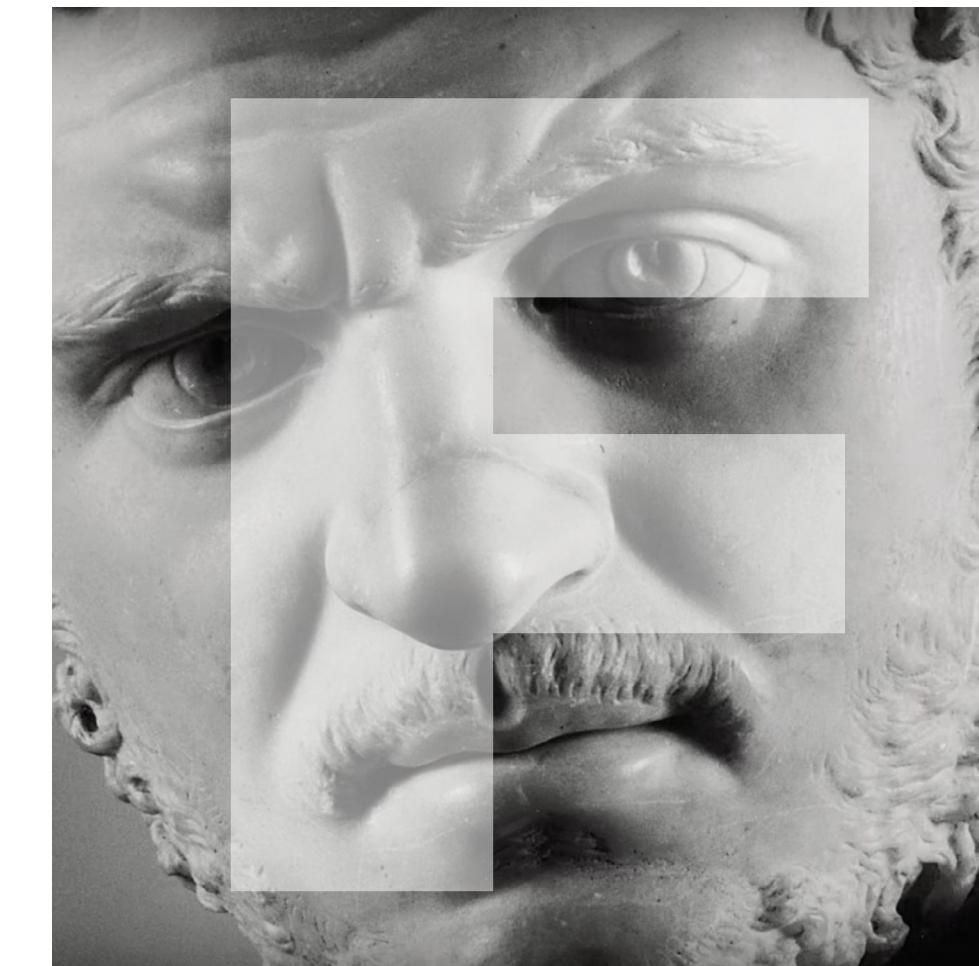
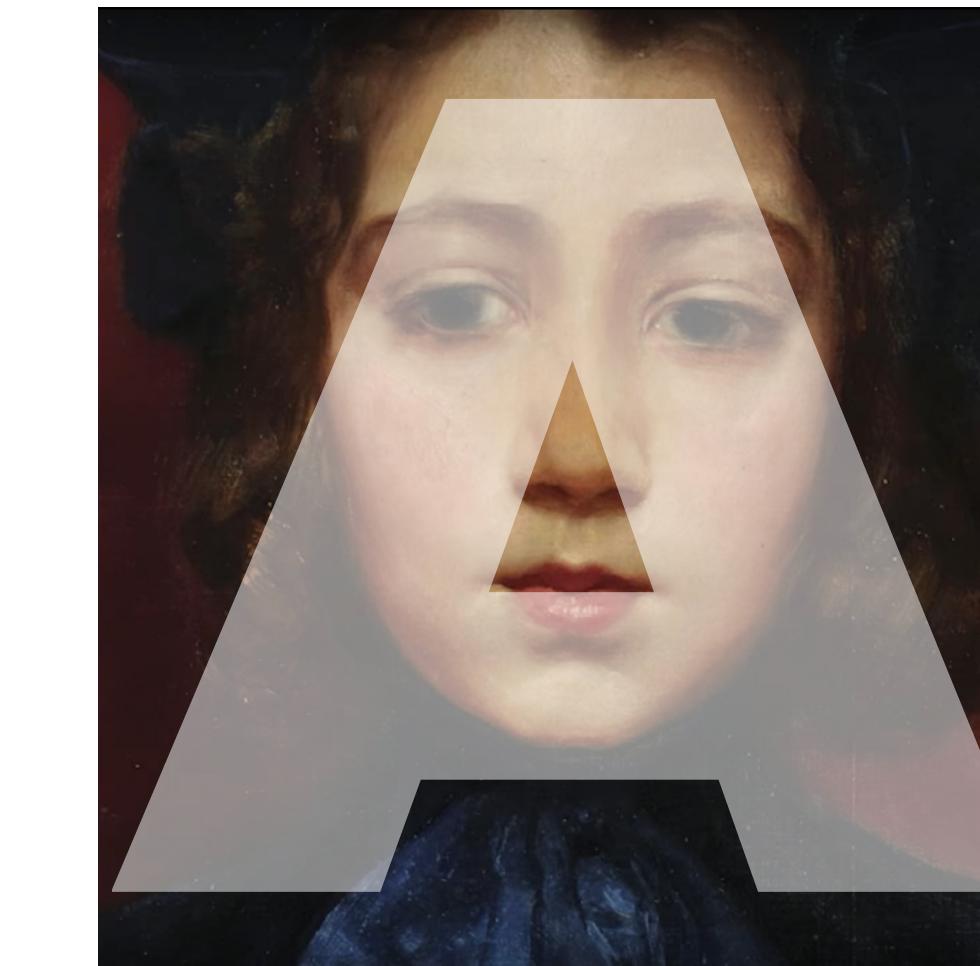


Skander **Hajri**



Licia **Tomaselli**



Costanza **Volpini**



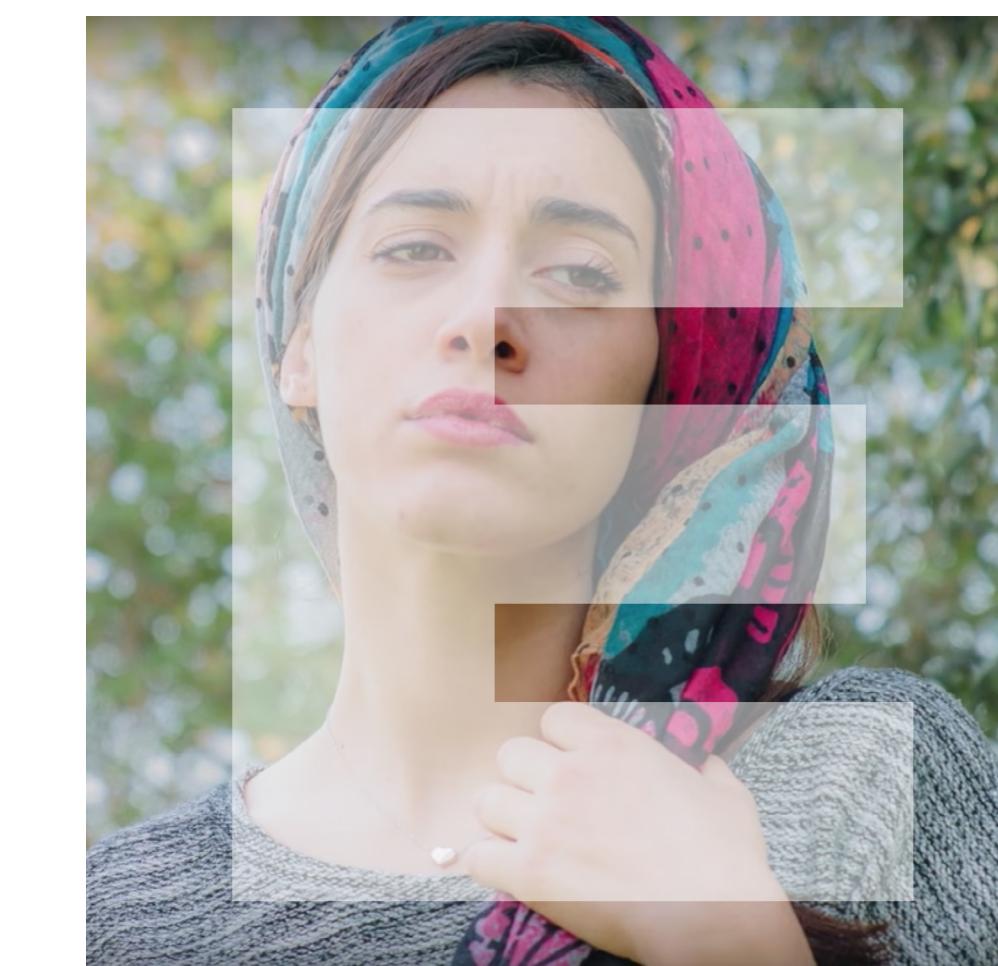
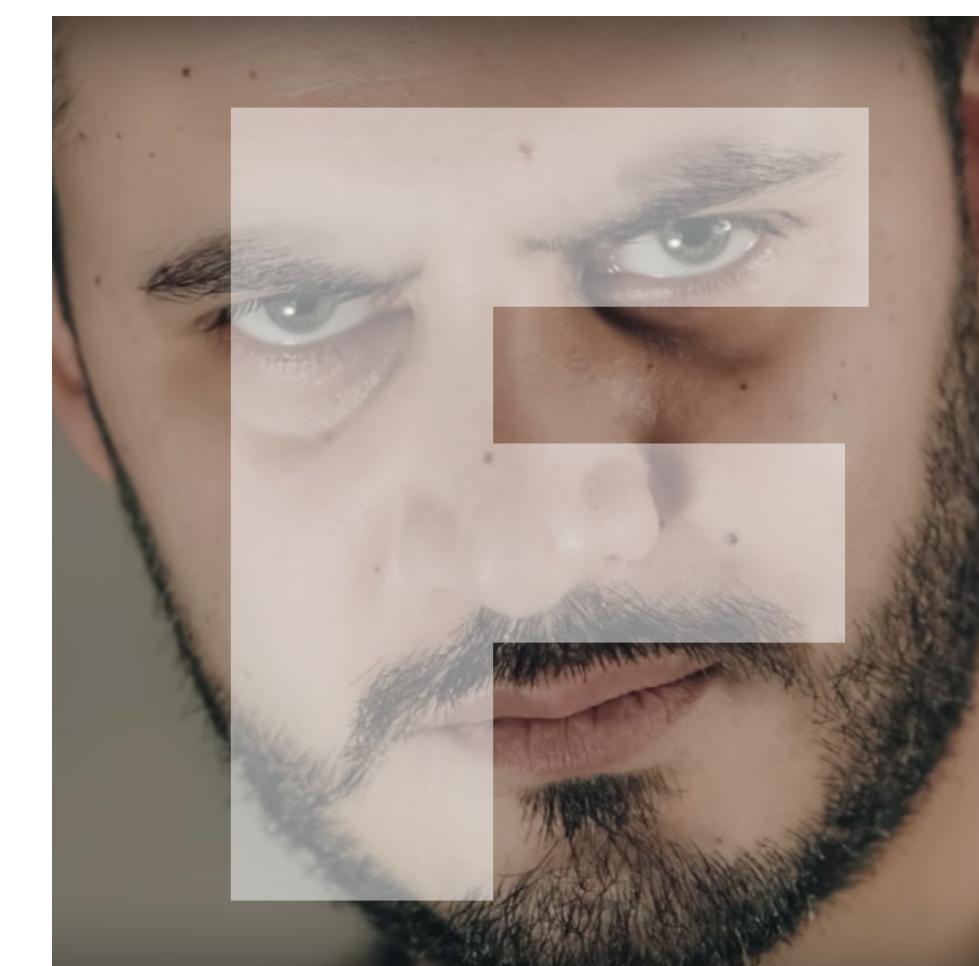
Reverse your perspective: for once the artwork will look at you like you're a work of art.

**The paintings have eyes.**

'IO'

Create your own path following your emotions, making your experience in the museum unique.

**Let your feelings guide you.**



a r t i s      w a t c h i n g      y o u .

# FACE to FACE



## Musée de l'Elysée

For our research we have chosen one particular exhibition (Liu Bolin - Le Théâtre des apparences) because his work is not too well known to interfere with the recording of visitors' impressions and it's at the same time various (in terms of atmosphere of the work), curious for most of the visitors and unconventional.



## Analysis of people's reactions

We intend to analyse and record feelings and emotions in visitors of different age, sex and cultural background in front of various paintings and investigate the way they look at artworks. In this way we have the possibility to study humankind from a different perspective.



## Facial recognition

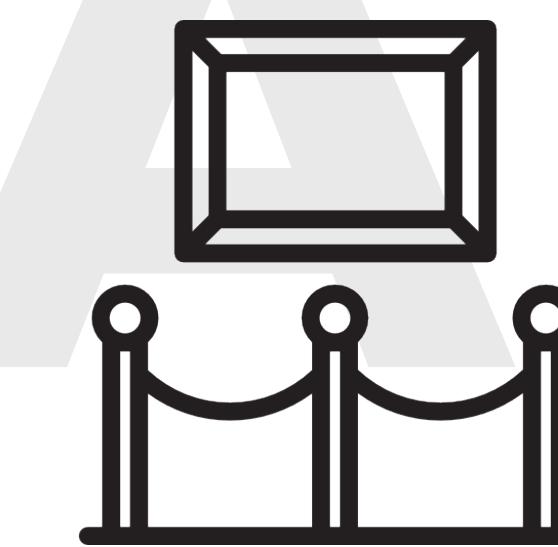
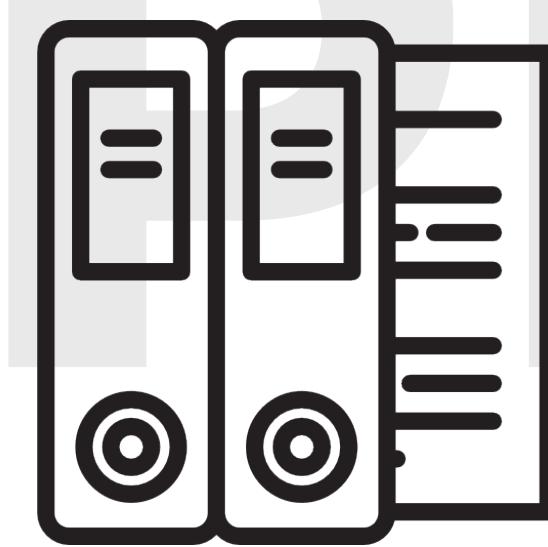
Emotions often burst out in a more or less evident way and we will try to catch what the visitor's face says about what they're feeling. Facial recognition tools will contribute to gather data, by taking pictures that can then be linked to a specific emotion using "deep learning" in order to define a global range of feelings for a particular piece of art.



## Emotional oriented path in existing museums

The aim is to set a specific path, museum design and succession of depictions based on a precise sequence of feelings that the viewer or even the organiser of the exhibition wants to evoke. In parallel what we aim to investigate is the undertaking of an anthropological study, based on people and products of other people's creativity; so a real face to face with art.

# PROJECT PROPOSAL



## Analysing visitors' reactions

Thanks to some already set facial recognition tools it will be possible to trace how people feel in front of an artwork.

## Rating artworks

Rating is done collecting data through direct observation in the physical museum.  
We expect to collect around 20 different sets.

## Defining a set of emotions

By collecting data it will be possible to "rate" images and put them in different categories based on the emotions range we aim to analyse.

## Emotional oriented path

Thanks to categories, eventually, we can create an algorithm of how the paintings sequence should be according to the swing of emotions we want to reach.

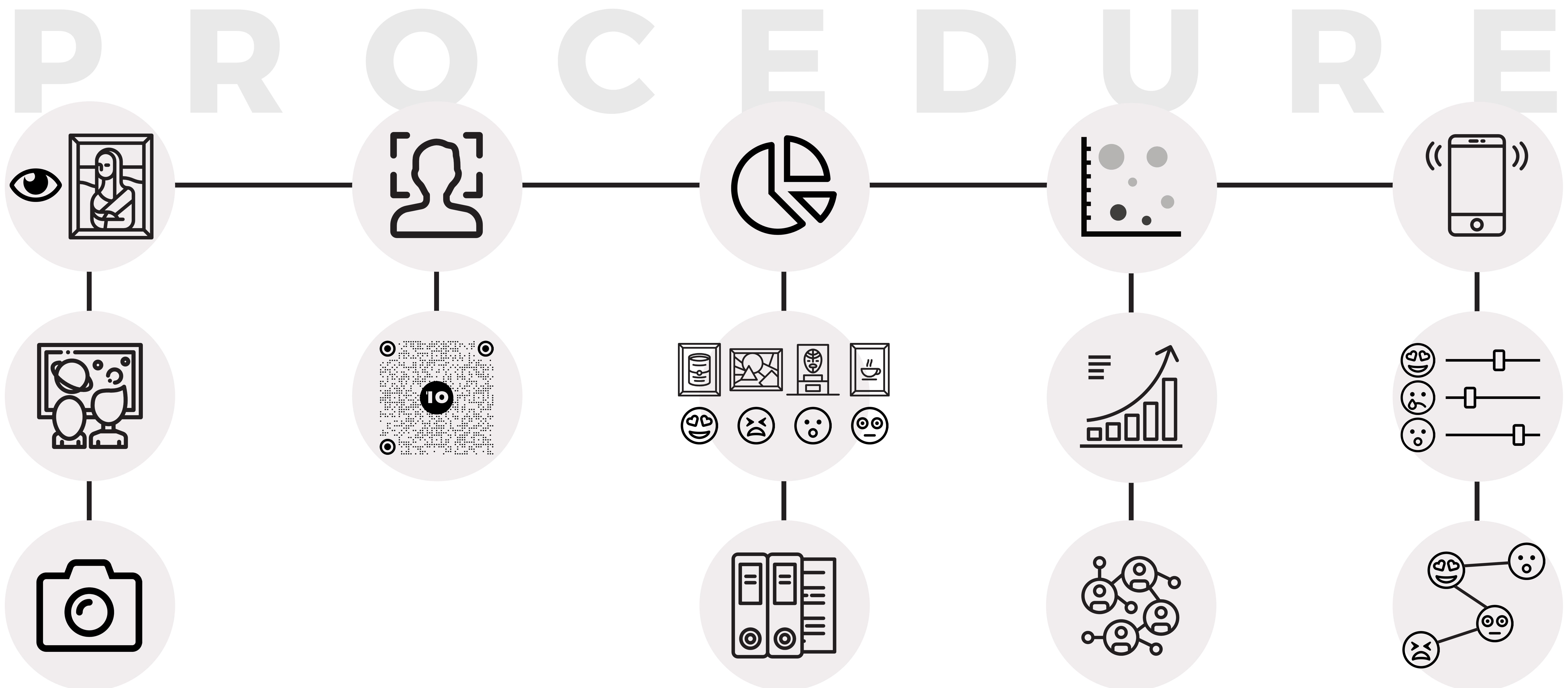
## Designing of physical museum

The physical exhibition should go along with feelings: this app can help the curator creating a coherent path and reinforcing paintings through a specific sequence.

# FACE to FACE

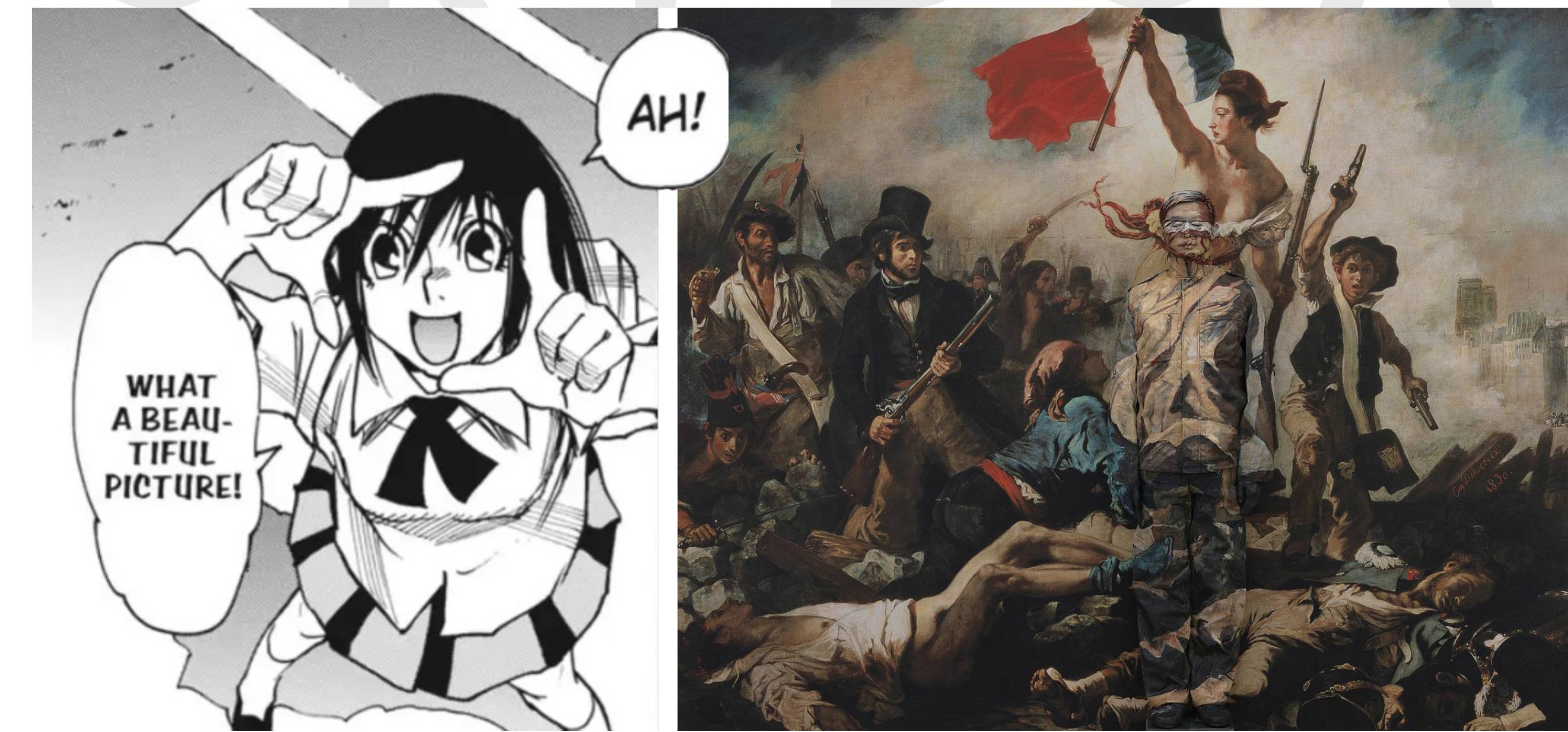
```
curation= {  
    “def”: “The ability of positioning and managing different pieces of  
    art according to an emotional impact the curator wants to  
    achieve. What we aim to do is emphasising this feeling cen-  
    tred attention and let the visitors embrace the essence of  
    the exhibition”,  
    “museum”: “Musée de l’Elysée (Liu Bolin)”,  
    “added-value”: “We would like to suggest new ways to explore the  
    museum, in order to emotionally connect with the  
    artist. A personally tuned visit will allow the  
    viewer to fully appreciate the exhibition and/or  
    the curator to share an exclusive point of view”,  
    “thick”: “Definition of how you want to feel during your visit”  
},  
    “thin”: {  
        “data-aquisition”: “Camera filming people”,  
        “database”: “Microsoft DB”,  
        “algorithm”: “Face by Microsoft Azure”,  
        “clustering”: “Classify pieces of art by feeling and then  
        grouping them by emotion classes”,  
        “user-interface”: “A web application where the curator can  
        create different paths for visitors”  
    }  
}
```

# FACE to FACE



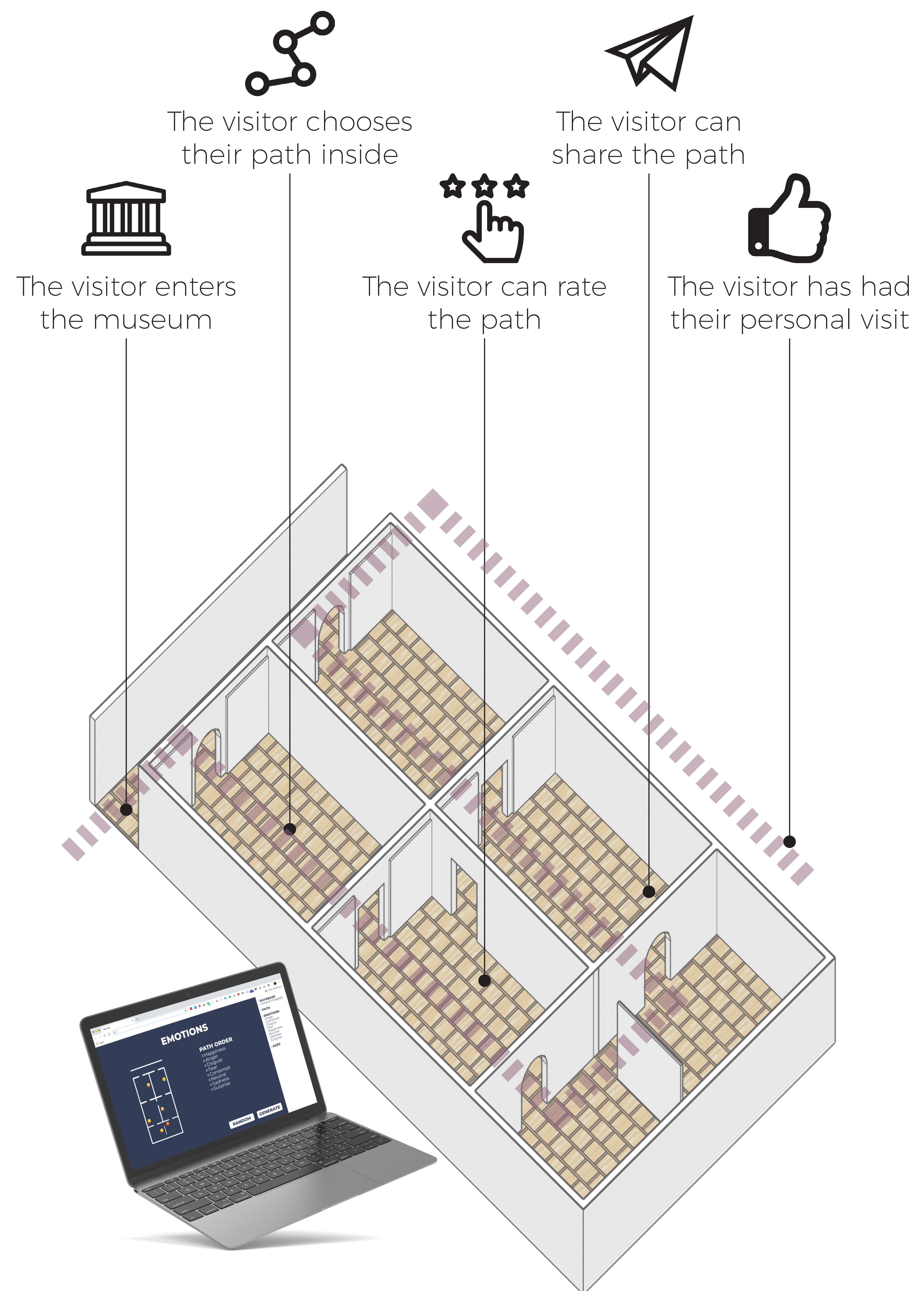
# FACE TO FACE

## STORYBOARD



# FACE to FACE

Musée de l'Elysée as a test field



# FACE TO FACE



## BACK-END

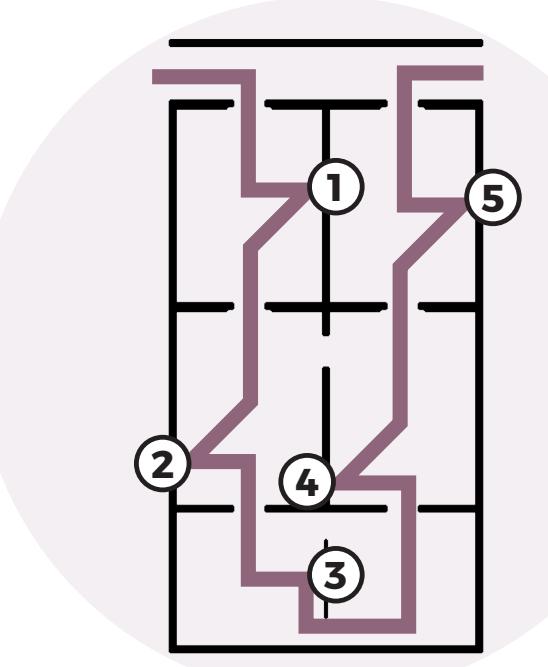
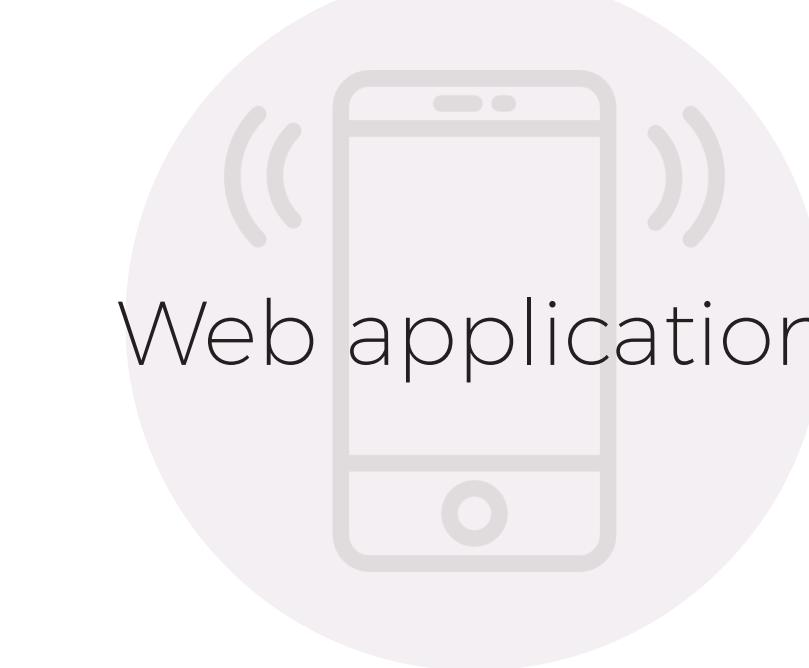
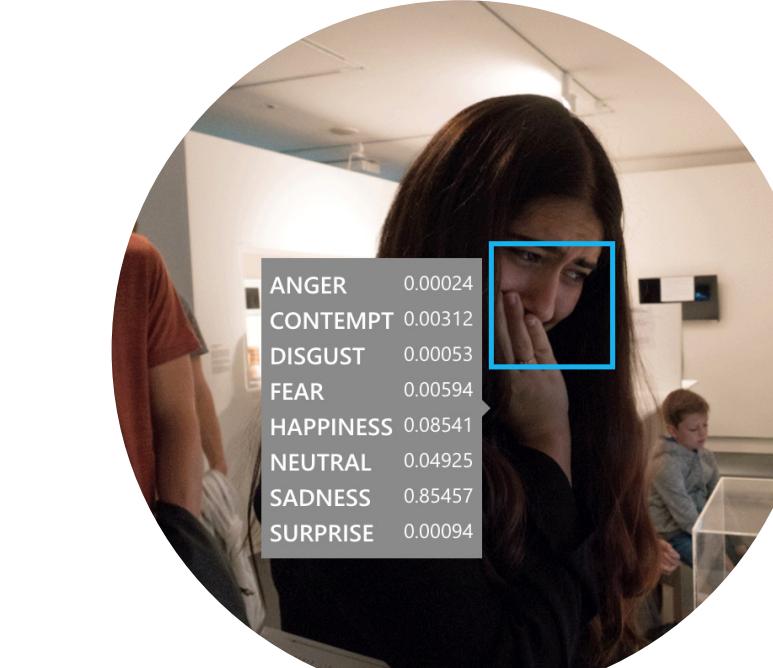
Send POST request  
to Microsoft Azure

## FRONT-END

Upload a photo or  
a set of photos



Make clusters by lo-  
oking at emotions  
or ages



# EXPERIMENT

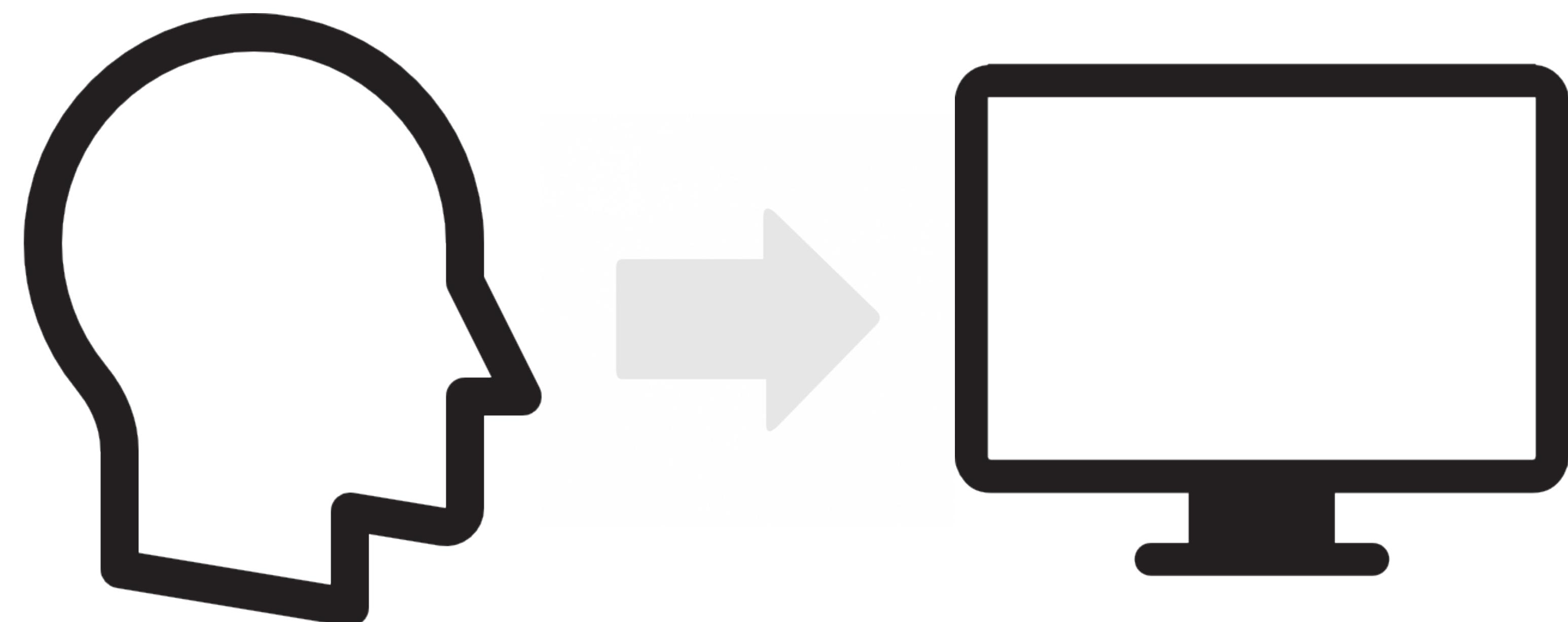
## 1 Video and people watching paintings

We have asked a few people to sit in front of a screen and simply watch some images that we had prepared for them: no-one was aware of the subject of the exhibition.

We have randomised the order of the paintings in order to obtain the most neutral result possible, as we thought the previous painting could affect the reaction in front of the following.

We have left every picture for 5 seconds, in our opinion a reasonable amount of time to make the initial facial expression fade before switching to the following image.

We have taken one picture of the person in front of the screen within the first second in which the image was displayed, when the facial expression was the most genuine.

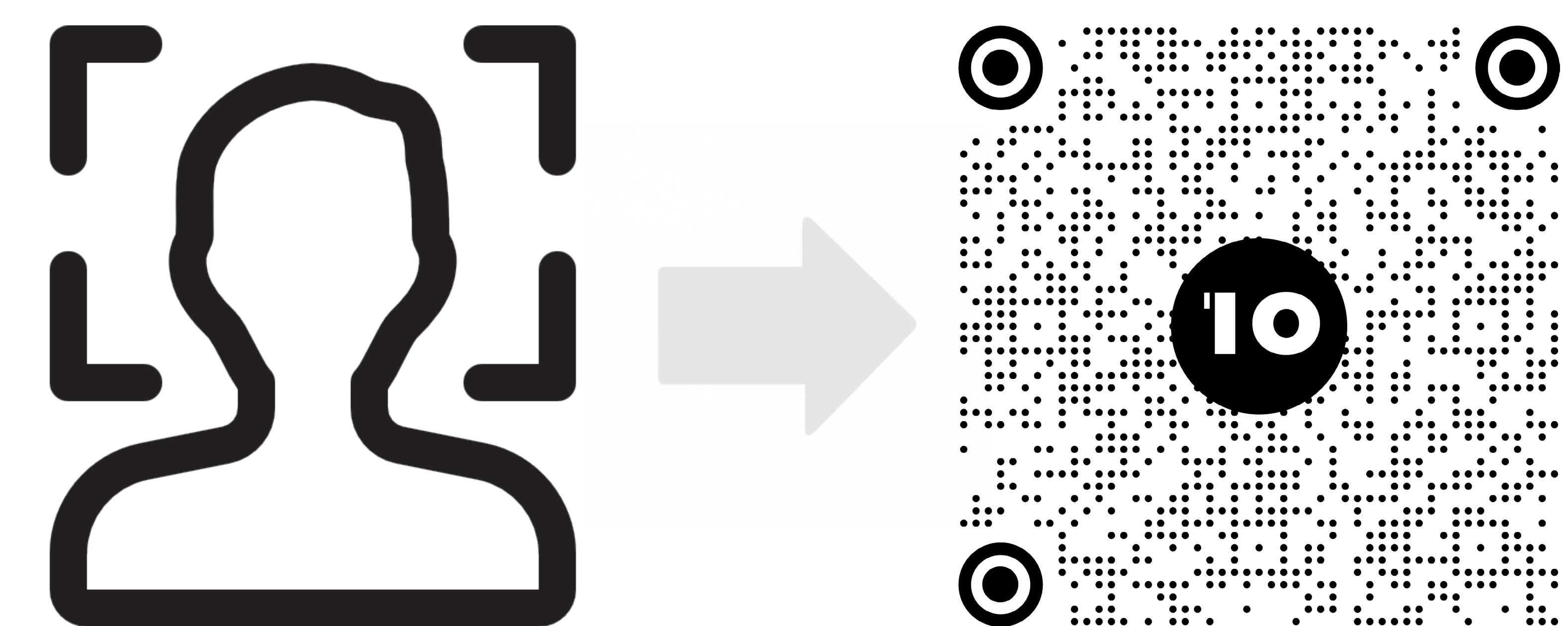


# EXPERIMENT

## 2 Sending and processing results

We have collected all the pictures and submitted to Microsoft Azure's API, obtained the JSON with the corresponding scores. We used the results to create a chart that shows the average spectrum of emotions people felt in front of that given image.

We imagine that, using this web-app in a real museum, the spectrum could constantly change giving the impression of the painting having a mood too.

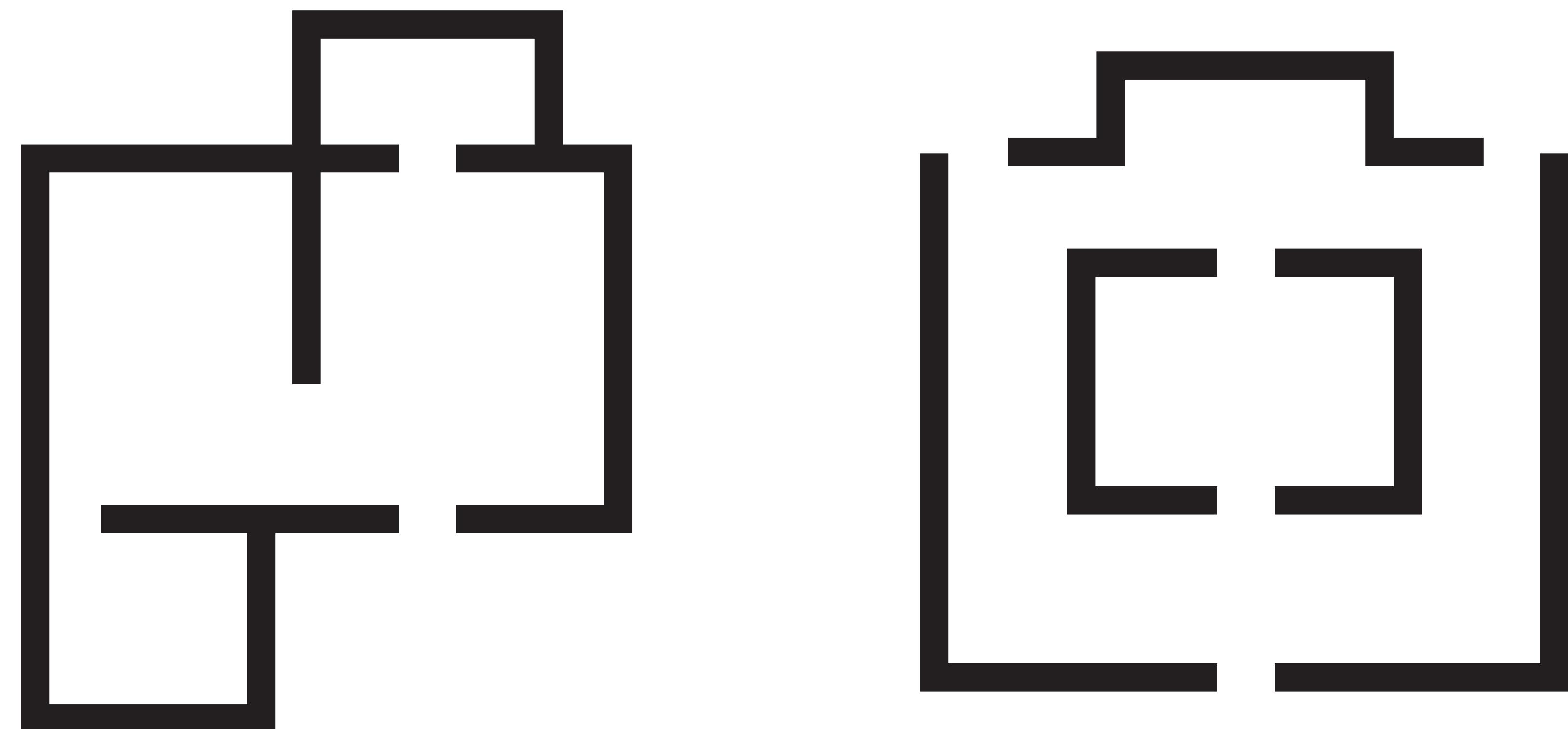


# EXPERIMENT

## 3 Representation of the museum

In parallel we have re-designed the plan of the Musée de l'Elysée and transformed it into a matrix: in this way it is possible to define the areas in front of the paintings, walls and the areas where visitors can walk and where they cannot.

We have kept the actual display of the museum, therefore the pieces of art are in the real position and sequence.



# EXPERIMENT

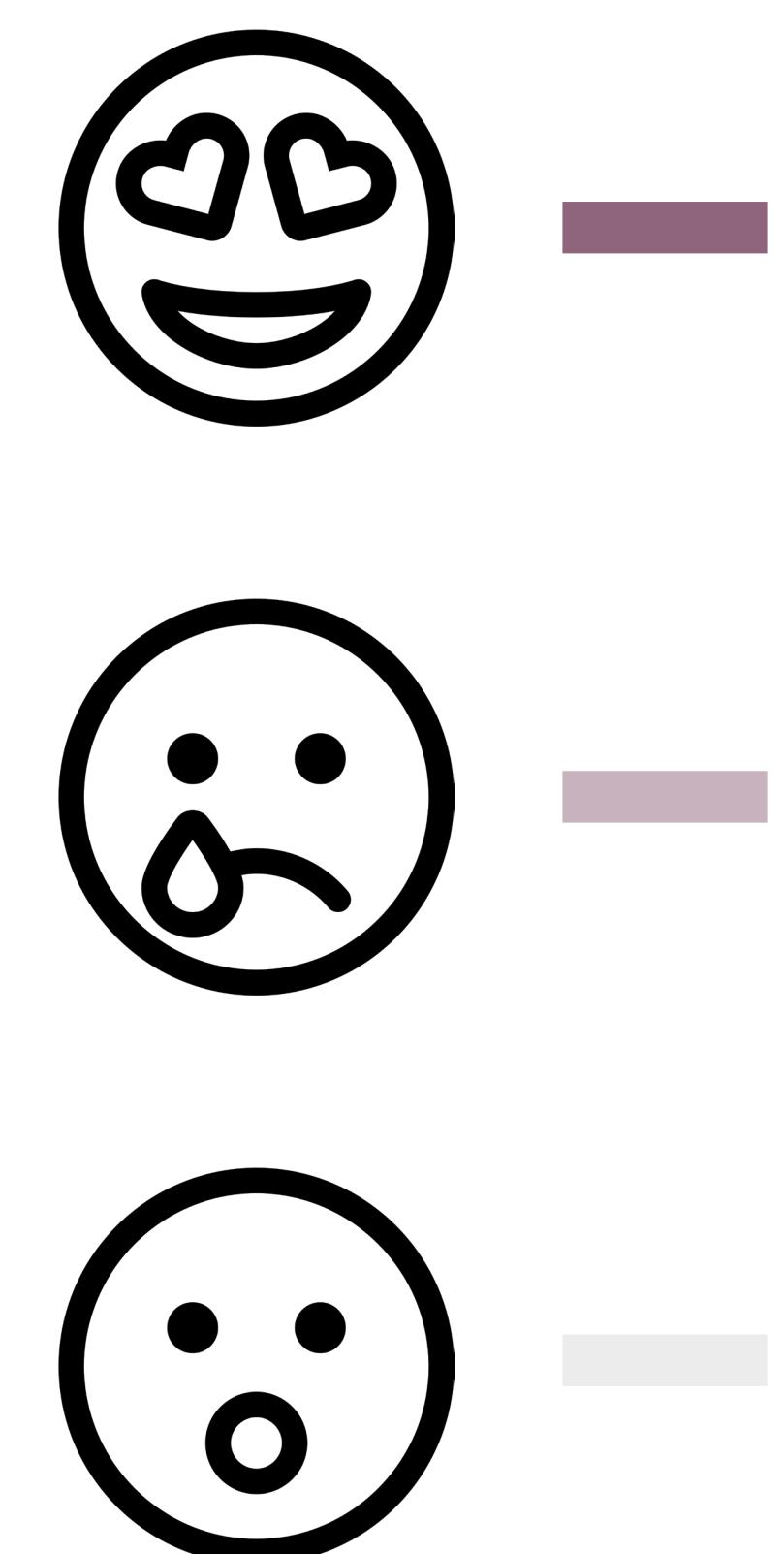
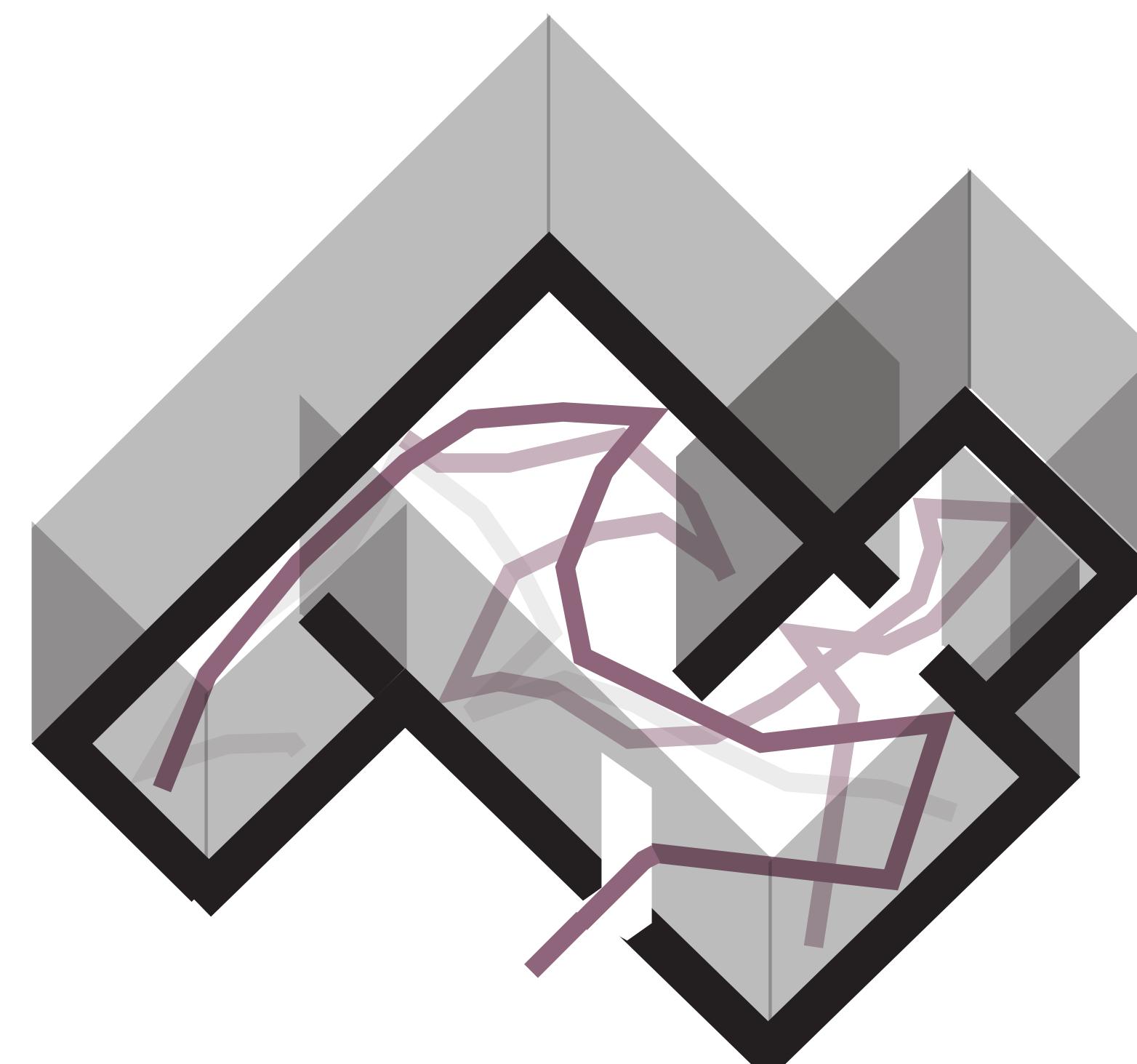
## 4 Creating the path inside the museum

Once the data for the spectrum of emotion have been collected the paintings are ranked according to them.

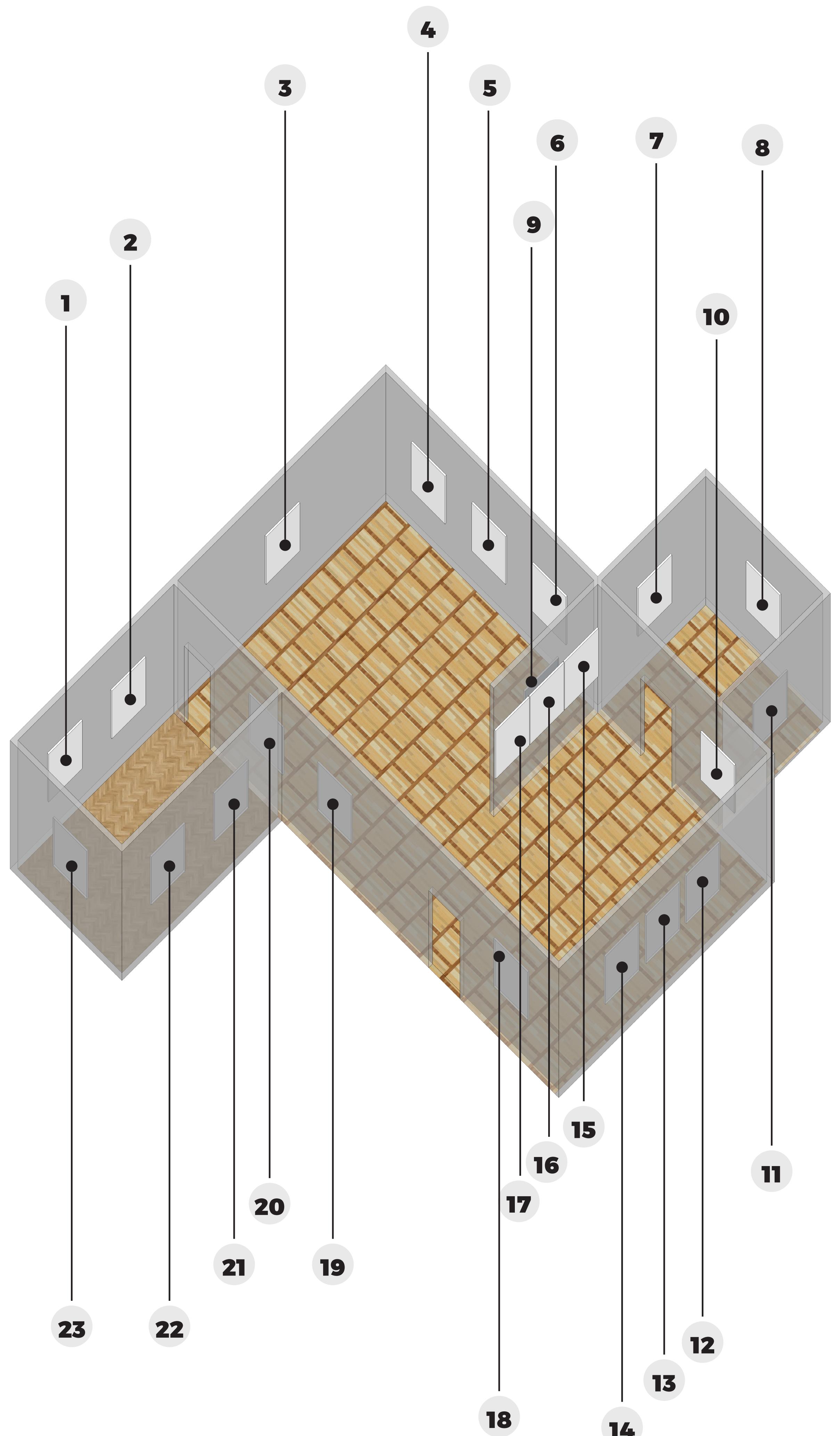
It is now possible to select a path by dragging the emoticon of how you imagine your emotional journey to be.

The app will calculate the next painting with the corresponding feeling and will guide you through the physical museum.

It uses a combination of distance and similarity score to find the next hop on your way through the exhibit.

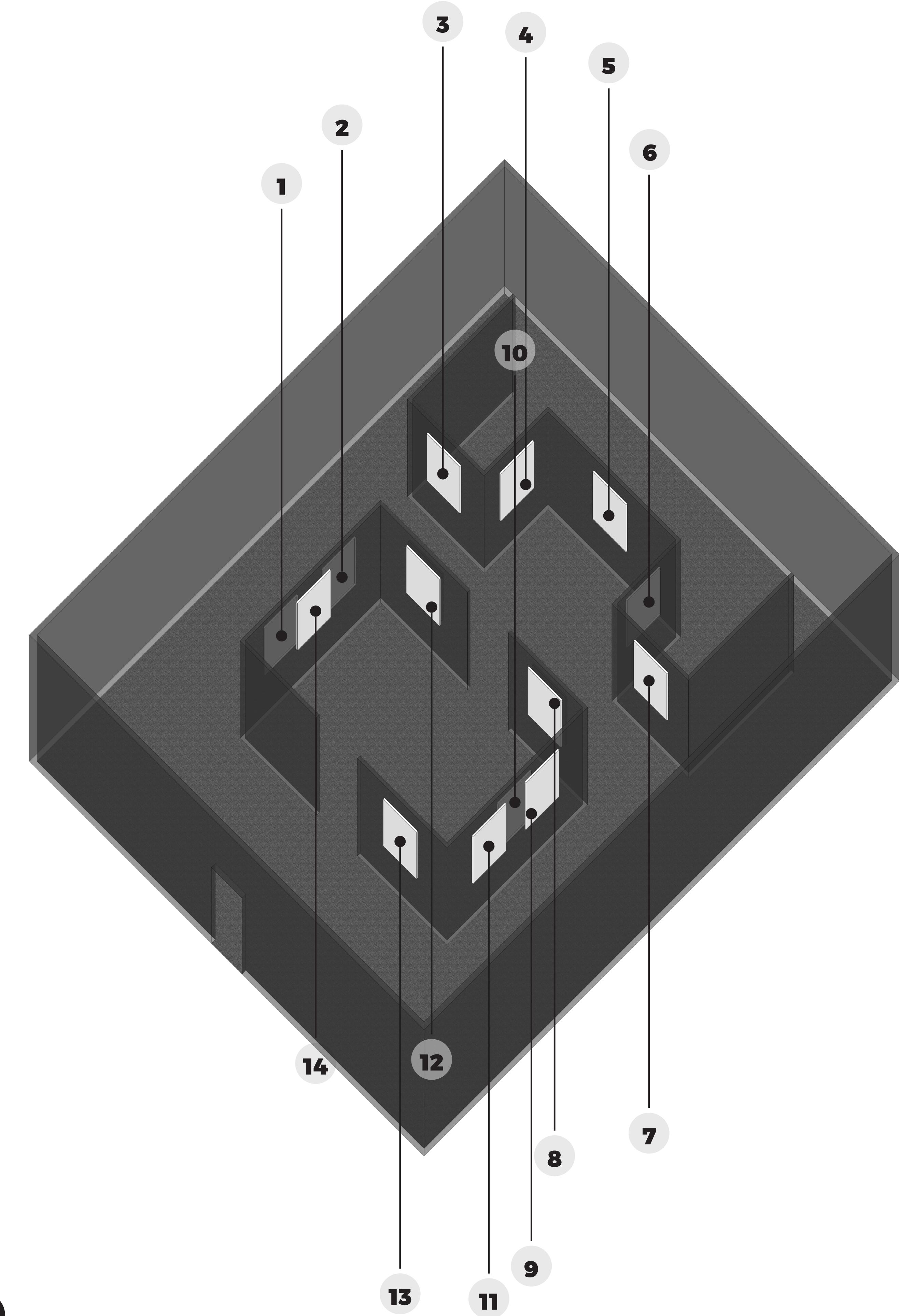


# FACE to FACE



**1ST FLOOR**

- 1.01 Pipes
- 1.02 Provisional wall
- 1.03 The laid-off workers
- 1.04 Open field
- 1.05 Unify the though to promote education
- 1.06 Voter registration is in accordance with the law
- 1.07 Chinese fan 3
- 1.08 Nine-dragon screen
- 1.09 Info port
- 1.10 Monastery
- 1.11 Chinese fan 2
- 1.12 United struggling
- 1.13 New culture needs more \_\_\_
- 1.14 Suoja Village 2
- 1.15 Learn by figure
- 1.16 Head portrait (Mao)
- 1.17 In front of the party flag
- 1.18 Policeman and civilian 2
- 1.19 The inheritance
- 1.20 Info wall
- 1.21 Road block
- 1.22 Forklift
- 1.23 Creeping forward

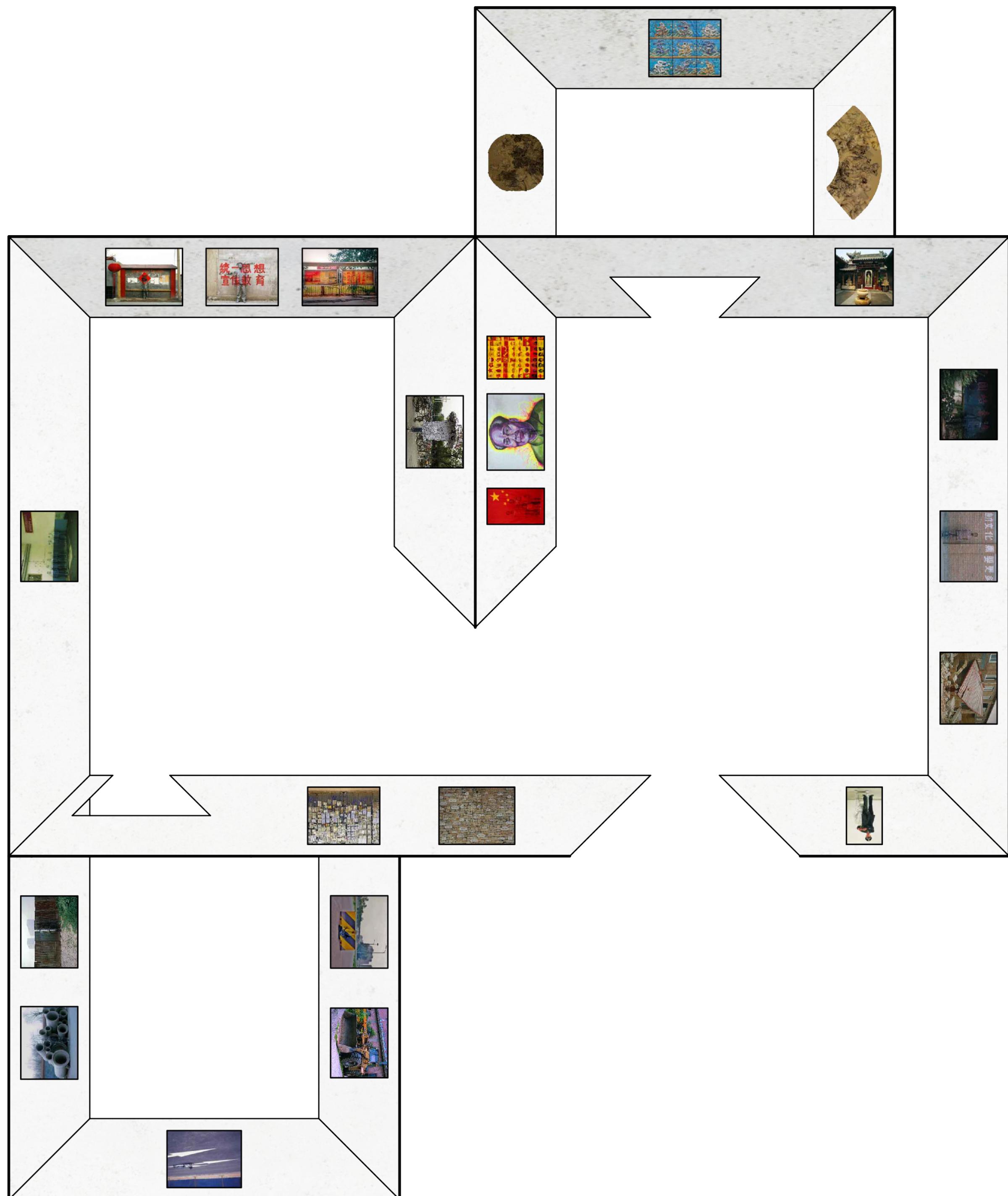


**2ND FLOOR**

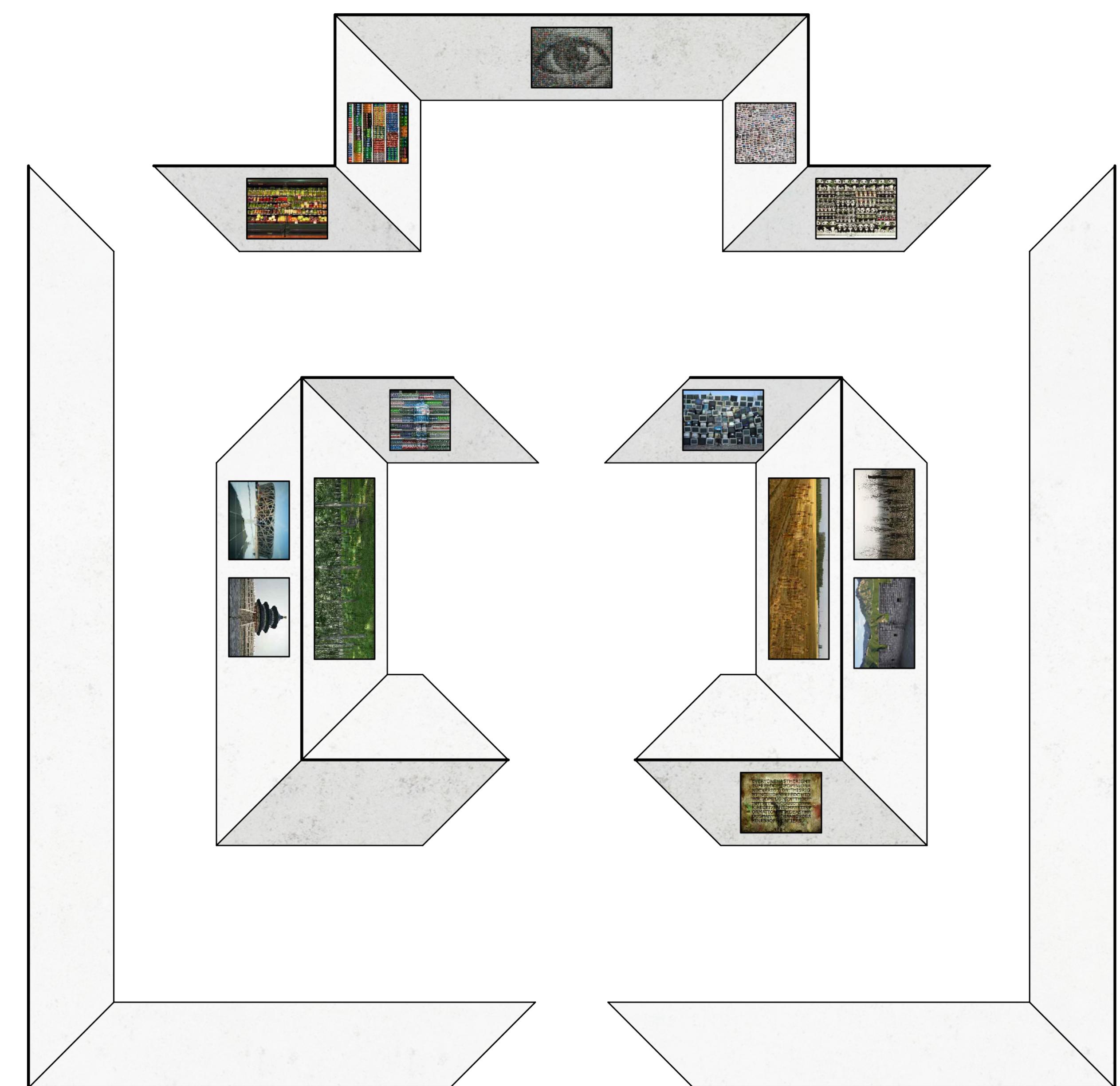
- 2.01 Temple of heaven
- 2.02 Bird's nest
- 2.03 Green food
- 2.04 Supermarket 3
- 2.05 Your world
- 2.06 Mobile phones
- 2.07 Panda
- 2.08 Screen in rest
- 2.09 Into the woods
- 2.10 Cancer village
- 2.11 The great wall
- 2.12 Water crisis
- 2.13 Cooperate with rero
- 2.14 Forest 2

# FACE to FACE

musée de l'elysée  
LIU BOLIN



1ST  
FLOOR



2ND  
FLOOR

FACE TO FACE

# DEMO-WEBSITE



# DEMO-PROCEDURE

10

PROJECT

EXPERIMENT

MUSEUM

TEAM



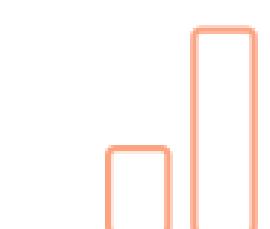
## ANALYSING VISITORS' REACTIONS

Thanks to facial recognition it will be possible to trace how people feel in front of an artwork.



## RATING ARTWORKS

Rating is done collecting data through direct observation in a digital museum.



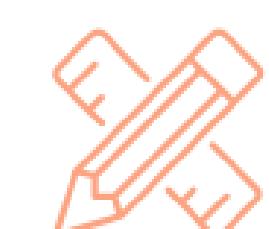
## DEFINING A SET OF EMOTIONS

By collecting data it will be possible to "rate" images and put them in different categories based on the emotions range we aim to analyse.



## EMOTIONAL ORIENTED PATH

Thanks to categories, eventually, we can create an algorithm of how the paintings sequence should be according to the swing of emotions we want to reach.



## DESIGNING OF PHYSICAL MUSEUM

The physical exhibition should go along with feelings and thus be coherent and reinforce paintings through the use of spacial conformational escamotages.



## OUR GOAL

What we aim to do is emphasising this feeling centred attention and let the visitors embrace the essence of the exhibition.

*Be the curator of your own emotions!*

## DEMO-EXPERIMENT

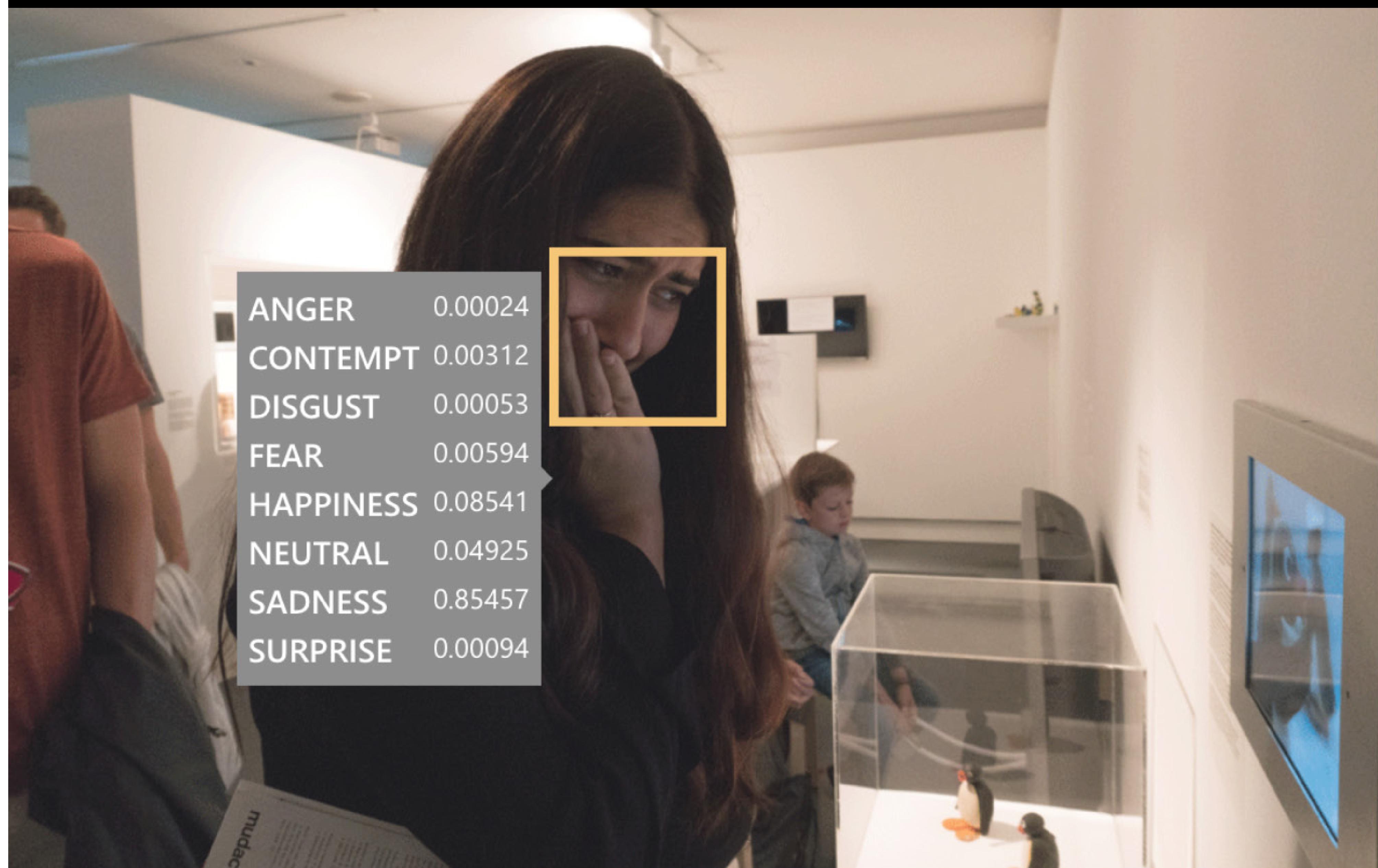
10

PROJECT

EXPERIMENT

MUSEUM

TEAM



## Emotion recognition

Run the experiment online to compare your emotions-score with the global one. For every painting we will detect a set of emotions such as anger, contempt, disgust, fear, happiness, neutral, sadness, and surprise.

Are you ready? Click on the button on the right!



FACE to FACE

# DEMO-EXPERIMENT

10

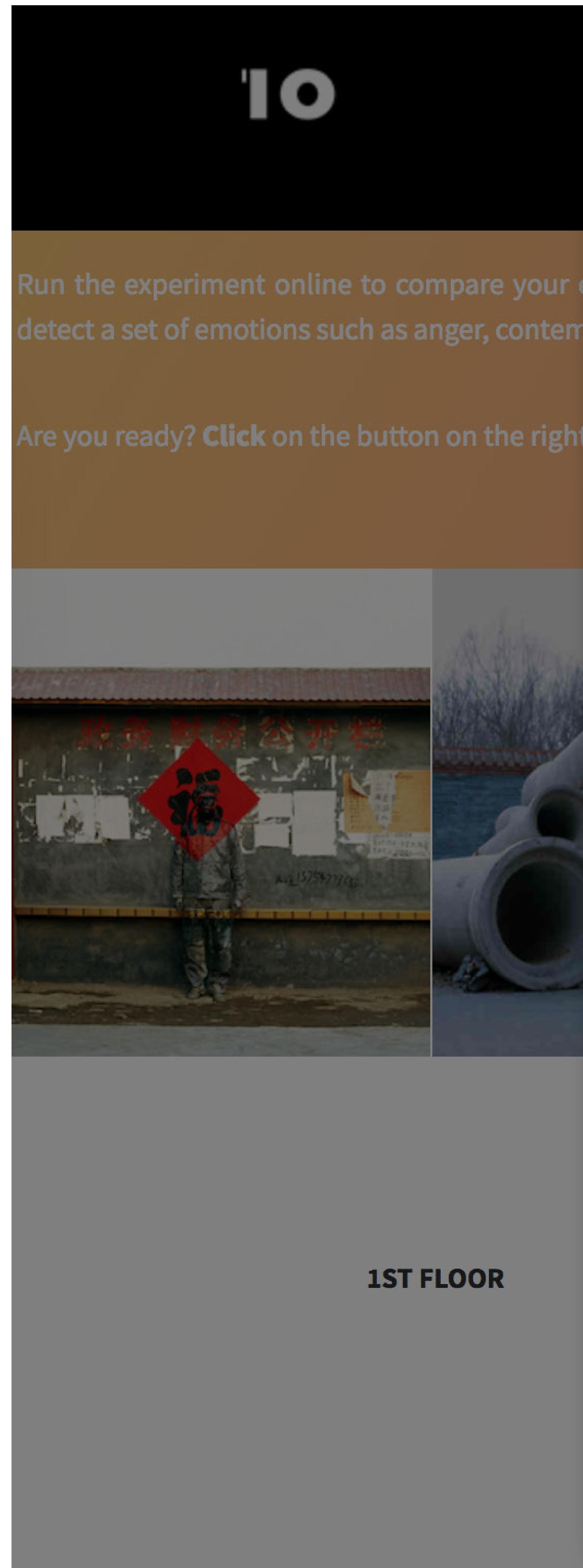
Experiment in progress!

MUSEUM

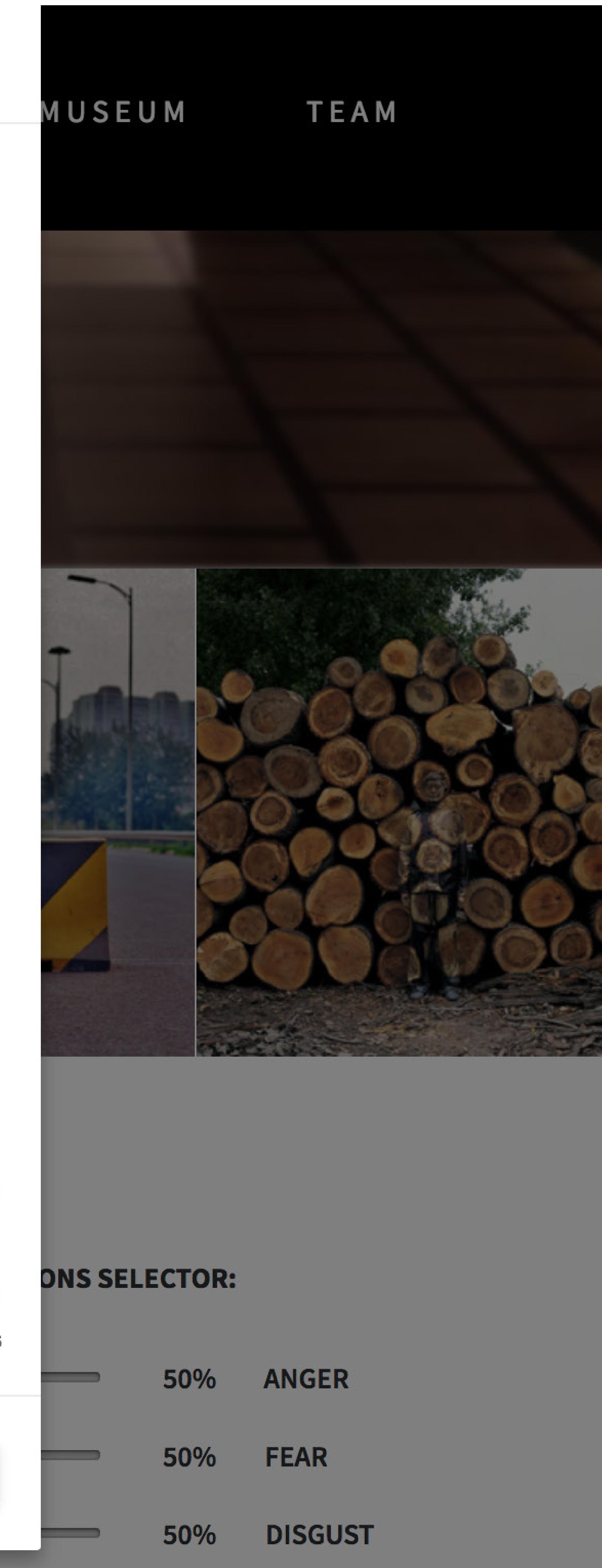
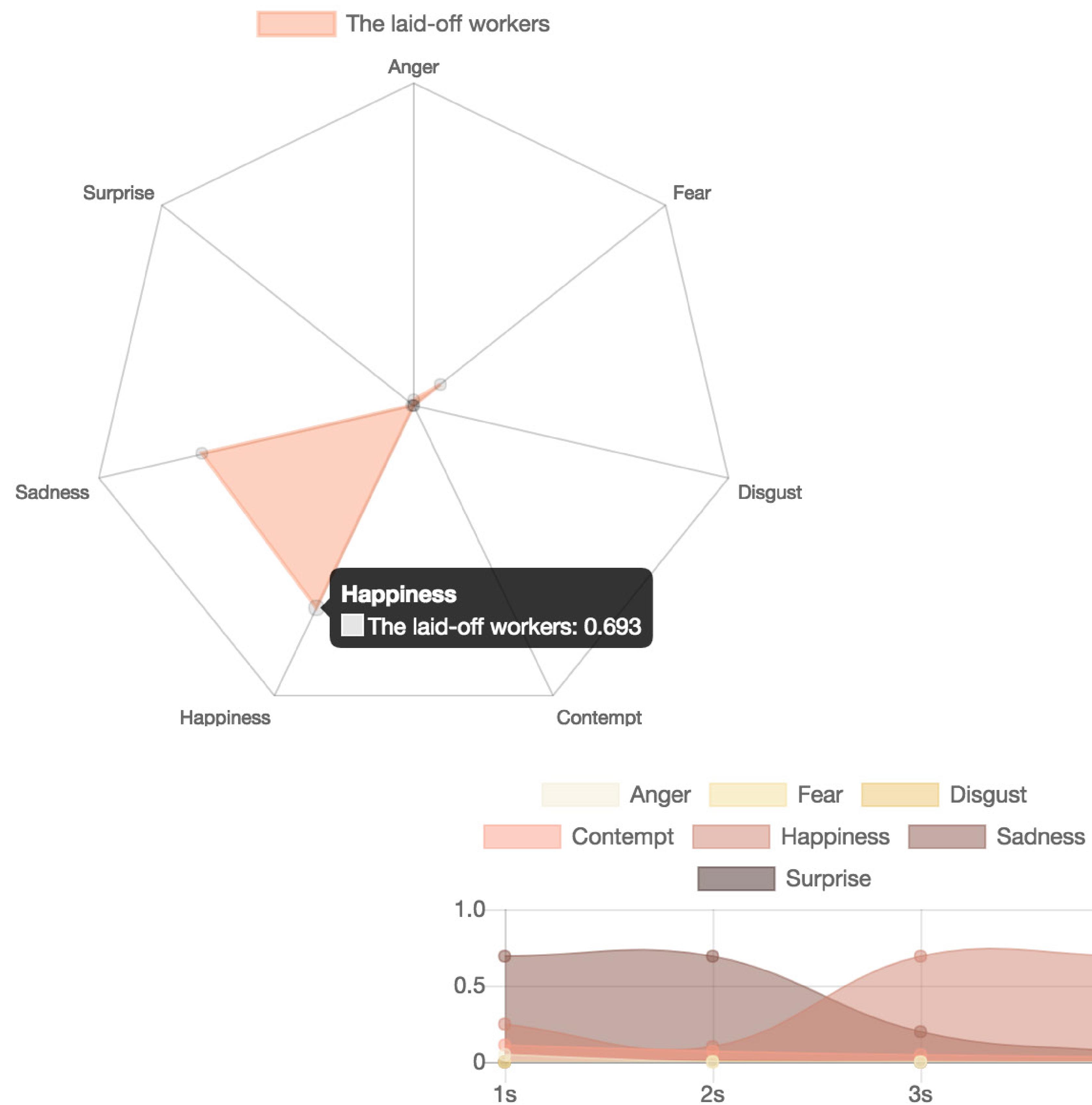
TEAM



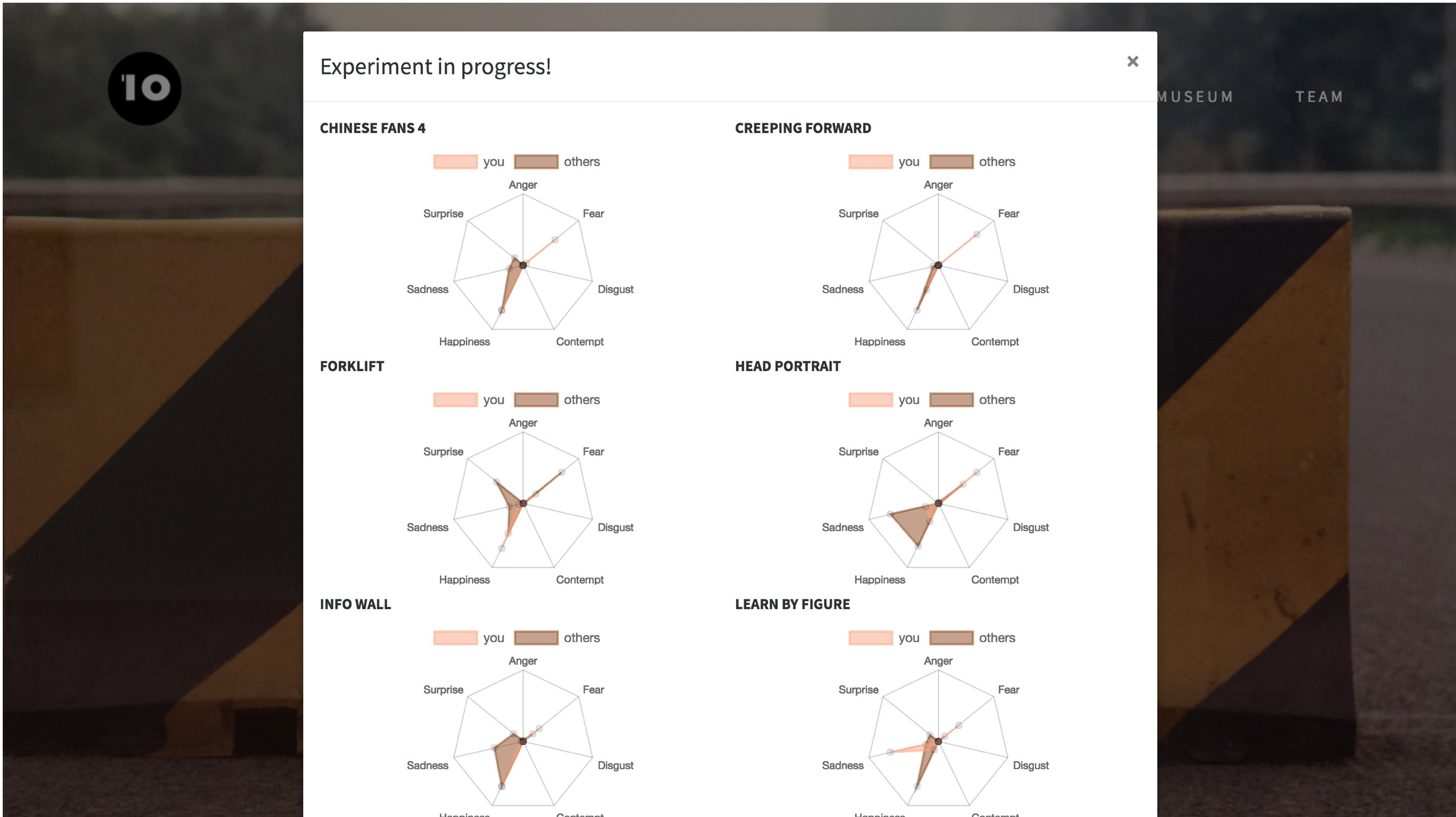
# DEMO-CHARTS



## Emotions analysis



## DEMO-RESULTS



# FACE to FACE

# DEMO-PATH

10

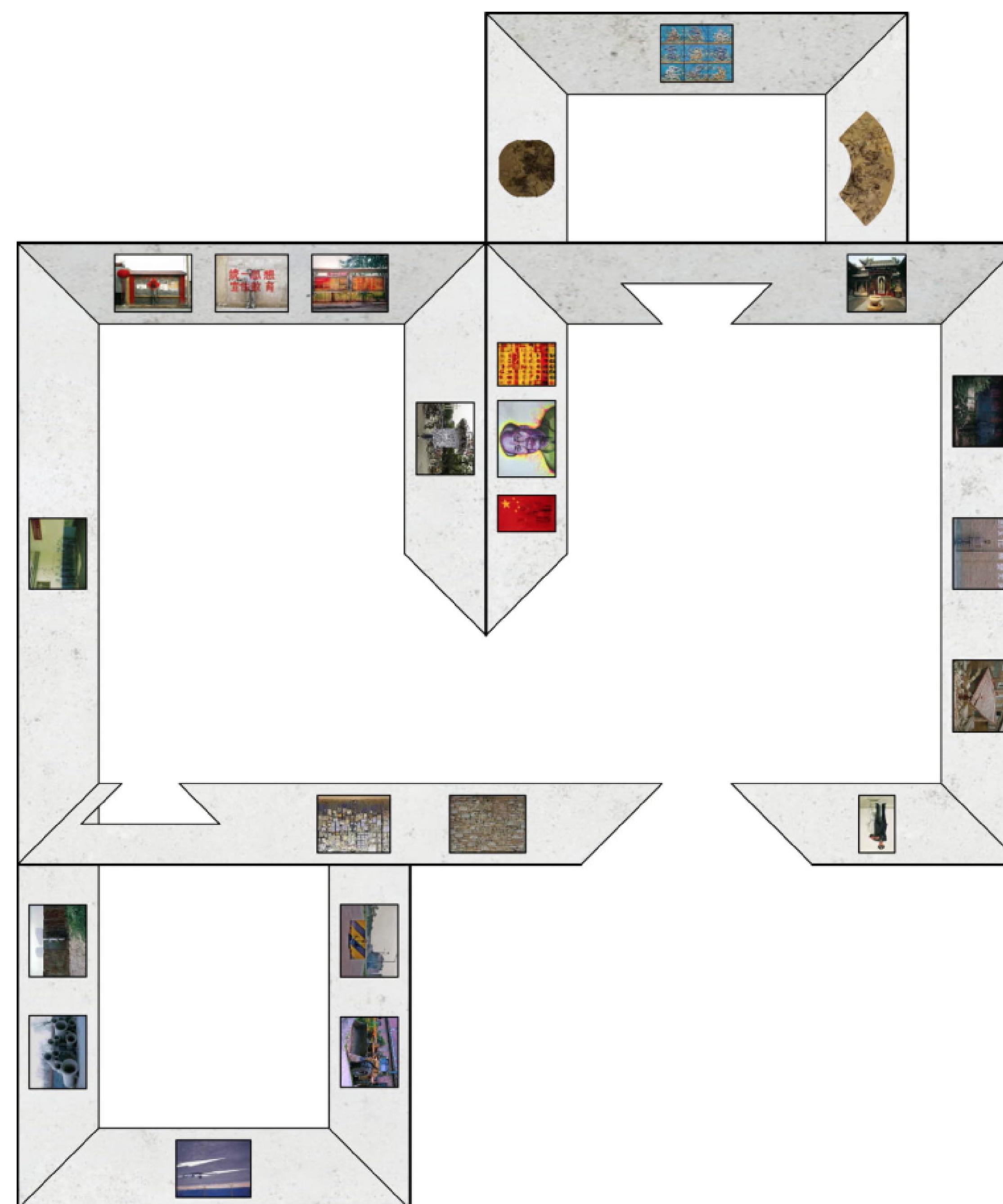
PROJECT

EXPERIMENT

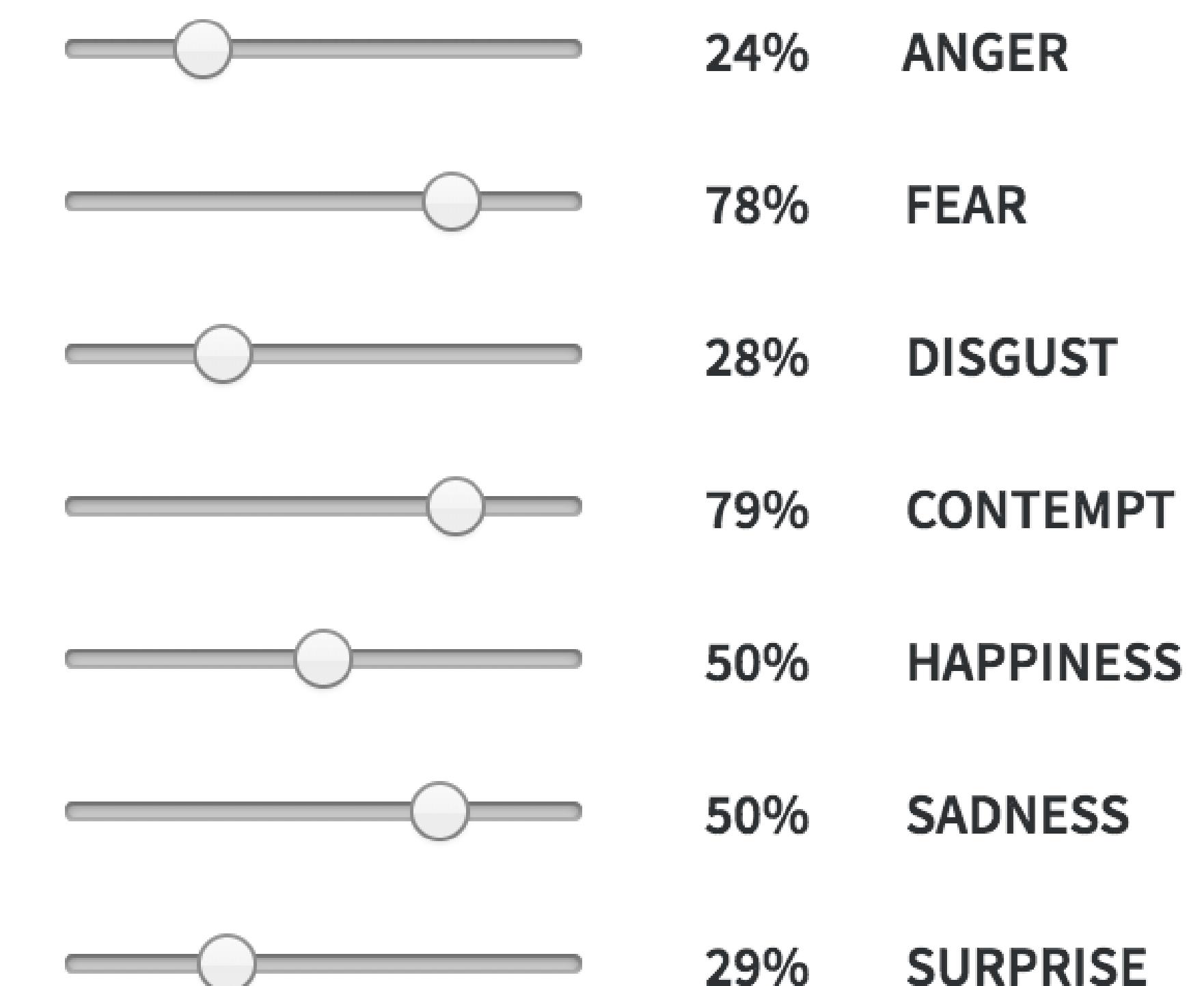
MUSEUM

TEAM

1ST FLOOR



EMOTIONS SELECTOR:



Ideal duration of the visit (in minutes)

15

GENERATE

# DEMO-TEAM

10

PROJECT

EXPERIMENT

MUSEUM

TEAM



Skander Hajri

COMPUTER SCIENCE

Computer Science student at EPFL, not Italian by birth but Italian by adoption. Likes olive oil, especially on bruschetta.



Licia Tomaselli

ARCHITECTURE

Architecture exchange student at EPFL, always around informatics though. Has a Facebook account just to look at kittens.



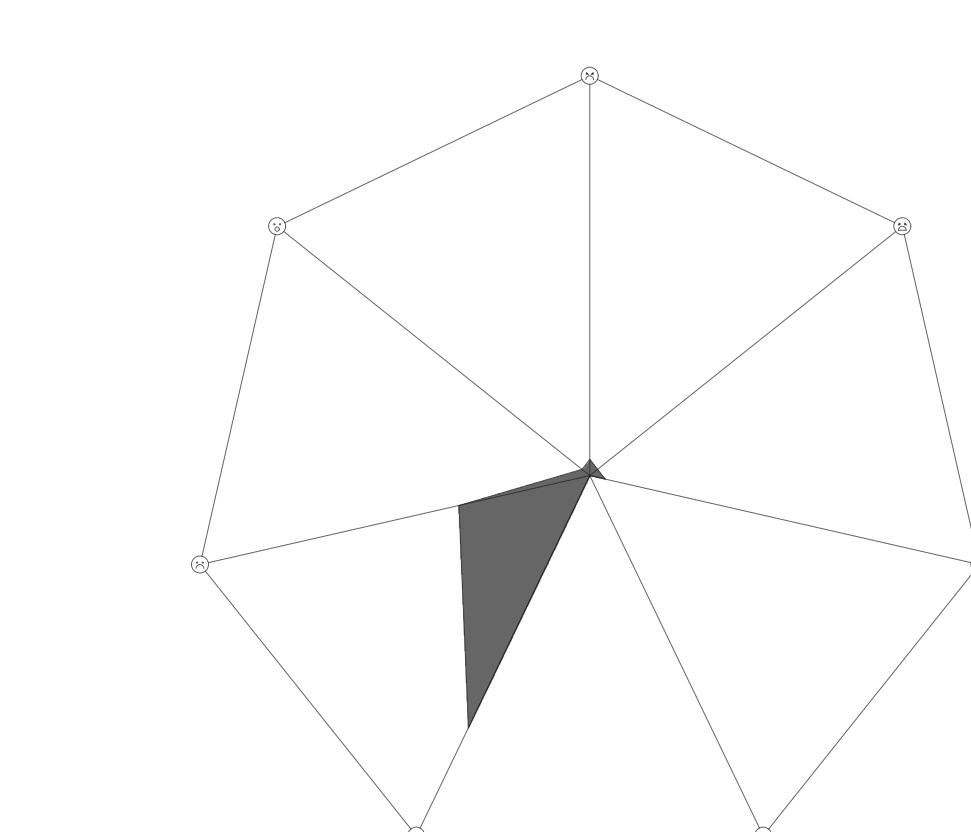
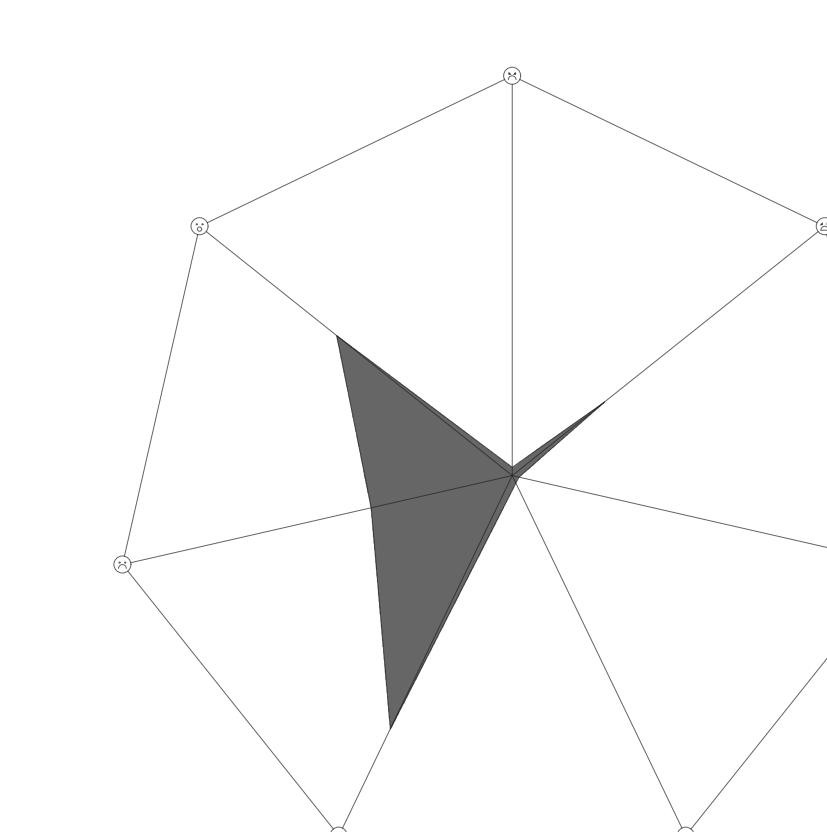
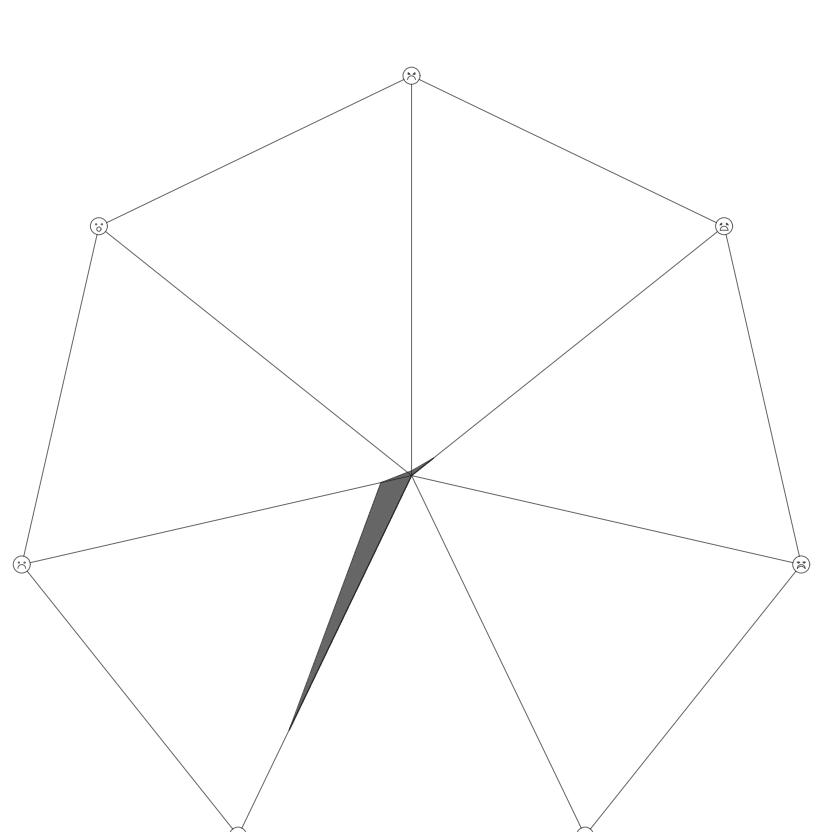
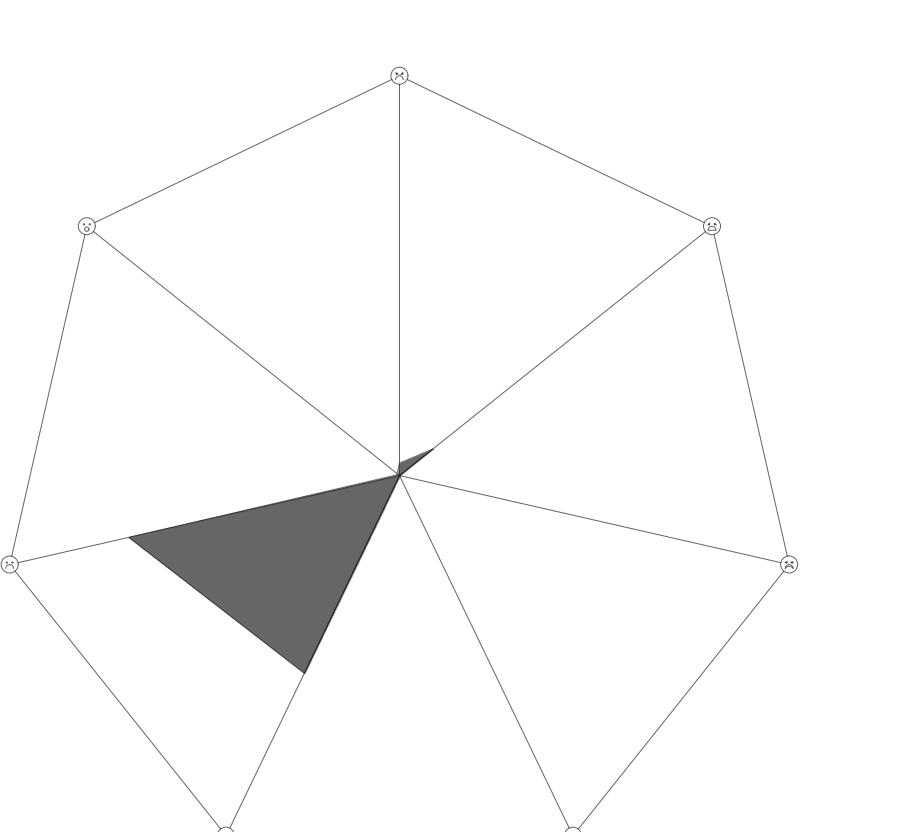
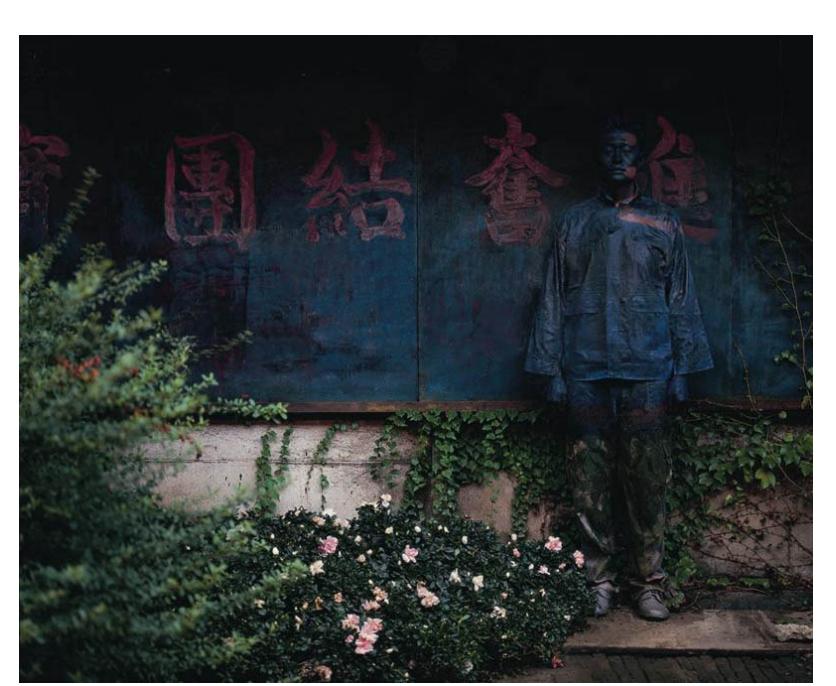
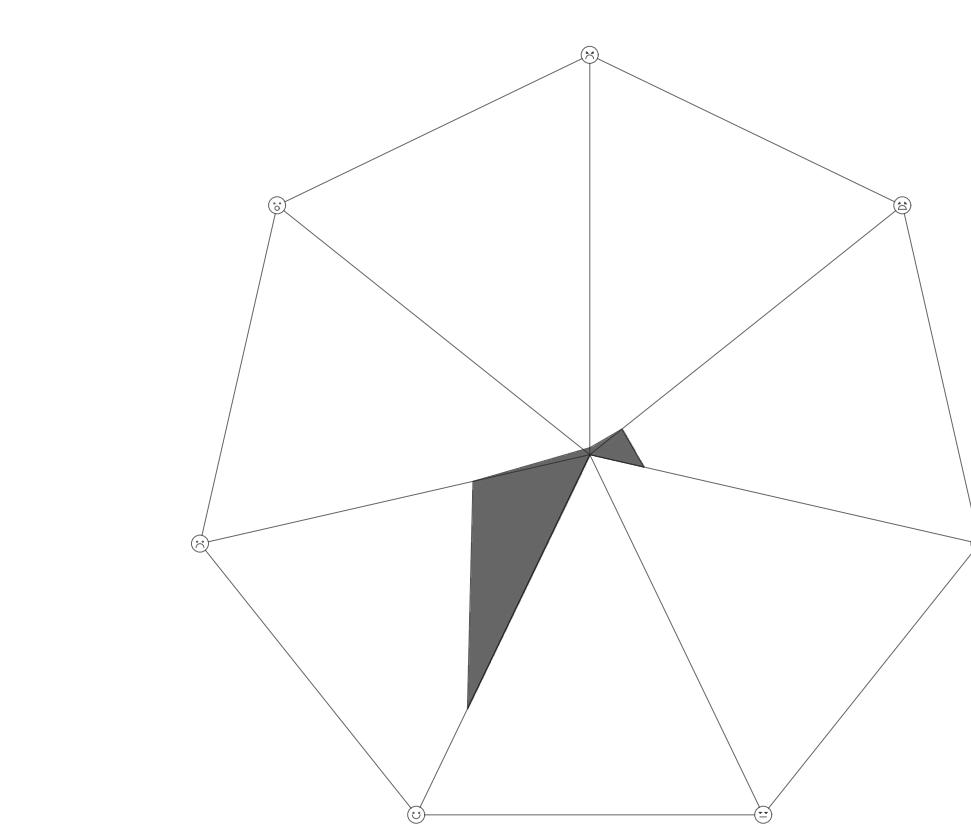
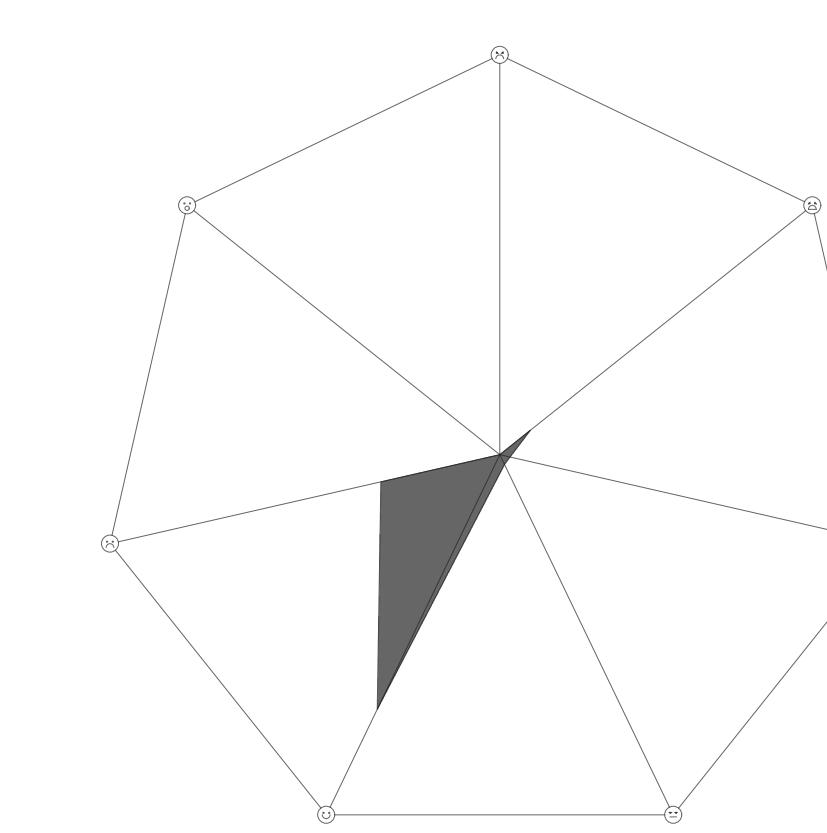
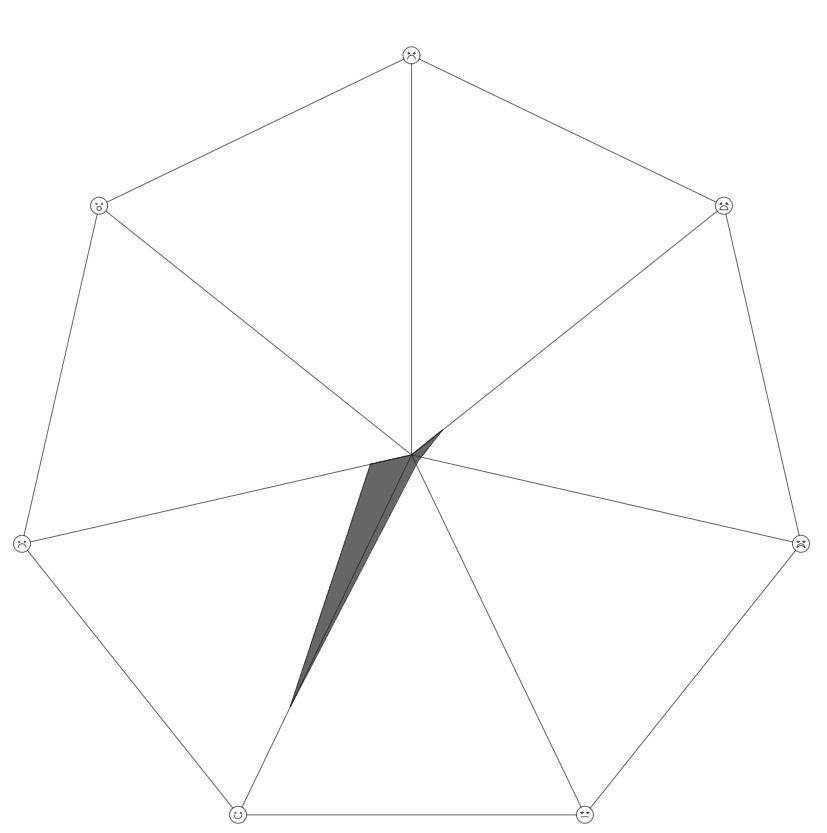
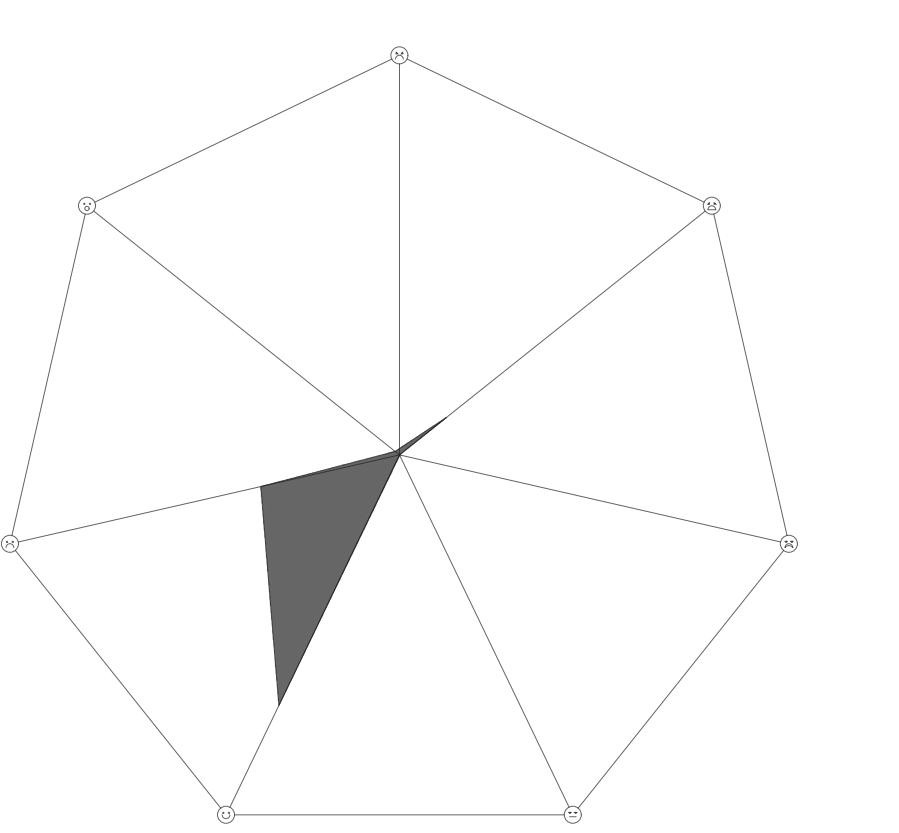
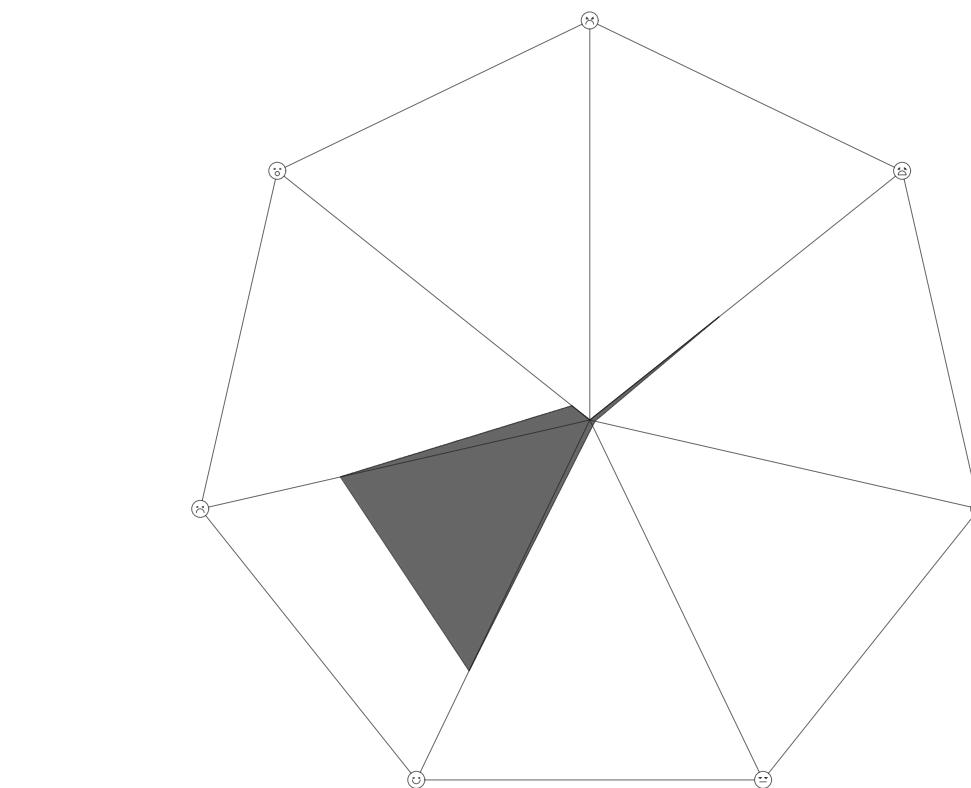
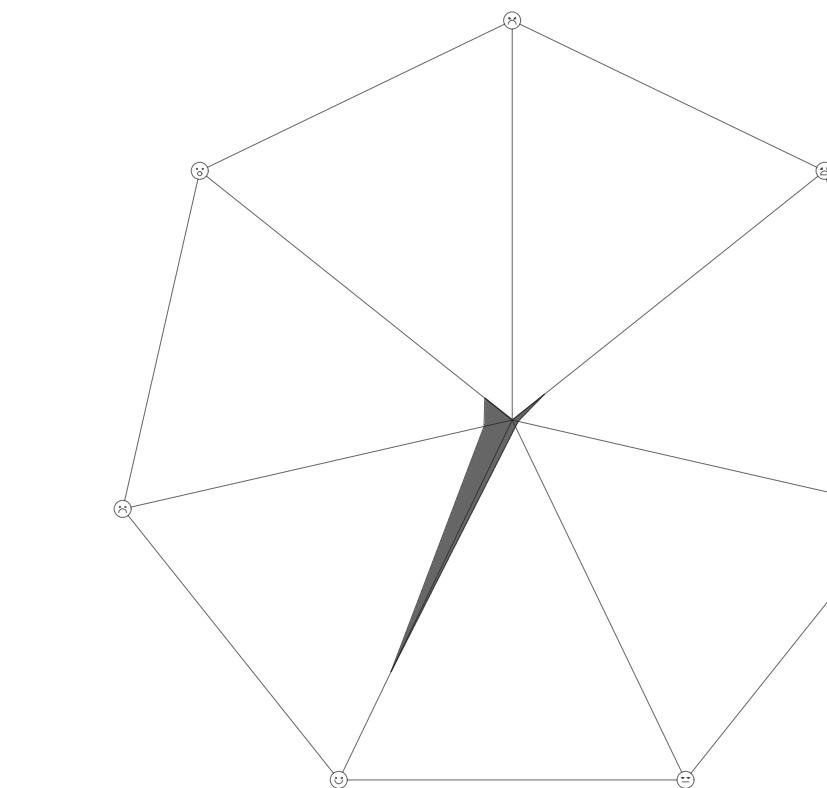
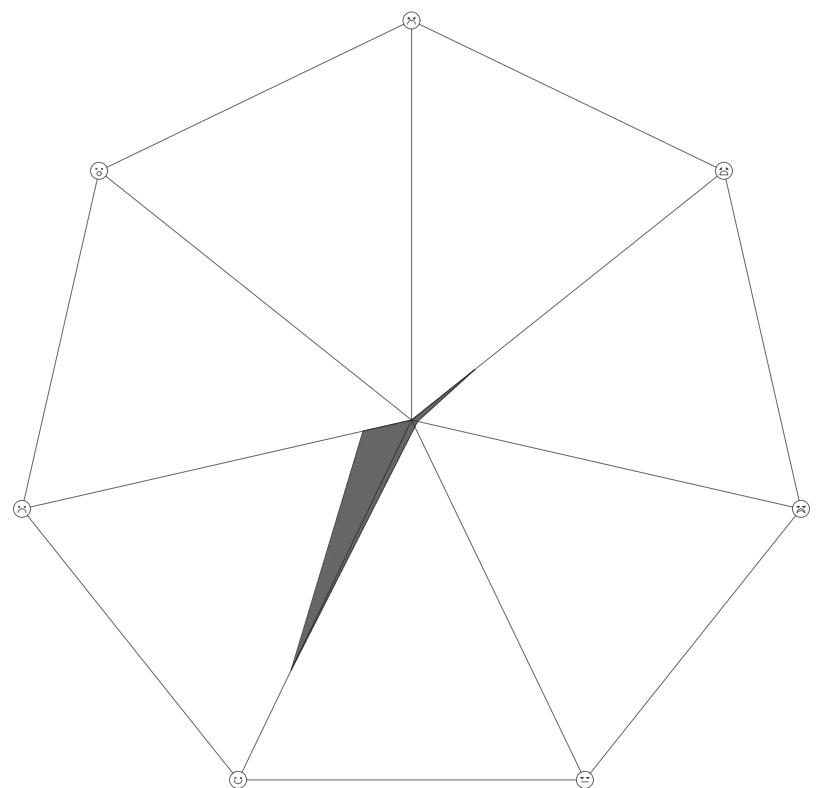
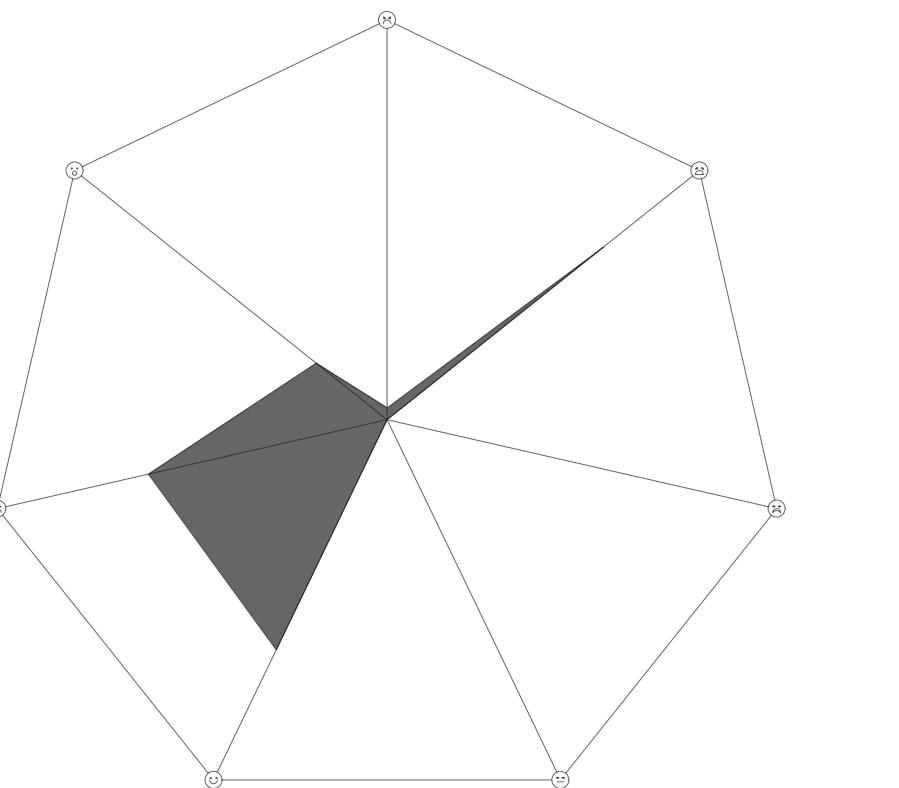
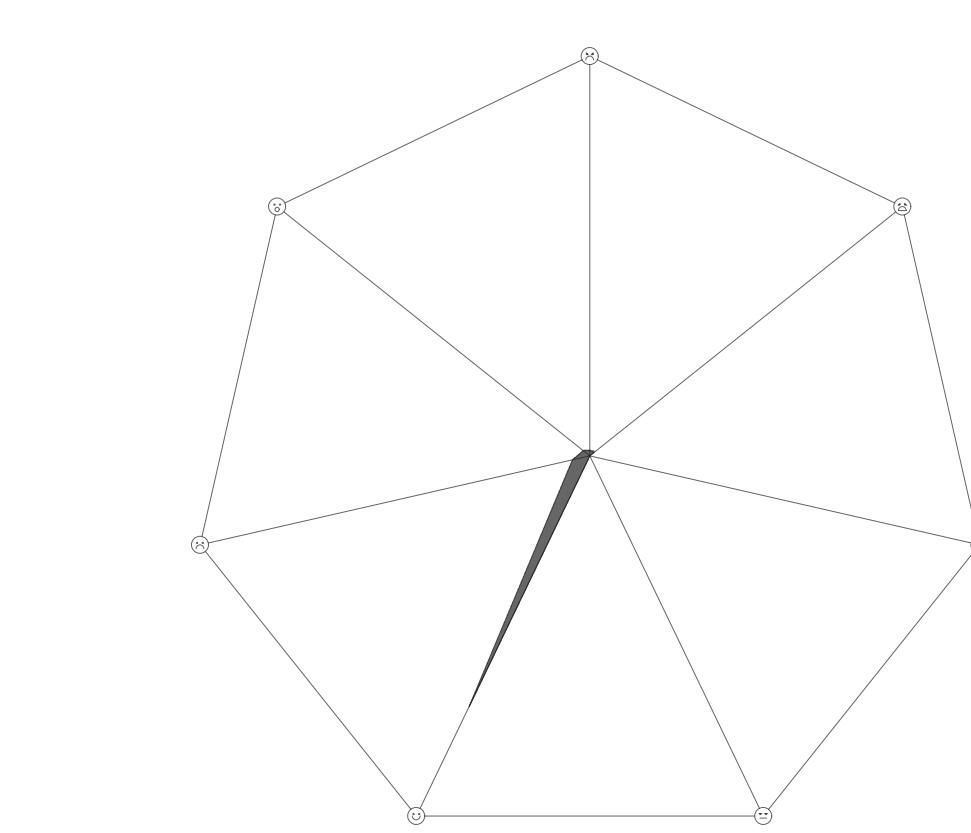
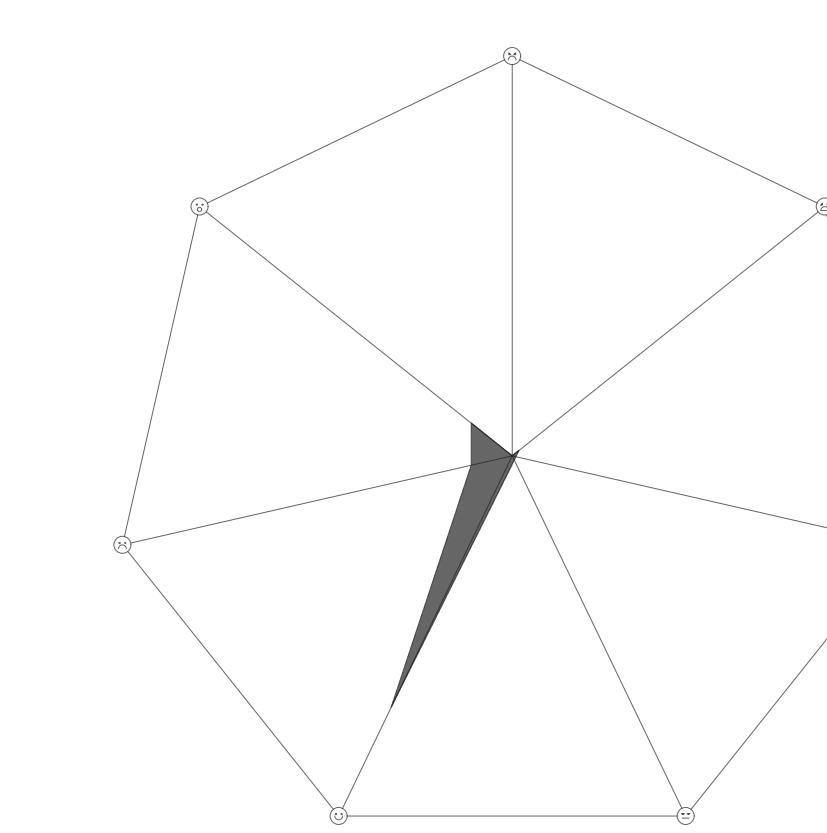
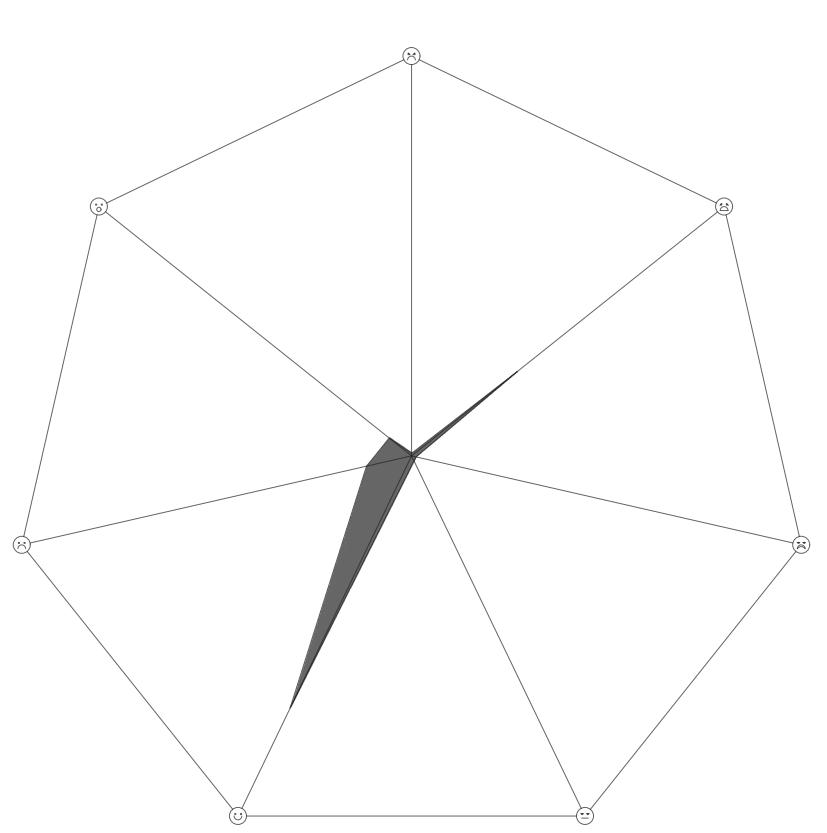
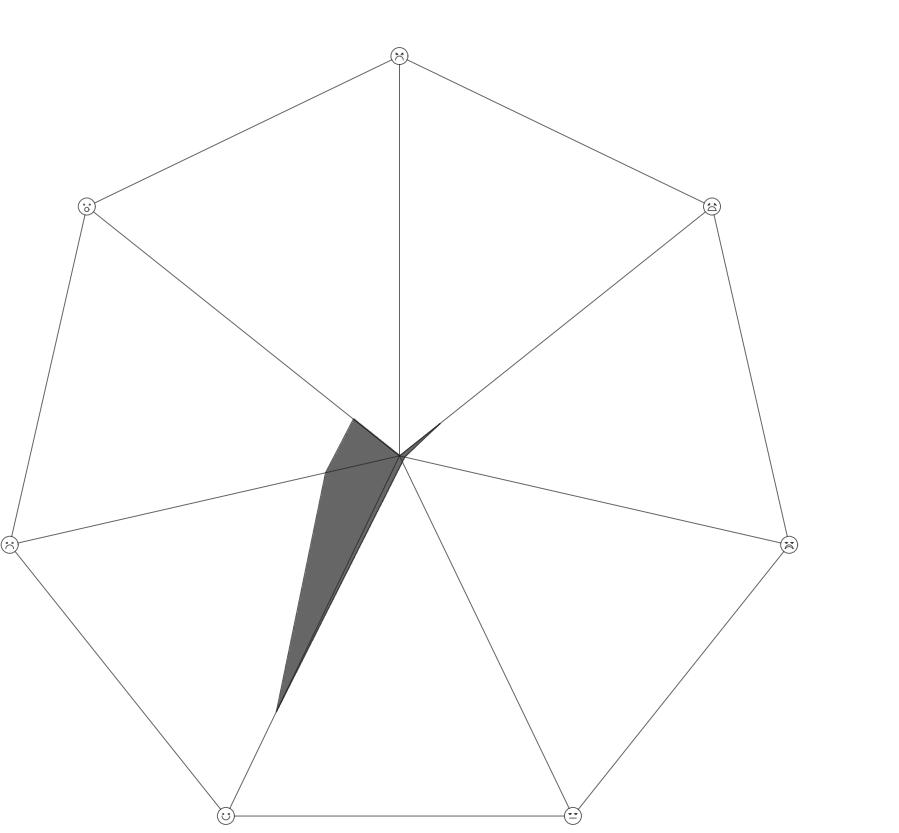
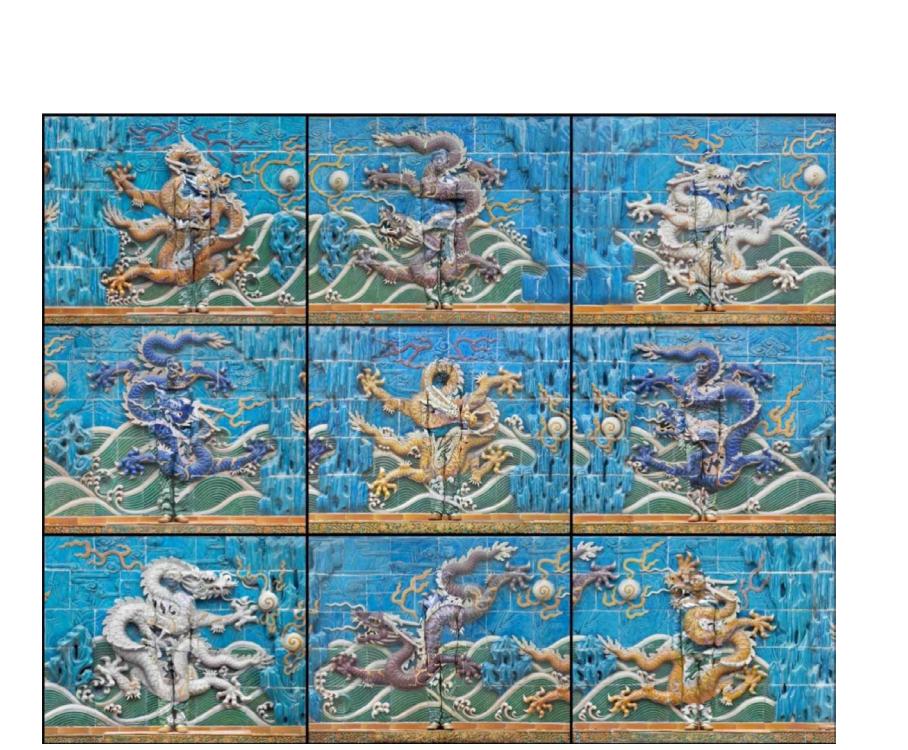
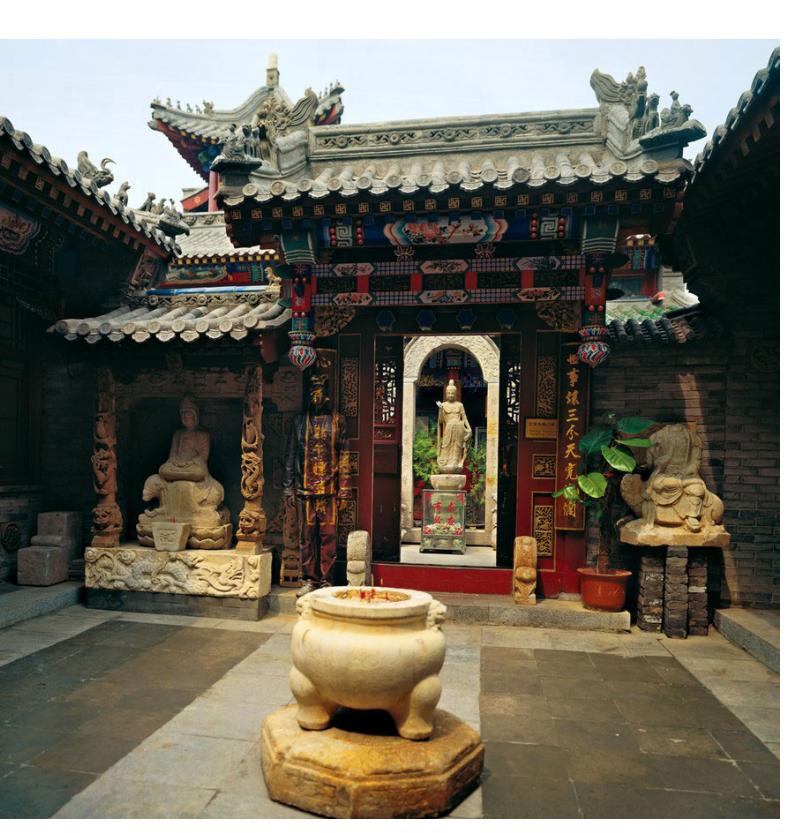
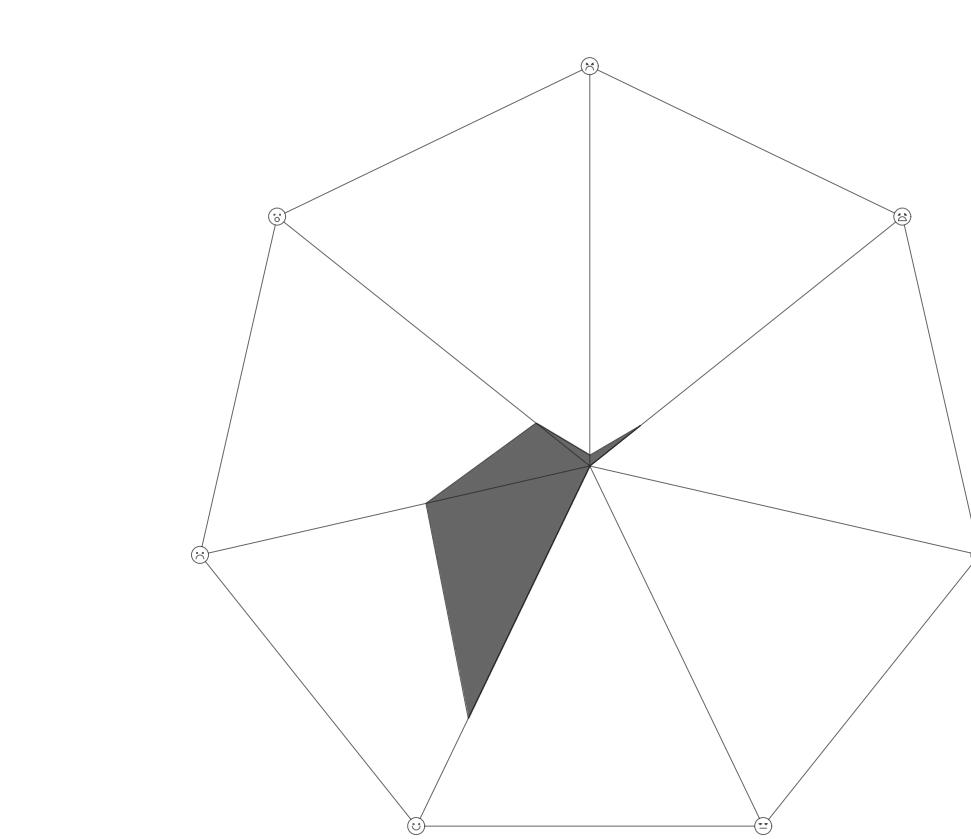
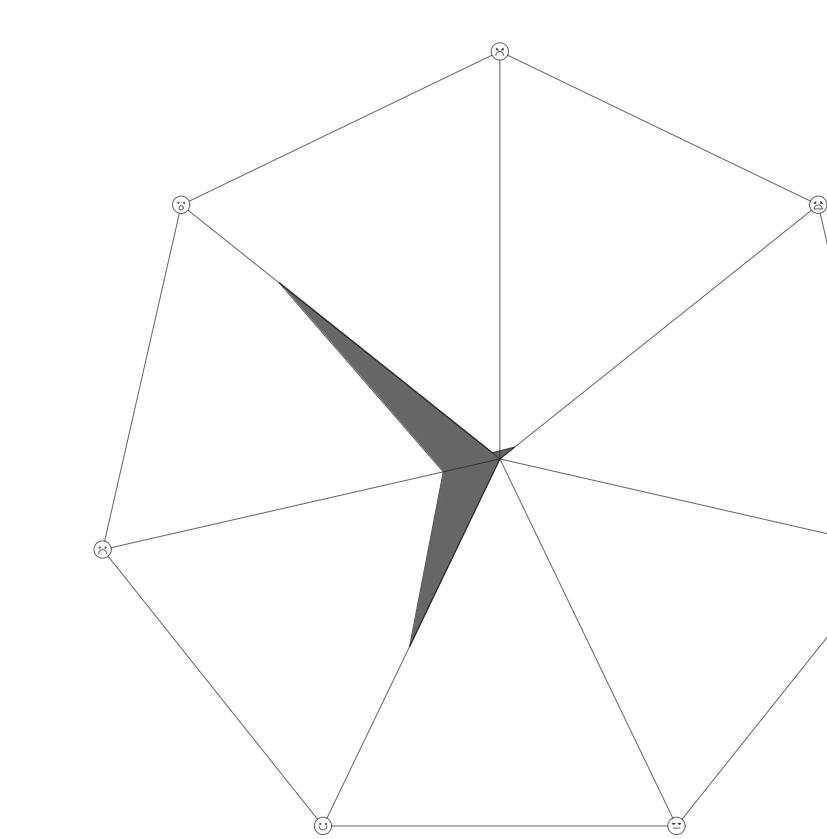
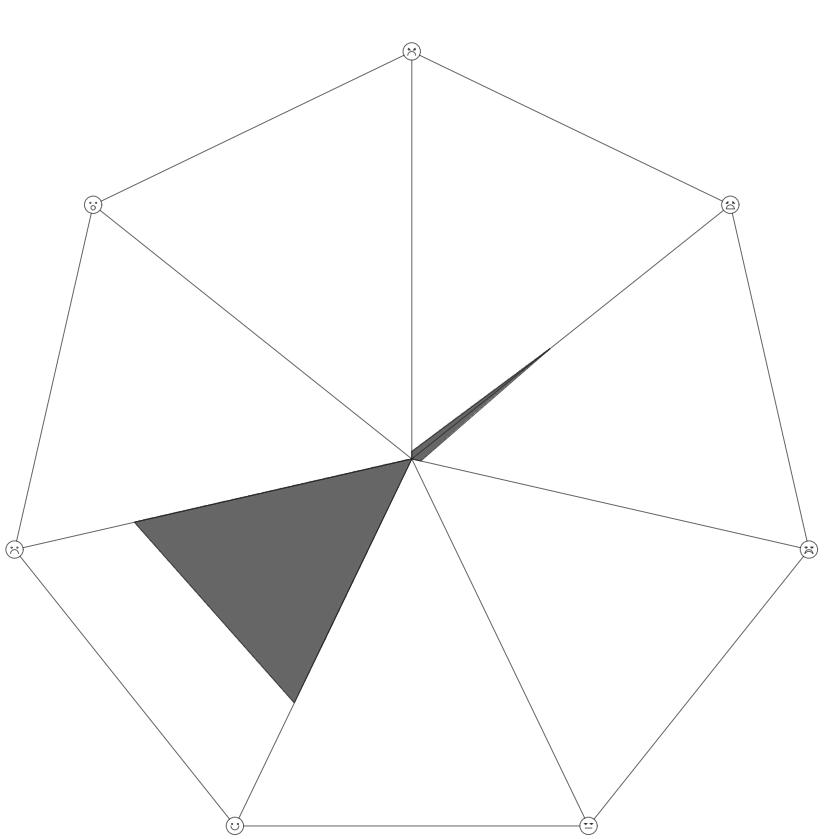
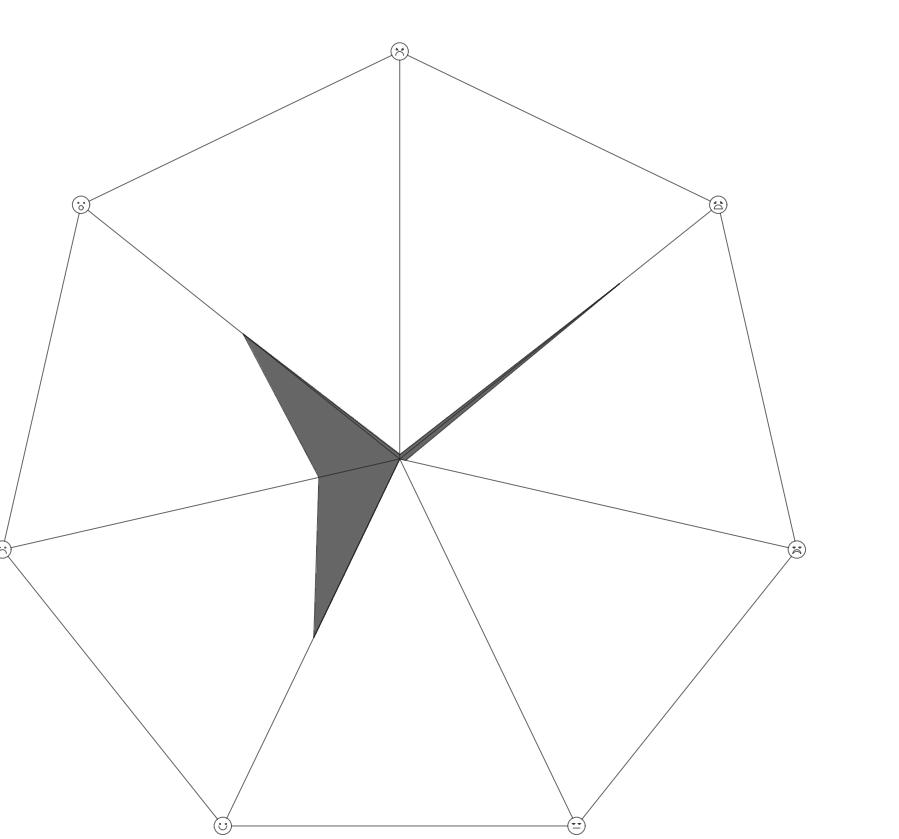
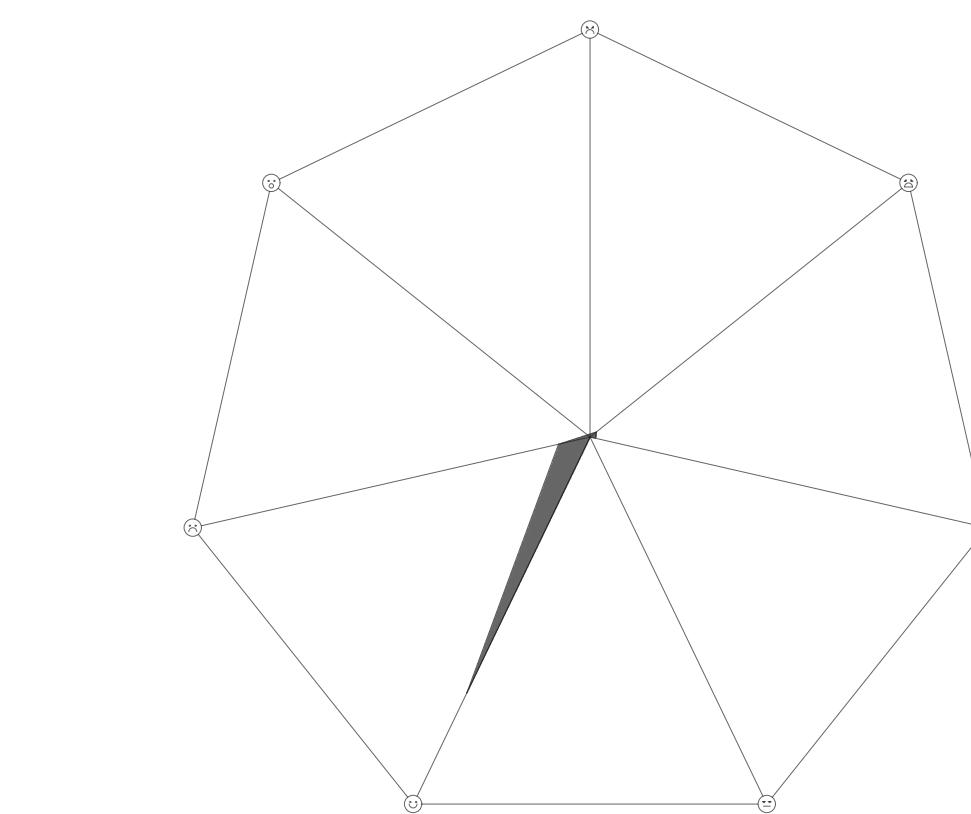
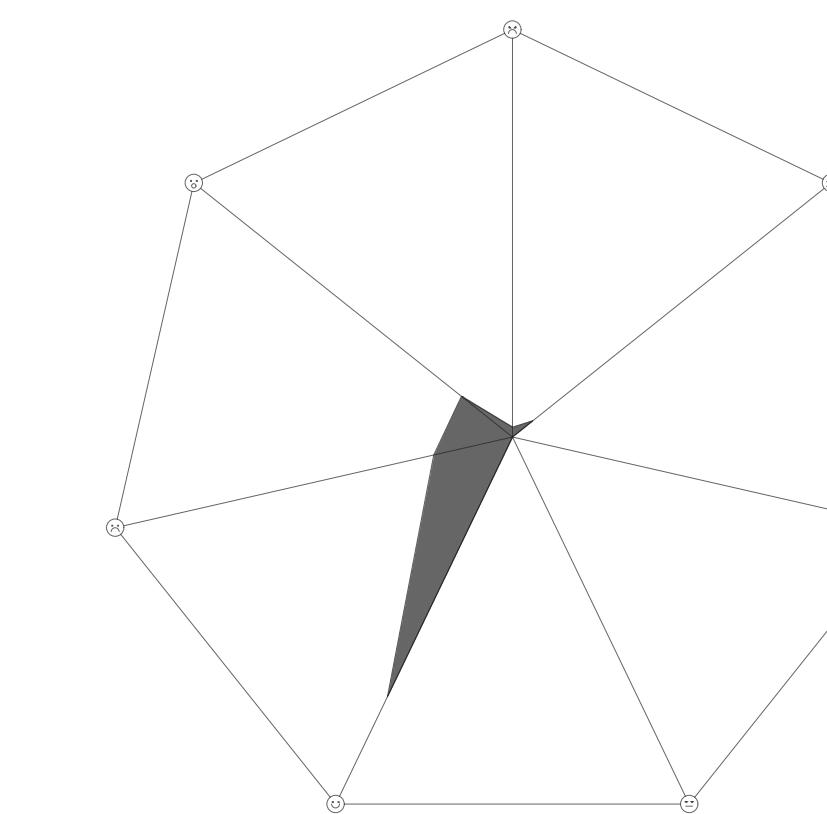
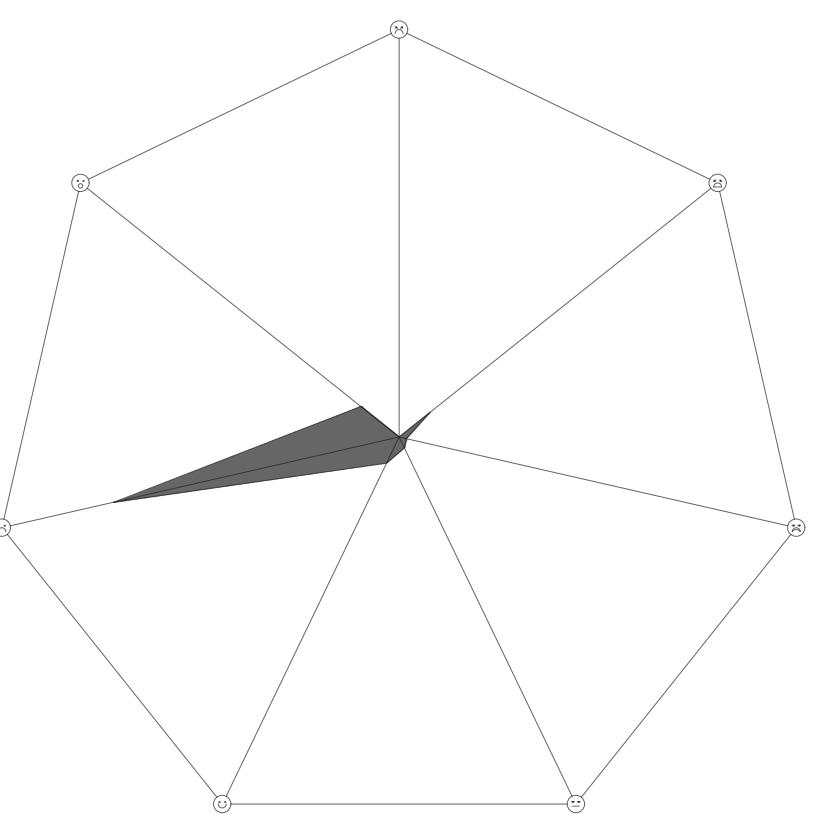
Costanza Volpini

COMPUTER SCIENCE

Always mistaken for an architecture student is, in fact, in the Computer Science field. Has an addiction for all kinds of bento box.

EXPERIENCE DESIGN (FALL SEMESTER 2018)

© 2018 Copyright: Costanza Volpini, Licia Tomaselli and Skander Hajri



# FACE to FACE

