

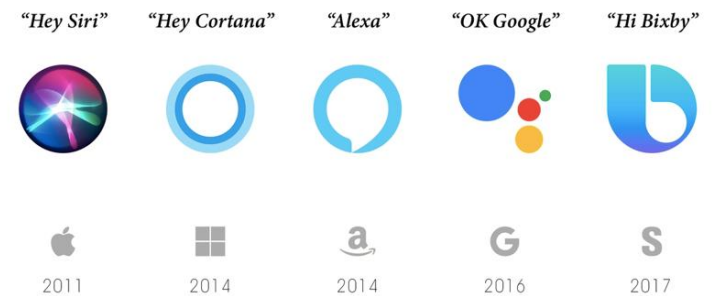
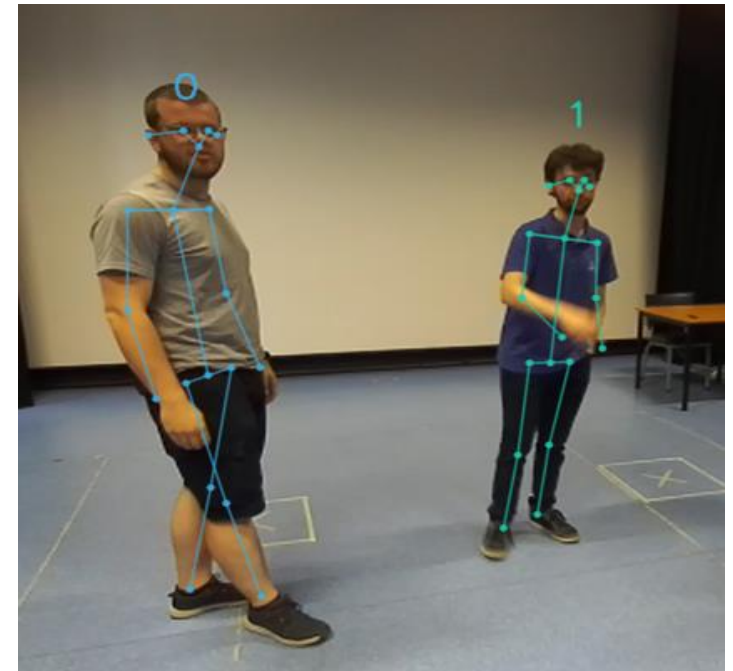
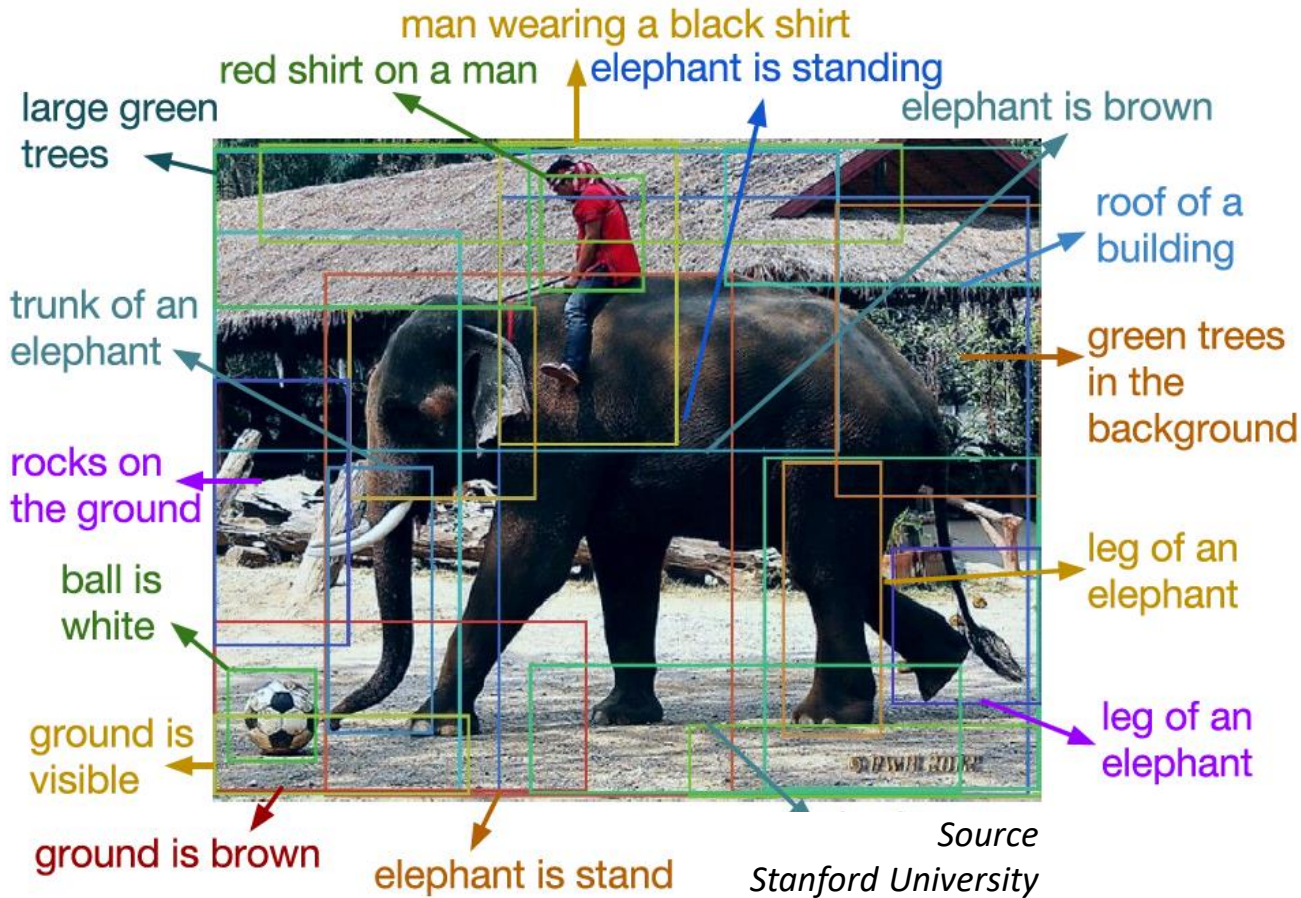
# AI for enhancing visitor experience in museums

Brussels, March 20th, 2024



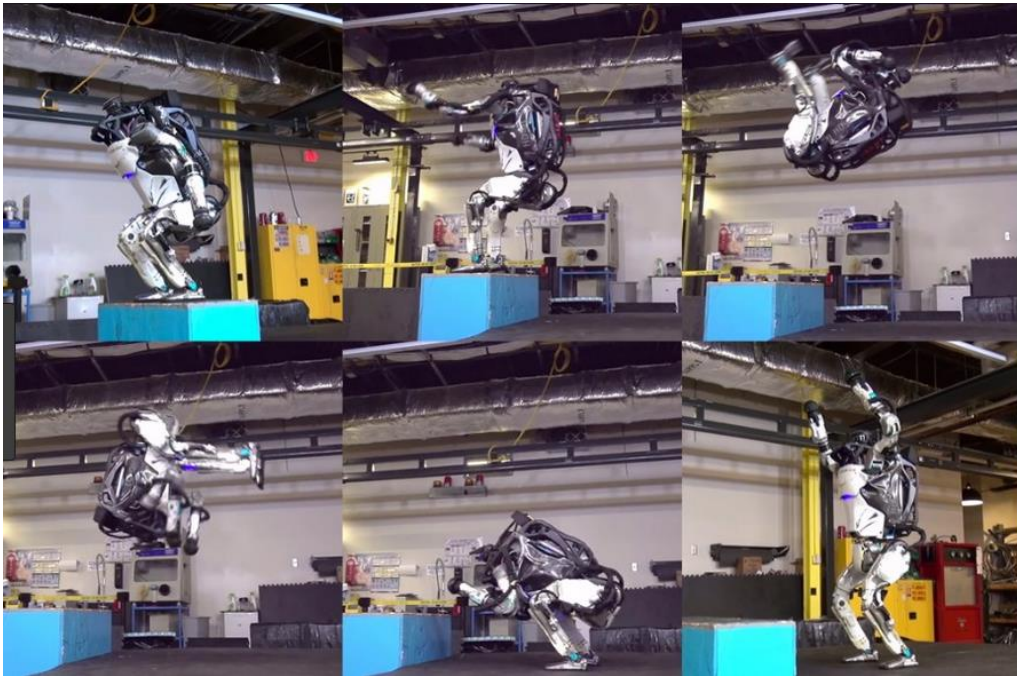
Prof. T. Dutoit,  
NUMEDIART Institute, UMONS

# Which AI are we talking about? – AI for Perception



Deep Neural Nets (2012)

# Which **AI** are we talking about? – AI for **Robotics**



Source Boston Robotics

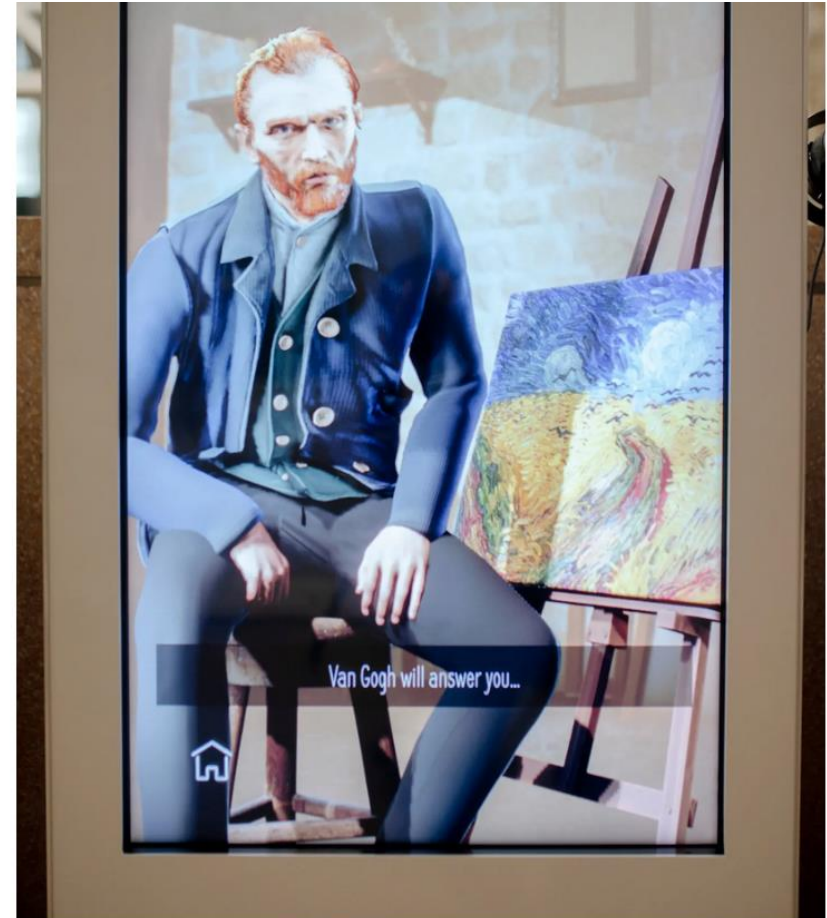
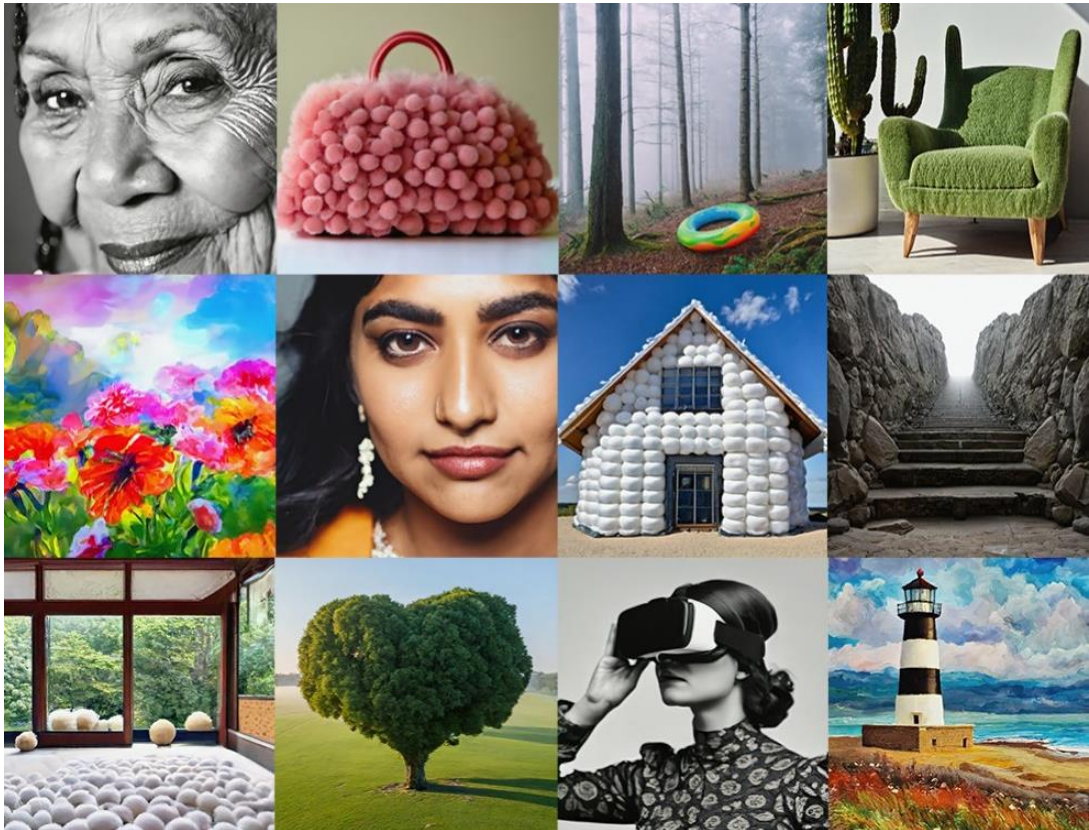


Source Springer Nature



Source MPR News

# Which **AI** are we talking about? – **Generative AI**

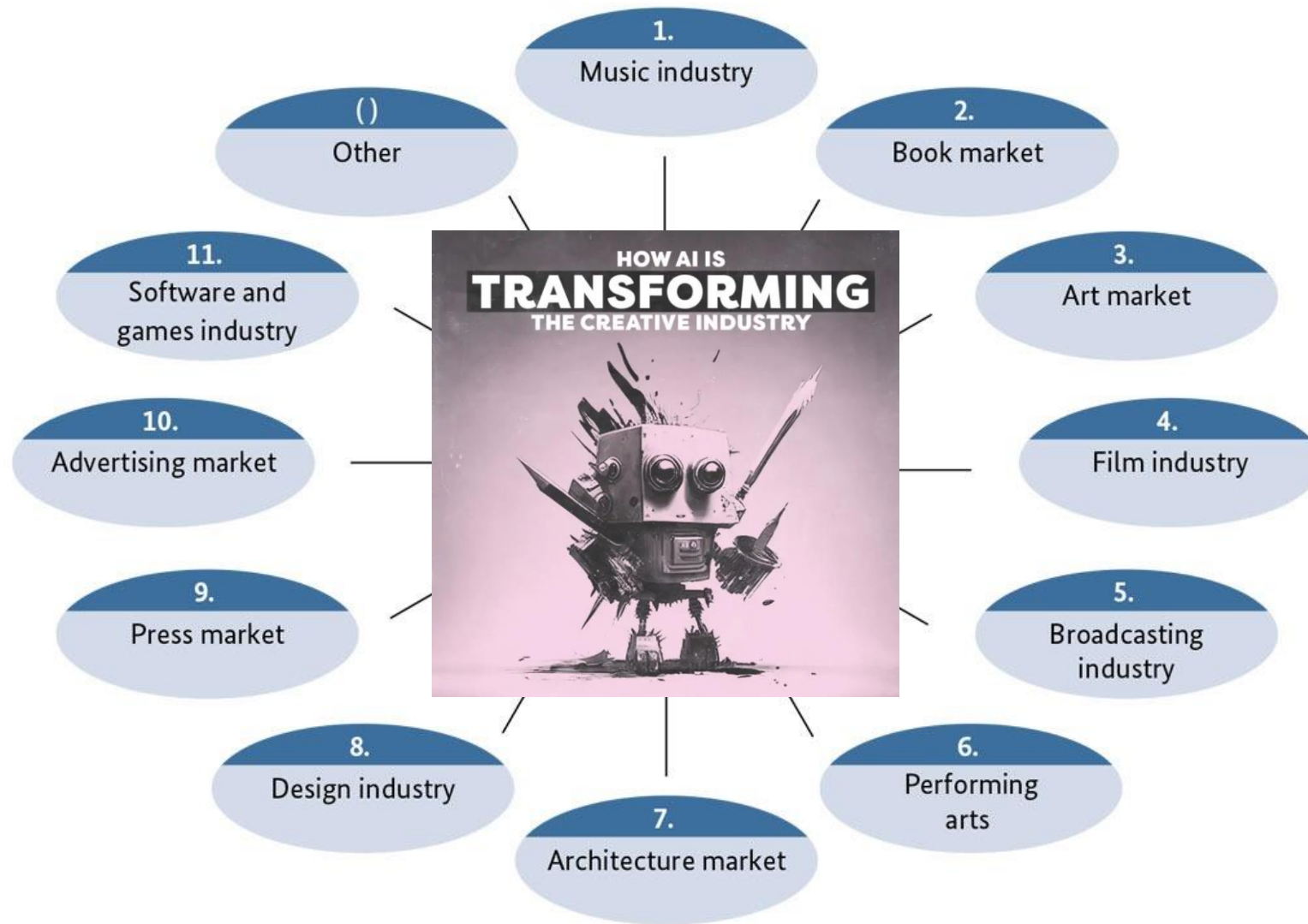


In "Bonjour Vincent" at the Musée d'Orsay, Vincent van Gogh chats with visitors, courtesy of artificial intelligence. A.I. developers have learned to gently steer the conversation on sensitive topics like suicide to messages of hope. Elliott Verdier for The New York Times

*GANs, Normalizing Flows, Transformers (2017)*

*Large Language Models (LLMs, 2018)*

# AI and the ICC market



# AI for museums

- **Enhancing visitor experience**
- Collection Management and Conservation
- Exhibition Planning and Curation
- Security and Monitoring
- Education
- Visitor analytics

# AI for enhancing visitor experience in museums

- Sketch-based information retrieval (DeepSketch)
- Embodiment of historical characters (Add-Muse)
- Gaze analysis and artwork exploration(RegArt)
- Audio immersion - Enhanced accessibility (DragOnBlind)

# DeepSketch

EU/FEDER/DigiMIR (2019-2023)

## Search by similarity in the collections of the Royal Museums of Fine Arts of Belgium (Brussels)

As part of the exhibition dedicated to Pierre Alechinsky (01.04 > 01.08.2021) at the Royal Museums of Fine Arts of Belgium (MRBAB), a device animated by AI allows the interactive discovery of the complete collection of drawings and paintings by the artist kept at the Museum.





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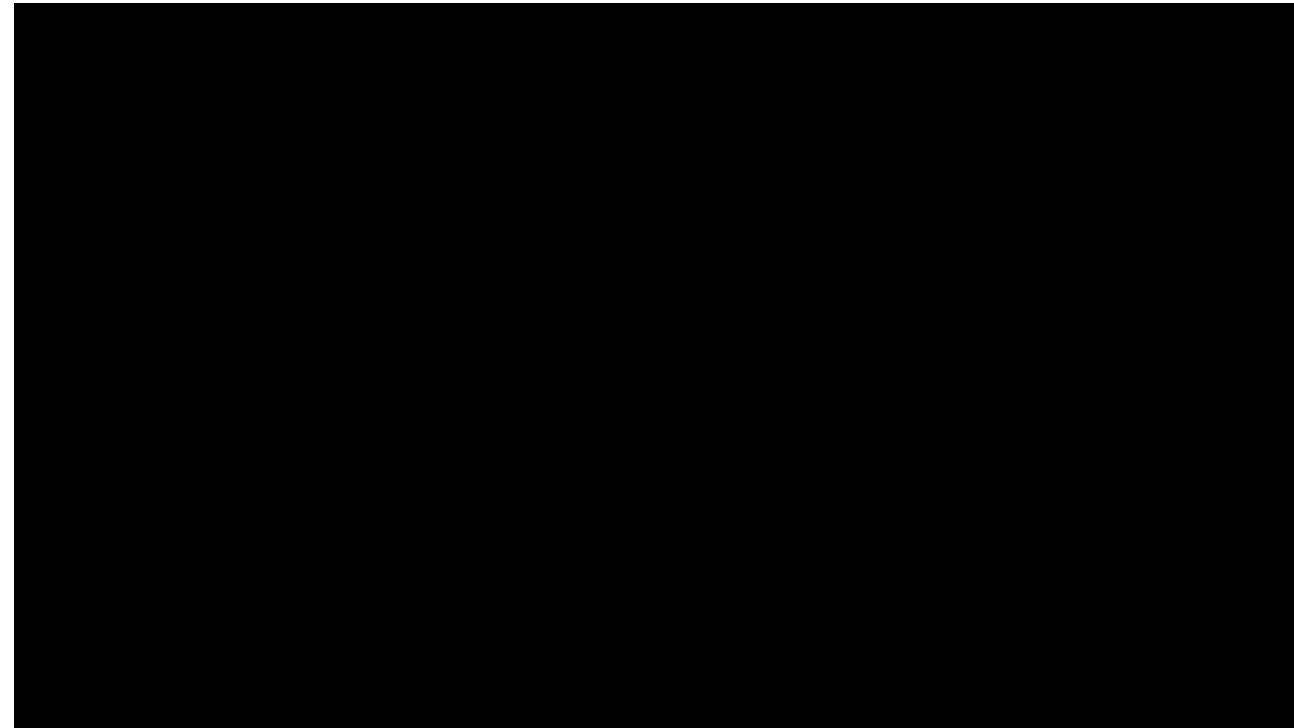
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# AI creative partner

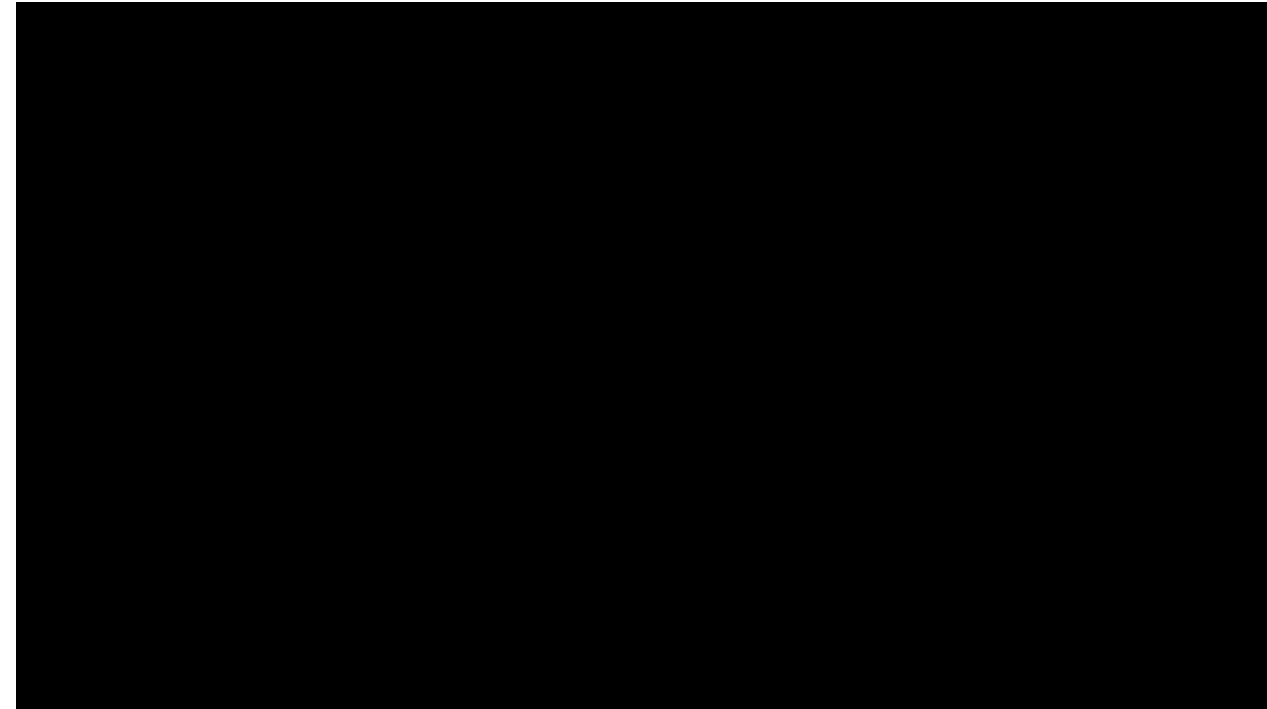
<https://helloimflo.net/>

HELLO, I'M FLO

## **Creative AI with a tangible interface**

**(could be adapted to information retrieval)**

This installation by Belgian artist Florent Schirrer proposes to assemble strips of colored paper to trigger a Generative AI process. It could also be used for information retrieval in a museum database.



## AddMuse

Feder/DigiLABS (2017-2023)



### Collaborative gaming

The interactive and immersive experience aims to confront a group of visitors with different key moments of the Doudou, inviting them to appropriate the Ducasse of Mons, and bring it to life together through the characters / actors, their characteristic gestures, objects, groups, important places of this heritage, etc.



# DragOnBlind

FEU/EDER/DigiSTORM 2017-23

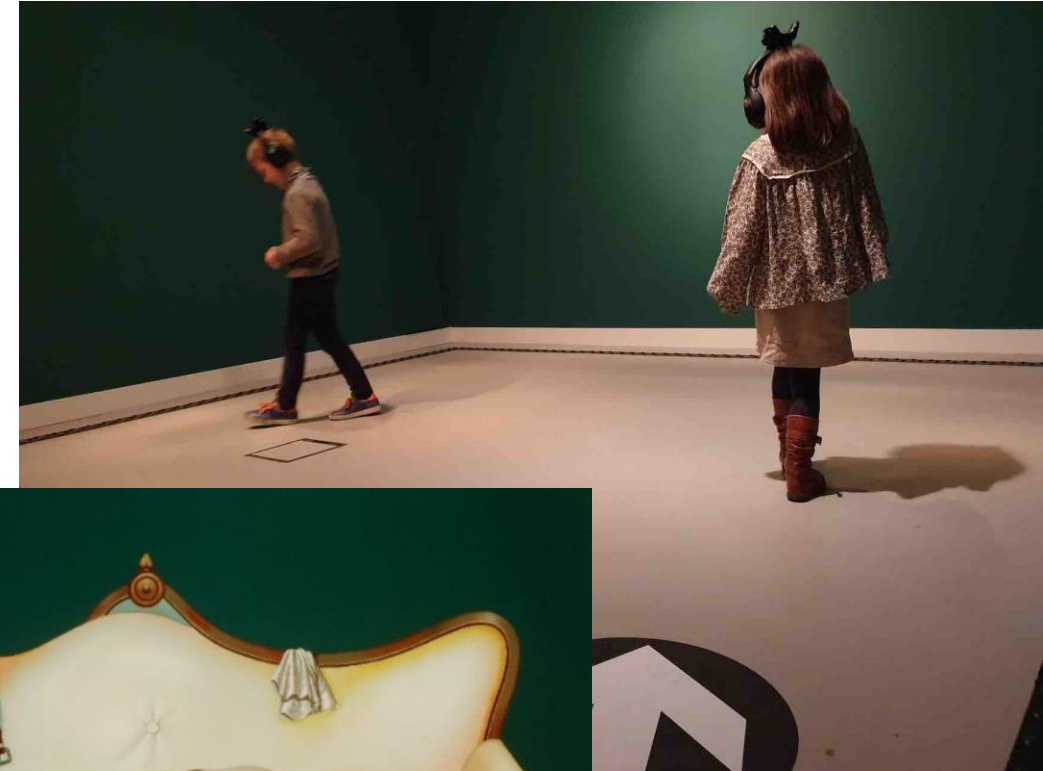


## An immersive, audio experience

Exhibited at the BAM Museum in Mons, this installation proposes to discover a painting of Carlos Revilla (« Le chien ») with your ears first.

During the experience, visitors enter an area marked out on the ground, wearing headphones fitted with a tracker. They hear sounds “from the painting” according to their position in the room.

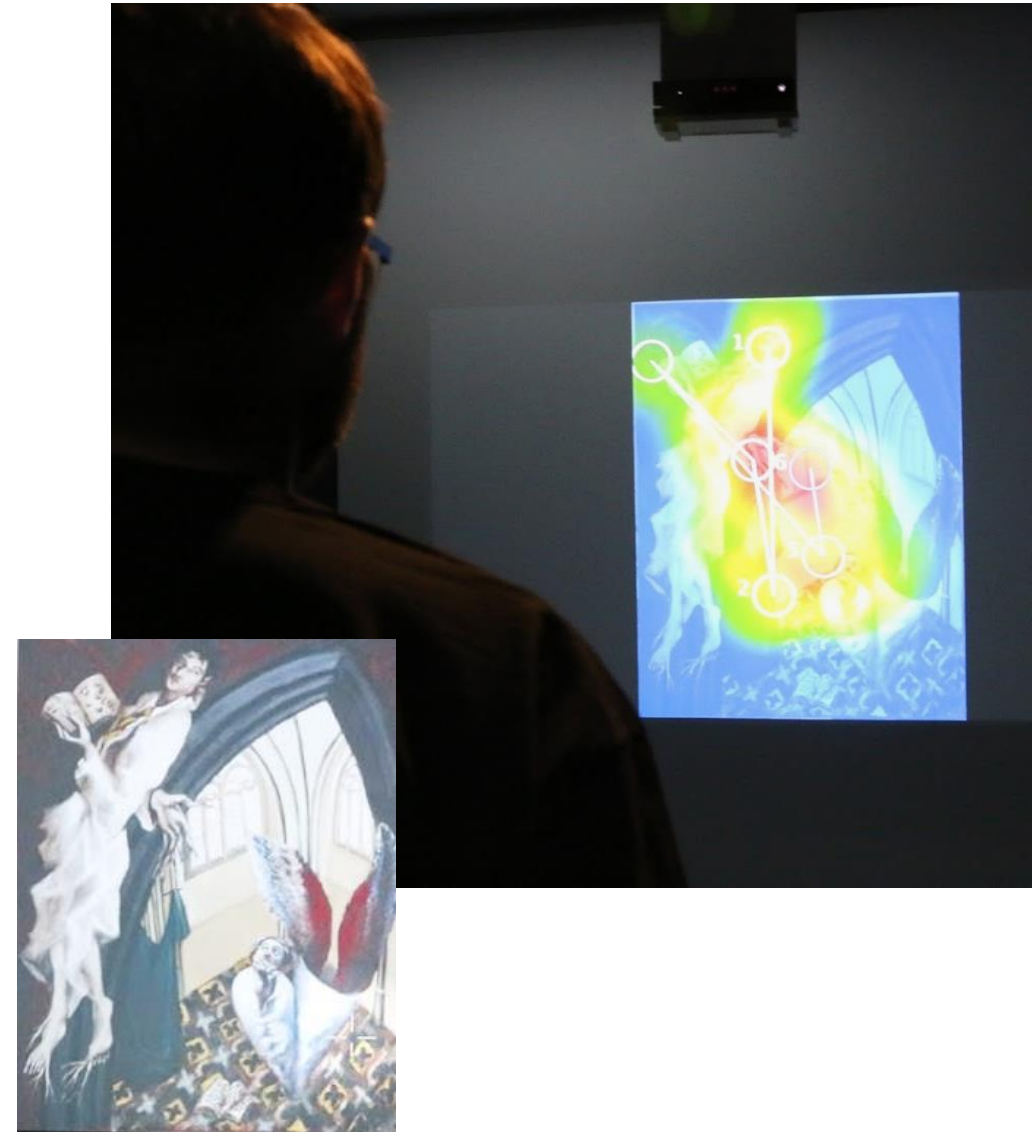
After three minutes, a voice asks the visitor to remove his headphones and explains that he has just explored a work of art with his ears.



## Analyzing the gaze of visitors on a painting

A stand-alone interactive installation for the general public, using eye-tracking and predictive attention analysis technologies to give visitors a sense of how their gaze automatically moves through “Isaïe d’Issenheim” by French painter Gérard Garouste.

At the end of the experience, the visitor receives a printed map of his eye exploration, compared to what the artist considers as important to see.



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- Interactive chatbots (Talk to Van Gogh)
- Personalized tours (from user preferences)
- ...