# Exhibition overview

AI: More than Human tells the rapidly developing story of AI, from its extraordinary ancient roots in Japanese Shintoism and Ada Lovelace and Charles Babbage's early experiments in computing, to AI's major developmental leaps from the 1940s to the present day to show how an age-old dream of creating intelligence has already become today's reality. Incorporating a broad range of digital media and immersive art installations Ai: More than Human gives visitors the chance to interact directly with exhibits to experience AI's capabilities first-hand.

The exhibition was Guest Curated by Suzanne Livingston and Maholo Uchida, who were supported by a group of specialist advisors including Ramon Amaro (Goldsmiths University), Paola Antonelli (MoMA), Hiroshi Ishiguro (Intelligent Robotics Laboratory, Osaka), Kenric McDowell (Google Research), Prof Murray Shanahan (Imperial College, University of London) and Anders Sandberg (Future of Humanity Institute, Oxford University).

The co-production partner was Forum Groningen.

Myriad (Tulips)
Anna Ridler
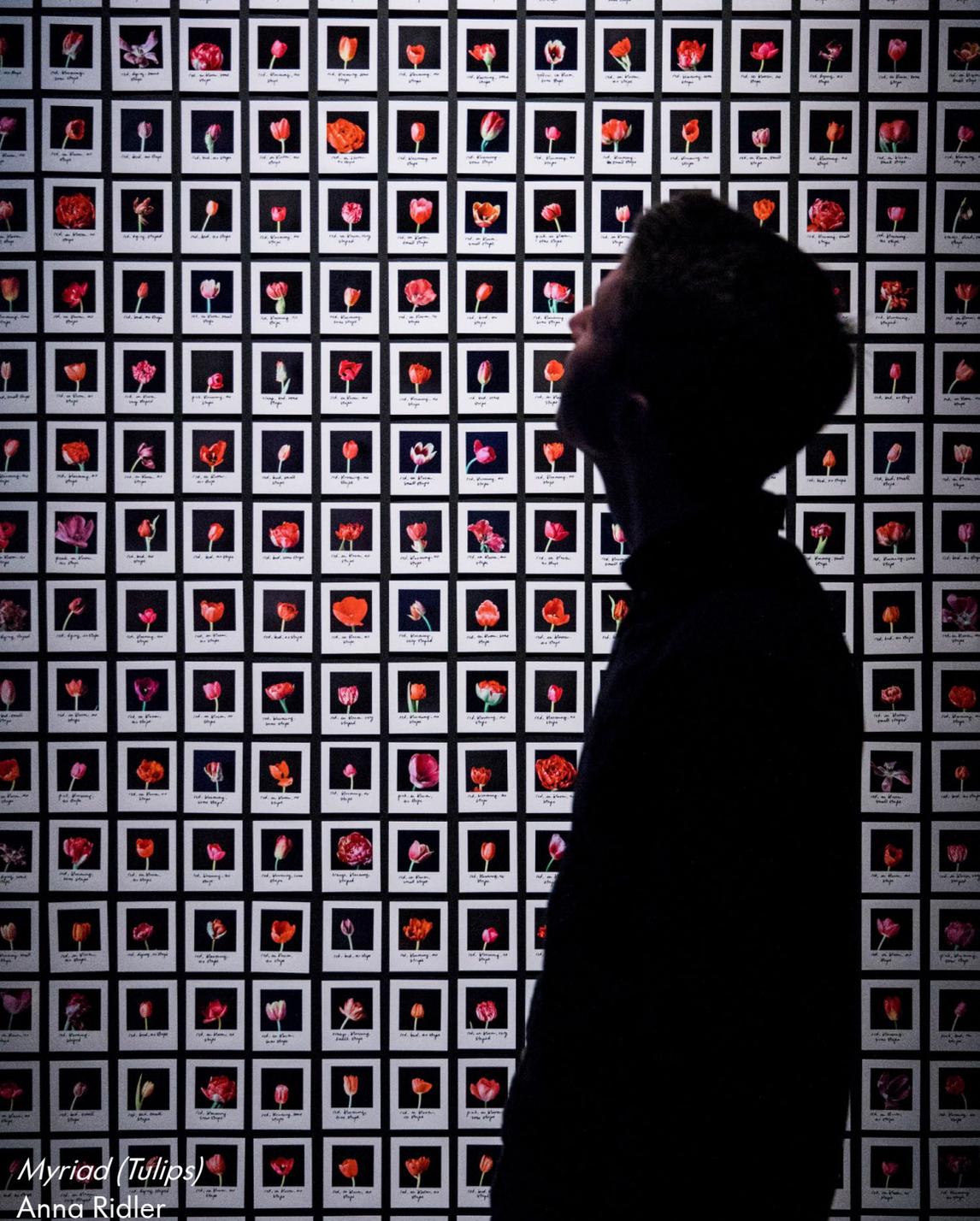
The exhibition presents commissions and projects by, artists, researchers and scientists including:

Memo Akten, Joy Buolamwini, Certain Measures (Andrew Witt & Tobias Nolte), Es Devlin, Justine Emard, Alexandra Daisy Ginsberg, Stefan Hurtig & Detlef Weitz, Mario Klingemann, Kode 9, Lawrence Lek, Daito Manabe & Yukiyasu Kamitani, Massive Attack & Mick Grierson, Lauren McCarthy, Yoichi Ochiai, Neri Oxman, Qosmo, Anna Ridler, Chris Salter in collaboration with Sofian Audry, Takashi Ikegami, Alexandre Saunier and Thomas Spier , Sam Twidale and Marija Avramovic, Yuri Suzuki, and Universal Everything.

AI: More than Human also includes some of the most prominent and cutting-edge research projects, from:

DeepMind, Jigsaw, Massachusetts Institute of Technology Computer Science Artificial Intelligence Laboratory (MIT CSAIL), IBM, Sony Computer Science Laboratories, Google Arts and Culture, Google PAIR, Affectiva, Lichtman Lab at Harvard, Eyewire, Wake Forest Institute for Regenerative Medicine, Wyss Institute and Emulate Inc.

aibo
Sony Corporation

The narrative is explored through four sections and a series of commissions and installations

- **The Dream of AI**
- **Mind Machines**
- **Data Worlds**
- **Endless Evolution**

Installation view National Museums of Liverpool

The Dream of AI

Installation view
National Museums of Liverpool

People have always been intrigued by the artificial creation of living beings, whether through magic, science, religion or illusion.

This interest has expressed itself differently across civilisations, from the religious traditions of Shintoism and Judaism to the science of Arabic alchemy, ideas of the Gothic and early developments in mathematics.

By giving life to non-living things, people have explored their place in the world — sometimes feeling powerful, and sometimes feeling fearful of a world they can't control.

This belief inspired attempts to create human-like figures with special abilities and to develop systems of intelligence that extend the mind. These two dimensions have driven the project of artificial intelligence to where it is today.

Installation view Forum Groningen

AE/MAETH
Stefan Hurtig and Detlef Weitz

AE/MAETH
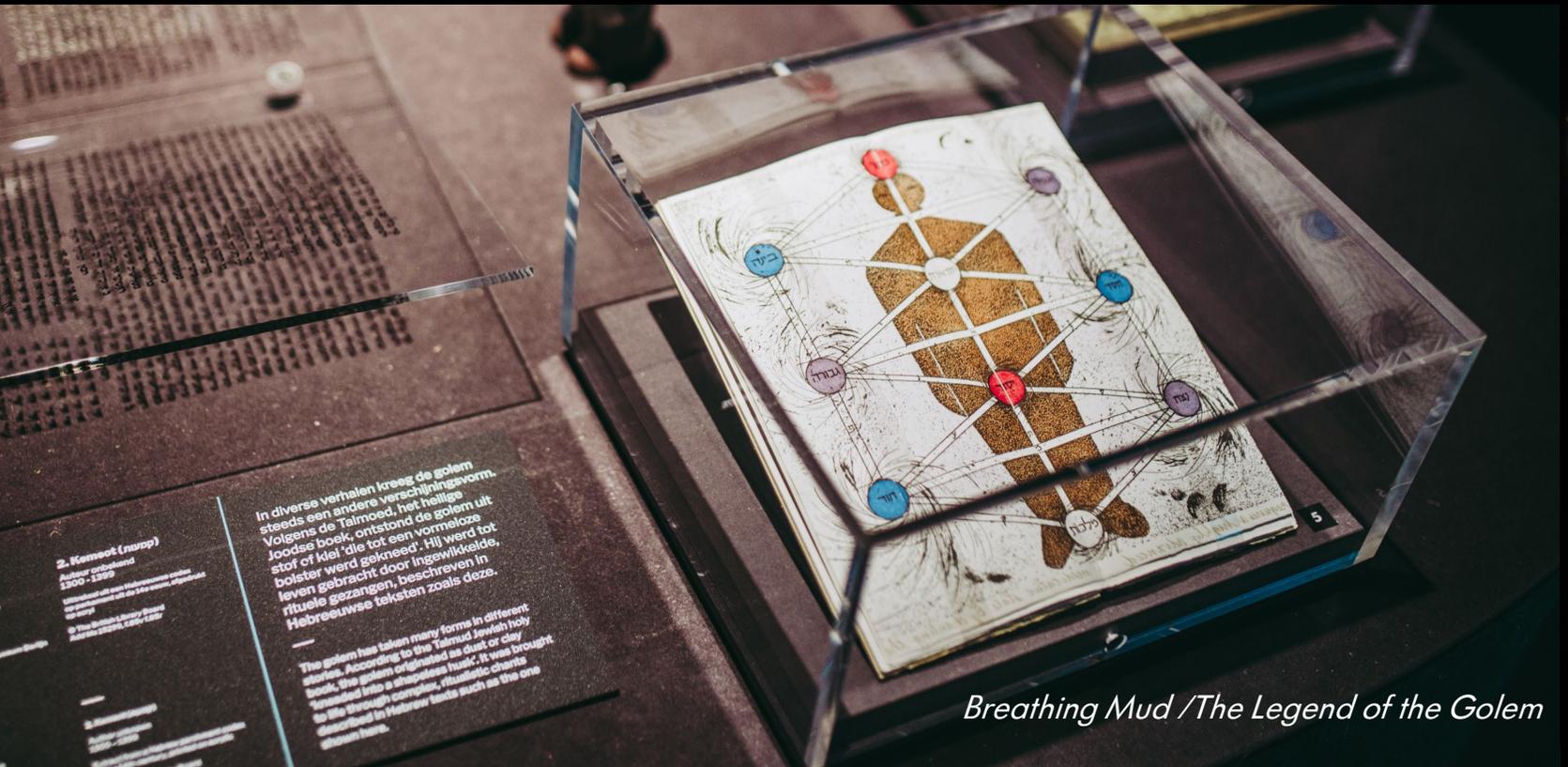Stefan Hurtig and Detlef Weitz

The Golems

IT

Shintoism

Breathing Mud /The Legend of the Golem
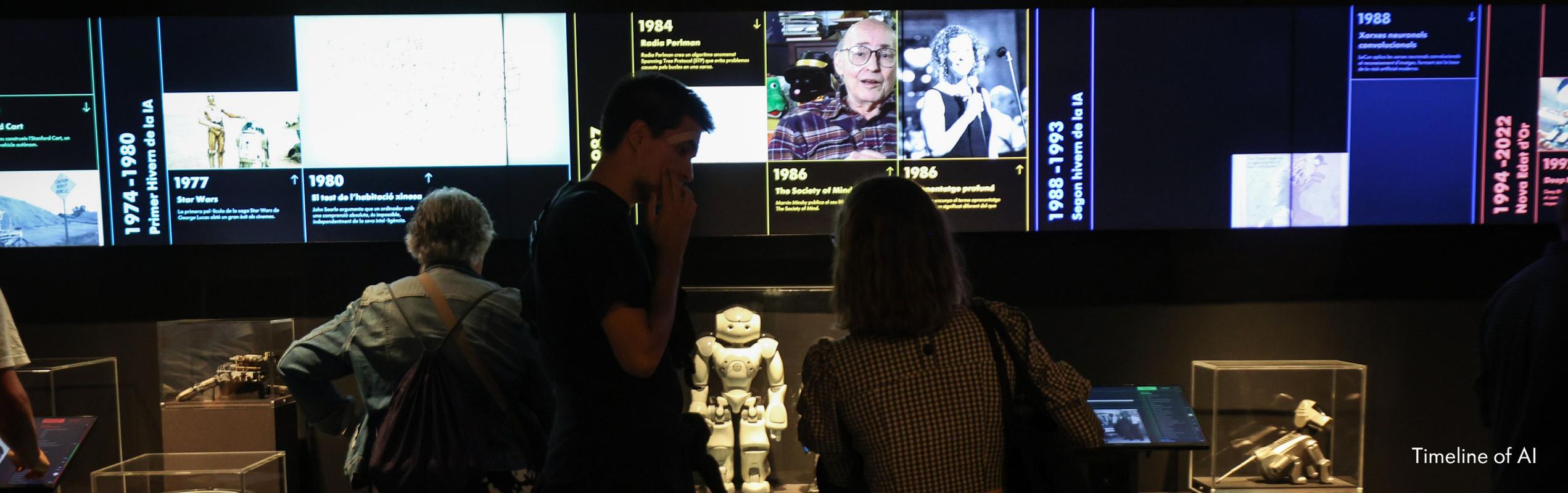

The Golem of Gotham

Mind Machines

Installation view
Forum Groningen

The ancient desire to recreate the workings of the brain through technology gained momentum in the 19th and 20th centuries.
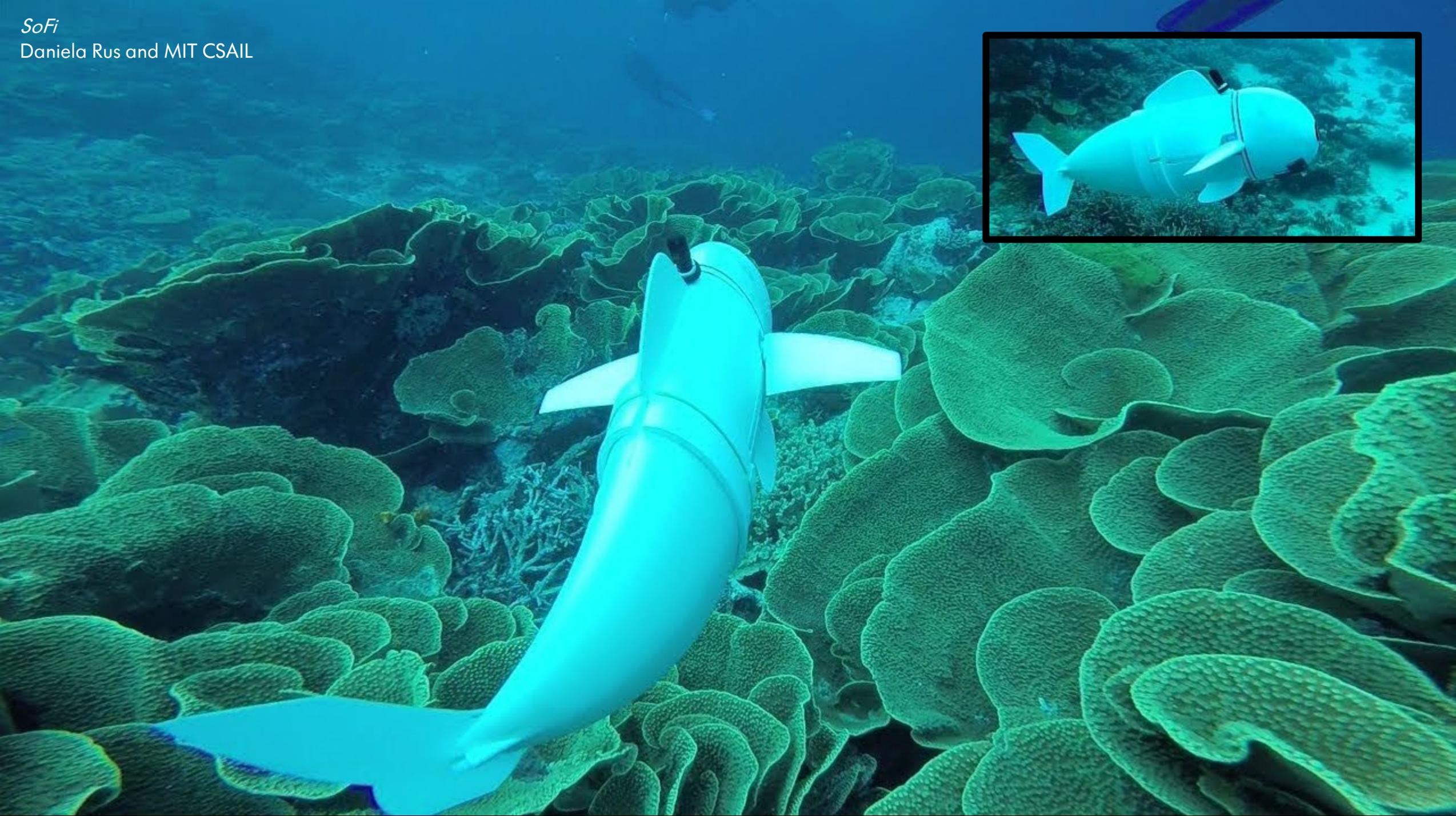
The early belief was that rational thought could be systematised and turned into formulaic rules. In the 1940s, this classic approach was transformed by the desire to not just decode the brain but mimic its workings.

By copying the behaviour of the brain's own neurons, it was possible to develop the first 'neural network'. Neural networks are computer programmes which self-improve over time. During the data explosion of the 2000s, they evolved to become the machine learning and deep learning that we know today.

Technology that is able to teach itself can endlessly surprise us with its apparent creativity and its ability to see, hear and move.

Timeline of AI

1999
Matrix

1994 – 2022 Nova Edat d'Or

1997
Deep Blue defeats Kasparov

2015
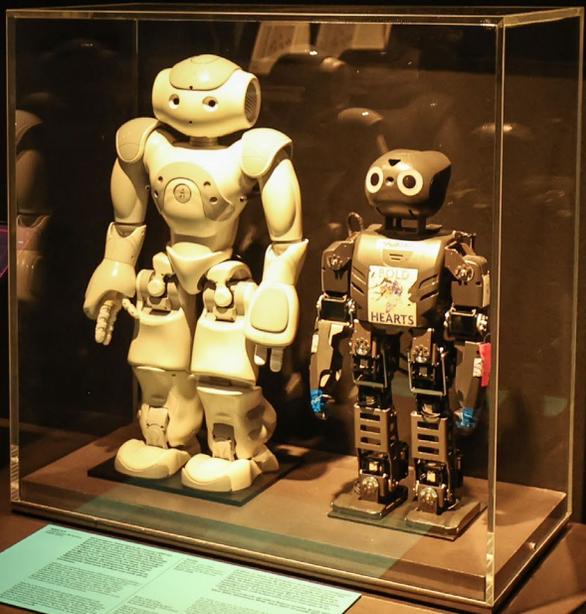MOTOBOT

2022
Llançament de ChatGPT

1984
Radia Perlman

Radia Perlman crea un algoritme anomenat Spanning Tree Protocol (STP) que evita problemes causats pels bucles en una xarxa.

1988
Xarxes neuronals convolucionals

1974 – 1980 Primer Hivern de la IA

1977
Star Wars

La primera pel·lícula de la saga Star Wars de George Lucas obté un gran èxit als cinemes.

1980
El test de l'habitació xinesa

John Searle argumenta que un ordinador amb una comprensió absoluta, és impossible, independentment de la seva intel·ligència.

1986
The Society of Mind

Marvin Minsky publica el seu llibre The Society of Mind.

1986
Aprenentatge profund

1988 – 1993 Segon hivern de la IA

1994 – 2022 Nova Edat d'Or

PROTEÏNES

MEDECINA PERSONALITZADA

QUALITAT DE L'AIRE

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# Build df will all t
zero_sgenes_df = pd.D
zero_sgenes_df = zero
zero_sgenes_df.rename
```

zero_allg
zero_allg
zero_allg

SoFi
Daniela Rus and MIT CSAIL

Ywain
Sander van Dijk, Marcus Scheunemann
and Daniel Polani of Bold Hearts
Robocup team
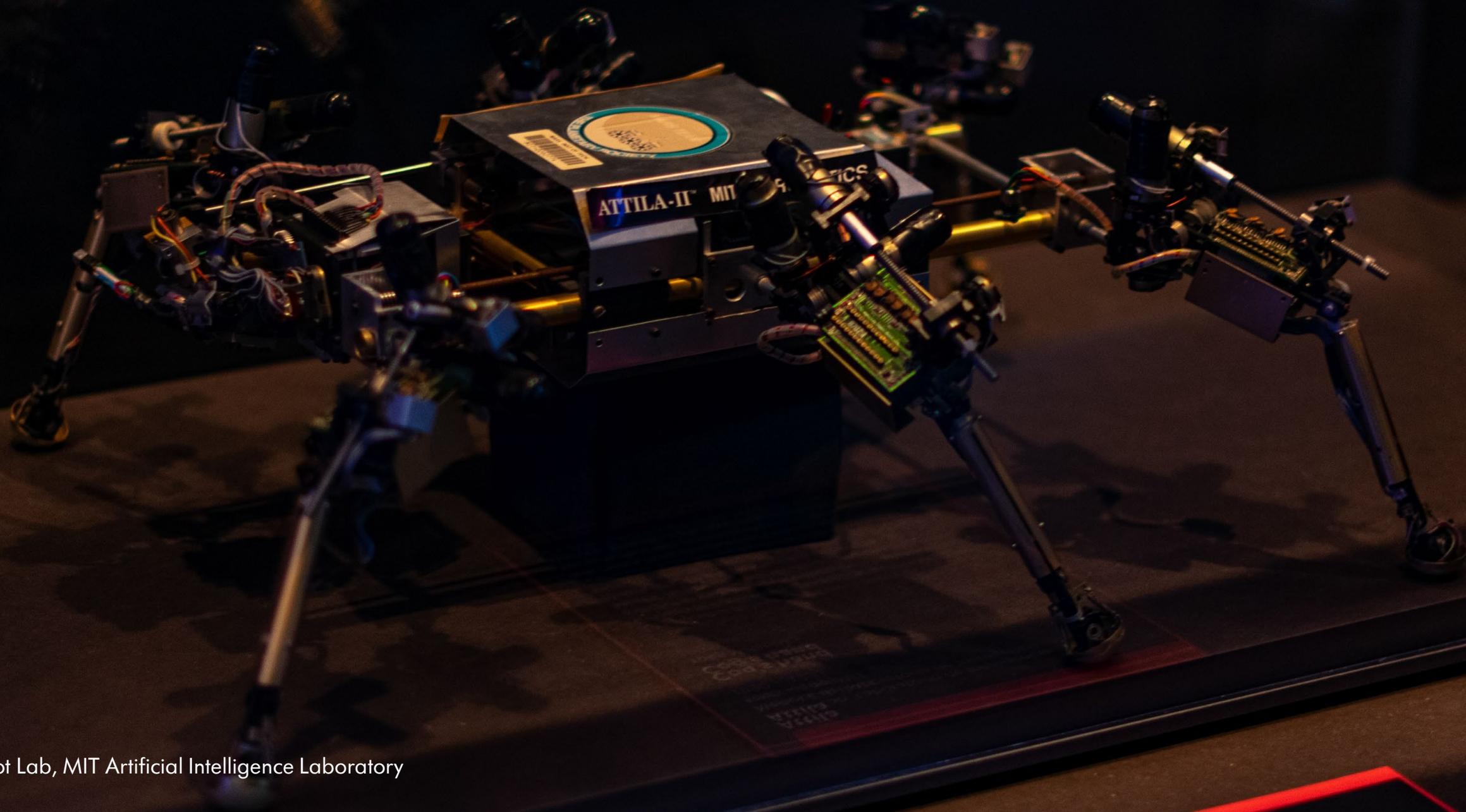
Atilla
Mobot Lab, MIT Artificial Intelligence Laboratory

Jeopardy! vs. IBM Watson
IBM

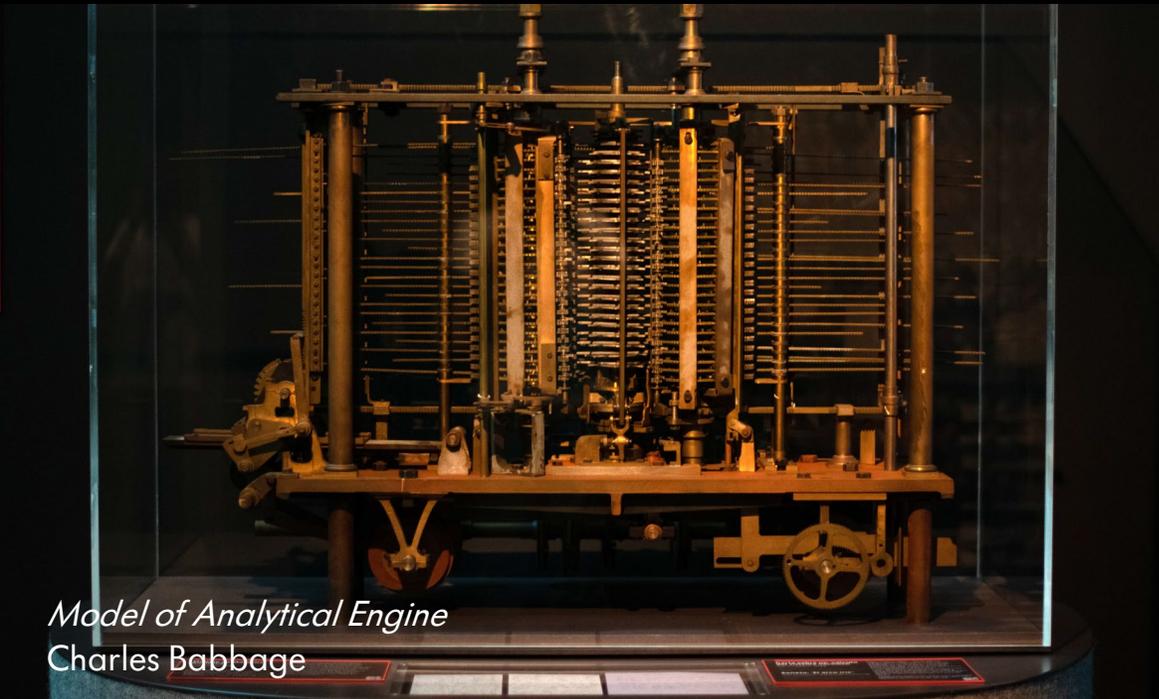*DeepDream: The Artificial Pareidolia*
Alexander Mordvintsev

Waterfall of Meaning
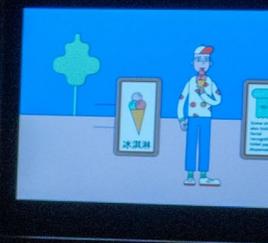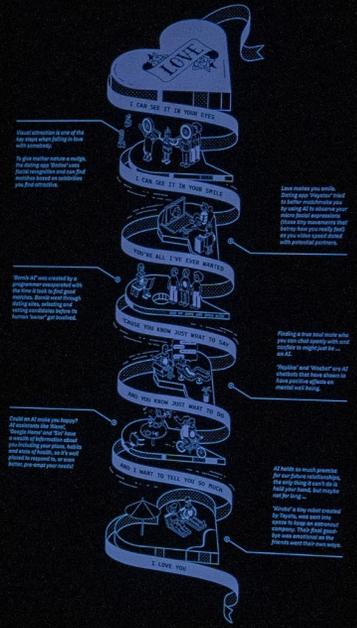Google PAIR

Myriad (Tulips)
Anna Ridler
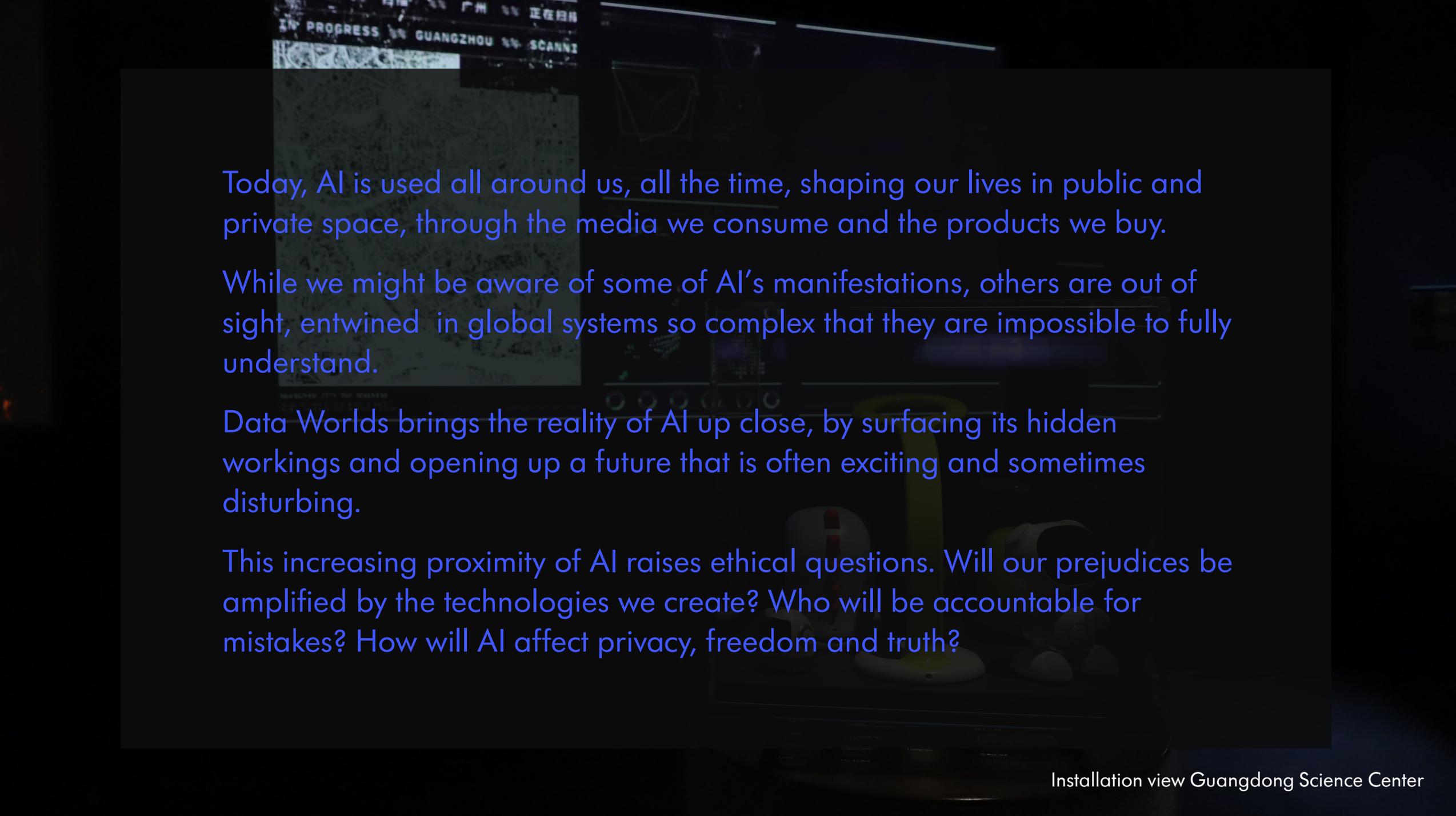
Model of Analytical Engine
Charles Babbage

Move 37 (installation view)
DeepMind
Created by The Workers

Circuit boards from Deep Blue computer,
IBM Corporation

Shogi board,
Barbican Centre

Robotic arm,
DENSO Corporation

(left to right)

Data Worlds
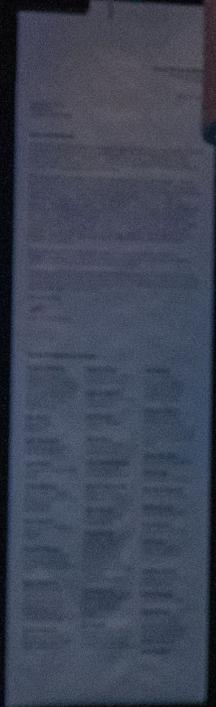
Installation view
Afundación, A Coruña

Today, AI is used all around us, all the time, shaping our lives in public and private space, through the media we consume and the products we buy.

While we might be aware of some of AI's manifestations, others are out of sight, entwined in global systems so complex that they are impossible to fully understand.

Data Worlds brings the reality of AI up close, by surfacing its hidden workings and opening up a future that is often exciting and sometimes disturbing.

This increasing proximity of AI raises ethical questions. Will our prejudices be amplified by the technologies we create? Who will be accountable for mistakes? How will AI affect privacy, freedom and truth?

Installation view Guangdong Science Center
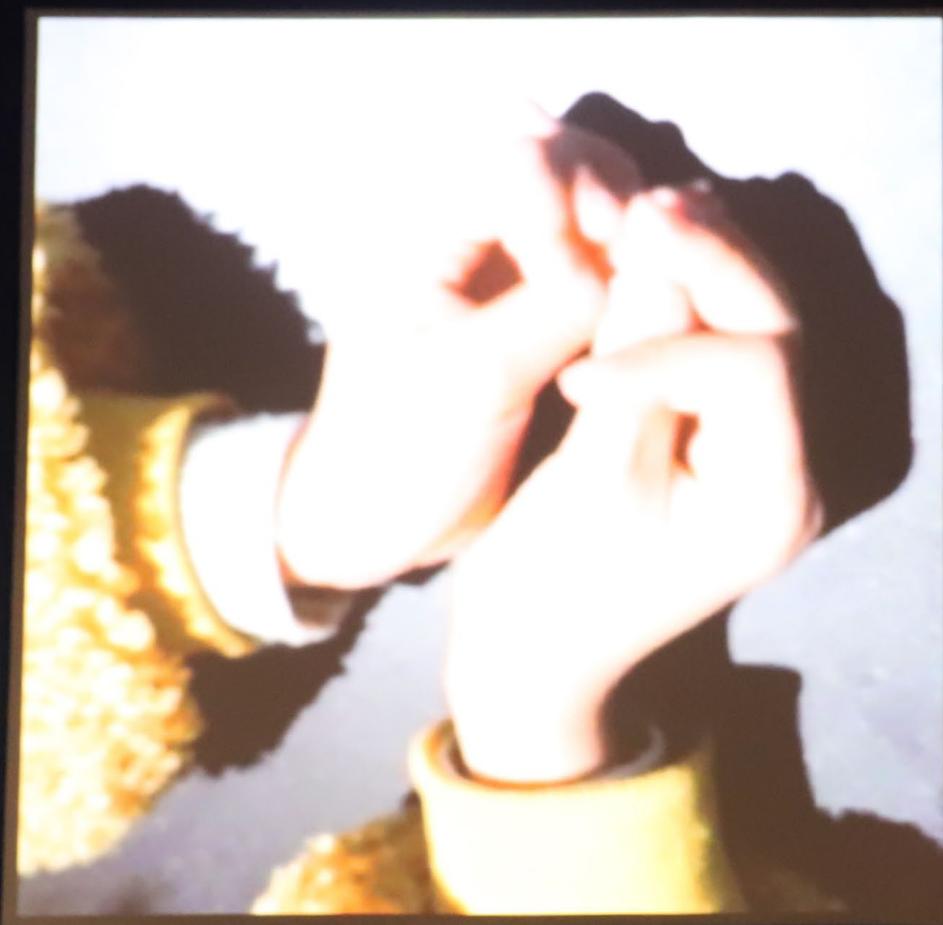
Learning to See
Memo Akten

Emotion recognition technology
Affectiva

Gender Shades and Mask
Joy Buolamwini

AI and freedom of speech
Jigsaw
Created by The Workers

Star Cubo intelligent roy
Zhao Guokun and Jing Chao

Endless Evolution

As AI infiltrates our lives it merges with other scientific and artistic disciplines, this means that no area of life is untouched.

An area of research known as artificial life (A-Life) is supported by AI but works with a much wider set of natural processes, including human and animal biology, and environmental science.

This gives the potential to improve our bodies, eradicate illnesses, produce new food groups and even extend life. It begins to change our idea of the 'natural'.

In this scenario, organic life is an expanding process — our form is not fixed at birth. As new body parts, new living environments and new beings are created, it is clear that our world is in endless evolution.

Installation view
Guangdong Science Center

As AI permeates our lives, it merges with other scientific disciplines and begins to change our idea of the 'natural'.

While AI emulates the behaviour of the brain, the related research area of artificial life (A-Life) works with a much wider set of natural processes, including human and animal biology, and environmental science.

This gives us the potential to improve our bodies, eradicate illnesses, produce new food groups and even extend life. It is possible to imagine both new futures for our species and the creation of new species.

In this scenario, organic life is an expanding process — our form is not fixed at birth. As new body parts, new living environments and new beings are created, it is clear that our world is in endless evolution.

Installation view Forum Groningen

Europa Mission
MIT, NASA,
Schmidt Oceanographic Institute and Woods
Hole Oceanographic Institution

Mezzanine vs. MAGNet
Mick Grierson
and Rob Del Naja

3D bioprinted organ scaffolds,
Wake Forest Institute for Regenerative Medicine

Organs-on-Chips Technology
Wyss Institute, Emulate

I am thinking...

Co(AI)xistence
Justine Emard

Selected Commissions and Installations

Future You (Installation view)
Universal Everything

Totem
Chris Salter

2065 (Barbican Edition)
Lawrence Lek
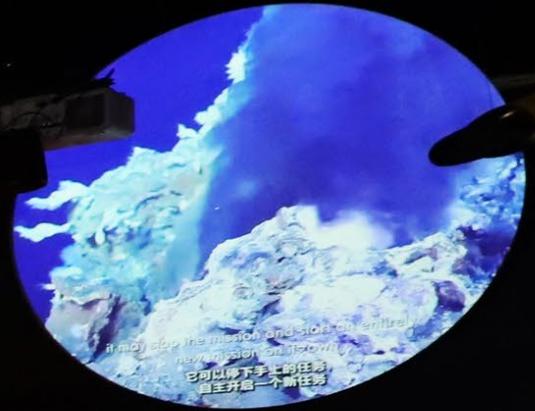
Barbican Immersive is a world-leading creator of exhibitions and experiences that aim to reframe visitors' understanding of familiar subjects and explore some of the most challenging and inspirational topics in the world today.

With a focus on contemporary culture, emerging technology and digital creativity. Barbican Immersive create holistic environments in which contemporary art, immersive experiences, historical artefacts, design, music and videogaming can provide the platform for a creative exploration of essential narratives.

Presented by
Barbican Immersive

BIE has been to **81** venues across **33** countries and still growing
Worldwide **Over 6,789,536 visitors** have visited a BIE exhibition

BI touring exhibition locations

Visitor figures
Past Exhibitions

Game On

13 venues
11 countries
2,366,839 visitors

Watch Me Move

11 venues
9 countries
685,469 visitors

Digital Revolution

7 venues
6 countries
616,801 visitors

Into the Unknown

4 venues
4 countries
166,712 visitors

Designing 007

9 venues
10 countries
511,317 visitors

- Tetsuya Mizuguchi
- Chris Milk
- Es Devlin
- teamLab
- Marshmallow Laser Feast
- Rhizomatiks
- Will.i.am
- Conrad Shawcross
- Hideo Kojima

- Larissa Sansour
- Trevor Paglen
- Isaac Julien
- Massive Attack
- Neri Oxman
- Joy Buolamwini
- Takeshi Murakami
- Jenova Chen

AI: More than Human, installation photo ©Robin Alysha, Forum Groningen, Netherland

artists and collaborators

1 teamLab

What a Loving, and Beautiful World

AI: More than Human, Barbican Centre
16 May - 26 August 2019

2 Takashi Murakami

Big Box Pko2

Mangasia, Palazzo delle Esposizioni
7 Oct 2017 - 20 Jan 2018

3 Chris Milk

Treachery of Sanctuary
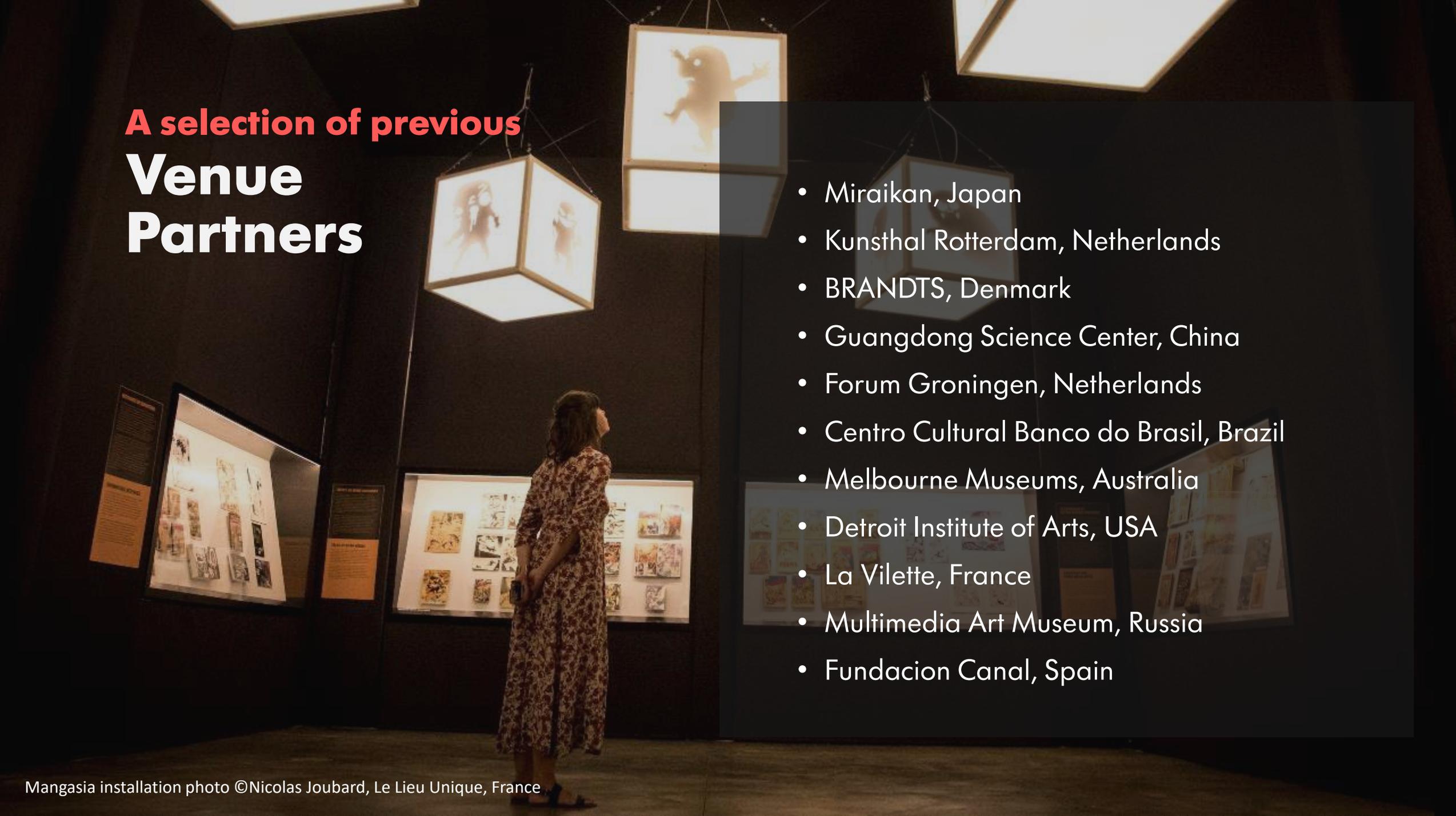
Digital Revolution, WF Central
16 Jan - 20 May 2019

4 Enhance and Rhizomatiks

Rezonance

Virtual Realms, ArtScience Museum
12 Jun 2021 - 9 Jan 2022

A selection of previous
Venue Partners

- Miraikan, Japan
- Kunsthal Rotterdam, Netherlands
- BRANDTS, Denmark
- Guangdong Science Center, China
- Forum Groningen, Netherlands
- Centro Cultural Banco do Brasil, Brazil
- Melbourne Museums, Australia
- Detroit Institute of Arts, USA
- La Vilette, France
- Multimedia Art Museum, Russia
- Fundacion Canal, Spain

Mangasia installation photo ©Nicolas Joubard, Le Lieu Unique, France

A selection of previous
Venue Partners

Forum Groningen
Netherlands

Western Australia Museum
Australia

Miraikan
Japan

The Barbican

The Barbican is a world-class arts and learning organisation that pushes the boundaries of all major art forms including dance, film, music, theatre and visual arts. Its creative learning programme further underpins everything it does.

We are:
- One of the largest arts and learning organisations in Europe;
- Registered Charity in the UK.

We have:
- 3 Theatres, 2 Concert halls, 2 Galleries, 3 Cinemas

- 10,00,000+ tickets sold last year

- 4,000+ events across all art forms every year

- 4,310+ artists from 80 nations

- 20,00,000+ estimated visitors

- 4,100,000 million unique website visitors

- 2 million+ social media followers

- 49,000 people reached through creative learning programmes
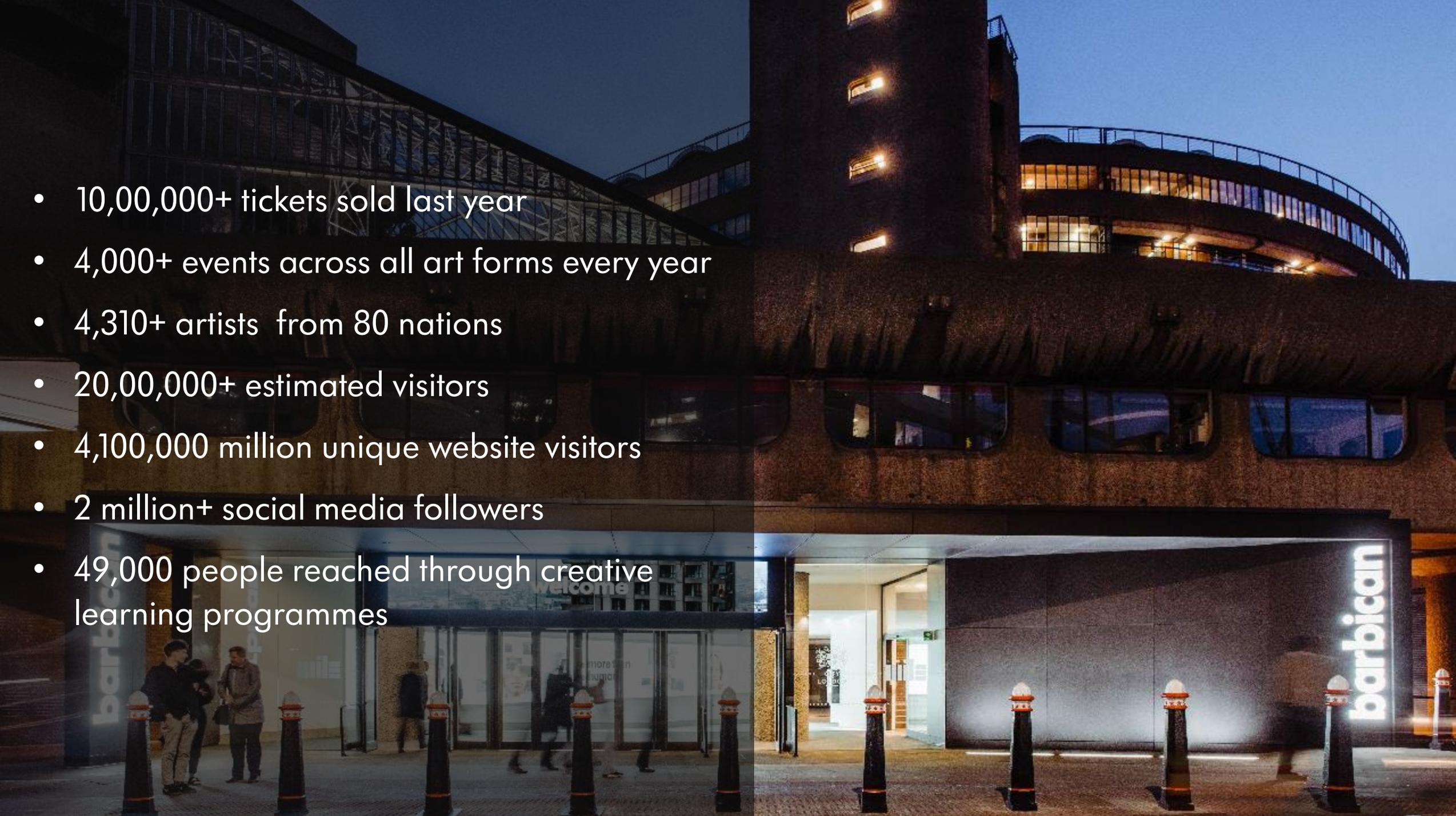
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