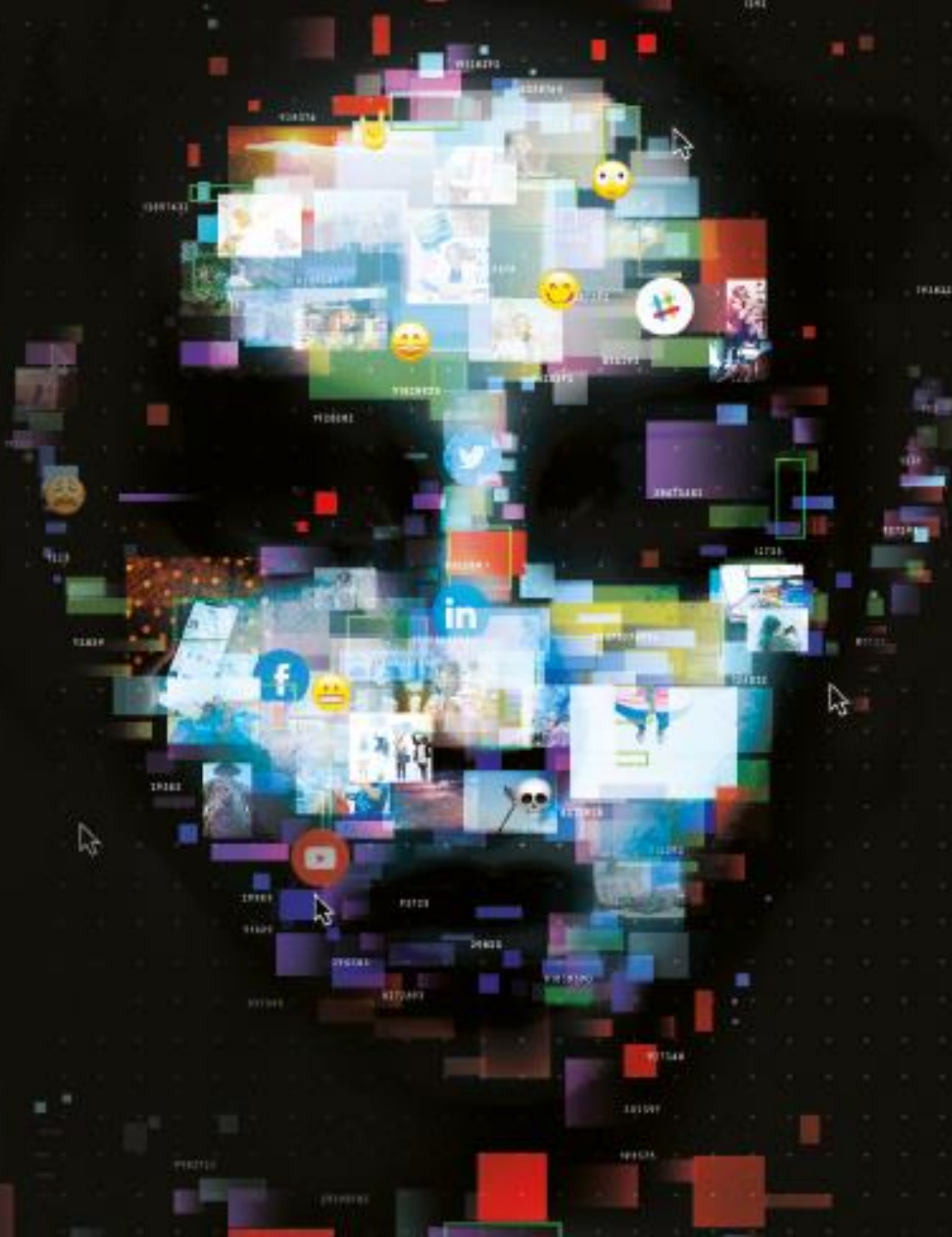


AI • more than
• human

Barbican Immersive



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.



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.



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



Hebrew text on a small display panel.



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.





AE/MAETH

Stefan Hurtig and Detlef Weitz



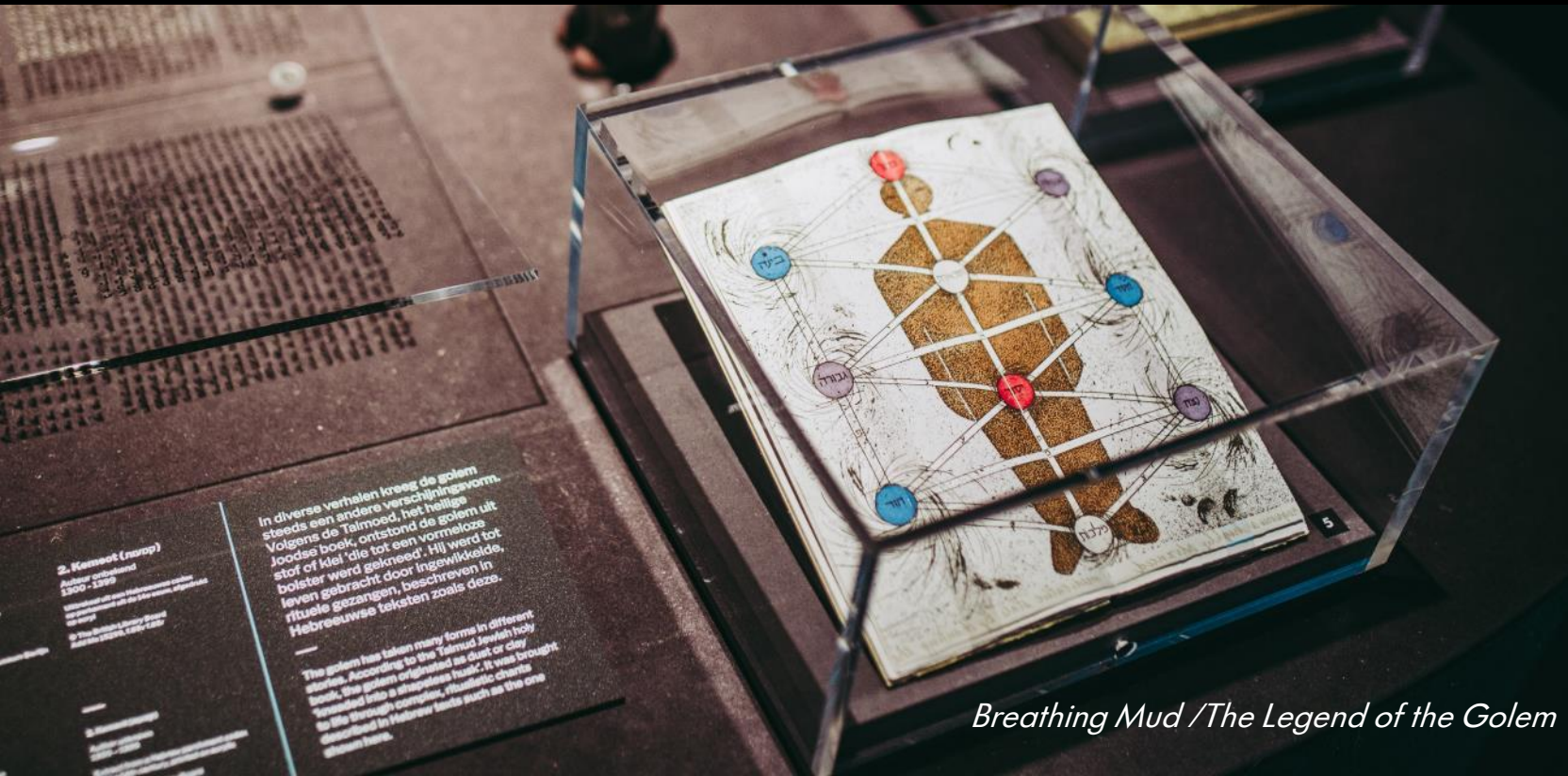
The Golems



Enigma enciphering machine



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.



1979

Backgammonprogramma
MSB
Met het eerste computerprogramma dat een
winst kan behalen, is de
backgammoncomputer op zijn
best.

1977

Star Wars
De eerste Star Wars
film op goed geluk.

Intelligence

organiseert de eerste Machine
shop in Edinburgh, die
wordt door onderzoekers vanuit de



SoFi
Daniela Rus and MIT CSAIL



Atilla
Mobot Lab, MIT Artificial Intelligence
Laboratory



Ywain
Sander van Dijk, Marcus Scheunemann
and Daniel Polani of Bold Hearts
Robocup team

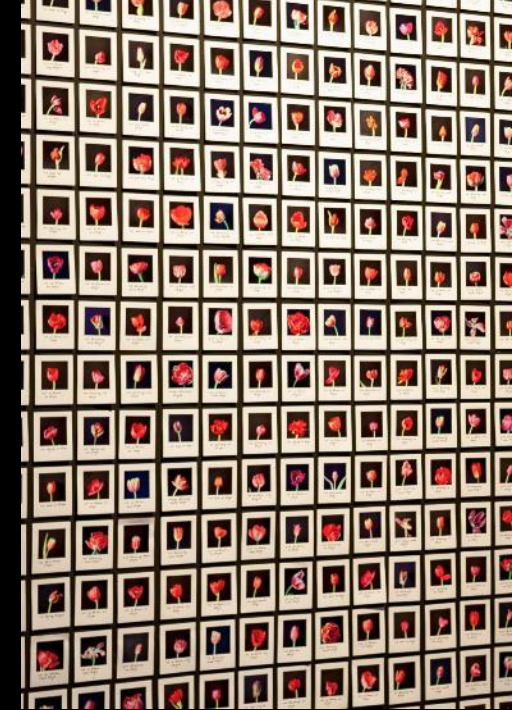


Jeopardy! vs. IBM Watson
IBM

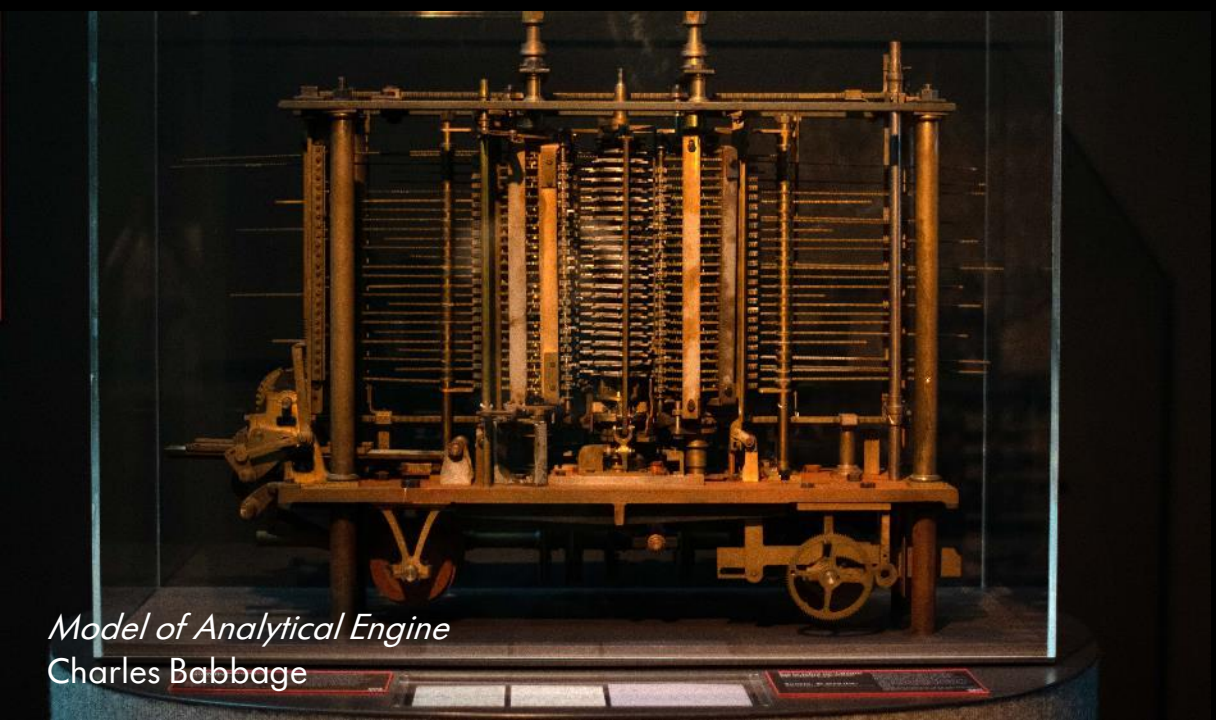
DeepDream: The Artificial Pareidolia
Alexander Mordvintsev



Waterfall of Meaning
Google PAIR



Myriad (Tulips)
Anna Ridler



Model of Analytical Engine
Charles Babbage



Move 37 (installation view)
DeepMind
Created by The Workers

Data Worlds



Perspective 3D
Training the AI



1. The first step is to define the problem and the goal of the project. This involves identifying the key stakeholders and the resources available.

2. The second step is to conduct a thorough analysis of the current situation. This includes identifying the strengths, weaknesses, opportunities, and threats.

3. The third step is to develop a clear and concise plan of action. This involves setting specific, measurable, achievable, relevant, and time-bound (SMART) goals.

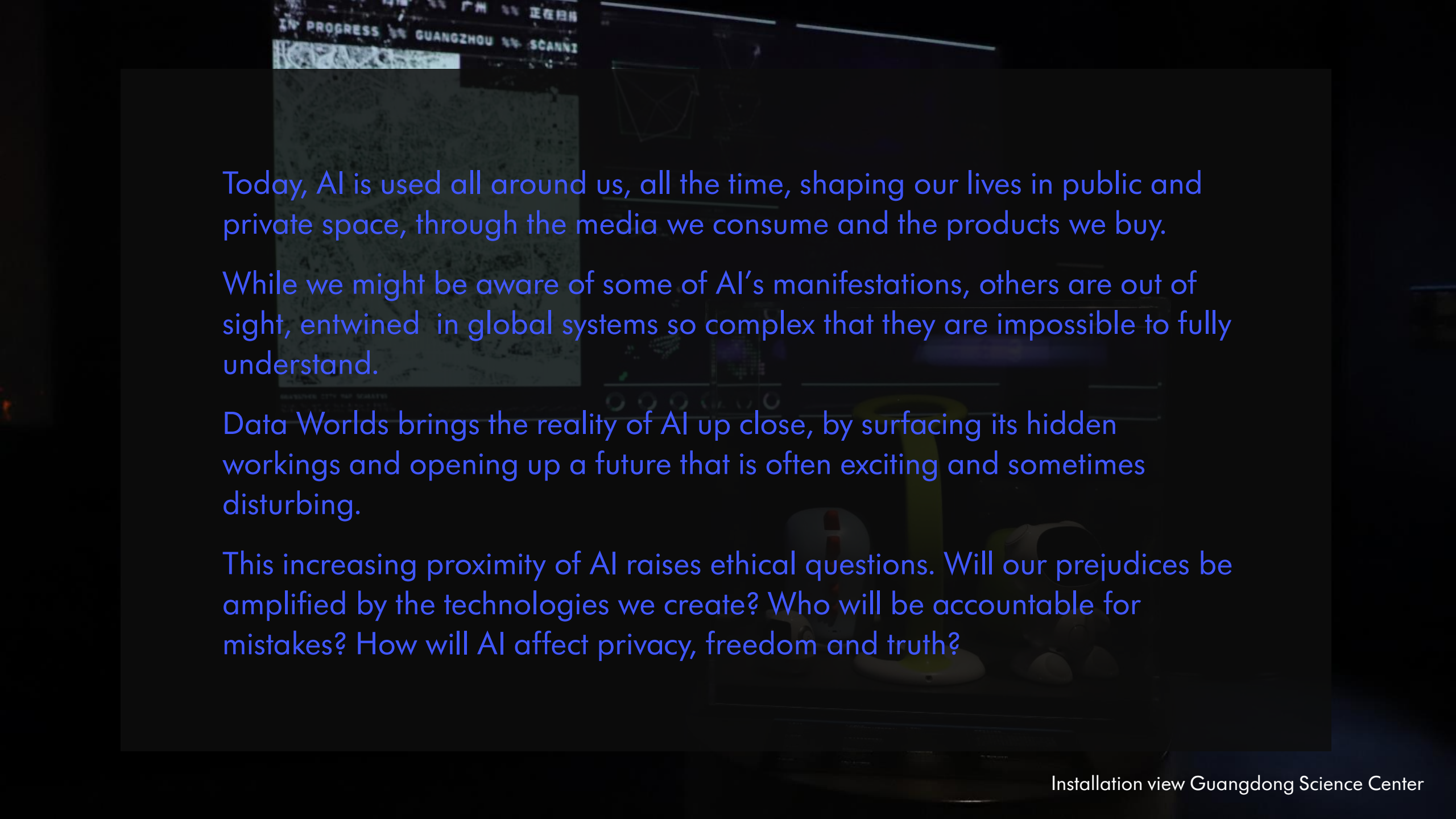
4. The fourth step is to implement the plan and monitor progress. This involves assigning responsibilities and tracking the results of the project.

5. The fifth step is to evaluate the results and make adjustments as needed. This involves comparing the actual results against the planned results and identifying areas for improvement.

6. The sixth step is to communicate the results and share the lessons learned. This involves reporting on the progress and outcomes of the project to all stakeholders.

7. The seventh step is to celebrate the success and recognize the contributions of all team members. This involves acknowledging the hard work and dedication of everyone involved in the project.

Installation view
Afundación, A Coruña

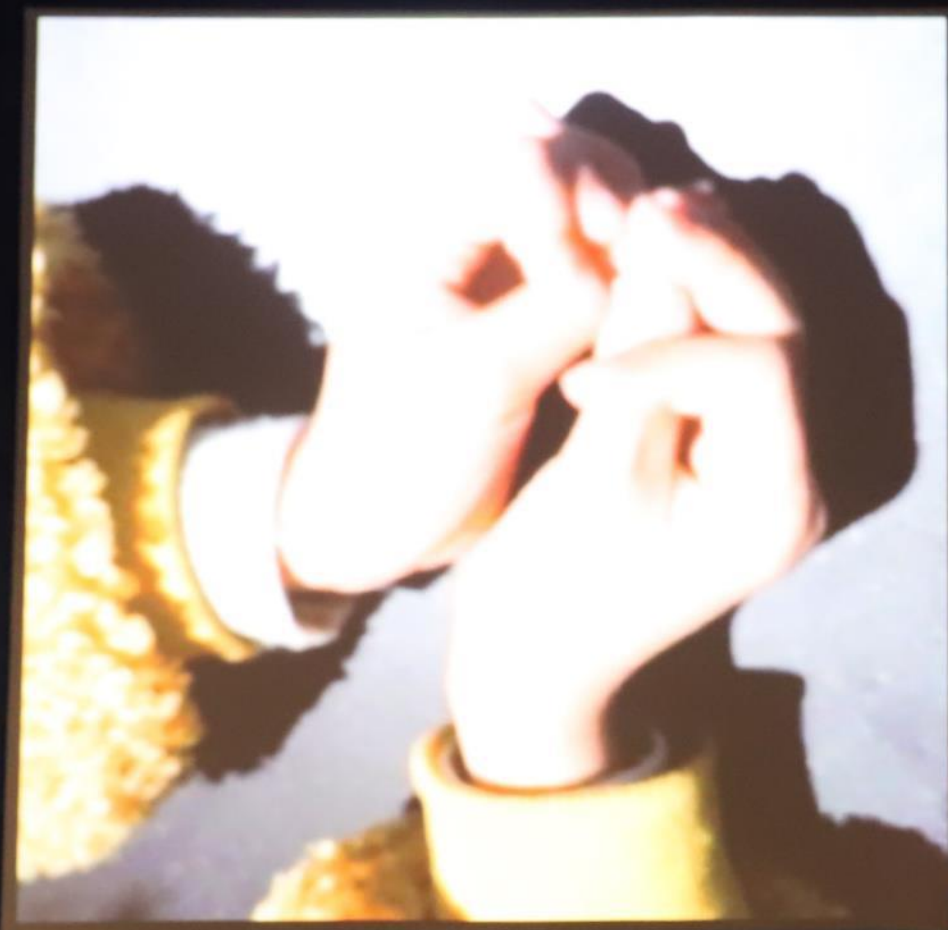


Today, AI is used all around us, all the time, shaping our lives in public and private space, through the media we consume and the products we buy.

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?



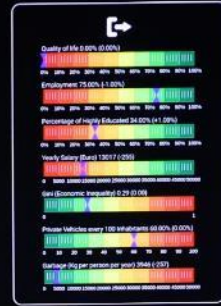
Learning to See
Memo Akten



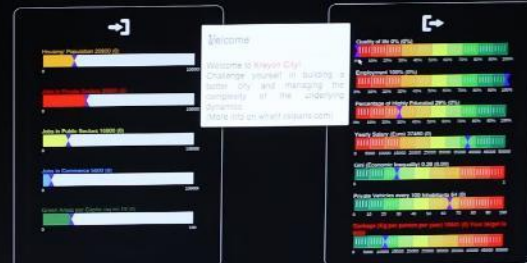
Emotion recognition technology
Affectiva



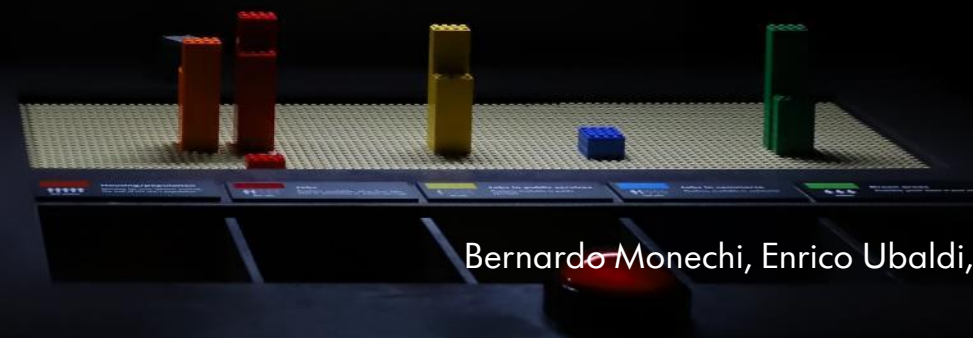
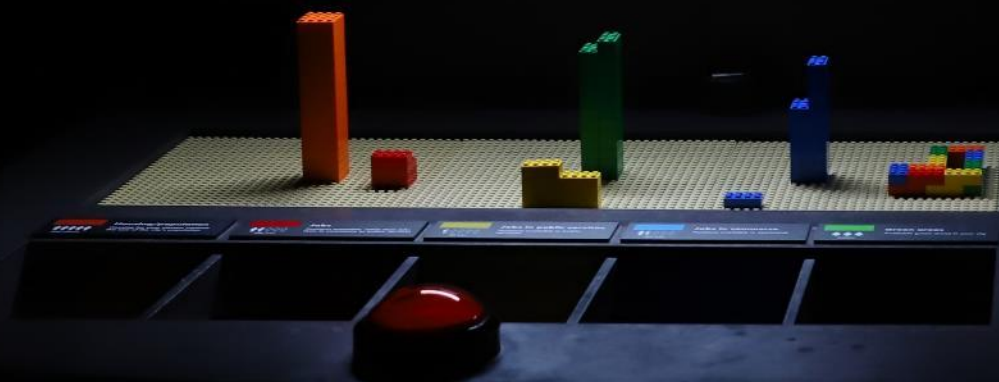
Gender Shades and Mask
Joy Buolamwini



PUSH THE BUTTON TO CONTINUE
KEEP IT PRESSED FOR 3 SECONDS AND RELEASE TO RESET



PUSH THE BUTTON TO CONTINUE
KEEP IT PRESSED FOR 3 SECONDS AND RELEASE TO RESET





AI and freedom of speech
Jigsaw
Created by The Workers



Star Cubo intelligent roy
Zhao Guokun and Jing Chao

Endless Evolution

断 SS Evolution 演进

生命有可能会改善人类的身体，根除疾病，产生新
食物群，甚至延长寿命。它开始改变我们对“自然”的认
识。

在这一场景中，有机生命是一个不断扩展的过程——
人类的形态不局限于出生时的状态。随着新的身体部位、新
的生活环境和新的生命的创造，显而易见，人类的世界正处于
于无休止的进化之中。

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.



Synthetic Apiary
Neri Oxman and The Mediated Matter Group



Perspective of Digital Nature
Yoichi Ochiai



Mezzanine vs. MAGNet
Mick Grierson
and Rob Del Naja



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



Selected Commissions and Installations



Future You (Installation view)
Universal Everything




Totem
Chris Salter



2065 (Barbican Edition)
Lawrence Lek



Poem Portraits
Es Devlin



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 **54** venues across **27** countries and still growing
Worldwide **Over 6,407,216 visitors** have visited a BIE exhibition



BIE 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

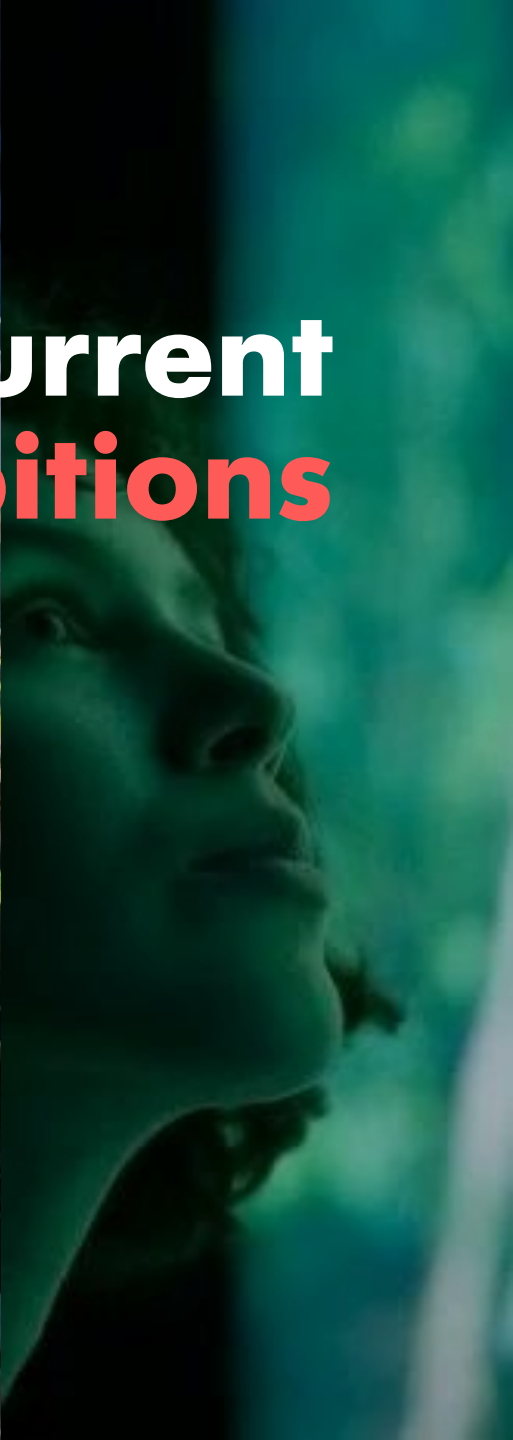
4 venues
4 countries
166,712 visitors

Designing 007

9 venues
10 countries
511,317 visitors



Current Exhibitions



A selection of previous artists and collaborators

- 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

**A selection of previous
artists and collaborators**

1 teamLab

What a Loving, and Beautiful World

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



1

2 Takashi Murakami

Big Box Pko2

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



2

3 Chris Milk

Treachery of Sanctuary

*Digital Revolution, WF Central
16 Jan - 20 May 2019*



3

4 Enhance and Rhizomatiks

Rezonance

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



4

A woman in a floral dress stands in a dark gallery, looking up at several glowing, cube-shaped light fixtures hanging from the ceiling. The cubes display various illustrations. On the walls, there are framed displays of comic book pages and panels. The lighting is dramatic, highlighting the woman and the glowing elements against the dark background.

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

**A selection of previous
Venue Partners**



Forum Groningen
Netherlands



Western Australia Museum
Australia



Miraikan
Japan

A selection of previous sponsors and media partners



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.

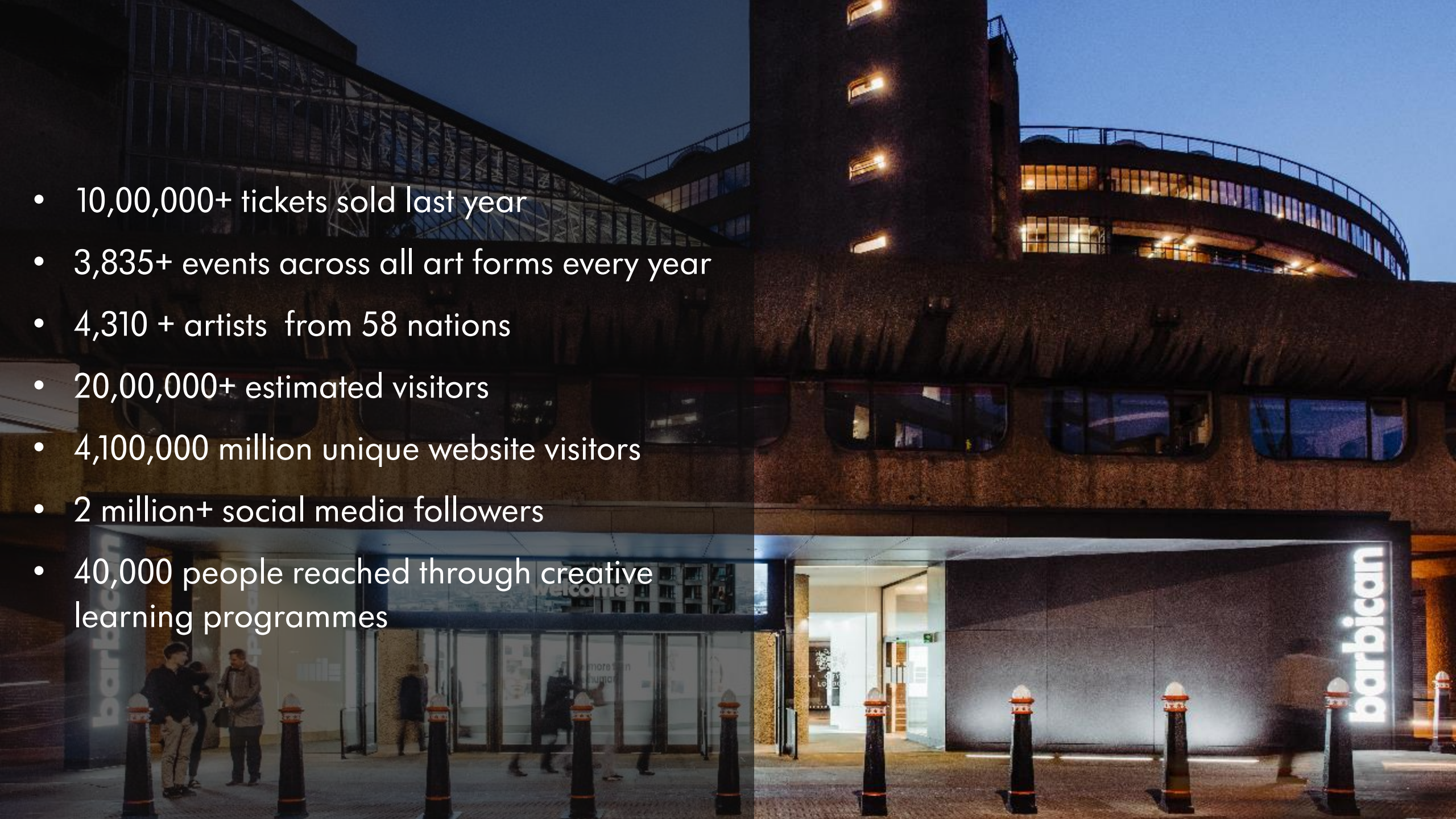
We are:

- 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
- 3,835+ events across all art forms every year
- 4,310 + artists from 58 nations
- 20,00,000+ estimated visitors
- 4,100,000 million unique website visitors
- 2 million+ social media followers
- 40,000 people reached through creative learning programmes





**For more information please
contact us:**

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Acting Co-Heads of BIE**

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