

Supercoders



Digital Revolution

Contents

- 1 Introduction**
- 2 Digital Archaeology**
- 3 We Create**
- 4 Creative Spaces**
- 5 Sound & Vision**
- 6 State of Play**
- 7 DevArt**
- 8 Our Digital Futures**
- 9 Indie Games**
- 10 Commissions**
- 11 Installation Shots**
- 12 Sample Marketing**

1 Introduction



Digital Revolution explores and celebrates the transformation of the arts through digital technology since the 1970s. The exhibition brings together for the first time a range of artists, filmmakers, architects, designers, musicians and game developers, who are using digital media to push the boundaries of their fields. The show also looks to the future and considers the impact of creative coding, DIY and maker-culture, digital communities and the creative possibilities offered by augmented reality, artificial intelligence, wearable technologies and 3D printing.

The exhibition includes new commissions from design studios Umbrellium (Usman Haque and Nitipak 'Dot' Samsen), Universal Everything and Seeper; global music artist and entrepreneur will.i.am and artist Yuri Suzuki; and a range of artists and performers including Rafael Lozano-Hemmer, Chris Milk, Aaron Koblin, Björk, Amon Tobin, game developers such as Harmonix Music Systems (Dance Central) and work by Oscar®-winning visual effects (VFX) Supervisor Paul Franklin and his team at Double Negative for Christopher Nolan's groundbreaking film *Inception* (2010). The Barbican have collaborated with Google on a new project called DevArt and will present four new gallery commissions by Karsten Schmidt, Zach Lieberman, Varvara Guljajeva and Mar Canet.

Comprising of both, interactive art works and exhibition-based displays Digital Revolution presents a number of impressive installations. Umbrellium, who are known for their large-scale and mass-participatory outdoor events, will produce their first work within a theatre setting. This immersive experience will take-over The Pit at the Barbican, filling the space with a series of magical interactive laser sculptures and set within an otherworldly sound environment. Universal Everything, one of the UK's leading media art studios, have developed a participatory piece allowing visitors to submit a hand-drawn artwork that they can contribute in the venue and online. Furthermore visitors can explore filmmaker and artist Chris Milk's major shadow play work *The Treachery of Sanctuary*, which was presented in the UK for the first time.

Our Digital Future section explores artists' use of recently possible and emerging technologies with London based Studio XO for TechHaus, the technical division of Lady Gaga's Haus of Gaga, wearable technology by Pauline van Dongen and a robotic installation by Minimaforms (Theodore Spyropoulos and Stephen Spyropoulos).

Quick Facts

Hire Fees:	Upon Application
Duration:	3 months +
Dimensions:	c. 800 – 1,500 m2
Number of staff travelling for install/de-install:	7 exhibition technicians for 14 day install and 7 day de-install (Venue to cover cost of flights, accommodation, per diem, visas)
Transport:	We request that one way (incoming) transport is covered by the venue. The show travels in 4 x 40ft Hicube sea containers.

Venues

Venue	Country	Dates
Barbican Centre, London	UK	3 Jul - 14 Sep 2014
Tekniska Museet, Stockholm	Sweden	24 Oct 2014 - 30 Aug 2015
Onassis Cultural Center, Athens	Greece	20 Oct 2015 - 10 Jan 2016
Zorlu Centre, Istanbul	Turkey	19 Feb - 12 June 2016
Wangfu Central, Beijing	China	15 Feb - 20 May 2018

2 Digital Archeology



Digital Archeology celebrates the seminal moments of digital creativity across the areas of art, design, film, music and videogames, and highlights the dramatic pace of technological change. This section is divided chronologically and documents the decades from the 1970s to the 2000s.

1970s: Pong (1972) and Space Invaders (1978) signalled the golden age of the arcade game. Graphical experiments such as Ed Catmull and Fred Parke's Computer Animated Hand (1972) laid the foundation for computer generated effects, the first of which were seen in the 1973 film Westworld.

1980s: Pac-Man (1980) and Super Mario Bros (1985) paved the way for character-led games and Manic Miner (1983) kickstarted the British games industry. The soundtrack of the decade was defined by the drum machine Linn LM-1 (1980) and the first digital synthesiser, the Fairlight CMI (1979).

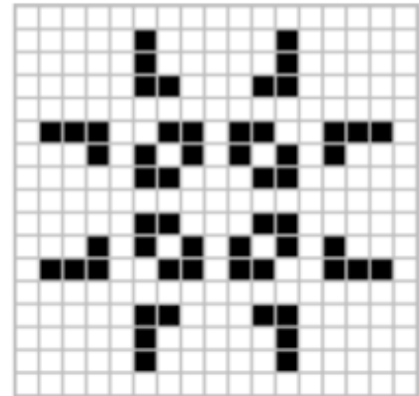
1990s: Tim Berners-Lee's World Wide Web (1990) led to the imaginative net art experiments, <http://www.wwwwwww.jodi.org> (1994) and Form Art (1997). In film, watershed visual effects brought dinosaurs to life in Jurassic Park (1993) and Terminator 2: Judgement Day's (1991) morphing metal robots became a reality, ultimately changing our expectations of cinema.

2000s: We Feel Fine (2005) by Sep Kamvar and Jonathan Harris gauged the mood of internet audiences and an interactive web video, Subservient Chicken (2004), changed the face of advertising, but it was Apple's iPhone (2007) introducing addictive apps like Angry Birds (2009), which changed everything. Suddenly, digital culture was just culture.

2 Digital Archeology



Texas Instruments
Speak & Spell
Interactive hardware



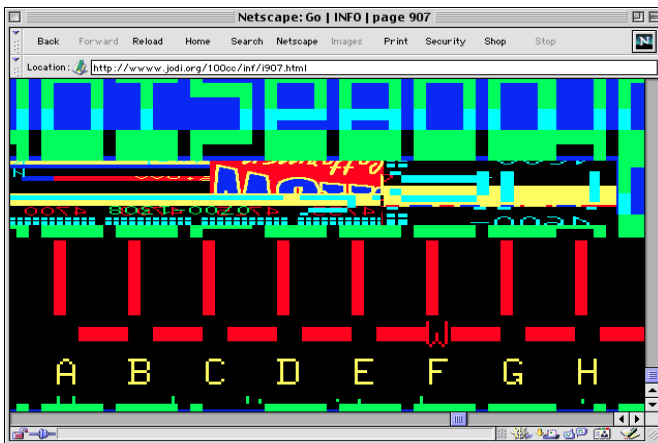
John Conway
Game of Life
Interactive projection



Danny Kleinman
Game of Life
Interactive projection



Apple
Mac Paint
Selection of 2C Prints



Joan Heemskerk & Dirk Paesmans
www.Jodi.org
Interactive Project



Tomohiro Nishikado, Taito
Space Invaders
Interactive arcade machine

3 We Create



The shift from content consumer to content producer, an outcome of readily available digital tools which are often free to use, is examined in **We Create**. The works in this section demonstrate how the digital has created new opportunities for artistic expression.

The Johnny Cash Project (2010), by Chris Milk and Aaron Koblin, allows fans to pay tribute to their icon by participating in a group artwork online. In a similar way the adventure game Broken Age (2014) showed that fans familiar with Tim Schafer's previous work could directly impact on the development of the game by using the crowdfunding website Kickstarter as an alternative funding platform to other, more traditional funding models.

The Massively Multiplayer Online Role Playing Game (MMORPGs) Minecraft (2009) has enabled thousands of individuals not only to play together, but also, craft together, pooling labour resources to create virtual architectures for others to appreciate, or even attempt to destroy.

The Deleted City 2.0 (2011) explores an early DIY net culture, which has evolved into the hacker and maker-culture of today by way of experimentation with accessible hardware platforms such as Arduino, Raspberry Pi and BeagleBone. This has given individuals and small teams the power to produce imaginative and interactive artworks as demonstrated by Type Case (2010), Escape II (2014), Pristitrope (2012).

3 We Create



Mojang
Minecraft
Game



Anthony Goh and Neil Mendoza
Escape 2
Multimedia



Richard Vigen
Deleted Cities 2.0
Interactive installation



Chris Milk and Aaron Koblin
The Johnny Cash Project
Interactive installation



Double Fine
Broken Age
Film clip and display object



Quinten Swagerman, Jasper van Loenen and Mr. Stock
Pristitrope
Multimedia

4 Creative Spaces



Creative Spaces demonstrates how conventional notions of time, space and narrative can be re-imagined using digital tools.

The section begins by looking at the world of visual effects (VFX) in Hollywood cinema. From computer-generated imagery (CGI) and pre-visualised animation, to bespoke constructions such as the lightbox, today's VFX industry is characterised by technological innovation and a creative approach to filmmaking.

We explore Christopher Nolan's *Inception* (2010) and Alfonso Cuarón's *Gravity* (2013) through the eyes of the Oscar-winning VFX supervisors Paul Franklin from Double-Negative and Tim Weber of Framestore. We look at how digital technology is changing the role of modern-day animators using DreamWork's *How To Train Your Dragon 2* (2014) as a case study.

Outside of Hollywood the affordability of creative tools has opened up spaces allowing independent studios to make their own unique films, like *Factory Fifteen* and Director Kibwe Tavares' *Robots of Brixton* (2011) and *Jonah* (2013).

Artists and coders are also using technology online to experiment with the creation and delivery of narrative. James George and Jonathan Minard's *Clouds* (2013), FIELD's app *Energy Flow* (2012), and artist James Bridle's *Dronestagram* (2012-ongoing), all connect audiences to content in exciting and poignant ways.

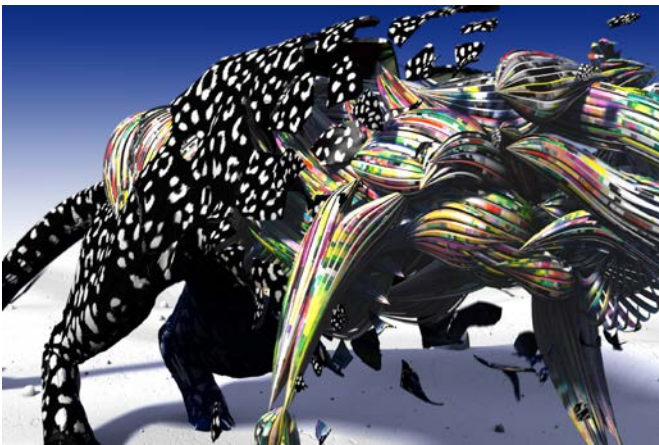
4 Creative Spaces



Kibwe Tavares/Factory Fifteen
Robots of Brixton
Static display object



Dreamworks Animation
How to Train Your Dragon 2
Interactive display



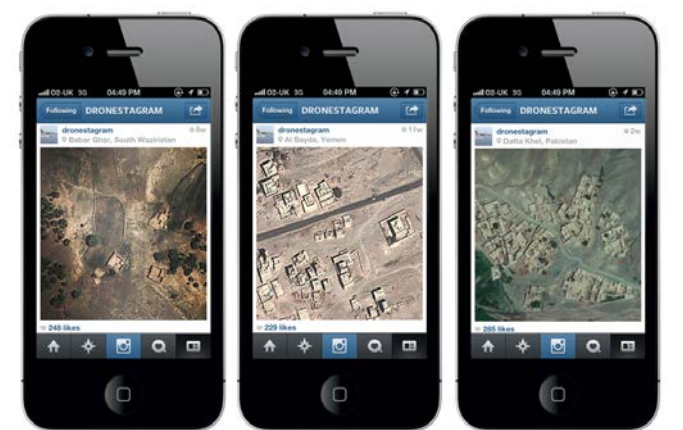
FIELD (Vera-Maria Glahn and Marcus Wendt)
Energy Flow
Graphic display



Tim Webber/ Gravity, (Dir. Alfonso Cuaron)
Gravity Lightbox
Interactive display



Paul Franklin/ Double-Negative (Dir. Christopher Nolan)
Inception display
Interactive display



James Bridle
Dronestagram
Floor projection and tablet display

5 Sound & Vision



Sound and Vision explores the visualisation of music through the eyes of musicians, artists, film-makers and designers. The explosion of imaging technologies has come to influence not only the sounds we hear, but also, the style in which we see them changing the look and feel of music for ever.

Globally-renowned recording artist and technology entrepreneur will.i.am in collaboration with artist Yuri Suzuki present *Pyramidi* (2014); an immersive and multi-sensory installation. His first work to be exhibited in a gallery setting, will.i.am has composed a newly commissioned song brought to life through three robotic instruments and accompanied by a projection-mapped backdrop.

As viewing experiences cross-over onto multiple mobile devices musicians are choosing to work with artists to visualise music in new ways. This connects them to larger audiences and allowing their fans to contribute. Highlighted here is a selection of groundbreaking apps, including *Biophilia* (2011), developed by Björk in collaboration with interactive artist and app developer Scott Snibbe, and Peter Chilver's and Brian Eno's generative music app *Scape* (2012).

Finally we feature a selection of some of the most dynamic and inventive data-driven, interactive and computer generated music videos, from Radiohead's *House of Cards* (2008), and Daito Manabe's *Music for Robots* (2014) with *Squarepusher*, to Chris Milk's interactive music video *The Wilderness Downtown* (2010).

5 Sound & Vision



Scott Snibbe
Biophilia
Interactive installation



Chris Milk / Aaron Koblin / Arcade Fire
The Wilderness Downtown
Interactive installation



James Frost (Radiohead)
House of Cards
Music Video



Peter Chilvers
Scape
Interactive installation



will.i.am and Yuri Suzuki
Pyramidi
Musical installation



Andrew Thomas Huang (Björk)
Mutual Core
Music video

6 State of Play



State of Play looks at the ways in which artists and game designers have experimented with notions of play and gesture using camera technologies.

Digital artists Rafael Lozano-Hemmer's *The Year's Midnight* (2011) and Daniel Rozin's *Mirror No.10 (Sketch Mirror)* completed in 2009, show how artists have adopted (and adapted) camera technologies, so that they can be harnessed into what can be considered an interactive form of digital portraiture.

In film-maker and director Chris Milk's monumental work *The Treachery of Sanctuary* (2012), the performer engages in a personal narrative, whilst participating in an interactive shadow play controlled by their own bodies, exploring a journey through life, death and transfiguration.

The artworks in *State of Play* show how the roles of viewer and computer have now become reversed: whereas once the player watched a screen and interacted via a simple hand-held controller, the computer now carefully watches over the player – as the marketing slogan says – YOU are the controller.

6 State of Play



Chris Milk
Threachery of Sanctuary
Interactive Installation



Daniel Rozin
Mirror No.10
Interactive art installation



Rafael Lozano-Hemmer
The Year's Midnight
Interactive art installation



7 Dev Art



DevArt challenges what code can be, and what art can be.

When developers use code to push the possibilities of creativity and technology, the result is a new type of art. It's called DevArt and it's made by a new type of artist. Using technology as the canvas and code as the raw materials these interactive artists create innovative, engaging digital art installations. The DevArt section of the Digital Revolution Exhibition shows what is possible when code and creativity are combined to create art.

Inside the exhibition you will see the work of three of the world's finest interactive artists: Karsten Schmidt, Zach Lieberman, and duo Varvara Guljajeva and Mar Canet. They have been commissioned by Google, and the Barbican Centre, to create

three all-new installations. Over the past few months, people logging in have been able to track the progress of these projects through regular updates on g.co/devart — from concepts and early sketches to the completed work.

The site was also used to give a platform to new, up-and-coming interactive artists. Our call for submissions was met with hundreds of responses from artists all around the world. Out of these, the interactive artist duo Cyril Digne & Béatrice Lartigue has been awarded a commission to create a new work of art to appear in the DevArt section of the Digital Revolution Exhibition.

7 Dev Art



Karsten Schmidt
Co(de)Factory
Interactive 3D modelling tool and 3D Printer installation



Cyril Diagne & Béatrice Lartigue
Les métamorphoses de Mr. Kalia
Interactive art installation



Zach Lieberman
Play the world
Interactive Installation



Mar Canet & Varvara Guljajeva
Untitled Butterfly work
Interactive installation

8 Our Digital Futures



Our Digital Futures presents a selection of some of today's most experimental and future-focused artists, architects and designers. With particular reference to the body and our environment the projects span the worlds of cyborg and wearable technologies, drones and "big" data.

The Not Impossible Foundation present *BrainWriter* (2014), designed for the paralysed graffiti artist *Tempt1*, it can read peoples thoughts and track their eye movements allowing them to communicate with the outside world. Artist Neil Harbisson has achromatopsia, a form of rare colour-blindness, meaning he can only see the world in black and white. Since 2004 Harbisson has used the *Eyeborg*, a mechanism he designed that translates colour into sound enabling him to hear a world in technicolour.

Fashion technologists *Studio XO*, recently launched the first ever drone dress with their flight couture collection and *CuteCircuit* have designed the *iMiniskirt* (2013), an accoutrement of personalised animations instantly controllable by a bespoke app. Fashion designer *Pauline van Dongen* presents *Wearable Solar* (2013), and *The Unseen* exhibits *Control* (2014), a technology garment that responds to the shifting weather patterns in outer space.

Artists and architects are also working within the worlds of augmented reality and gaming to create environments that lie somewhere between imagined and real spaces. *Martelli/Gibson* (*Bruno Martelli* and *Ruth Gibson*) present, *Man A* (2013) a seemingly flat geometric surface that is activated by a user's mobile app. Musician *John Cale* collaborates with speculative architect *Liam Young* on *Lost Signal* (2014), a drone orchestra performance and interactive online multi-player environment.

8 Our Digital Futures



Katja Canepa Vega
Kinisi
Video Clip



The Not Impossible Foundation
Brainwriter
Interactive Installation



Cute Circuit
Mini Skirt (TBC Name)
Display Object and app



Pauline van Dongen
Wearable Solar
Display Object



Gibson/Martelli
Man A
Interactive installation and app



Liam Young
Drone Orchestra
Collaboration with John Cale and commissioned performance with interactive WebGL project

9 Indie Games



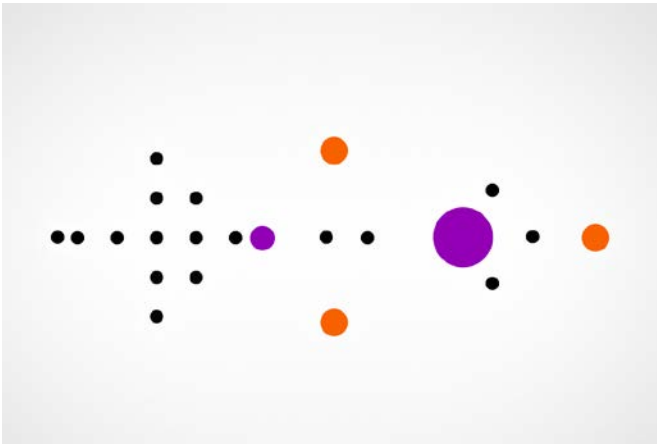
Indie Games Space looks at videogames that have been created with generally little or no direct support from a videogame publisher. Often consisting of no more than a coder, sound and graphics artist, independent games now span many genres, from puzzle games such as *Blek* (2013), twitch games such as *Canabalt* (2009) and randomly-generated exploration fantasies such as *Proteus* (2011). Games such as the BAFTA Award winning *Papers, Please* (2013) and *Journey* (2012) have also experimented with game play as an emotional form of storytelling.

Although making videogames was a more laborious process when Jeff Minter's *Attack of the Mutant Camels* (1983) was coded, today indie development is a more open affair. Accessible tools such as Flash, Unity 3D and the Unreal 3 engine, being used to prototype or develop games, such as *Antichamber* (2013), *Thomas Was Alone* (2012) and *Today I Die* (2007).

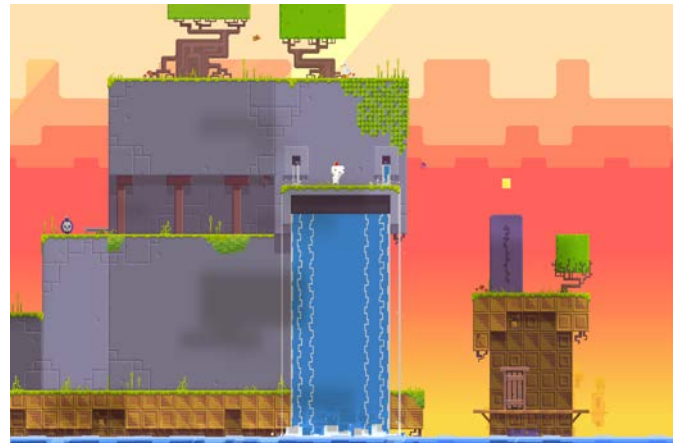
For some, game development is a personal labour of love and individuals such as Phil Fish, Terry Cavanagh, Kenta Cho and Daisuke "Pixel" Amaya have designed games crafted by single minded persistence and, in some cases, taking years of struggle to come to fruition.

More recently new methods of distribution have allowed independent development to become financially viable and today indie games flourish as a breeding ground for new experimental ideas.

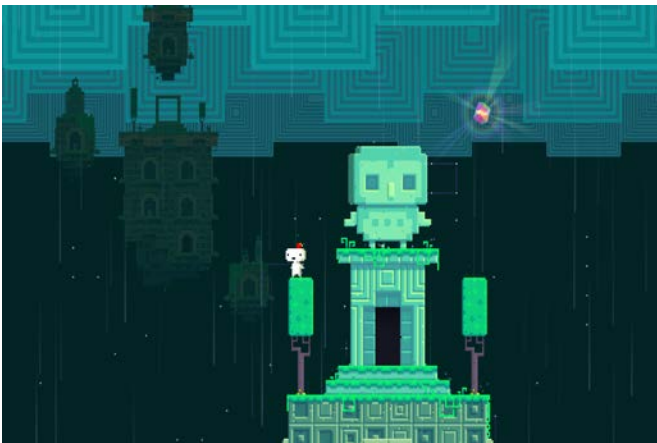
9 Indie Games



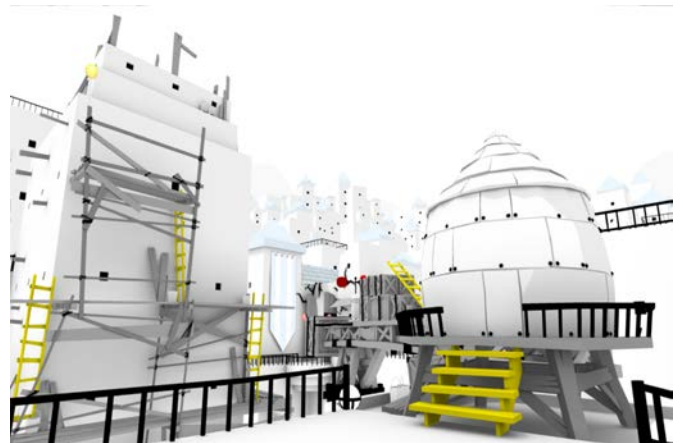
Davor and Denis Mikan
Blek



Phil Fish
FEZ



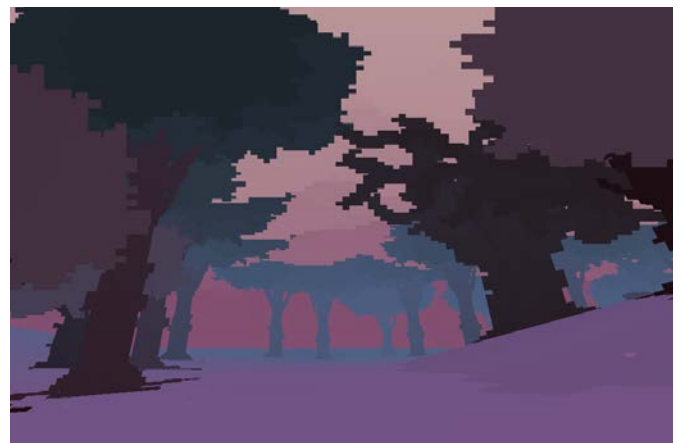
Daisuke "Pixel" Ayama
Cave Story



Alexander Bruce
AntiChamber



Jeff Minter
Attack of the Mutant Camels



Ed Key / David Kanaga
Proteus

10 Commissions



Petting Zoo, 2013

Minimaforms

Real-time behavioural environment/soft robotic installation

In the form of suspended robotic arms Petting Zoo (2013) is a generative robotic installation populated by inquisitive and artificially intelligent creatures, which respond to human engagement. Using a real-time camera-tracking system that can locate people and detect gesture and activity each pet has the capacity to process data so that they can learn and explore different behaviours by interacting with the public and each other.



Assemblance, 2014

Umbrellium

Assemblance, Umbrellium's specially-commissioned new artwork, is an environment filled with three-dimensional interactive light-structures that are created, manipulated and modified by visitors to the space. Through sweeping gestures and gentle movements that leave trails of light behind and around them, people become players on a stage, collaborating with each other to build complex forms... or destroying them if they're not careful. At times magical, and at others times slightly sinister, the light structures created in Assemblance have a physical presence, although you can't feel them with your hands.



Together, 2014

Universal Everything

Together is a collaboration between Universal Everything and the audience, bringing together two fundamental parts of Universal Everything's process: drawing and rule-based creativity. The artwork is a bespoke web app that presents the audience with a minimal shape and colour palette to prompt inventive responses from a limited toolkit, encouraging them to create short animated loops. The minimal toolkit enables the audience to duplicate a frame, onion skin, trace over a guide frame, and erase or delete a frame. The audience-created loops will be shown in an array of 24 screens, creating a wall of individual animations that are a collective response to the aesthetics and rule-based limitations presented to them.



The Treachery of Sanctuary, 2012

Chris Milk

The Treachery of Sanctuary is inspired by the aura of primal human experiences with technology as felt in the prehistoric paintings on the walls of the caves of Lascaux. The piece is an interactive triptych whereby the stories of birth, death and spiritual transfiguration are played out on the giant white panels and reflected on the mirrored surface of the water. As a camera tracks the viewer's body movements, it translates them into a series of projected shadow plays that combine with those of birds, allowing the visitor to feel transformed and immersed in the experience.

11 Installation Shots



11 Installation Shots



11 Installation Shots



Images © Wei Wang unless otherwise stated
Digital Revolution Tour Pack

11 Installation Shots



12 Sample Marketing



12 Sample Marketing



数字革命
Digital Revolution

一场关于艺术、设计、电影、音乐以及电子游戏的沉浸式展览体验
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DIGITAL REVOLUTION

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ZORLU PSM'DE!"

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DIGITAL REVOLUTION

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Exhibition organised and hosted by Barbican International Enterprises, London

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Google SAMSUNG

THE YEAR'S WINDIGHT, 2011, RAFAEL LOZANO-HEMER, COURTESY OF BITFORMS AND CARROL/FETCHER GALLERIES, PHOTO BY ANNA GERSON

TEKNISKA MUSEET