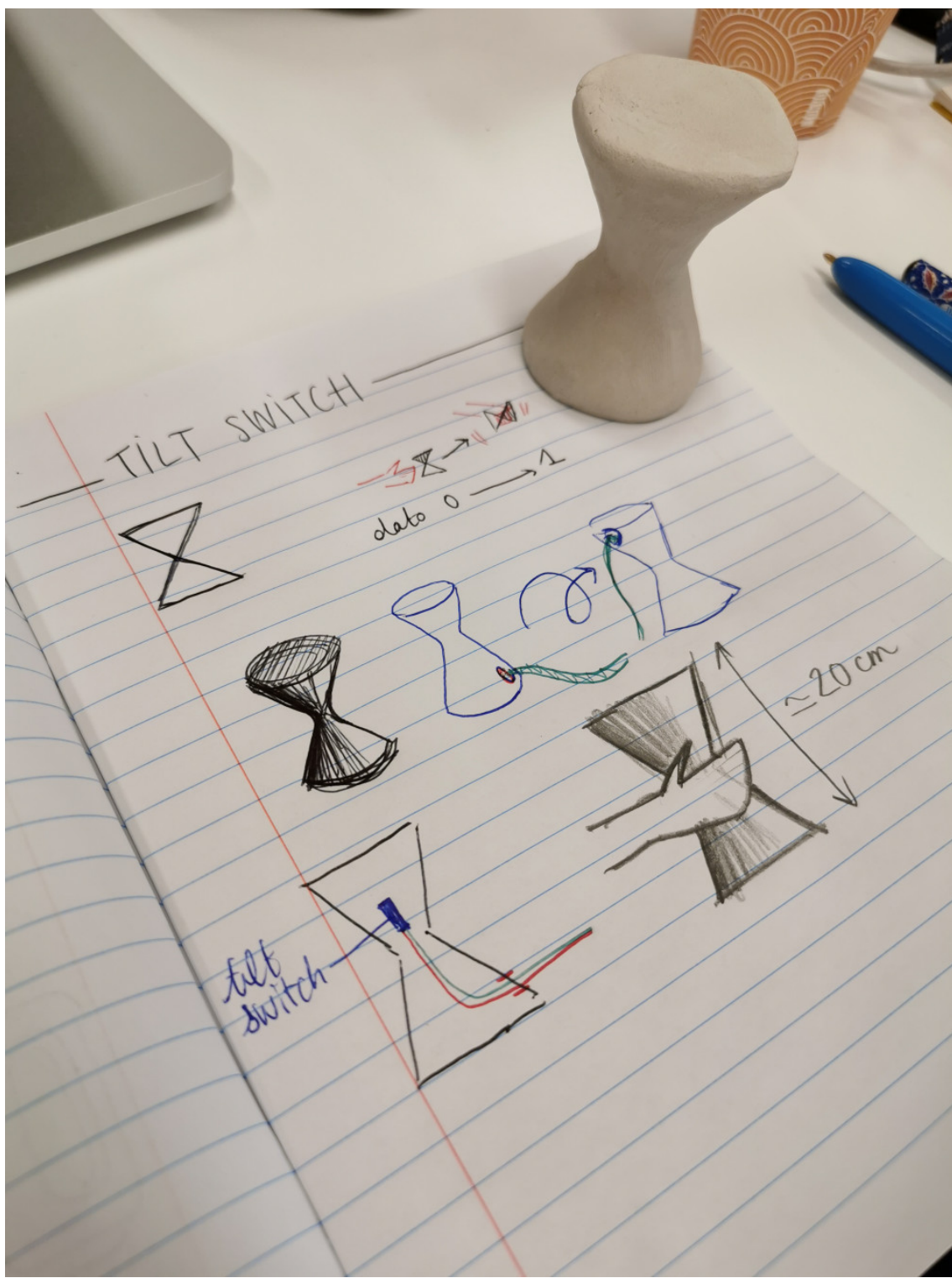
**GROUP 2:** Anaïs Cambou, Anthonin Gourichon, Pia Pachinger, Xiaoning MENG, FENGYU LI

As technologies challenge the real world, we, as humans, must challenge it back. “That's Life” is an intelligent, interactive game that reverses the roles of players and game, challenging narrative codes.

## CONCEPT

Technologies shape how we experience our environment, offering new possibilities and perspectives about our social and physical surroundings.

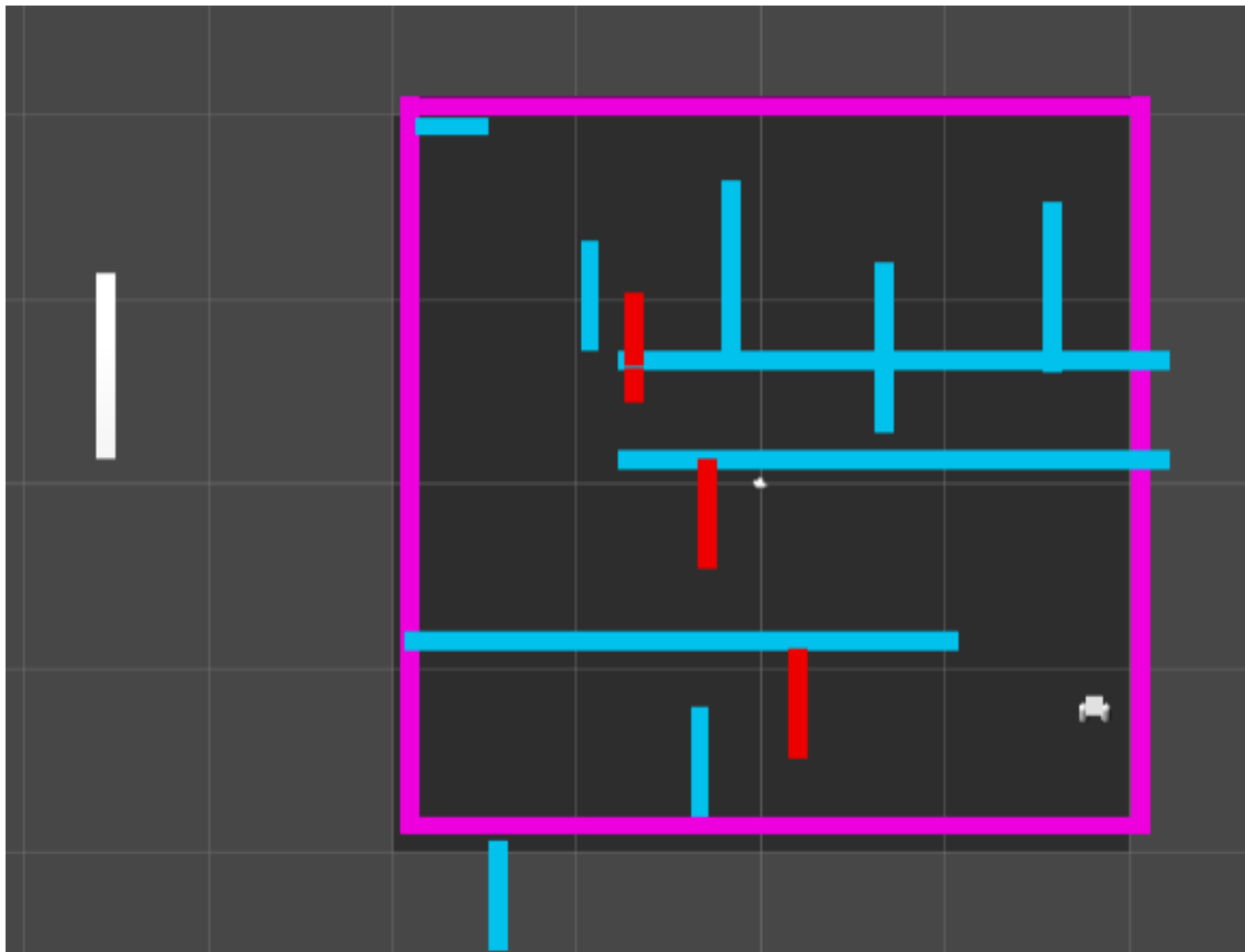
“That's Life” presents an intelligent avatar looking for an exit. The visitor can transform the digital space by manipulating multiple physical artefacts. That makes it more difficult for the avatar, "Lucy", to find its way. The visitor does not control the avatar directly but instead raises and lowers the barriers that affect its life.



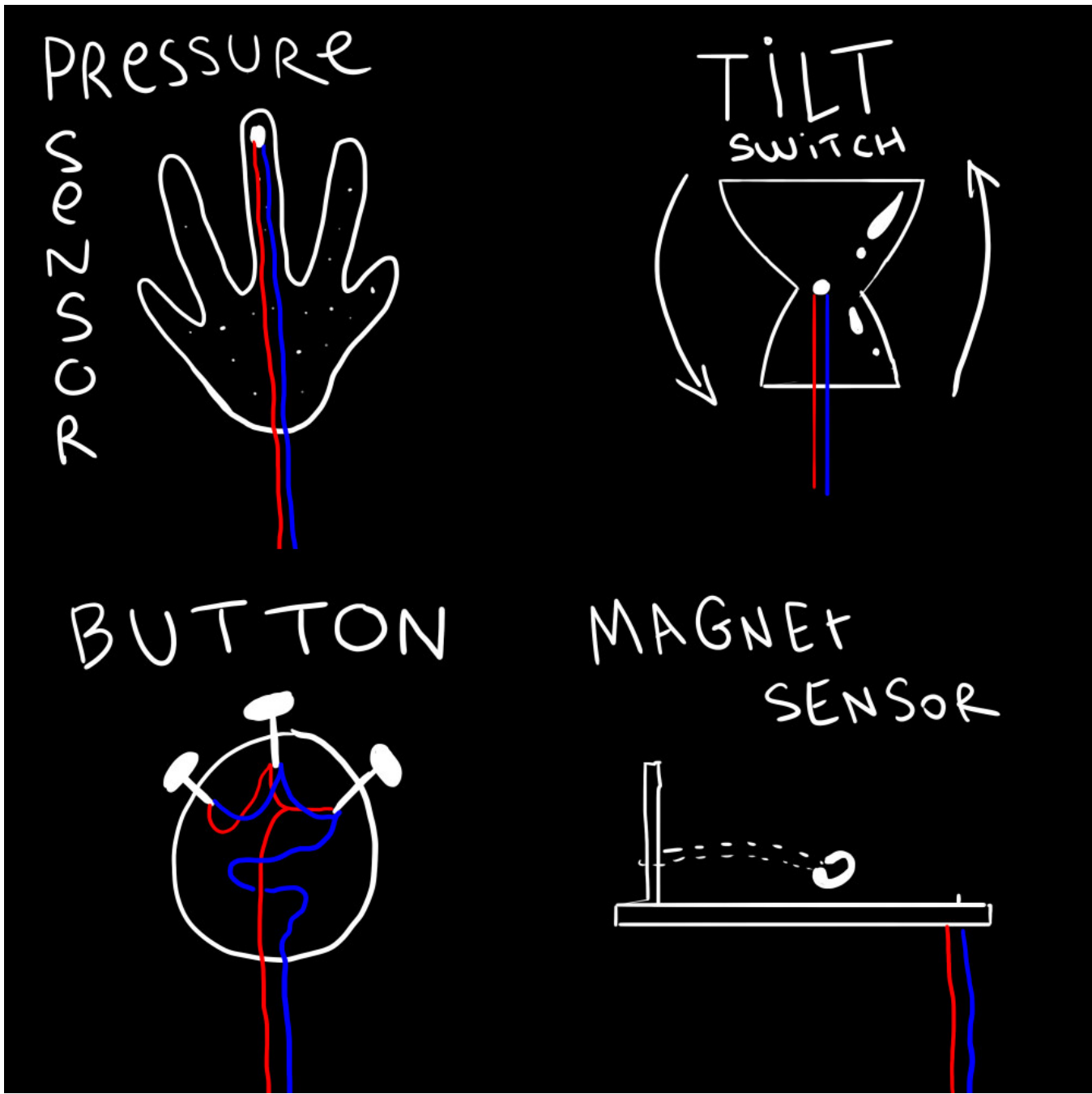
## NARRATIVE

You are invited to interact with the artefacts on the ground and watch the game on the ceiling. Try to figure out either how to help or to constrain the avatar, "Lucy", on its way to the exit.

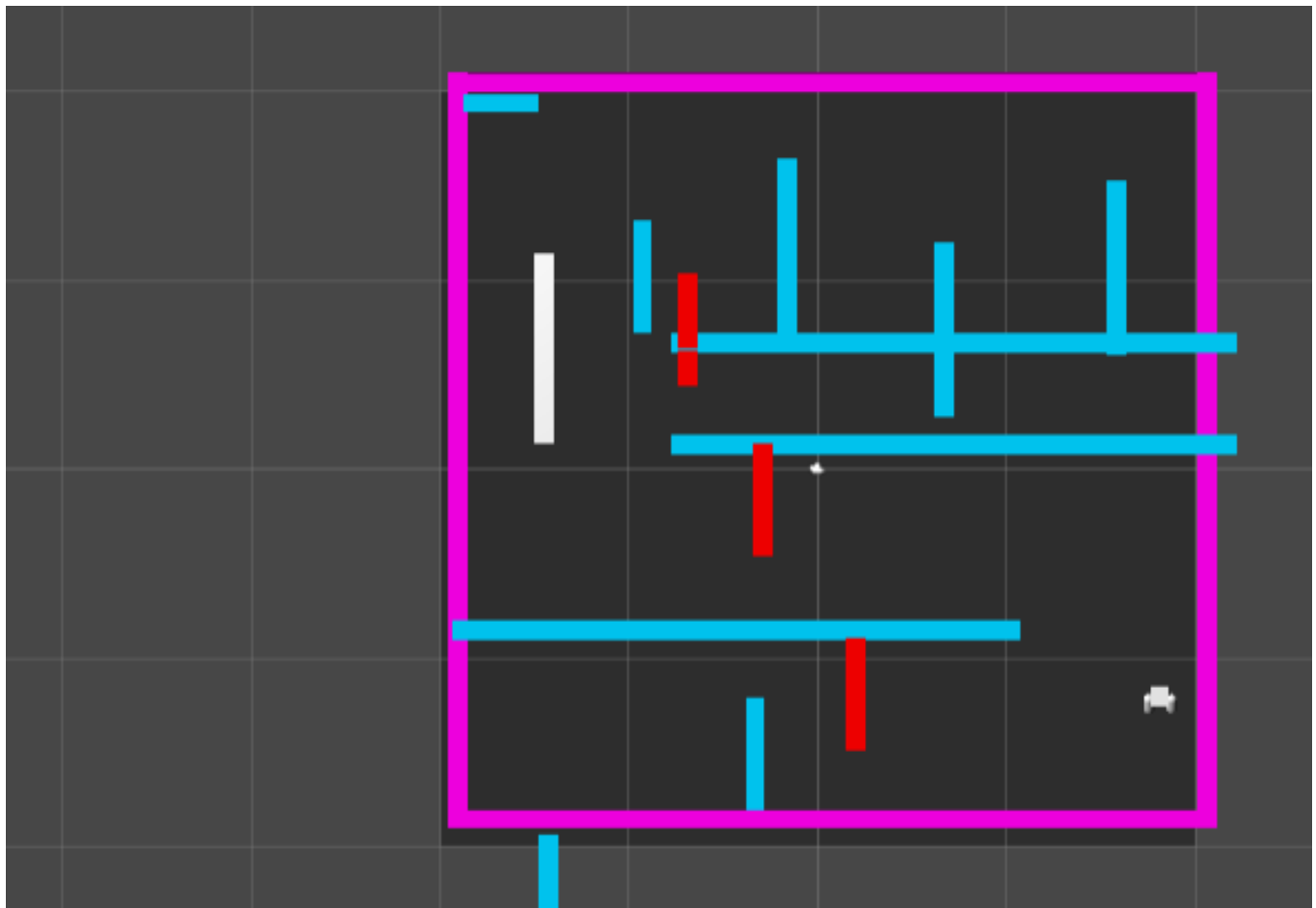
## STORYBOARD



The avatar AI is trying to find its way to the exit



One of the 4 sensors is activated



By playing with the artefacts, the player is able to modify the walls and obstacles of the game

## HOW IT WORKS

The multiple sensors on the artefacts are sending data to the Arduino motherboard, connected to Unity to activate some obstacles. In the meantime, the AI is trying to reach the exit as fast as possible.

## MATERIALS

- Arduino
- Unity
- Clay
- Wood
- Python
- Tilt switch
- Pressure Sensor
- Magnet Sensor
- Buttons
- C#
- Plexiglass



**GROUP 3:** Magalie Mobetie, Ava Scott, Lala Ray, Elena Rankova, Jiin Lim

To achieve equilibrium, diverse bodies must develop non-agressive behaviour towards each other, so they can expand without eating into each other's territories.

CONCEPT

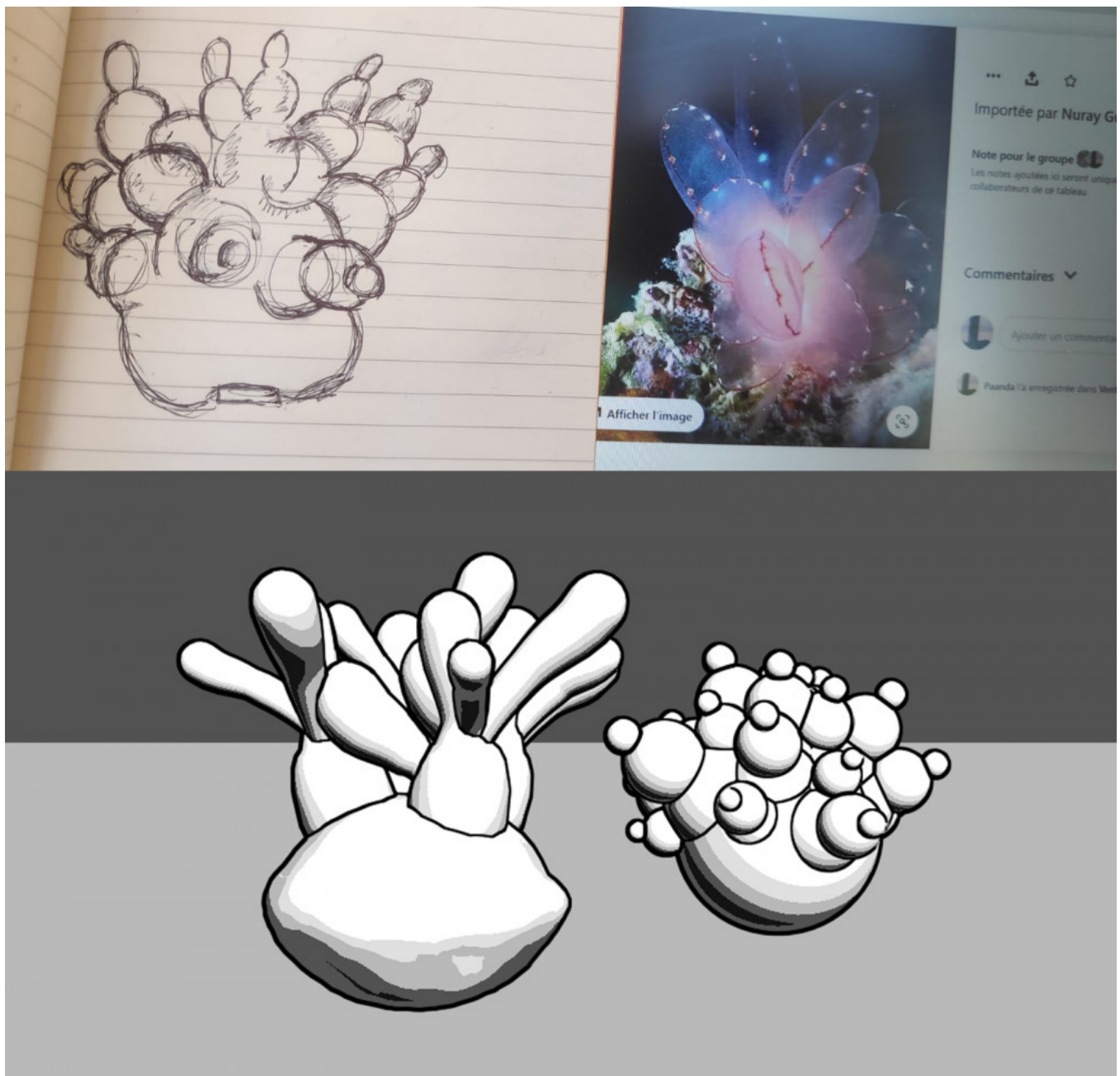
In the era after the Anthropocene, with humans gone, our trash still survives as ashes. Gifted with life through the power of wind and technology, a plastic organism modifies its frontiers through expansion, much like human cities. How can we co-habit intelligently? This installation requires us to adapt to the space of the other, by attending to dimorphic body language.



Close up of the plastic organism.



The expansion of the plastic organism.

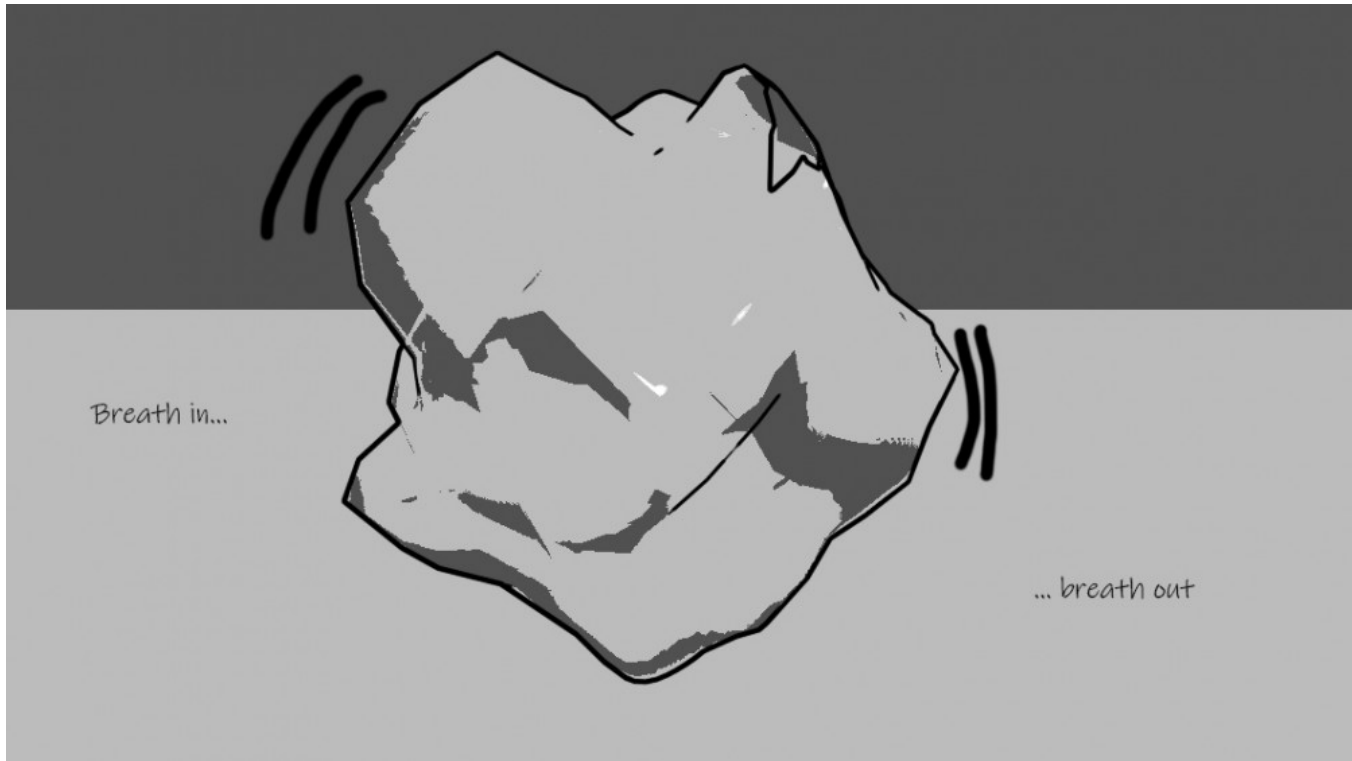


Sketches and 3d researches

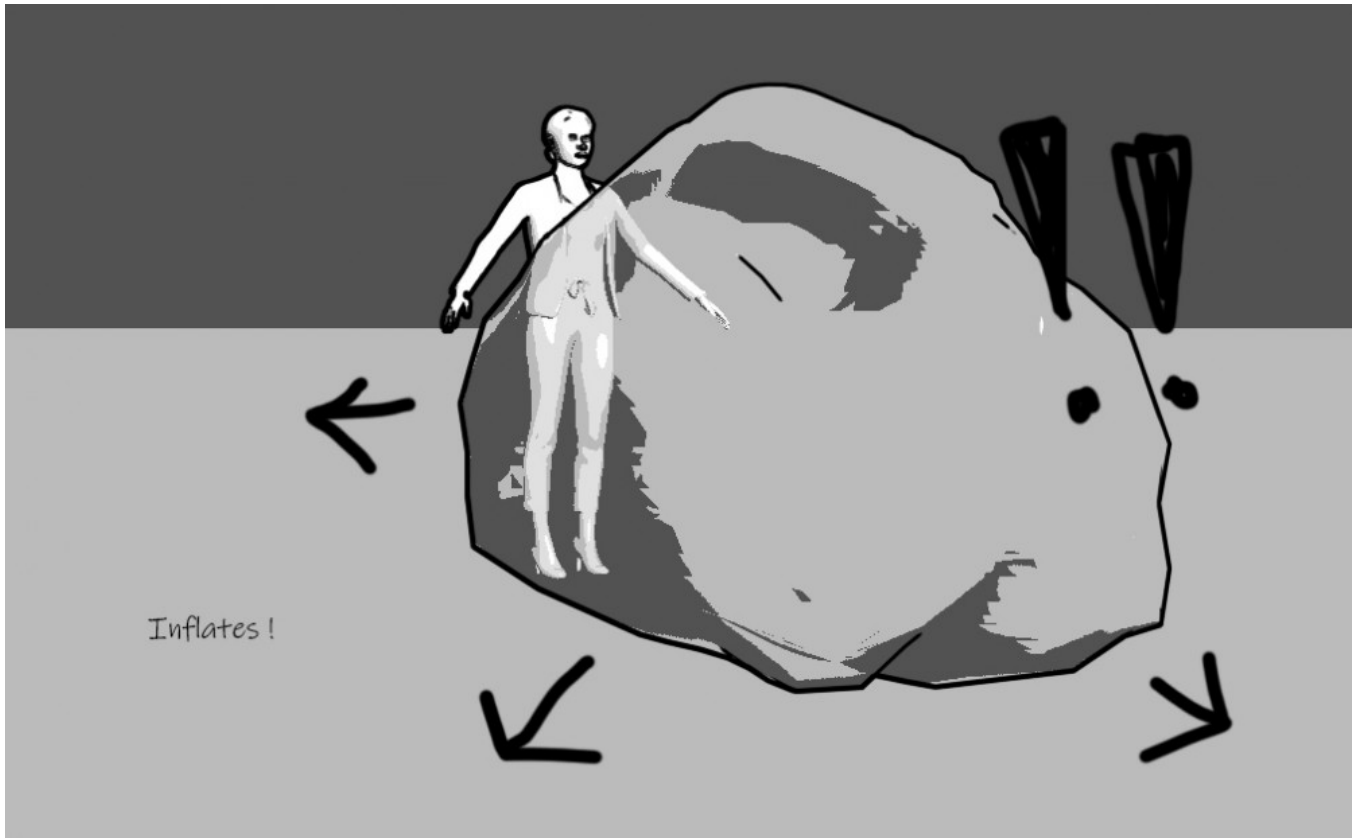
NARRATIVE

The plastic creature exists peacefully in the environment, breathing gently. Catching the viewer's eye from afar, the creature unintentionally invites the viewer into it's space. Responding aggressively, the creature expands through ventilation, demanding that the user respects it's territory. The viewers and creature enter a dynamic body language. If viewers can achieve stillness, the creature will subside it's aggression, de-escalating the situation and dissolving the opposition.

STORYBOARD



Plastic organism exists peacefully.



Opposition between viewer and creature is created as the two move close together, defending territory.



As the viewer(s) learns to reduce movement and co-exist with the creature, there is subsequent deflation and de-escalation.

HOW IT WORKS

We use a webcam to feed a video classification algorithm that detects and defines visitors in the pre-defined territory. We have used transfer learning to adapt previously trained models to our situation, trained over mobile net. Our algorithm triggers the fan to turn on according to the visitor's presence and movement. Close visitors = more inflation. Less movement = less inflation.

MATERIALS

- Found Plastic bags
- fan
- Plexiglass
- camera

# Entanglement

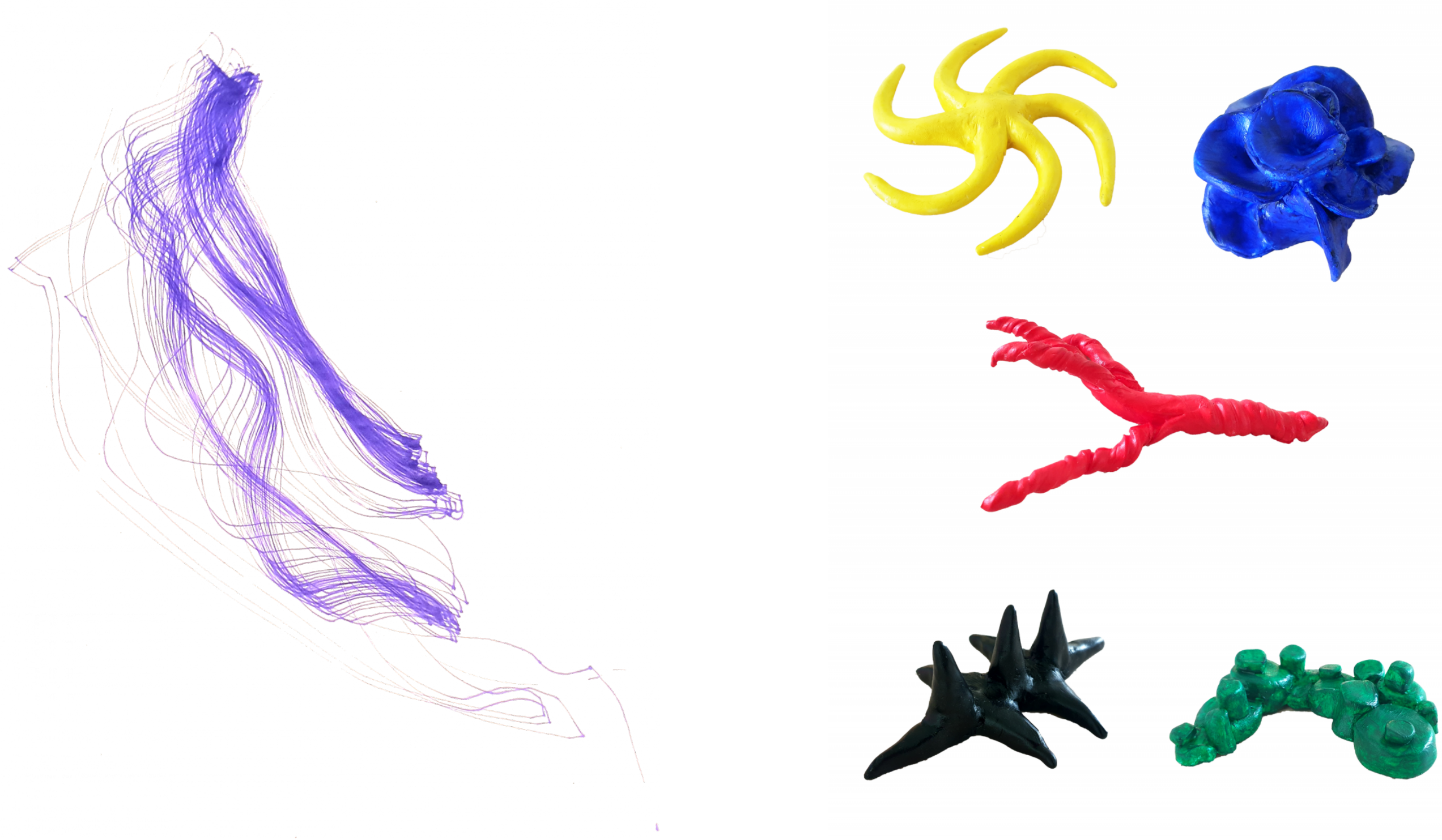
**GROUP 4:** Hiba Slimani, Viny-Saajan Victor, Samuel Leberre, Frédérique Pardo

**Title creates constantly, systematically in different points in paper. Throughout this experience the human is invited to collaborate with the machine in order to create in tandem with it, guide it and be guided in order to develop art.**

## CONCEPT

With our technologies getting increasingly more advanced, the role of the artists and the edge of their creativity is constantly questioned.

Entanglement is a physical drawing machine, digitally augmented, that invites the audience to collaborate on an artwork it has already started to create on. A series of tokens the audience can move next to it influence the creative decisions taken by the AI. Nevertheless it still doesn't possess creative agency on the end result. Throughout the experience this project tries to blur the lines of authorship to create together.



## NARRATIVE

The machine does not take the role of a means to an end in order to create for a human but it rather challenges the view of creative tools and takes its own role as the artist. Therefore when it is approached and interacted with, the work becomes a co-creation between the two partners, a way for the machine to react to the person and the person to follow the ways of the machine. The result is a graphic work that is not a simple drawing but rather the trace of our dialogue with the machine.

## STORYBOARD



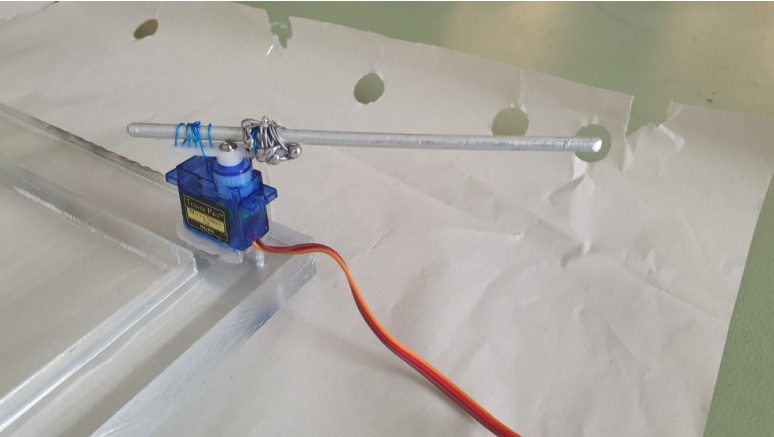
The machine is drawing.



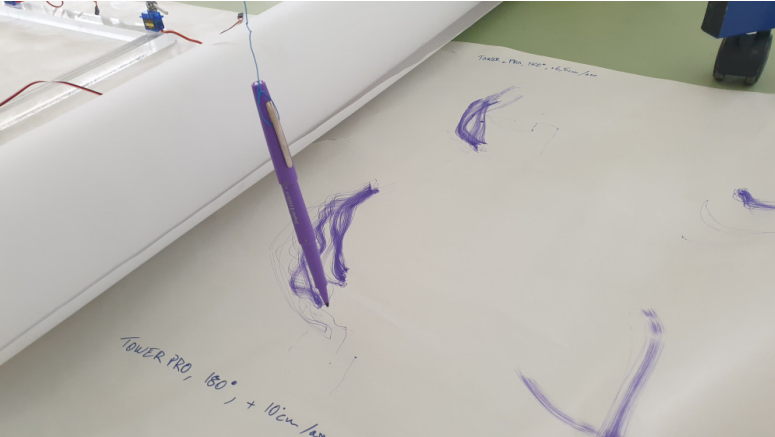
There are 5 different tokens.



The visitor moves token around.



The motors change angles making the machine change its previous design.



The tool draws new traces on the paper.

## HOW IT WORKS

There are 5 servo motors in order to achieve the movement of the pens. They all go in circular shapes and tend to act the same. A person interacts using tokens, and through a recognition system of the different colors and shapes of the tokens, the system reacts by changing the way the motors rotate, depending on the token. A projector is connected in order to reflect onto the plexiglass different patters of light that the user follows.

## MATERIALS

- Arduino
- Motors
- Paper
- Pens
- Clay
- Humans

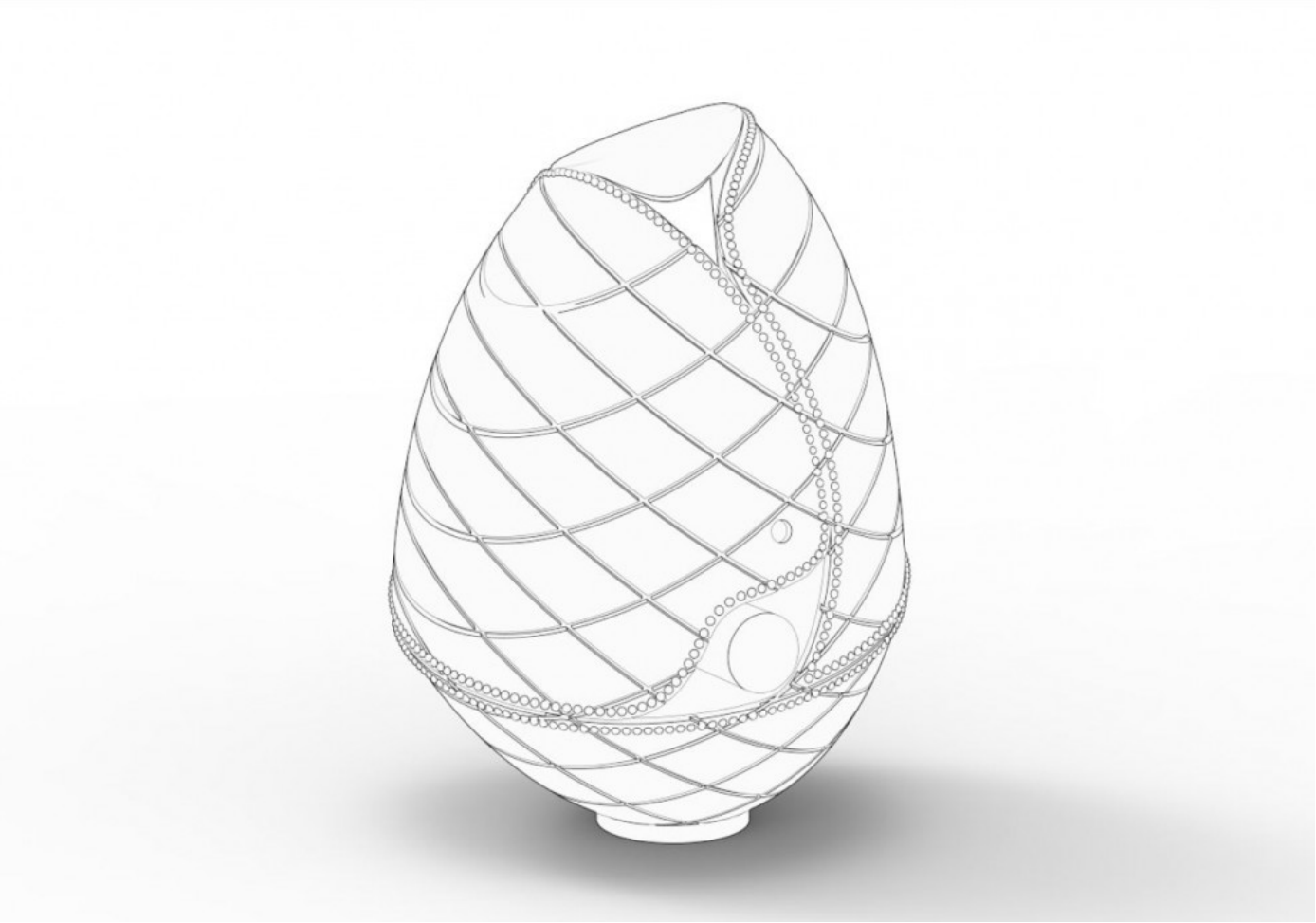
# Egon

**GROUP 5:** Gustave Cortal, Corentin Loubet, Vincent Cavez, Vénissia Kay, Ignacio Pérez

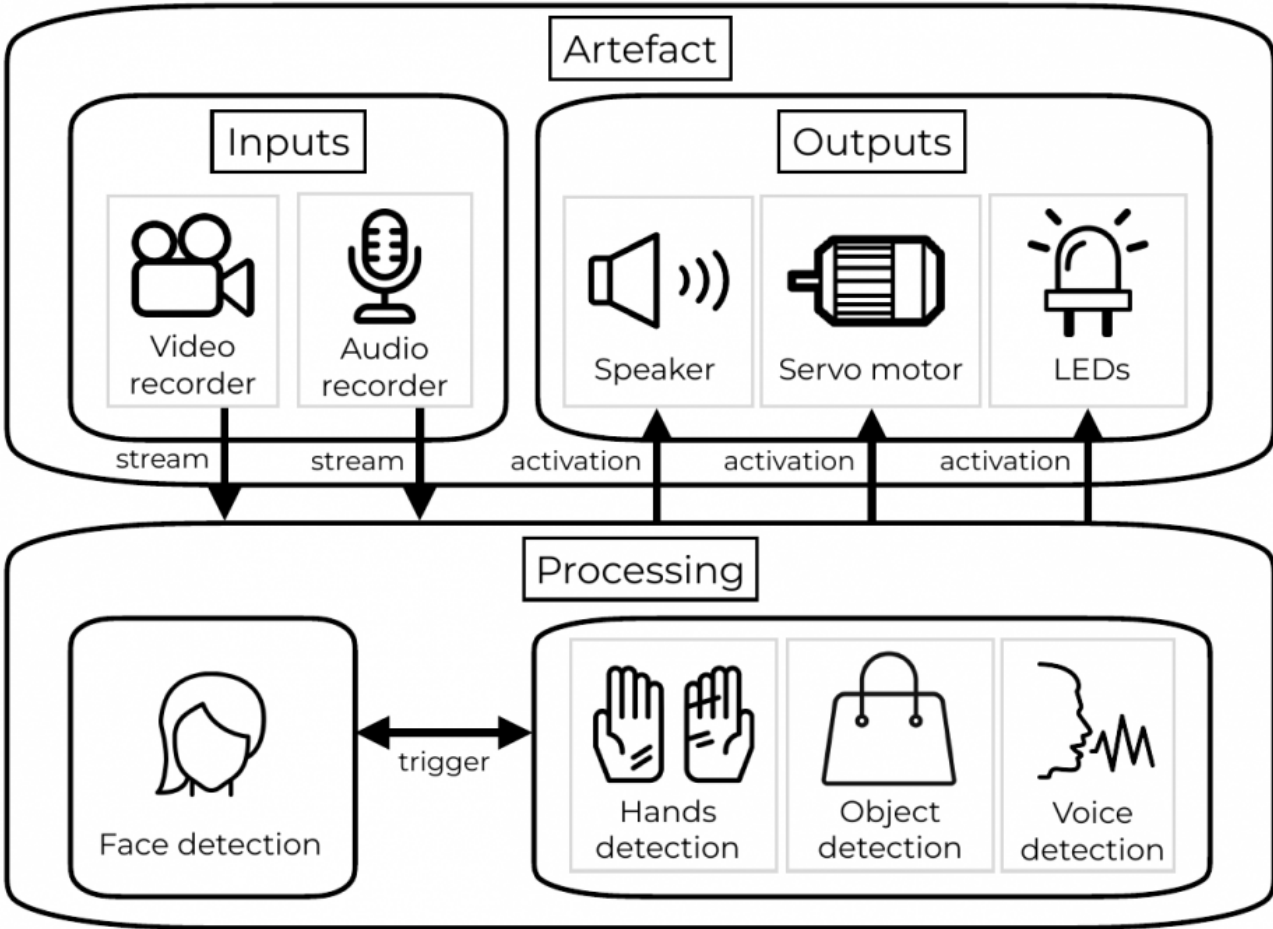
An affective artefact wants to be entertained by learning your movements and sound. Will you please him enough ?

## CONCEPT

Social platforms are known to intentionally consume our attention through addictive design patterns. Starting from this premise, **Egon** is an artefact taking the shape of a smart object. Faced with various tactics to attract its attention, this object reacts capriciously with disdain or curiosity to the audience. This project tries to demonstrate the contemporary shift we perceive in our technological devices. In some cases, it seems to be transforming us into an addicted servant craving for attention.



3D model of the artefact



Internal processing using feedback loops

## NARRATIVE

**Egon** is an intelligent thing combining camera, sound and movement. Using face recognition and tracking, the rotating artefact is able to select visitors by staring at them. Able to detect the audience's behavior, it encourages them to entertain it with creative interactions. If successful, **Egon** lights up and emits a specific sound feedback. In case the interaction was not sufficient, it will express its disappointment.

## STORYBOARD



## HOW IT WORKS

Object (e.g. smartphones), face and voice (e.g. emotion and sentiment words) detection to identify the presence and behavior of the audience. Automatic generation of onomatopoeia related to different cognitive states (e.g. bored, interested, excited). Colors and frequencies of LEDs describe heartbeats and breathing using handmade mathematical functions triggered by the cognitive states.

## MATERIALS

- Object detection
- Face detection
- Voice detection
- Copper
- Plexiglass
- 3D print

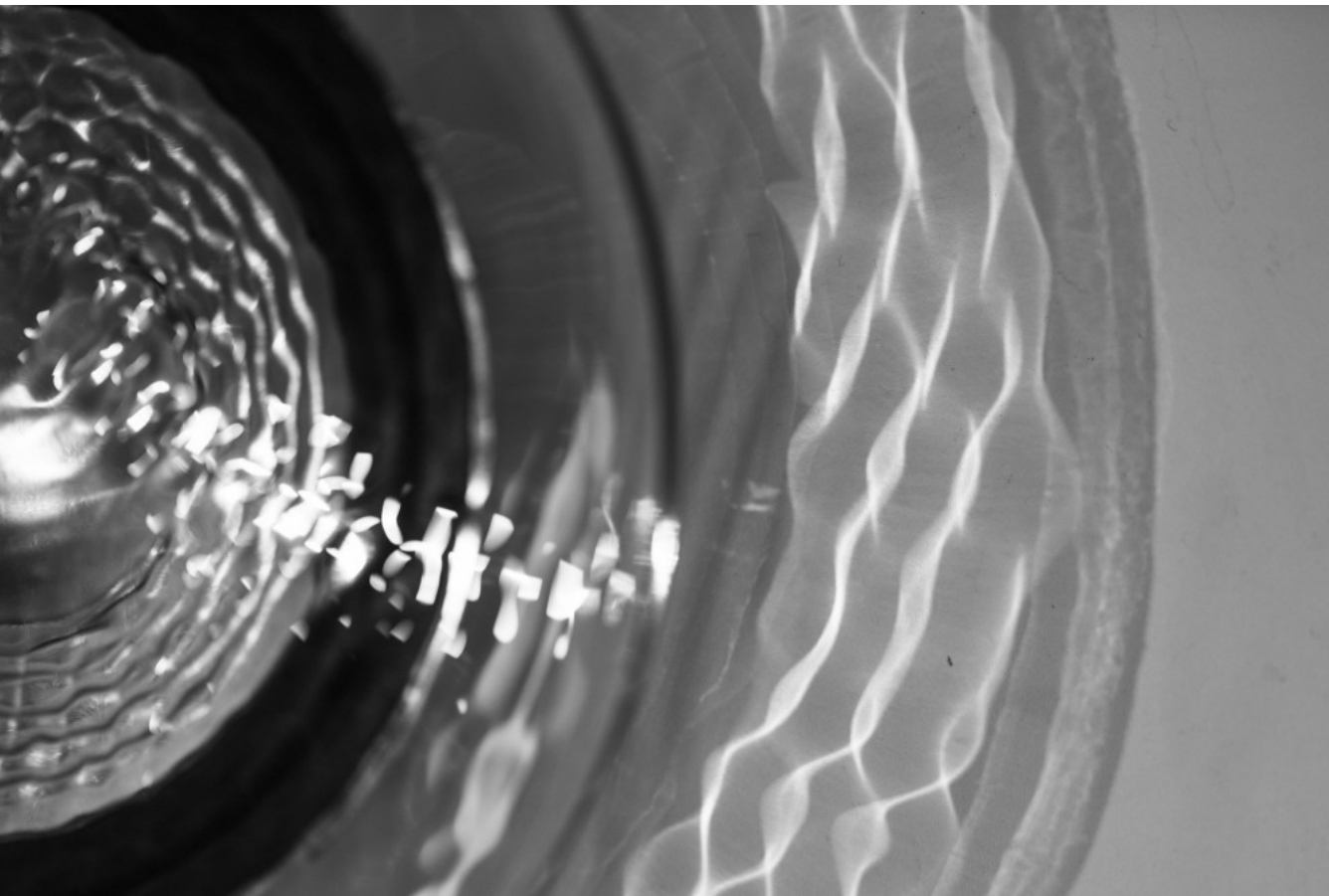
# Réseaunance

**GROUP 6:** Katherine Wang, Julián Lechuga, Marta Shilova, Guillaume Thomas, Gaelle Clavelin

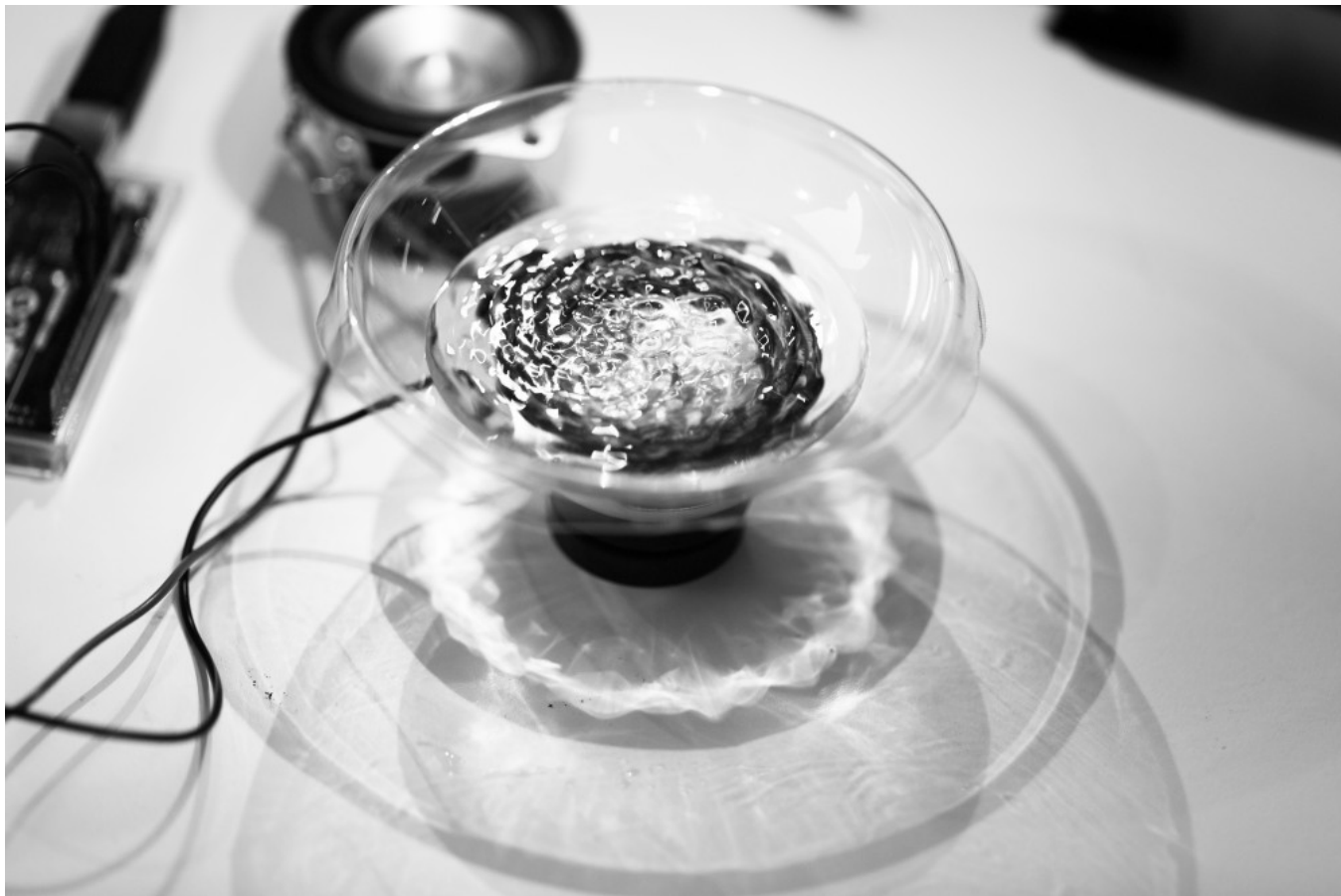
**Réseaunance explores the resonant vibrations of human movement through visual art.**

## CONCEPT

Water is the liquid of life, a primary element connecting us all. Here, we fall down the rabbit hole through a network of glassy irises, which invites us to dive into the looking glass. Réseaunance allows individuals to play with the invisible, entering a sibylline communication through wavelengths of light and sound. Inspired by the science of cymatics, Réseaunance encourages the audience to use hand movements to communicate with cybernetic acoustic entities to display symmetrical patterns in bodies of water.



Playing with light, movement and sound,



we invite you to whisper to...

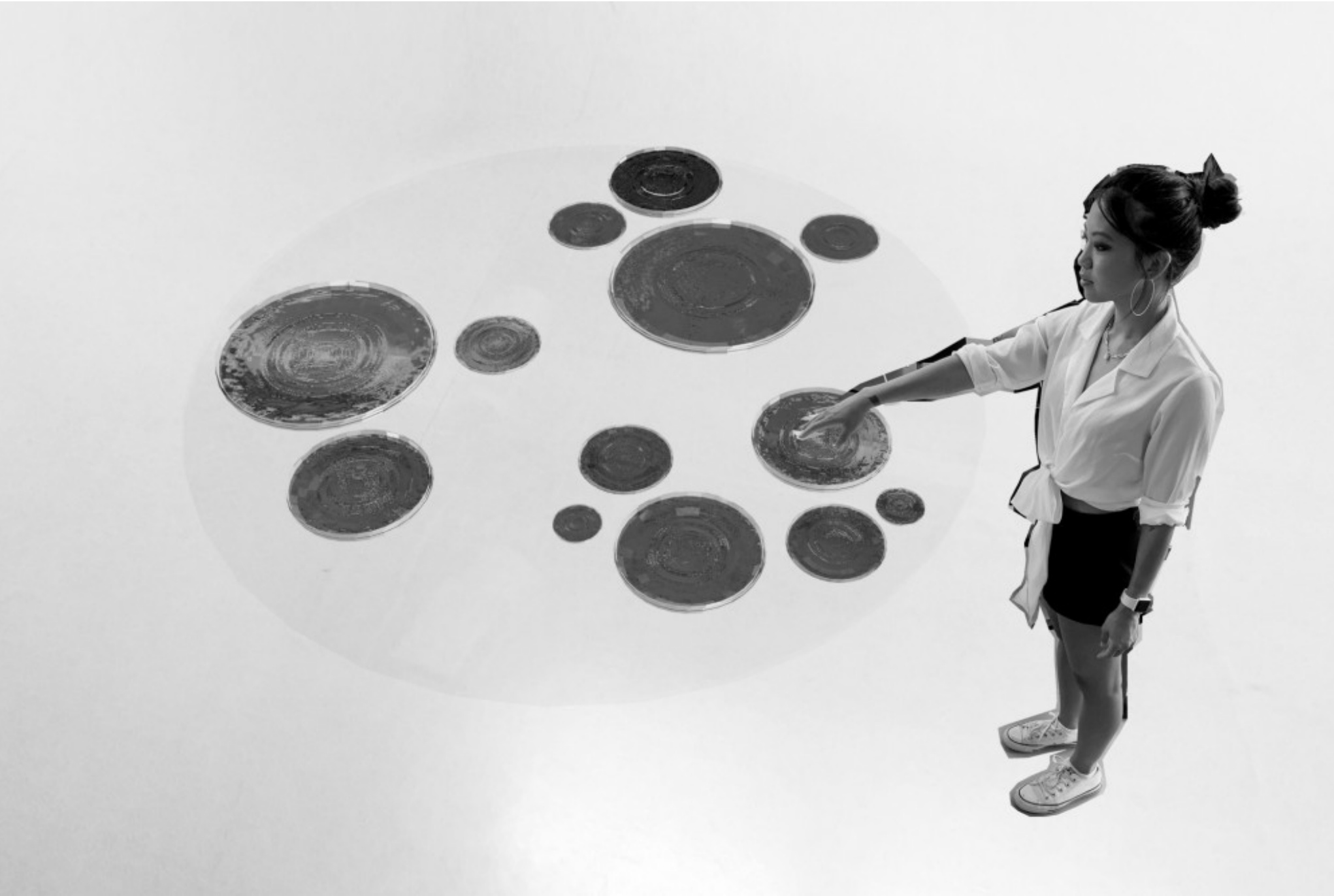


water.

## NARRATIVE

Réseaunance consists of a network of interconnected speakers that propagate sonic waves through water. Individuals manipulate acoustic frequencies through different hand gestures. Complex geometric patterns result from interference patterns of wave interactions.

## STORYBOARD



The visitor gestures with their hands above sensors to control sound frequencies of speakers.



Speakers emit vibrations into water and visitors can play with the living shapes that form on the surface of each iris.

## HOW IT WORKS

Réseaunance is a network of interconnected mediums that propagate sonic waves from different sized speakers into shallow dishes containing water. Light amplifies the patterns created by vibrations and cast dancing shadows below the irises.

## MATERIALS

- Arduino
- Speaker
- Leap Motion
- Plexiglass
- LEDs
- Water

# Materia Strata

**GROUP 7:** Michele De Bonis, Anouk Daguin, Nelly Lam, Selma Noiro, Alexis Poignant

A long time ago in Saclay's Plateau, nature, overwhelmed by technology, cybernitized and shift into a data mine. Scientists, tired of loosing themselves into databases, went back to the forest to cultivate the soil.

## CONCEPT

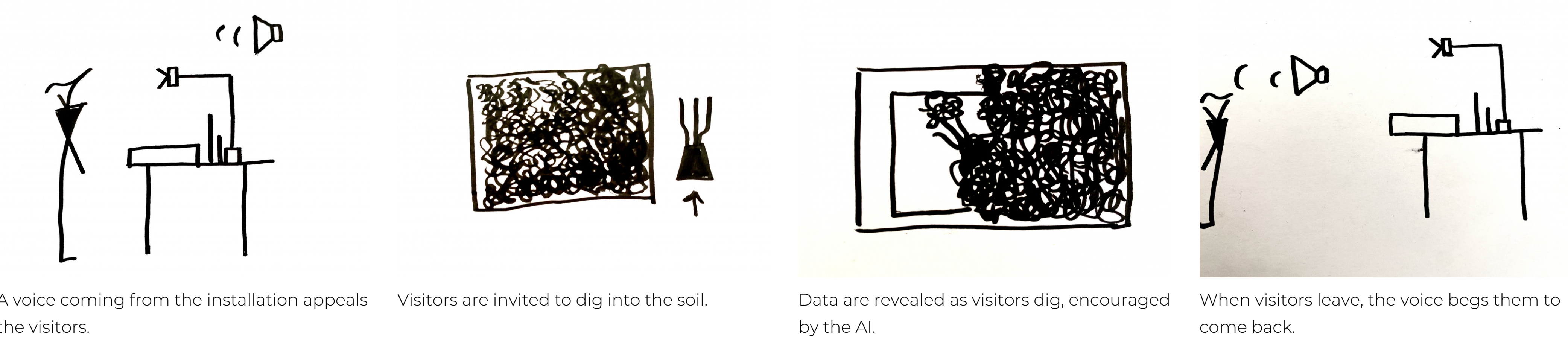
In today's technological world, the boundaries between materiality and virtuality are increasingly blurring. What would happen if the nature had formed a symbiosis with our electronics? If we shift our imagination into a near future, would technology be able to have its own intelligence to show us the layers of our past societies? What would be the way to interact with it? Would we be archaeologists, daring to discover the memory of a world that is merging the real and the virtual?



## NARRATIVE

How can the world of science and technology and the world of art intertwine to make us play the role of archaeologist of the future? This is the experience we propose, containing both documentary and material finds from the Saclay site. An old box found next to a building site, a series of dismantled electrical components, a multitude of images from the archives of Saclay. The resonating voice calls us to question ourselves about the sedimentary imprint we will leave on Earth.

## STORYBOARD



## HOW IT WORKS

A camera detects the user's hand through AI hand's pose estimation models. Images appear depending on its position. Texts and audio testimonies are displayed through a screen and speaker. Based on the presence of the user's hands, a state machine provides a scenario for the narrative process to invite them to keep digging. When the user stops, AI generated texts and images pop, as history taking over the unrecalled past.

## MATERIALS

- PC Laptop
- USB Camera
- Screen
- Speaker
- Wood
- Soil
- Copper
- Plexiglass
- iron
- archeological objects
- Second-hand materials