

Creartathon 2021 portfolio

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

This event is organised by the Université Paris-Saclay, with the Inria Saclay - Île-de-France research center, and Societies, and takes place at the Fablab Digiscope, Université Paris Saclay.



Call it a day



Šok!



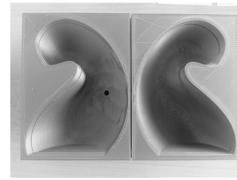
House Vibes



Latent organism



Meet PERSONA



The Peeble



Cor Epiglottae

Call it a day

Group 1: Priyanka Syal, Catarina Allen, Irene Kaklopoulou, Martin Lemaire

Call it a day is a minimal object designed to communicate the intimacy and the comfort of a bedtime story.

The context

Bedtime is one of the most intimate and affectionate moments between two humans. A new species have appeared in our lives - the AI -. Call it a day generates a thematic understanding of the use of interactional technologies to inspire affection and intimacy between a human and a machine. Together, they co-create a poetic storytelling experience based on children's literature. Next to the bed lies a book containing the stories of the AI.



A fluffy pillow made of recycled materials.



The answers of the AI are displayed on the screen embedded in the nightstand.



A sketch of the interactions.

Narrative

Call it a day consists of one big pillow, a nightstand, and a computer screen. The person lying down on the pillow is prompted to tell it a story while being recorded by a microphone embedded in it. Speech is recognized and processed by an artificial intelligence agent. When the agent detects a pause, it adds a sentence to the story on the screen, co-creating poetry. The agent is trained to a dataset of children's fairytales. Ambient sounds play in the background.

Storyboard



The space and the artifacts.



The audience member narrates the story to the artificial intelligence agent using the pillow.



The audience member enjoys the comfort of the pillow.



The audience member reads the augmented book which contains the stories used to train the artificial intelligence agent.

How it works

Aitextgen Algorithm trained on fairy tales, and children's book dataset which is obtained by accessing free books provided by Project Gutenberg.

Materials & tech

Textiles
Foam
Speaker
Microphone
Google's Speech to Text API

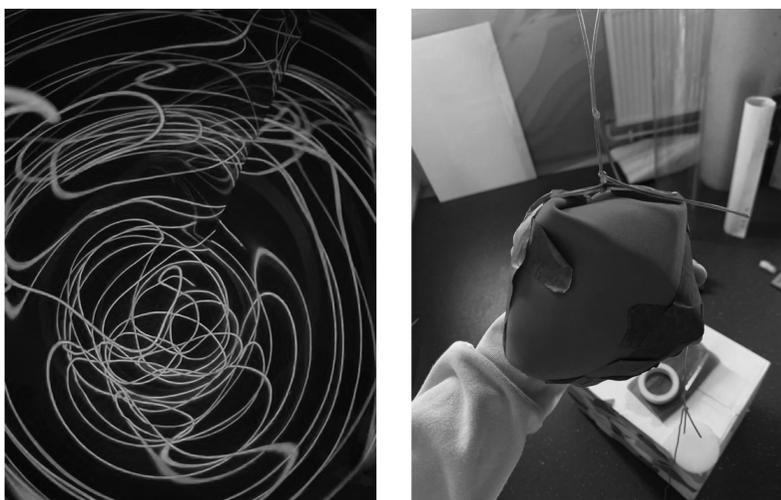
Šok!

Group 2: Julia Biesiada, Robert Falcasantos, Wissal Sahel, Arnaud Bridou, Ruta Binkyte-Sadauskiene

"Šok!", meaning "dance!" in Lithuanian, is a piece that aims to get people to dance with AI. It generates music as you dance with it by touching, moving and twirling it through space, and reacts to you through light.

The context

The essence of the night club: Partying in a night club is an international cultural phenomenon that has greatly developed during the 20th century. This place, this heterotopic space at the limit of reality, gathers a heterogeneous population around the same goal: to dance and have fun in the hope of reaching this ephemeral sensation, this instant or this moment with an almost transcendental character, this connection to the world, to one's body and to oneself, an experience as intimate as it is universal. ŠOK is the fruit of a reflection around this questioning: can we, thanks to artificial intelligence, succeed in synthesizing what constitutes the essence of a nightclub, and thus re-create this so particular moment? On the contrary, in the manner of Federico Gonzalez's gogo dancer, will ŠOK only succeed in creating a form of discomfort in front of this installation which forces to dance?



Narrative

Inspired by existing nightclubs, such as the Prada double club Miami by Carsten Höller, and by the tradition of Belgian dance organs, ŠOK brings together a set of signs associated with the nightclub experience: lights and reflections, pmma decor, speakers, and, perhaps the most universal of signs: disco ball.

Storyboard



The space and the artifacts.



The audience member narrates the story to the artificial intelligence agent using the pillow.



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The audience member reads the augmented book which contains the stories used to train the artificial intelligence agent.

How it works

It is the latter which gathers all the sensors and creates the interaction with the visitor. When they look at the ball, push it or press it, it creates different music and light effects, with the only purpose of continuing to make the person move and stimulate this interactive dance experience. Depending on the intensity of the detected movements, the system adapts sound and lights, with the paradoxical objective of "maximizing" this dance experience.

Materials & tech

Plexiglass
Cardboard
Metal
Arduino
One-way mirror film
Magenta.js
Reinforcement learning
LEDs
Gyroscope, ultrasonic,
Tilt, Temperature,
Humidity sensors

House Vibes

Group 3: Aikaterini Batziakoudi, Kugen Ramasawmy, Olga Boiché, Léa Dammann, Wen-Jie Tseng

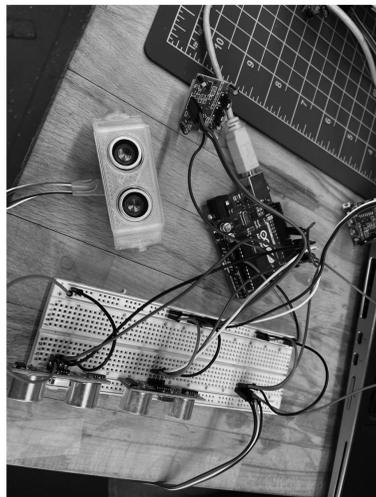
House Vibes expresses the emotional state of the house through an interactive visualization. Resident comprehends how they affect the ecosystem, empathise with their house environment needs and tries to bring back the balance through their interaction with the generative sculptural lights.

The context

Imagining that a house is a living organism, who feels all the changes that are happening in the environment, the consumption of energy and resources, the noise and light pollution, the temperature and humidity, and the presence of humans. The house calls for their balance in a world, an ecosystem which is continuously disrupted by humans.



Olga shaping parts of the plastiline sculpture



Arduino sensors being calibrated before assembly



Léa applying silicone on plastiline base for the sculpture

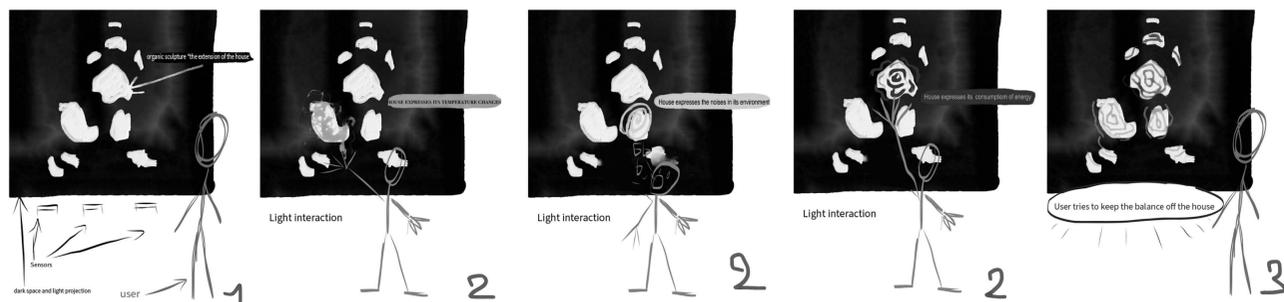


Silicone curing on plaster base for part of the sculpture

Narrative

A user sees the visualization of House Vibes --- the lighting projection on the sculpture. This visualization represents the emotional state of the house and keeps it in a stable form. The user is able to understand and empathise with his environment. By speaking and performing specific gestures, is able to modify the levels of the energy consumption, sound pollution, and temperature. In this way, he understands how he affected the ecosystem and how he can help in order to bring back the balance in this.

Storyboard



The space and the artifacts.

How it works

We use a sound sensor, ultrasonic sensors and motion sensors controlled by an Arduino to detect the user's gesture during their interaction with the visualization of projection. For example, when they are approaching the sculpture of House Vibes and hovering above the sculpture. These sensor values are transmitted to a PC and based on them we map different light projections on the sculpture to demonstrate the emotional state of House Vibes.

Materials & tech

Plexiglass
Foam
Silicone
Plastiline
Plaster
Pigments
3D printing PLA
Projector
Arudino
Sensors

Latent organism

Group 4: Adrien Chuttarsing, Ninon Lizé Masclef, Yang (Sophie) Chen, Marianne Canu

Latent Organism creates a novel technique for the creation of 3D objects using a tangible interface. Building on creations by generative algorithms, our tool allows anyone to create unique and complex 3D shapes through natural and playful interactions with an intuitive and sensitive tactile interface.

The context

This work proposes a process of co-creation between the human and the machine through a balanced interaction and a way of appropriating what we could call an artificial imagination. In this work « Latent organism », we propose an interactive installation that exemplifies how a reincarnated form could be provided by the huge amount of data our bodies.



Sensors react to the successive pressures and to the position in space.



The 3D shape and its texture evolves in real time when the spectator interacts with the physical artifact.

Narrative

For this experiment, the machine was fed thousands of photos of living organisms. Its property of learning and generalization allows it to converge towards an abstract conception of the idea of organic flesh. It is then possible to navigate in this continuous space of potentiality.

The spectator is in control, using the imagination of the machine as clay, as a moldable material. Our sympoietic machine takes the physiological data from the spectator as inputs and then translates it into a generative shape and texture using the latent space of a 3D GAN (Generative Adversarial Network). The human is actively participating in the process since he can manipulate, twist, rotate the physical object to transform the shape.

As an incarnation of how humankind continues to externalize itself through technology, this installation relies on technique not only as a collection of tools, but also as an epiphylogenetic memory [Stiegler].

How it works

- Different sensors react to the successive pressures and to the position in space of the human.
- The 3D shape and its texture evolves in real time when the spectator interacts with the physical artifact.
- The interaction can be more or less active, and can also be experienced in a contemplative way.
- Each generated shape, combining the human inputs and the machine's imagination, is unique.

Materials & tech

- Nylon
- Silicon
- Cotton
- Self made pressure sensors
- Conductive ink and velostat
- GAN 3D
- Web app python + JS (Node JS)
- Three.js
- Texture CNN

Meet PERSONA

Group 5: Julia Valeria Lopez Rojas, Joséphine Raugel, Anaïs Legros, Michele Romani, Léo Thizy

MEET PERSONA is a performance, it is an encounter involving an embodied AI and the visitors.

The context

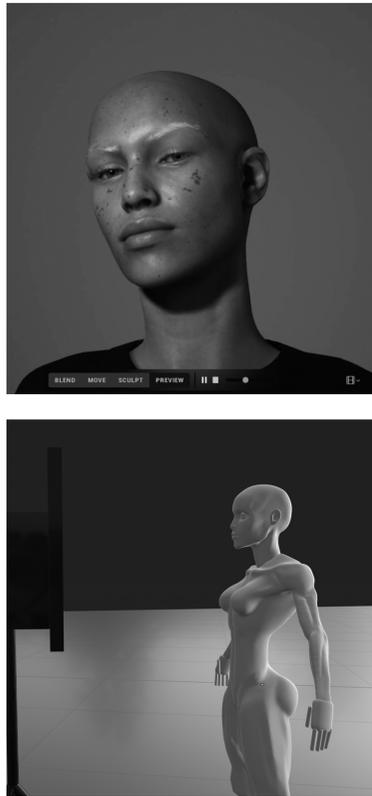
From Mary Schelley's Frankenstein to Spike Jonze's Her, humans' desire to create an entity able to establish communication pervades literature and cinema. May it be a dreadful creature or the ideal partner, the idea of designing an intelligent machine to interact with has been obsessing us for centuries. Today, from Alexa to sex-bots or Japanese robot pets, developers seek to design the useful partner, the perfect companion.



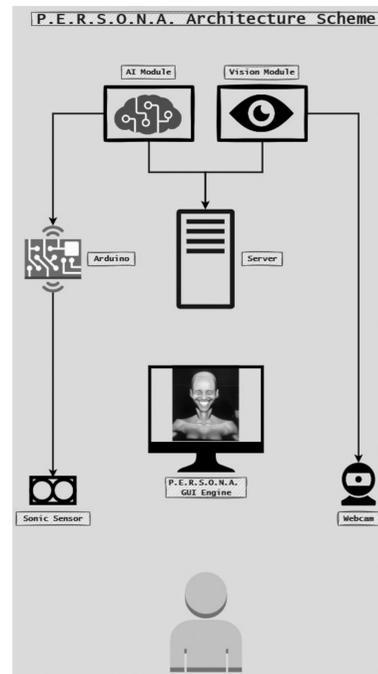
Cardboard prototype



Static prototype



3D model prototypes



system architecture scheme

Narrative

Persona is one of these embodied AI. It is intended to interact with human beings and learn, from all its encounters, how to get on with them.

It is a realistic humanlike entity, but unlike most of its fellows, it has a singular body language. While developers want to get rid of the uncanny valley feeling, we seek to develop a peculiar behavior with Persona.

Persona's purpose is not to solve humans' problems like most AIs but to raise doubts, interrogations.

It is about challenging the perception of the visitors about AI; do I see a human, do I see a puppet?

And also about ourselves; what does our behavior towards Persona says about our relationship with the unusual, the unknown, the 'alien'?

How it works

Over the course of the exhibition and throughout the multiple encounters with the visitors, Persona will evolve and learn how to break the diffidence barrier with humans, it will develop its own way to understand them and to communicate with each of them. This learning process will be complex, chaotic and a very long journey for Persona as its teachers will be multiple and diverse, reacting in their own ways to its attempts of interaction.

Materials & tech

Online reinforcement learning model (Python)
Web based computer vision functionalities (Javascript)
Webcam
Proximity sensor powered by Arduino (C, Python)
3D rendering and animation (Unreal Engine, C++)
HD Monitor on tripod

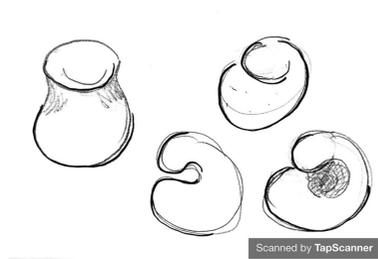
The Peeble

Group 6: Margot Anquez, Vennila Vilvanathan, Yann Trividic, Adèle Reboul

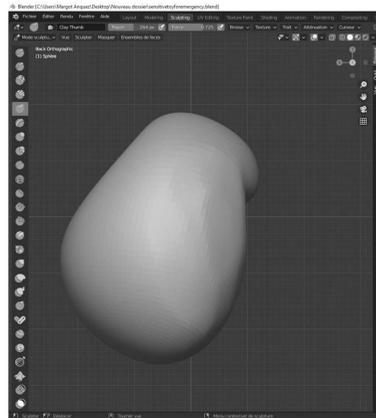
The design is meant to replace the red emergency button at the hospital. It offers several functionalities and allows the nurse to understand the patient's degree of emergency and cater to their needs, and helps the patient to calm down while waiting.

The context

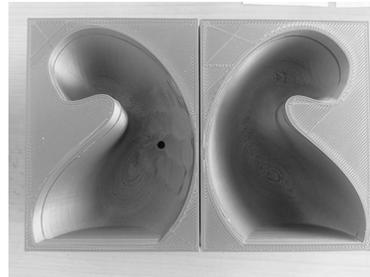
We noticed that while having a crisis at the hospital the patient has only one way to contact the nurse : they must push the red button behind their head. But this has three issues, first it's difficult to reach it when they have a tetania crisis for example, or difficulties to move. Secondly, it is only sending one signal, and no notion of intensity of the urge. And finally, the patient can not know if it worked and if the nurse is on their way.



Sketches for the Peeble's design.



The 3D design on blender.



The mold we used for the silicone.



An exhibition vue (the box, the device, the instructions).

Narrative

If the patient is having a crisis, they can shake the Peeble, softly to send the message that they need to see someone, or strongly for the emergency message. If they can not move, they just have to push the device on the floor and it will automatically send the message.

A lightbulb in your room will turn red when the message is sent.

While waiting, the device will say confort things to you, and offer to play music ; you can interact with it by clapping in your hand.

If the nurse is on their way, the light will turn yellow, and if they are coming in a few seconds, it will turn green.

If they're angry and frustrated because of the wait time, they can throw the device into the wall and it will apologise and be silent.

Storyboard



The patient can listen to it.



The patient can squeeze it.



The patient can shake it to call for help.



The patient can throw it.

How it works

The object is powered by an Arduino board. Various sensors are inside. Those inputs are processed by the board in order to convey signals to the nurse, via a bluetooth protocol.

Materials & tech

PLA
Silicone
Arduino board
Light bulb

Cor Epiglottae

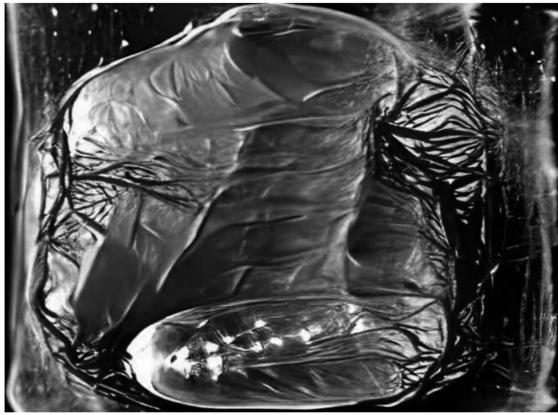
Group 7: Elna Aurand, Junhang Yu, Hervé De Saint Blancard, Téo Sanchez, Alexandre Boiron

Cor epiglottae is an interactive sculpture designed to create an intimate conversation between a visitor and another organism.

The context

Whereas Artificial Intelligence has always tried to mimic human behavior, it often fails to reproduce organic and responsive reactions of living beings. We created living organism in a transparent shell that can respond sound stimuli.

Inspirations: Pakui Hardware, Floryan Varennes, Ittah Yoda, Ernesto Neto, Jesse Darling, Anicka Yi.



We used a text-to-image generative Machine Learning algorithm to ideate the organism form and texture.



Cor Epiglottae: We melted an acrylic plastic sheet to create the organism shell.



We create the organs skin with silicon molded on concrete.

Narrative

A new organism was found on the Plateau Saclay. It is highly sensitive to sound and human voice. You are invited to converse and create an intimate interaction with it. You can whisper, whistle or talk to the sculpture and it will react it's own way.

Storyboard



The visitor can approach Cor Epiglottae that is quietly breathing. He stimulate the organism with a sound.



The organism react to the sound. Its reaction can evoke pleasure.



The visitor continue its conversation.

How it works

Cor Epiglottae has a body shell made of a melted acrylic plastic sheet. Its skin and organs were made in silicone and animated with a controlled water circuit. It captures sounds with a microphone hidden on its tail. The sound is synthesized using Cantor Digitalis, a physical model synthesis of vocal folds, throat and mouth created by researchers in Paris Saclay (LIMSI) and Sorbonne Université (Institut Jean le Rond d'Alembert). For the stimulus-response association, we used a Machine Learning model trained on our own collected data.

Materials & tech

Acrylic plastic sheet
Silicone
Fabric fillings
Water circling system