



# F\_AI\_L

DANCE

AI



Performative installation where the movements of a spectator are captured and interpreted by an AI. The more confident the AI is in recognizing the current movement, the simpler and more stereotypical the representation of the body becomes.

A body to be exhibited.

Conversely, the more the movements deviate from the usual, the more the AI makes mistakes and proposes numerous interpretations, as it is unable to discern the smallest variations. The representation of the body becomes more complex and closer to human.

A body to be explored.



# F\_AI\_L

DANCE

AI



The dance in this project is inspired by a thorough research on everyday gestures and attitudes. A performance initiates each presentation. The spectators are invited in turn to participate and live an experience of "somaesthesia", increasing their perception of bodily sensations, such as limb position and proprioception. As they step outside of normative movement frameworks, they are encouraged to explore new forms of movements. Will it be a body to exhibit or a body to explore? It is the relationship with the present AI that will determine it...

# INTENTIONS

The aim of the F\_AI\_L performative installation is to show the predictable and deterministic aspect of current AIs.

Even by adding a variable of random generation, the AI remains within the biases that make up the dataset on which it was trained.

Human perception tends to take "tortuous shortcuts" due to the fact that we have limited experience. The AI has a lot of information, but it only assembles what looks the most alike, whereas humans create relationships between all things in life and not all information has the same value.

It is the improbability of human perception that makes it interesting and that allows what we call intelligence, because intelligence is subjective and it is not the same in everyone.

The AI, on the other hand, considers each bit of information in the same way without discernment.

Artificial intelligence, as it currently exists, makes it possible to obtain above all archetypal answers and rather common results.

Via a "lived" movement and not simply a "reproduced" one, the "F\_AI\_L" project highlights the fallibility of the AI used in this project.

# DESCRIPTION

In this experiment, a visitor is facing a camera that captures their "usual" movements, such as those they activate while visiting and improvising in front of an interactive installation, in a museum-like context.

These movements are subjected to an AI (artificial intelligence) trained to detect and interpret them, resulting in a representation of the body as a stable, but rather simple, smooth, and stereotyped mirror image.

The capture by the AI highlights existing and biased canons of movements considered "normative" and relatively "reduced", without true feeling or particularly expressive. The body is merely exposed.

If, at some point, the participant moves in a slightly unusual way, i.e. with movements that are out of the ordinary, the AI "mistakes" itself by starting to produce different interpretations. The AI fails because it does not invent anything new, it just optimizes what it already knows. Human flexibility versus AI's rigidity.

When the AI starts proposing several representations of the initial movement, the initial image gets deformed because the AI has nothing else to propose, in response to what the audience member is doing. That is where the physical exploration takes place.

The more the visitor proposes inhabital or asymmetrical movements, or embodies an expressive gesture, the representations of his/her body become more complex and closer to his/her "being".

We will not know for sure what makes that the AI does not understand anymore the on going action.

A body to be explored, depending on one's own emotional state and personal bodily sensation..



# TECHNOLOGY

The performative installation F\_AI\_L integrates an RGB camera to capture the movements of a visitor and a depth camera used to create the representation of the body after being processed by the AI.

- Making of a catalogue of daily gestures and postures, rather archetypal, like the ones enacted by people in the context of a museum space
- Training sessions of a neuronal network (deep learning), capture of the performer's movements. Making of our own data set
- Movement capture of visitors with an Intel RealSense depth camera
- Setting of the communication with Unity (video game engine): programming of an application for stylized 3D representation, with shaders
- Linking of the application with a python based script to operate the neuronal network, and to detect the visitors actions. Making of the shaders for the visual representation
- Visual representation
- Interactive sound design
- Scenography

This interactive installation involving an artificial intelligence (AI) interprets the movements of a spectator and generates representations of the body according to its index of confidence in its interpretation. When the AI is sure to recognize the movement in progress, the representation of the body is simplified and stereotyped, while when the AI is less certain, the representation is more complex and close to human, thus inviting the spectator to explore the represented body. This raises interesting questions about perception, about what the consciousness of a human being brings to the subject he/she observes, how by paying attention to a subject, a human being defines this subject, partially, in apart from any objectivity.

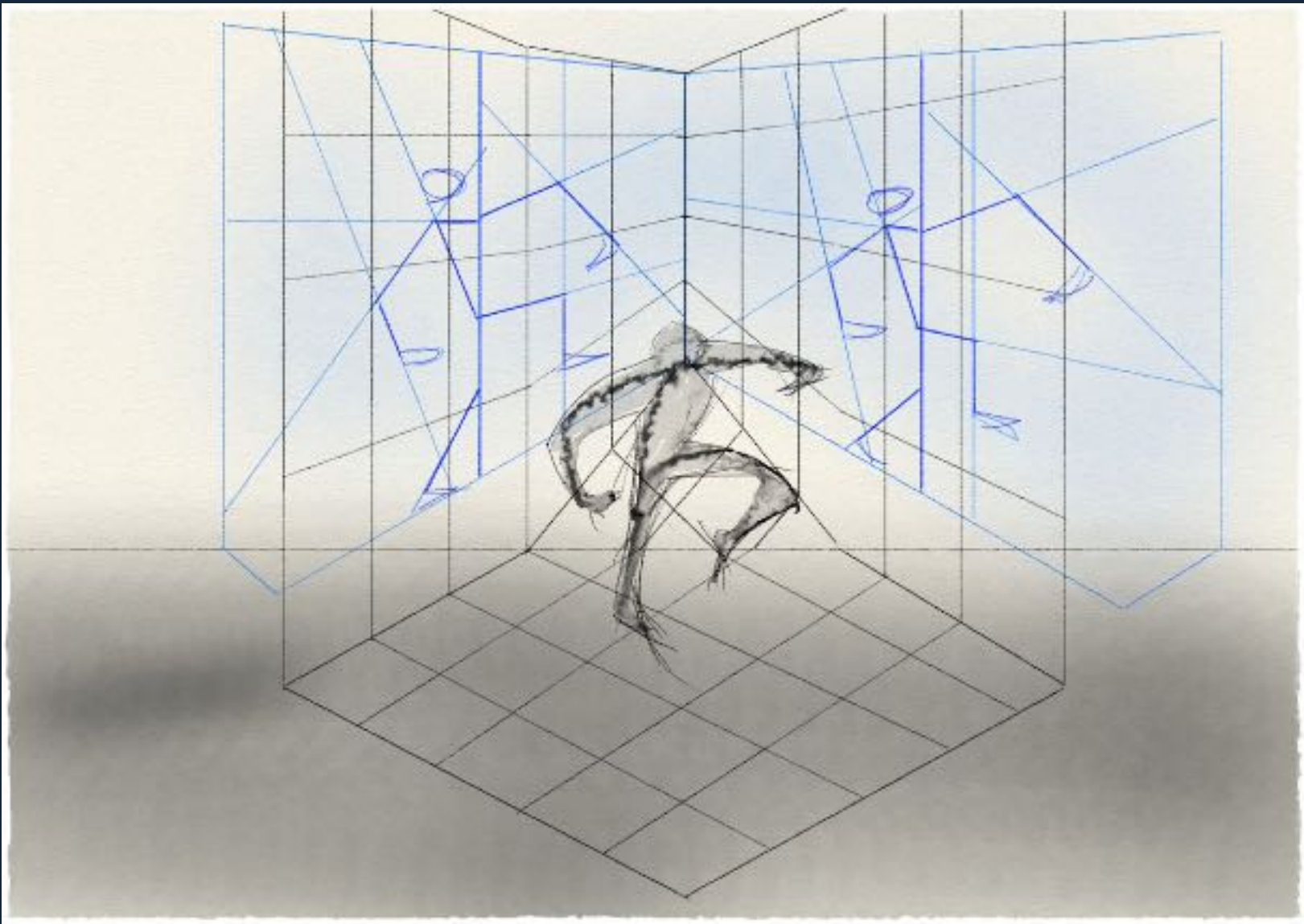
The installation is fascinating in terms of exploring the limits of an AI's understanding and interpretation of movements. The idea that the more confident AI is in its interpretation, the more simplified and stereotyped the representation of the body is, may reflect the biases and limitations of machine learning algorithms that create stereotypes and simplistic generalizations.

On the other hand, the idea that the more the AI is wrong, the more the representation of the body is complex and close to the human, can give rise to reflections on the complexity of human perception. This can also call question the notion of truth or objectivity in the interpretation. Indeed the AI necessarily has an objective point of view but we cannot say that it necessarily creates something true, by showing that different perspectives can give rise to varied and complex representations.

This installation provokes reflections on the role of AI in artistic representation and in the perception of art. The use of AI as a creative tool raises questions about the interpretation, creativity, and authenticity of machine-generated artwork.

Ultimately, such a performative installation offers a stimulating experience to the viewers, inviting them to reflect on perception, the very concept of reality which depends perhaps more on the subjectivity of each person than on the objective world we are not aware of, we have no direct access to, as well as on the role of AI in artistic creation.





SCENOGRAPHIC SCHEMATICS

# PARTNERS

## K. DANSE

Coproduction and scientific  
technological collaboration:

- . Quai des Savoirs (Toulouse)
- . LAAS (Laboratory for Analysis and  
Architecture of Systems-CNRS,  
Toulouse)
- . IRIT (Institute of computer science  
research of Toulouse)
- . InfoMus (Research Center Casa  
Paganini, Genoa, Italy)

- . European Bodynet-Khoros project  
(Spain, France, Greece) – Cultural center  
Casa de la Libertad, Zorita, Salamanca,  
Spain - University of Lesbos, Greece
- . Euroregional event Ada ArtEina  
Auditorium of Mònica, Majorca,  
Balearic Islands
- . Ecos Festival, Konic Thtr, Barcelona
- . Cultural affairs of Villeneuve-Tolosane  
(Toulouse Metropolis)
- .. Cultural Center Bellegarde, Toulouse

### **Institutional support**

- . Ministry of Culture
- . City of Toulouse
- . Regional Council of Occitania
- . Local Council of the Haute-Garonne

Residencies: Quai des Savoirs, Gare aux Artistes,  
Friche culturelle La Vannerie, Theater la Brique Rouge,  
Cultural Center Bellegarde

# ARTISTIC TEAM

## **JEAN-MARC MATOS**

Choreographer

Jean-Marc Matos develops a contemporary movement language by the dialectic confrontation between the physical body (lived, experienced) and the visual body (seen, virtual).

K. Danse is a pluridisciplinary Company involved in many production, mediation and research projects integrating dance and digital arts.

## **LAURE LAPEYRE**

Performer

Laure Lapeyre is a comedian, actress and performer. Her research explores physical theater as well as the creative relationships with the camera. She works in Toulouse in theatre, dance and cinema.

## **CLEMENT BARBISAN**

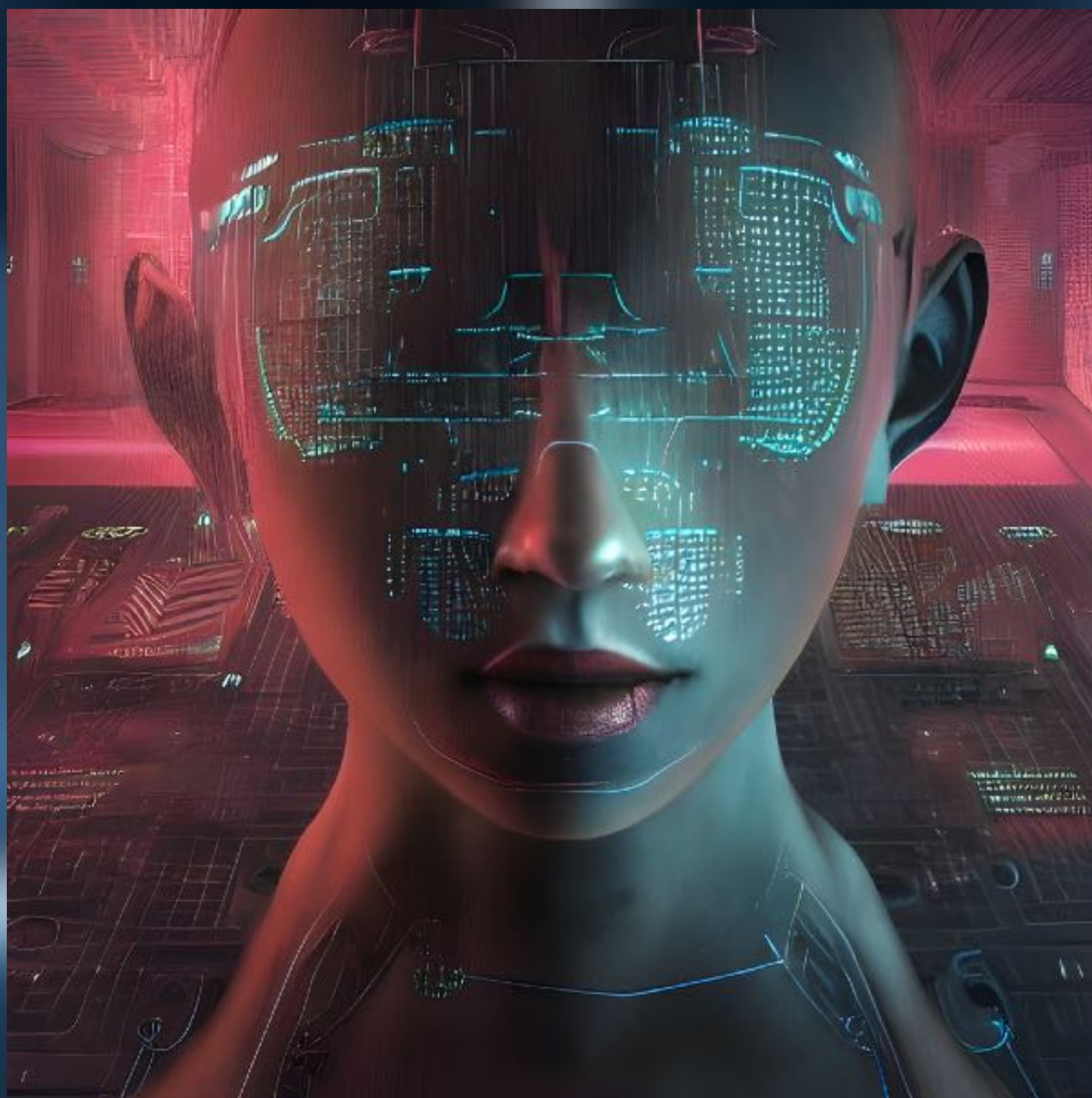
Artist and computer programmer

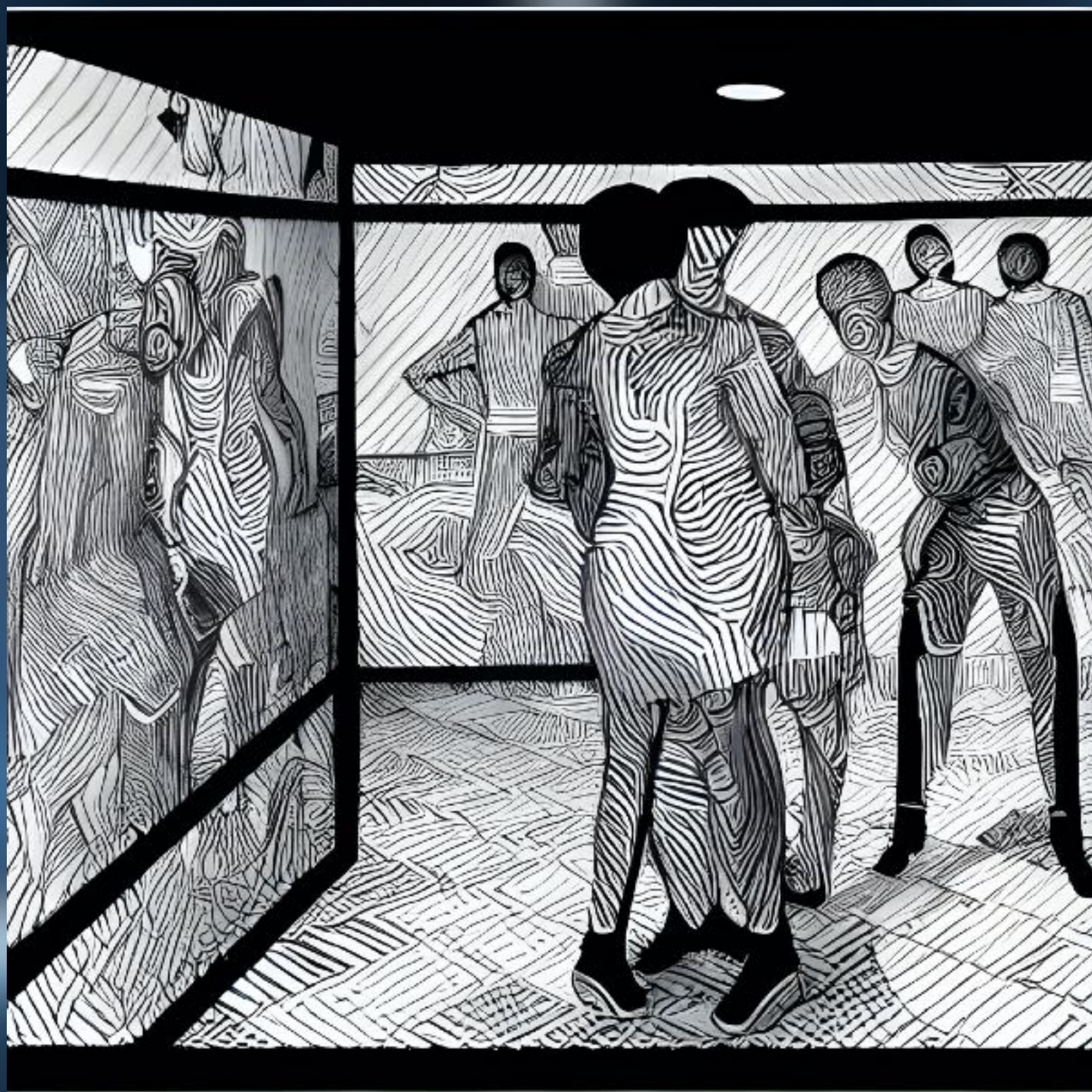
Clément Barbisan is at the crossroads of a technical and artistic practice. He spent some time at the Beaux-arts de Paris where he worked on perception and then turned to programming in order to create on his own interactive experiences.

## **BASILE ROBERT**

Scenographer

Sound artist





# CONTACTS

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