

THE LUMEN PRIZE

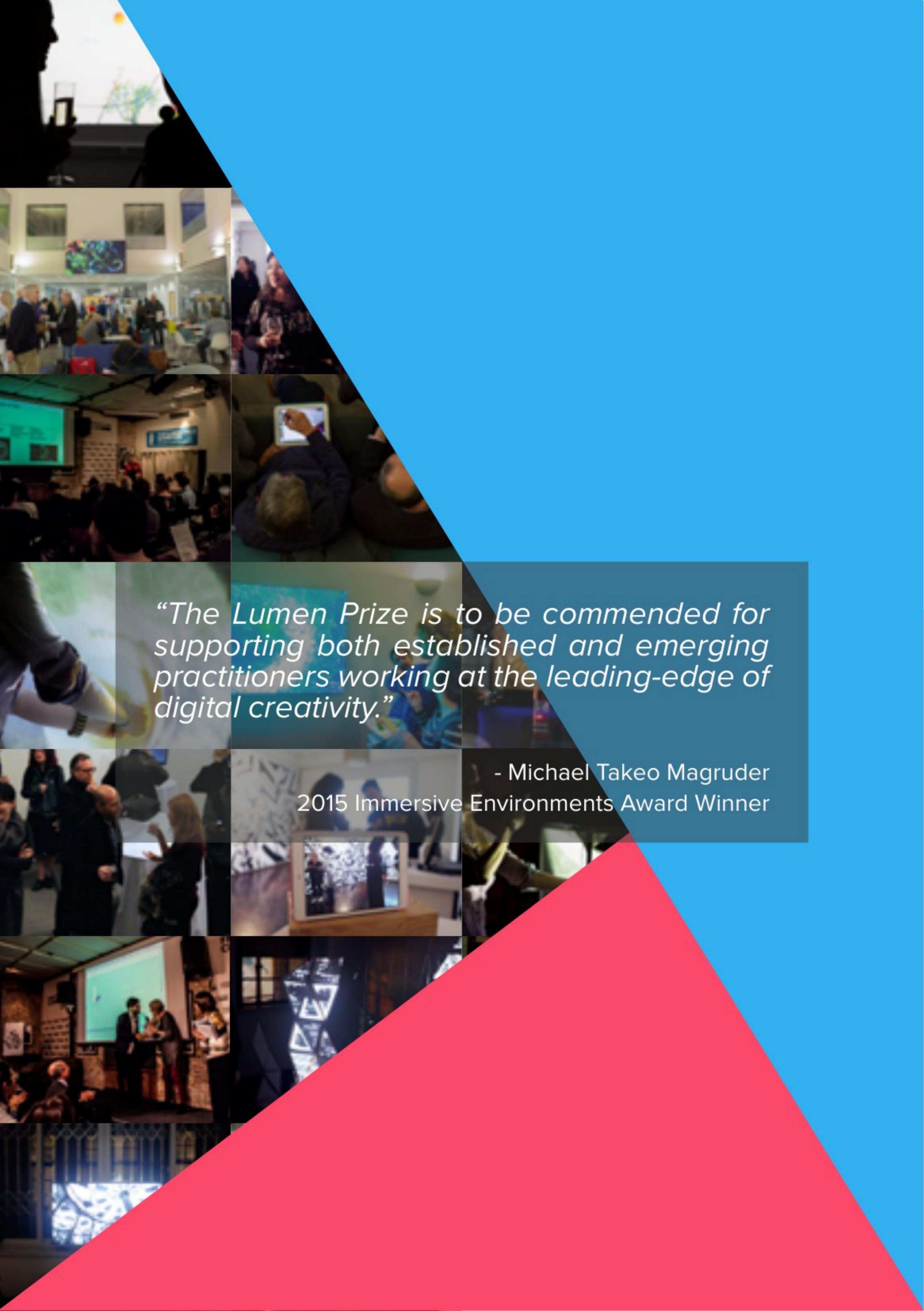
2015/16 CATALOGUE

Special Issue:

Page 73

The bulletin of the Computer Arts Society





“The Lumen Prize is to be commended for supporting both established and emerging practitioners working at the leading-edge of digital creativity.”

- Michael Takeo Magruder
2015 Immersive Environments Award Winner



2015/16

LUMEN PRIZE

CATALOGUE

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The bulletin of the
Computer Arts Society

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About The Lumen Prize

Launched in 2012, The Lumen Prize celebrates the very best art created digitally by artists globally. Its goal is to focus the world's attention on this exciting genre through an annual competition and global tour of works selected by an eminent panel of judges.

This catalogue showcases Lumen's fourth annual awards and global tour which travelled the world in 2015/16.

To enter the prize, artists around the world submitted work made on electronic devices, such as smart phones, tablets, 3D printers and computers using apps, software or original coding. The longlist of 100 works opened for a public vote for the People's Choice Award in August and the shortlist of 25 works were announced in Vancouver at the start of this year's global tour. The winners were announced in London that September.

Every Lumen show includes a workshop or seminar on digital art and engages with digital artists locally. As of Spring 2016, Lumen has staged more than 25 shows around the world, including venues in China, the US and across Europe and has given away more than \$30,000 in prize money.

A not-for-profit organisation based in Cardiff, Wales, Lumen works with a range of academic, charitable and corporate partners around the world in curatorial collaborations, educational activities and special projects. For more information, please email info@lumenprize.com.

www.lumenprize.com



Lumen Turns Four

Carla Rapoport, Director & Founder, The Lumen Prize

On a wet and windy Monday night in February, more than 100 people turned out for a Lumen Highlights event in southwest Wales. The Swansea University School of Management hosted a Lumen Prize party, including a Master Class in digital painting. Drinks in hand, people enjoyed a range of interactive and projected Lumen Prize art. Then, they sat down to sketch mountains with their fingertips.

It was one of the happiest evenings I can remember. London, Hong Kong, New York City, and Shanghai are all great places to show digital art but bringing Lumen to places where it doesn't normally go – to people who don't normally see digital art – is perhaps one of the biggest joys of being part of Lumen. Raising the enjoyment and understanding of digital art remains goal number one for Lumen.

"Bringing Lumen to places where it doesn't normally go – to people who don't normally see digital art – is perhaps one of the biggest joys of being part of Lumen."

Creating more opportunities for digital artists remains goal number two, perhaps an odd goal for an art prize. But Lumen has always aimed to be more than a prize. For example, our global tour isn't just for the winners – the shortlist and People's Choice Award winner travel too. And by moving around the world each year, we broaden our partnerships and network which we can share with artists who have been part of the Lumen family since it launched in 2012.

So far, these opportunities have included a chance to be part of our seminars, panels and symposiums, providing workshops at a Lumen show, or having art displayed in shows following their Lumen prize selection. In the next year, we aim to broaden

this to online sales through our Lumenus sister site as well as commissions with selected partners.

This year we are also proud to have connected to other art networks, such as Creative Tech Week in NYC, a city-wide festival of the creative arts, Canary Wharf Winter Lights, an annual outdoor light festival in East London, Leeds Digital Festival and Electronic Visualisation and the Arts (EVA), a connection made possible by our links with the prestigious Computer Arts Society founded in the UK in 1968.

This catalogue – available in print as well as online – presents another opportunity. In addition to providing an engaging record of the 2015 Lumen Prize winners, shortlist and tour, for the first time, it includes two academic essays about digital art. Each one makes a connection to Lumen's role in the narrative of digital art, making it a double honour to publish them. In future years, we hope to broaden this aspect of the catalogue.

One of the authors of these essays, Jonathan Kearney, Postgraduate Programme Director, UAL, Camberwell College of Art, was the very first academic I contacted when I was establishing the prize in 2012. One of his early emails to me included the following:

"The opportunities Lumen creates to cross boundaries, both conceptual and literal, are enormous. We are only just beginning to explore the space created for work beyond the usual art hegemonies."

I'm fairly certain Jonathan would agree that four years later, digital art is further along in exploring that space. And I'm incredibly encouraged by the strides Lumen has made in just four years – not just by the turnout on that cold, windy night in Swansea. The art on the pages that follow make the case better than anything else.

Jury Panel

Douglas Dodds

Senior Curator in the Word and Image Department at the Victoria & Albert Museum. Recent exhibitions include Barbara Nessim (2013) and Digital Pioneers (2009/10). The V&A holds the UK's national archive of early digital art.

Tessa Jackson OBE

UK-based gallery director, curator and arts consultant; founding Artistic Director of Artes Mundi, Wales' International Visual Art Exhibition & Prize and past CEO of Iniva, Institute of International Visual Arts, London.

Bruce Wands

Chair of the MFA Computer Art Department, Founding Chair, BFA Computer Art Department and Director of Computer Education, School of Visual Arts, New York; widely-exhibited artist, author of Art of the Digital Age and Director of the New York Digital Salon.

Michael Fukushima

Montreal-based executive producer of the National Film Board of Canada's fabled Animation Studio and prize-winning filmmaker who co-founded the NFB's flagship emerging filmmaker program, Hothouse, in 2002.

Clarrie Wallis

Clarrie Wallis is a curator for Tate Britain. A leading expert on contemporary art, she has curated many exhibitions for Tate including Richard Deacon (2014), Patrick Caulfield and Rose Wylie (2013).



MAN A

Gibson / Martelli

Gold Award

AR Installation

London, England

Drawing inspiration from the visual language of ‘dazzle’ camouflage developed by artist Norman Wilkinson in World War One, *MAN A* is a series of seemingly flat geometric surfaces, activated by a users’ mobile app to reveal engaging performances.

Tools

Vicon Motion Capture Studio with Nexus Motion Analysis; Motion Capture Studio with Cortex software; Motion Builder; 3DS Max; Unity 3D; Photoshop; Illustrator; Xcode; iPhone; iPad; LG Nexus 5

The work reminds us of both tribal war paint and zebra’s stripes, playing on the idea of concealment and revelation with the technology acting as the catalyst. The re-imagining of ‘dazzle’ camouflage is used to conceal performers who move within the installation, becoming visible only through the use of an Augmented Reality app.

Gibson/Martelli see the *MAN A* project as a conceptual laboratory and the outcomes of a number of their experiments have been exhibited in a variety of forms including site-specific installation, large scale wall and window prints, and virtual reality.



Métamorphy

Scenocosme - Grégory Lasserre & Anaïs met den Ancxt

Silver Award

Immersive Installation

Lyon, France

Placing physical interaction, sound and digital technology side-by-side, Scenocosme creates a visual and sound installation that offers an immersive projection of the body by mixing real and imaginary reflections. Referring to the process of metamorphosis the artwork seeks to represent the notion of change.

Tools

C++, Maxmsp + Jitter, Kinect,
Computer, Video projector, Audio
system and lights

Acting as a second skin, the veil reveals various meditative universes, through organic, liquid

or incandescent substances. Like a musical score, each interaction that occurs between the audience and the veil generates a sound effect, evolving according to the place and depth of the physical contact. When nobody interacts with the veil, it remains rigid and only the reflection of the spectator is present.



Augmented Hand Series

Golan Levin, Kyle McDonald & Christine Sugrue

Bronze Award

Interactive Installation

Pittsburgh, PA, USA

The Augmented Hand Series is a real-time interactive software system that presents playful, dreamlike, and uncanny transformations of its visitors' hands. Originally commissioned by the Cinekid Festival, the project was conceived in 2014 as a tool for muddling embodied cognition and explores new possibilities for the digital

body. The installation consists of a box into which a visitor inserts their hand, and a display that shows their 'reimagined' hand as altered by various dynamic and structural transformations.

Tools

openFrameworks / C++, Mac OS,
MacBook Pro, LEAP controller, Point
Grey camera

There are about 20 different transformations that have been developed and the touchscreen allows the participants to select from them. Some of these perform structural edits - cutting and pasting the visitors' digital body - while others endow the hand with new dimensions of plasticity. For instance, selecting Plus One will provide your hand with an additional finger, while Fractal Hand will result in each of your fingers terminating in a small hand.



A New Jerusalem

Michael Takeo Magruder

Immersive Environments Award

VR Installation

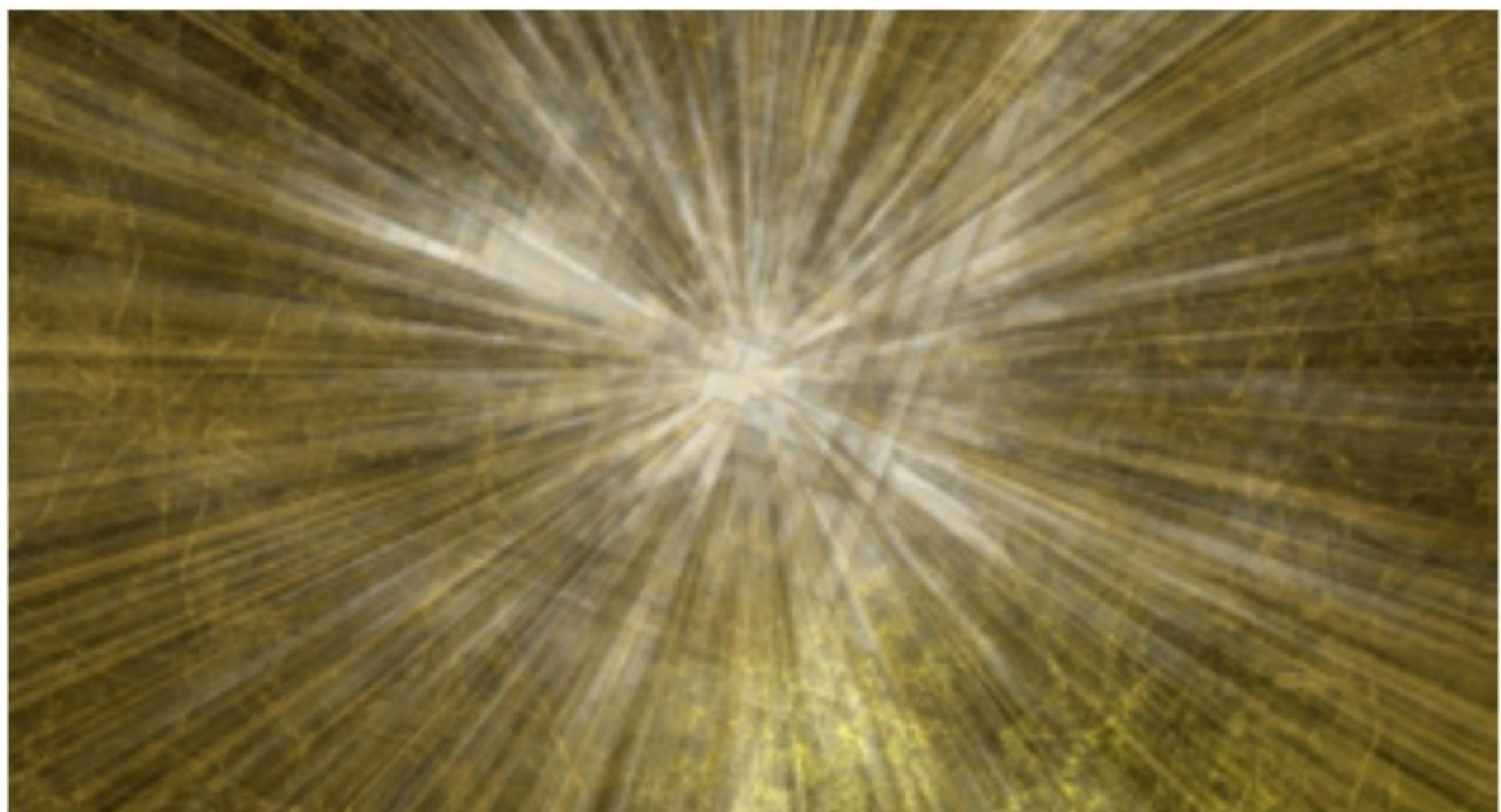
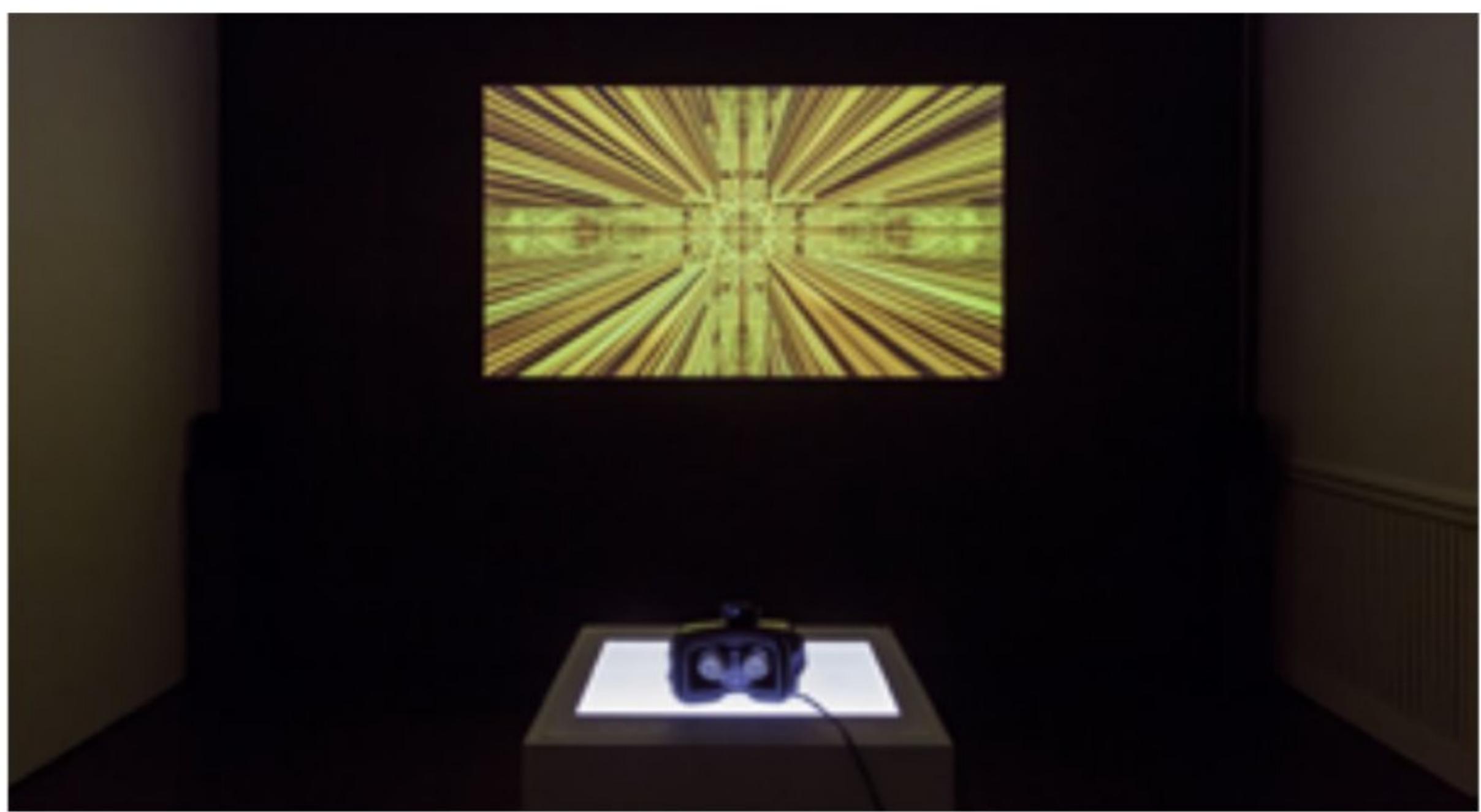
Coventry, England

The narrative of the Book of Revelation is not just one of apocalyptic destruction; it is also a journey of salvation and unveiling. The Book's positive culmination is expressed in the creation of a heavenly city – referred to as New Jerusalem – that arises from the remains of the old world. *A New Jerusalem* is an immersive virtual reality installation that seeks to embody the spirit of the heavenly city. The artwork manifests as a beautiful and illuminated metropolis which is based upon the architectural descriptions narrated by John the Seer in the Book of Revelation.

Tools

Oculus Rift VR headset and HD video projection system; Unity3D, 3D Studio Max, Google Maps, Adobe Flash, Adobe Photoshop, Sony Sound Forge and Raco Industries barcode software

A New Jerusalem is generated solely from the text of Revelation itself; translated into data code and rendered in four-dimensional virtual space. The imagined cityscape is also constructed using current Google Map data of the present-day Jerusalem, thus proposing that this virtual city is not a wholly unrecognisable place. Within this context, the artwork asks viewers to contemplate why we should care about our present society and environment if promises of 'a new heaven and a new earth' (Rev 21:1) await us.



RadianceScape

XCEED

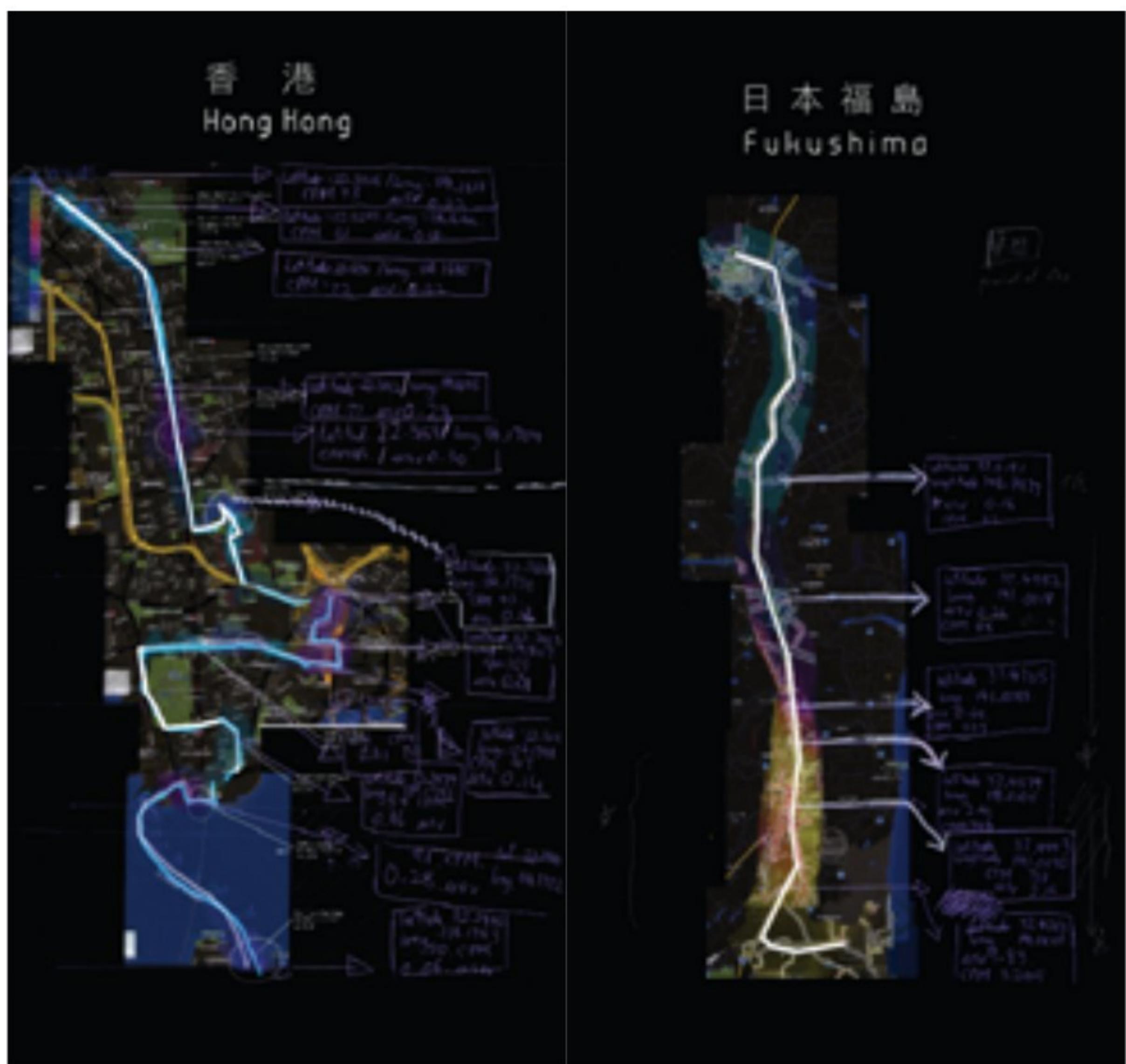
Level 39 Creative Coding Award
Generative Data Visualisation
Hong Kong SAR

Responding to the 3.11 earthquake in Fukushima in 2011, *RadianceScape* is a data-visualising sonic composition based on live radiation data. Acquiring the data from Safecast.org (a global sensory network for collecting and sharing radiation measurements) and measuring the radiation level in Hong Kong for comparison, the artist uses this information to generate an audio-visual cityscape.

Tools

Safecast bGeigie Nano, Safecast API, Google Maps API, Google Street View API, openFrameworks, Ableton Live, Reaktor and IanniX

The visibility of the cityscape correlates to the density of the radiation level; the less you see the higher the radiation level. The project aims to visualise radioactivity and raise public awareness of the problems that persist in Japan.



Lundbye's Coast - Oblivion

Filip Vest

Still Image Award

Still Image

Frederiksberg, Denmark

Inspired by Johan Lundbye's painting *A Danish Coast* (1843) this series of images offers a digital version of the original painting. The digital version has been corrupted

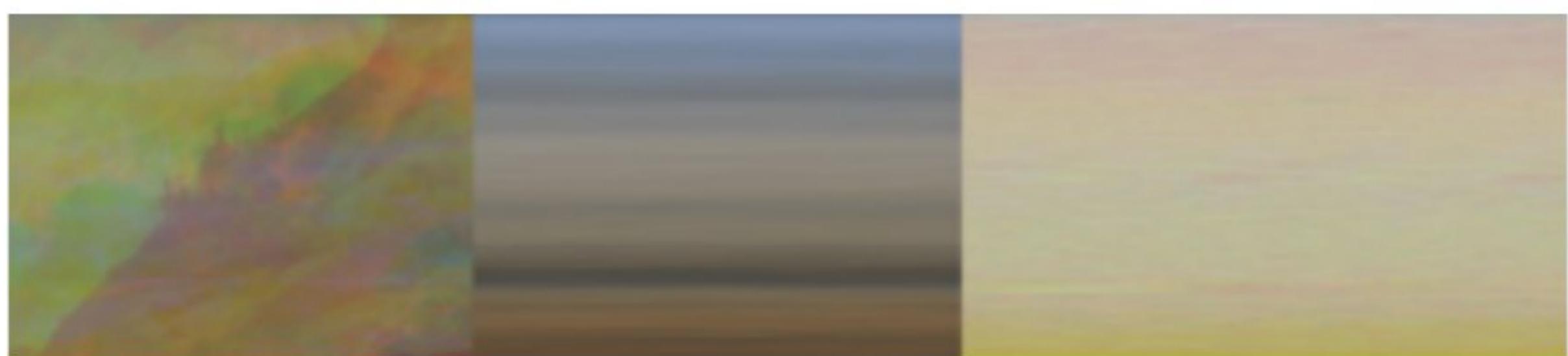
and as a result the codes of the image file, while they remain intact, cannot be reassembled by the computer. Each work in the

series represents the software's attempt to recreate the original painting. The process that the computer undertakes becomes a sort of analogy of oblivion, symbolic of erased memories.

The work was exhibited alongside Lundbye's *A Danish Coast* at the National Gallery of Denmark in 2015.

Tools

Macbook Pro, Abode Photoshop



Portée/ Lab212 Collective

Welsh National Opera Performance Prize

Interactive Installation

Paris, France

Portée, a collective multi-sensory experience, presents the interactive unfolding of a musical score in space. Concentrating their work on establishing a dialogue between artist, audience and machine the visitors are invited to explore the spatial and interactive qualities of music within a poetic setting.

Tools

Custom software written in NodeJS & Arduino, Yamaha Disklavier grand piano and MacBook Pro

The movement of the visitors triggers the vibration of the 16 threads that dissect the space, which in turn reverberate through the electromecanic grand piano.

While visitors trigger these melodies the configuration ultimately remains out of their control. Referencing the work of Iannis Xenakis, a Greek composer, architect and engineer, the threads evoke a continuous dialogue between mathematics, architecture and music.

The melodies that are triggered by the visitor are by the French musician Chapelier Fou (aka Louis Warynski). These musical scores evolve over time and prompt the audience to question the origin of the music that they hear and their control over it.



Electric Sheep

Scott Draves

Founder's Prize

Generative System

New York City, NY, USA

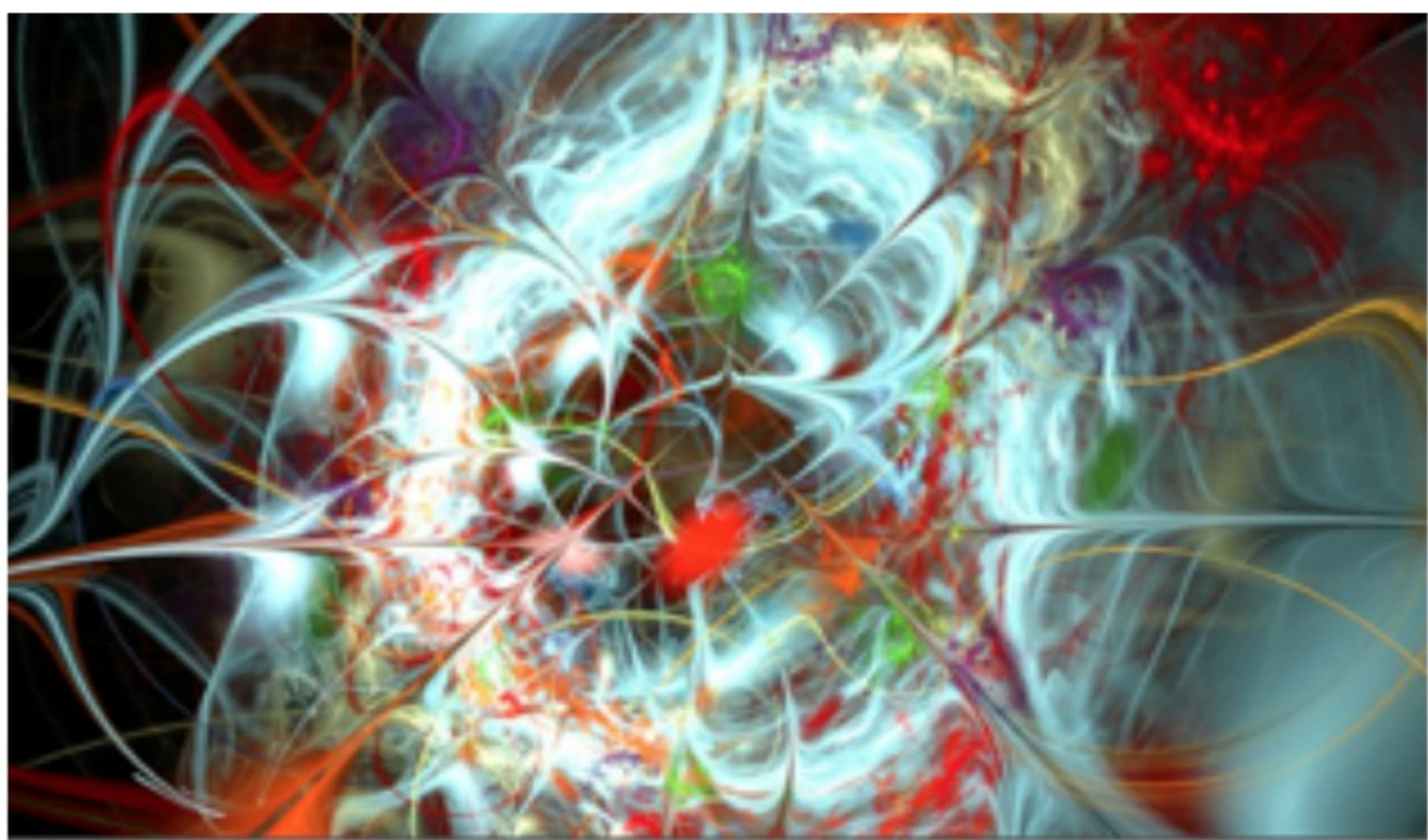
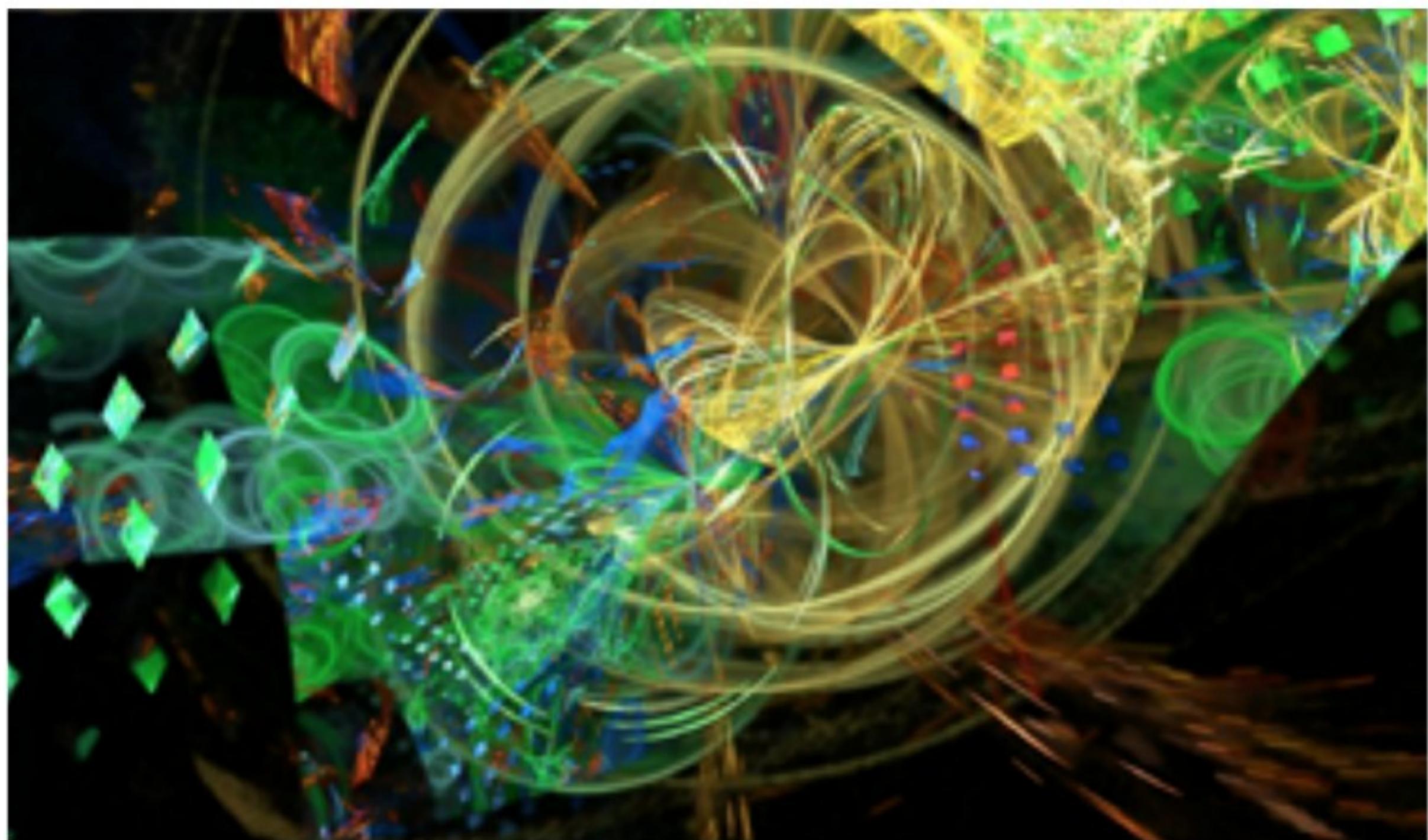
Electric Sheep is a computerised system for art-making with an infinite capacity for making and sharing unique images. The artist considers the system as a conceptual artwork that demonstrates the viability of independently creative machines.

Tools

Original flame algorithm, original rendering software, screensaver software and distributed renderer written in C, C++, objective-C, Java, Perl, Original video ordering algorithms and Github

A collaboration between thousands of people globally *Electric Sheep* can be installed on any ordinary PC, Mac, Android

or iPad. When these operating systems ‘sleep’, *Electric Sheep* comes alive and joins other participating systems to produce a supercomputer – creating abstract animations known as ‘sheep’. Participants can guide the survival of the fittest by selecting the animations that they prefer, prompting a ‘sheep’ to live longer and reproduce. What this results in is a collective ‘android dream’, merging man and machine to produce an artificial life form.



WOMAN WITHOUT MANDOLIN

Fabiano Mixo

People's Choice Award

Moving Image

Berlin, Germany

WOMAN WITHOUT MANDOLIN is a portrait of Miriam Goldschmidt. Combining digital motion compositing with a visual concept that has simultaneous camera angles Mixo rethinks Cubism through the medium of film.

Tools

After Effects & Premiere Pro

The piece confronts the formalistic aspects of Cubism through the direct quotation of Picasso's *Girl with Mandolin*: confronting the art historical context of the work and the influence African art had on the movement. Thus, the work presents an opportunity for the audience to reflect on the re-appropriation of the already appropriated.

While the work draws on the formalist qualities of the Cubist movement, Mixo aims to express, through the subject of a strong woman, the consciousness of different cultures and their histories.



Aeolian Light

Squidsoup

Interactive Light Installation
Salford, England

Commissioned by Quays Culture and the University of Salford, *Aeolian Light* is an installation consisting of 12,096 individually addressable full-colour LEDs suspended within a 24 x 24 LED strand grid.

Building on seven years' of exploration into the use of 3D arrays of controllable lights to represent media elements within physical space, Squidsoup have developed a bespoke volumetric rendering system that visualises 3D form and movement through light.

Tools

openFrameworks / C ++, LEDs, SICK LMS Laser Scanner, Sparkfun Arduino based weather station and system controlled by 72 DMX universes

Inspired by the windy location, the LEDs track and visualise the energy that disturbs the work. The movement of people within the work is tracked using a laser scanner, while the wind and its direction is detected using a weather station.



Color Field

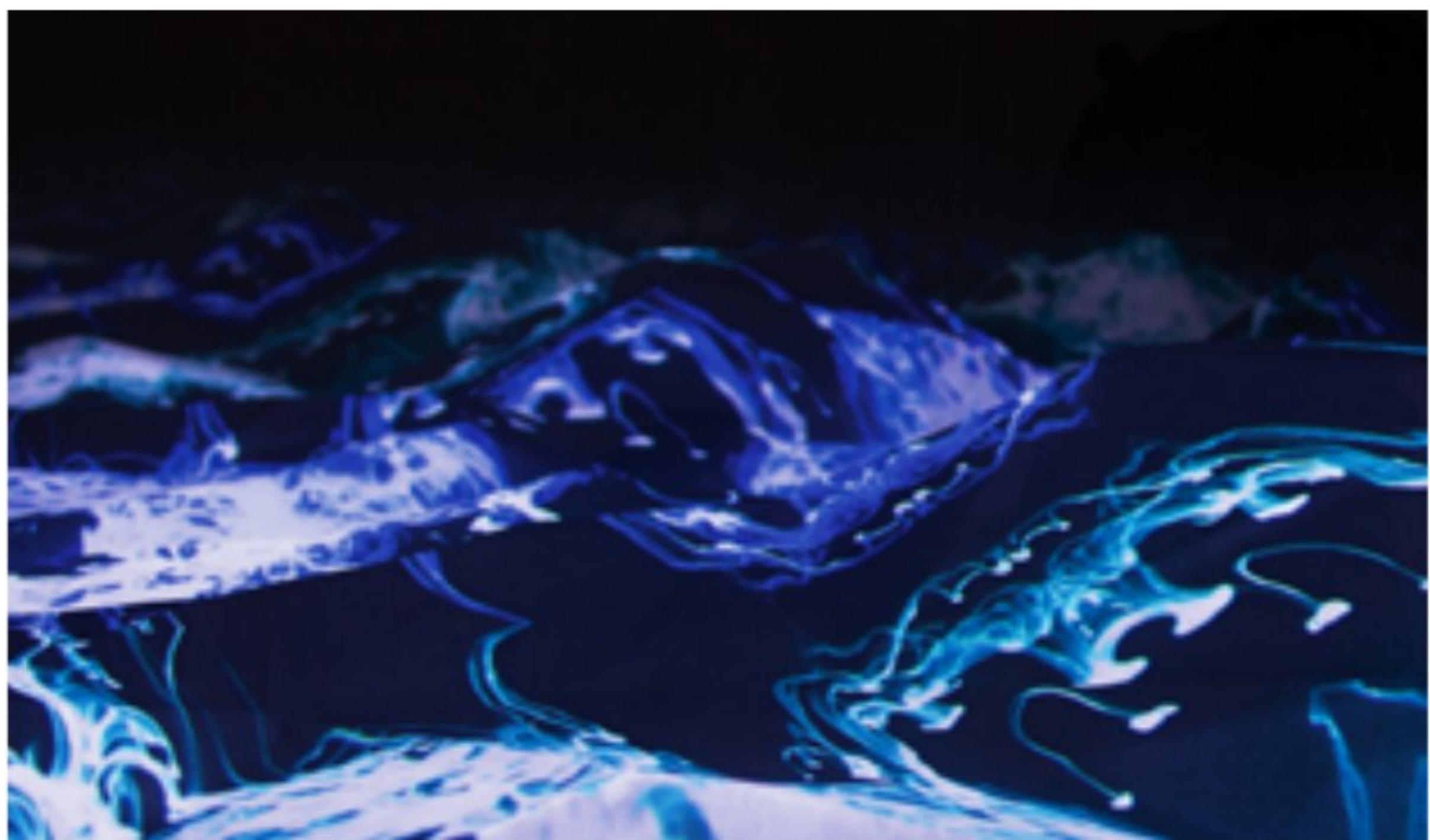
Chin-Lung Chuang

Interactive Installation
New York City, NY, USA

Tools

SolidWorks 3D CAD, Madmapper
& Adobe Premier

Color Field is a projection mapping installation that explores emotive responses to colour within nature and the human subconscious. The installation projects images of colour on a multi-planed topographic form, replicating an abstract landscape. Within an acrylic infinity box, colours are slowly shifting to represent notions of life's continuum. *Color Field* offers viewers a meditative and reflective space to unearth deep memories.



Fibonacci Image with blue cells emerging from an orange background

Marcus West

Computer Assisted Graphic Art

Cardiff, Wales

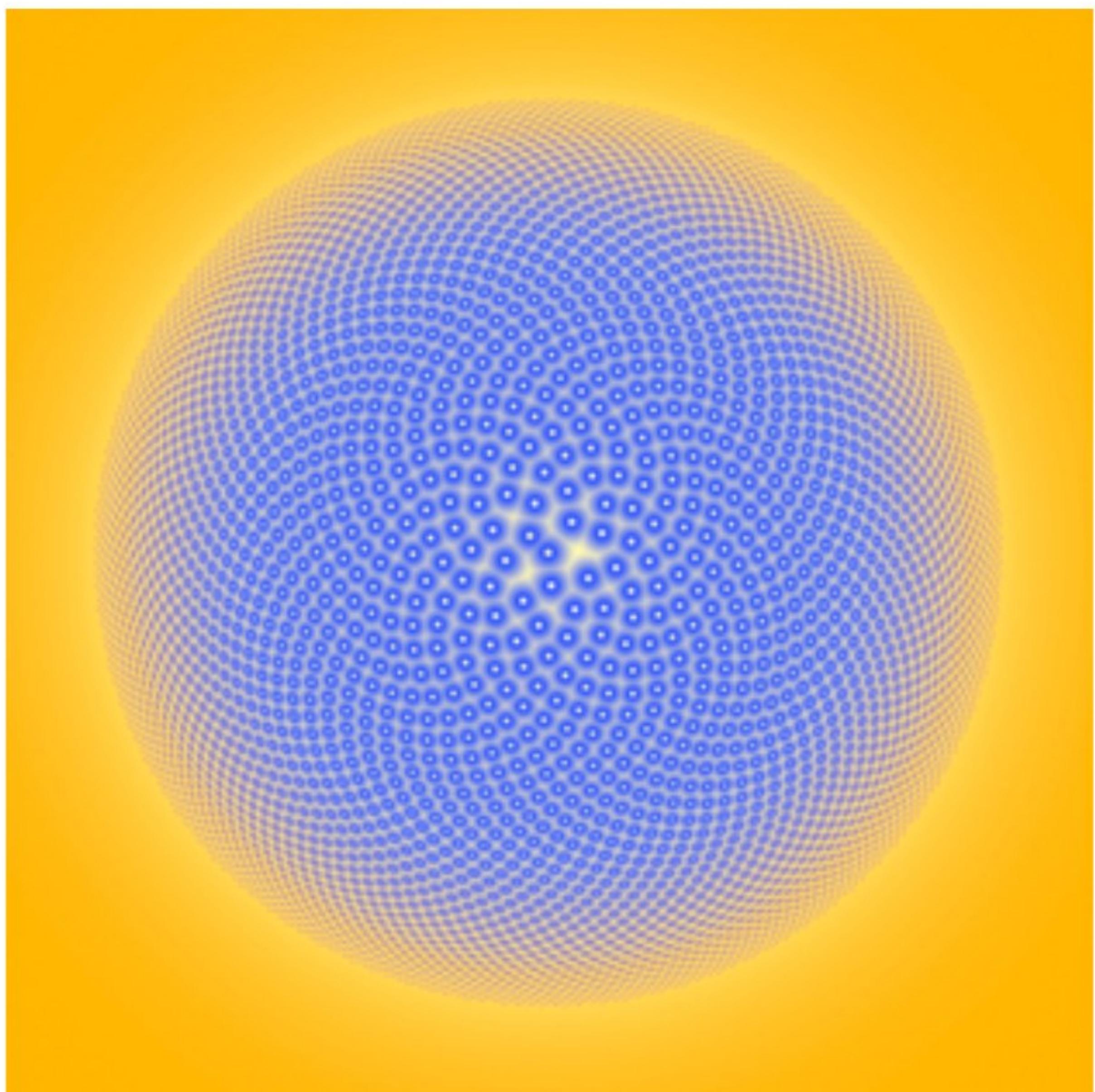
“In essence: my goal is to create images with impact, complexity and subtlety, works that are striking but that do not reveal all their secrets at a single glance.”

Based on the Fibonacci series – the sequence of numbers that defines the Golden Ratio – this work has been constructed out of families of spirals. Intertwining digital art and nature, these networks of spirals move clockwise and anti-clockwise across the surface.

Tools

Custom programmes written in Delphi
& Pascal

As you move further into the centre of the image you start to sense the emergence of these familiar relationships. At first glance the colours appear to pulse, but as you look closer it is revealed that the blue elements of the work are not circular. The edge of each element ‘negotiates’ with the edges of each of its neighbours to create something that gives the appearance of a collection of cells packed closely together.



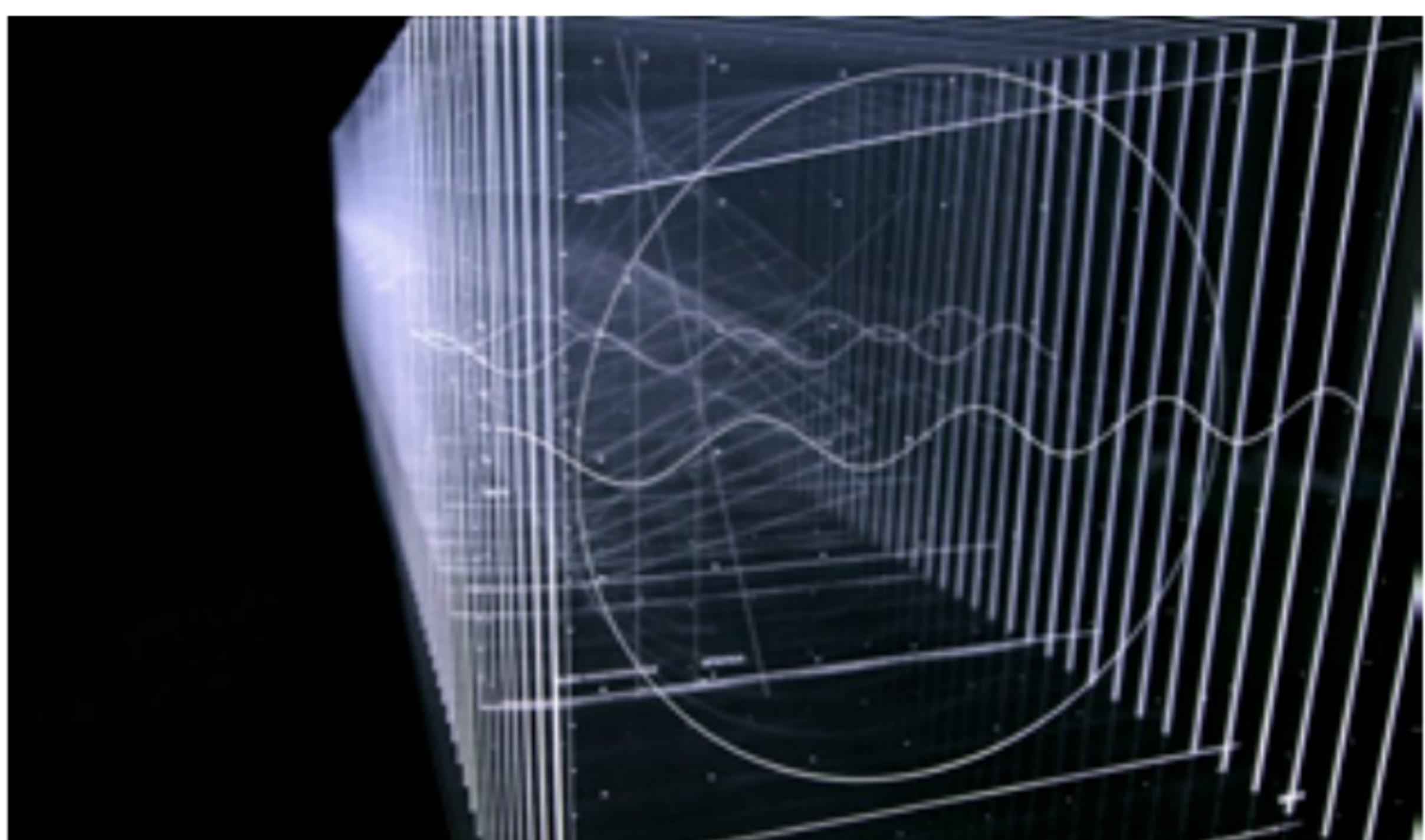
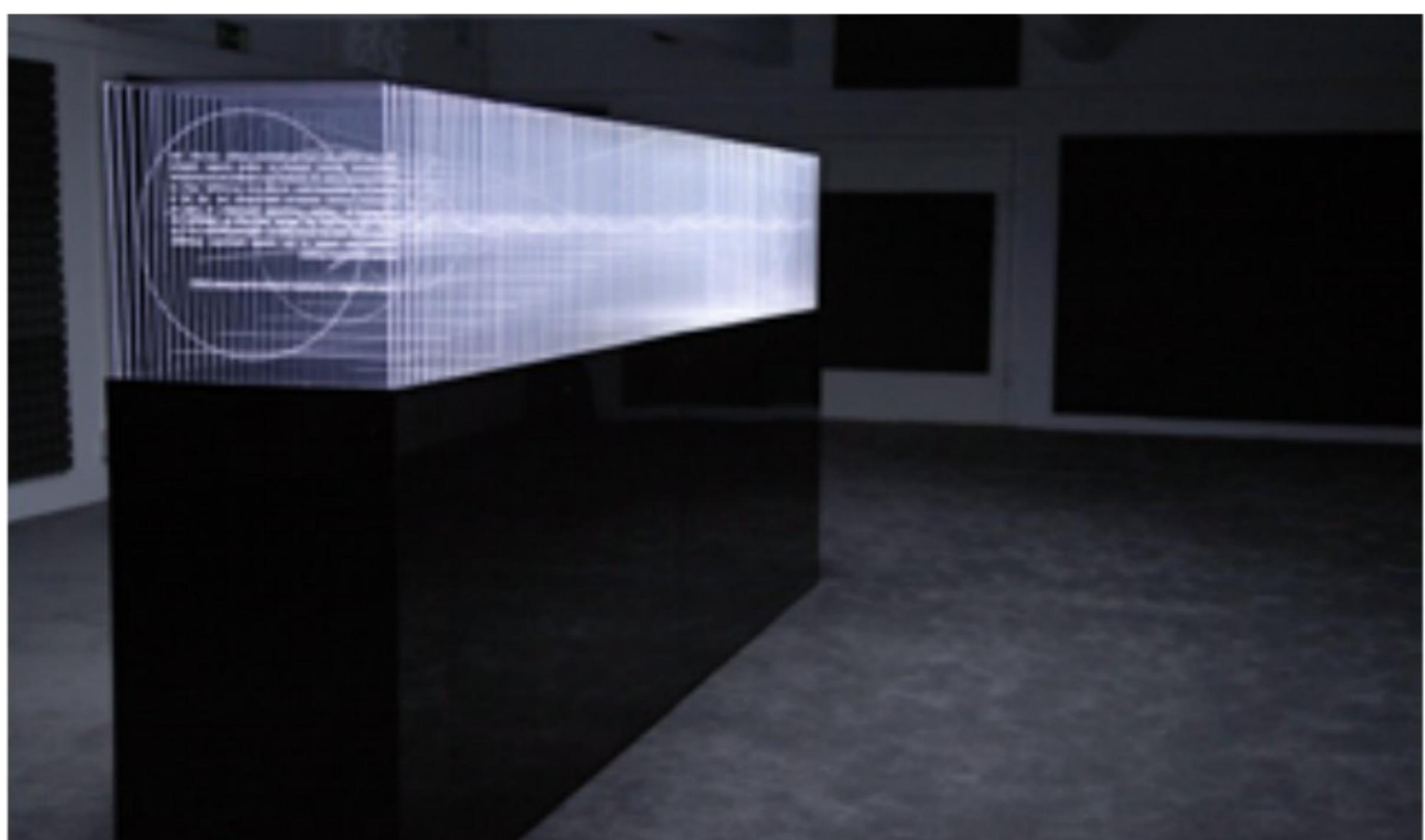
Frequencies (Light Quanta)

Nicolas Bernier

Light and Sound Installation
Montreal, Canada

Part of an on going process entitled *frequencies* which aims to explore the basic sound and light dichotomy, *frequencies (light quanta)* is a sound and light installation created by superimposing 100 transparent laser cut acrylic panels. Engraved with vectorial graphics inspired by quantum physics, these panels are edge lit and individually controlled by a computer-based algorithm that switches the lights on/off and syncs it with sound.

The audio-visual composition stems from 100 sounds and light fragments that develop organically, generating an infinite but disruptive form in time and space. This disruption allows the vectorial graphics to constantly create new ways to look at the visual. The structure of *frequencies (light quanta)* recalls the machines and electronic circuits that are used to analyse subatomic particles and aims to offer a better understanding and visualisation of the infinitesimal world.



Hyphae

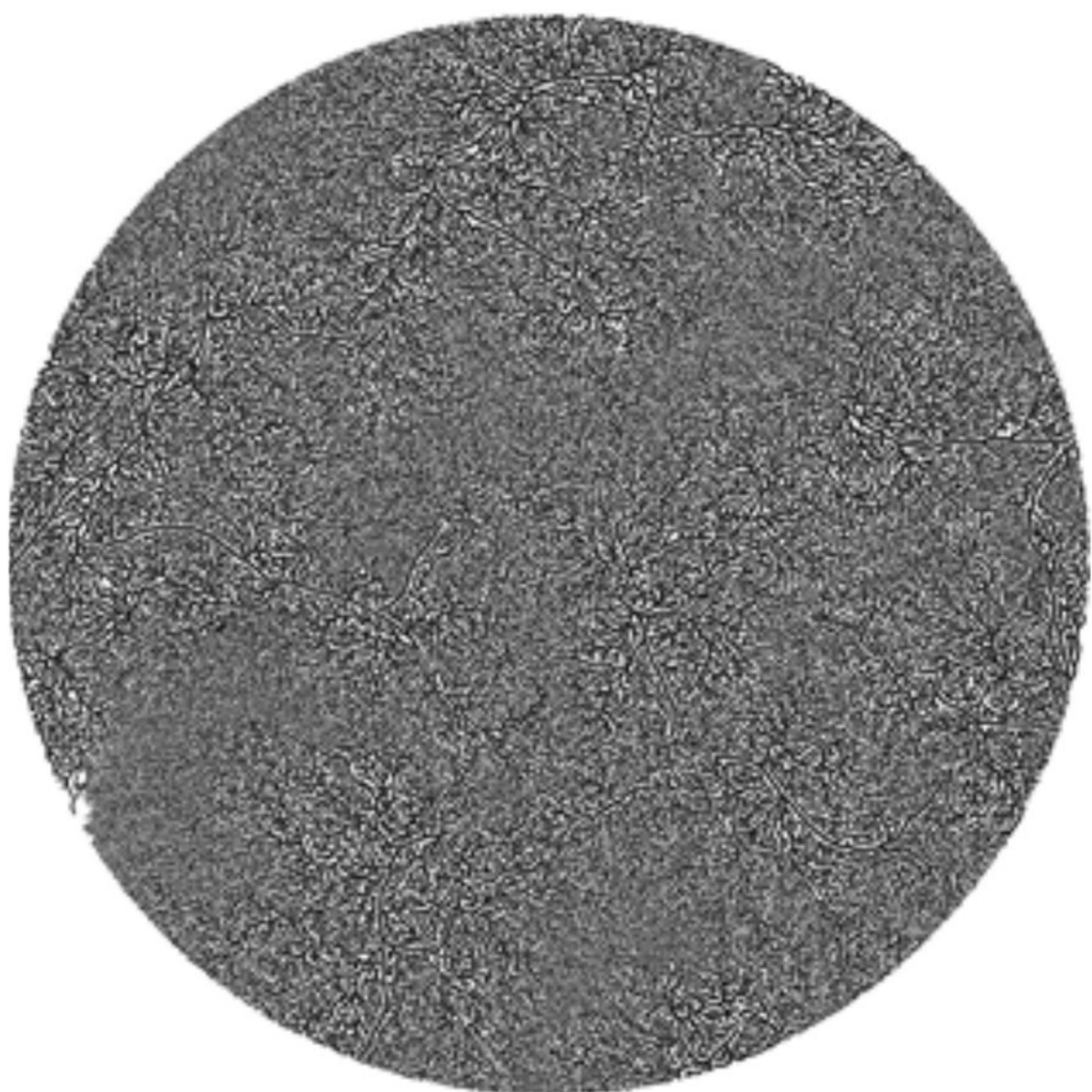
Anders Hoff

Still Image
Oslo, Norway

Hyphae is a generative algorithm written in an attempt to mimic biological forms such as the growth of tree branches or roots. Emerging out of an attempt to mimic leaf veneration patterns, *Hyphae* centres around letting circles grow next to each other in such a way that no two circles ever overlap. This algorithm has resulted in an incredibly intricate and fractal-like piece of work.

Tools

Custom Python program using NumPy
& Python-Cairo



In Flow

Ronan Devlin

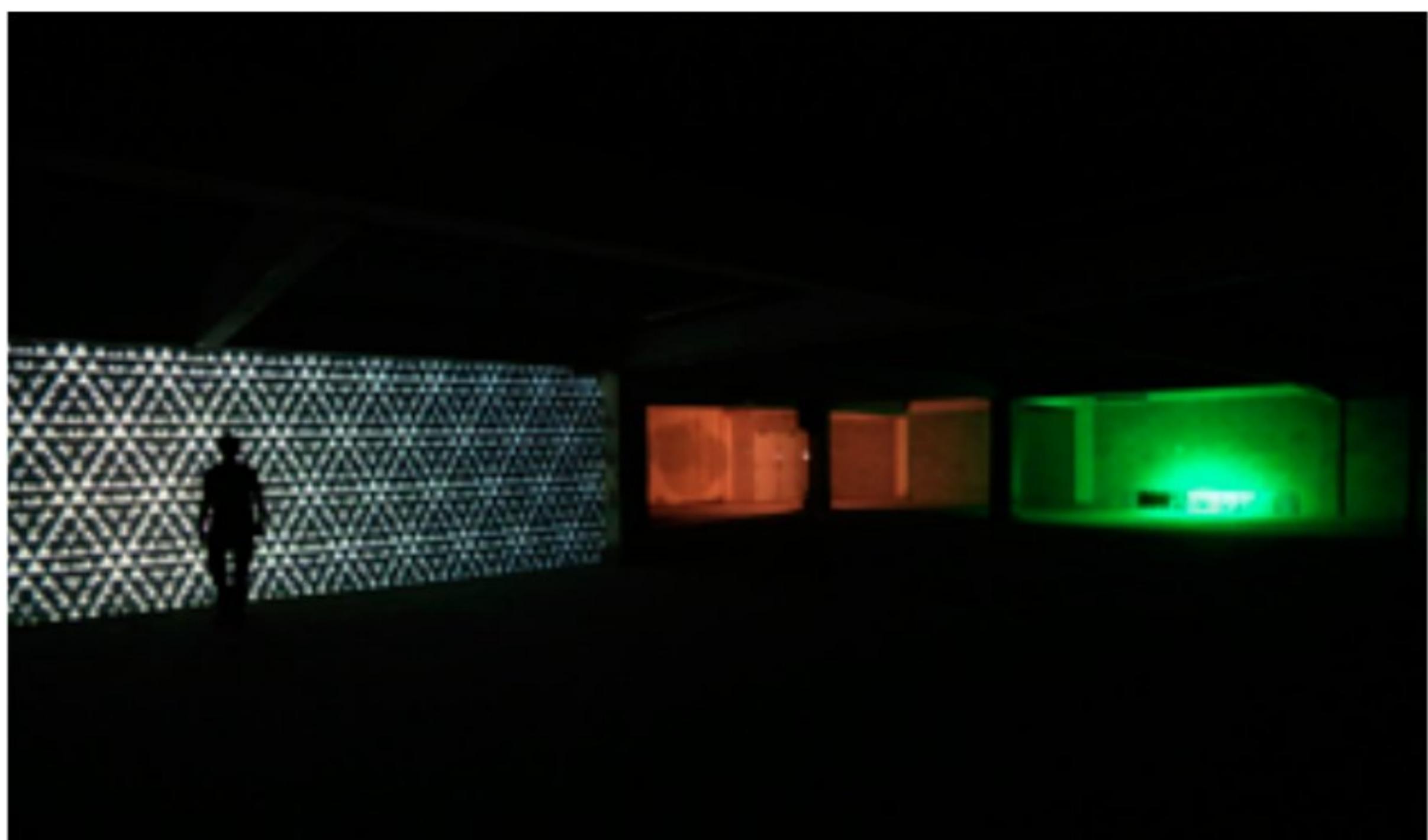
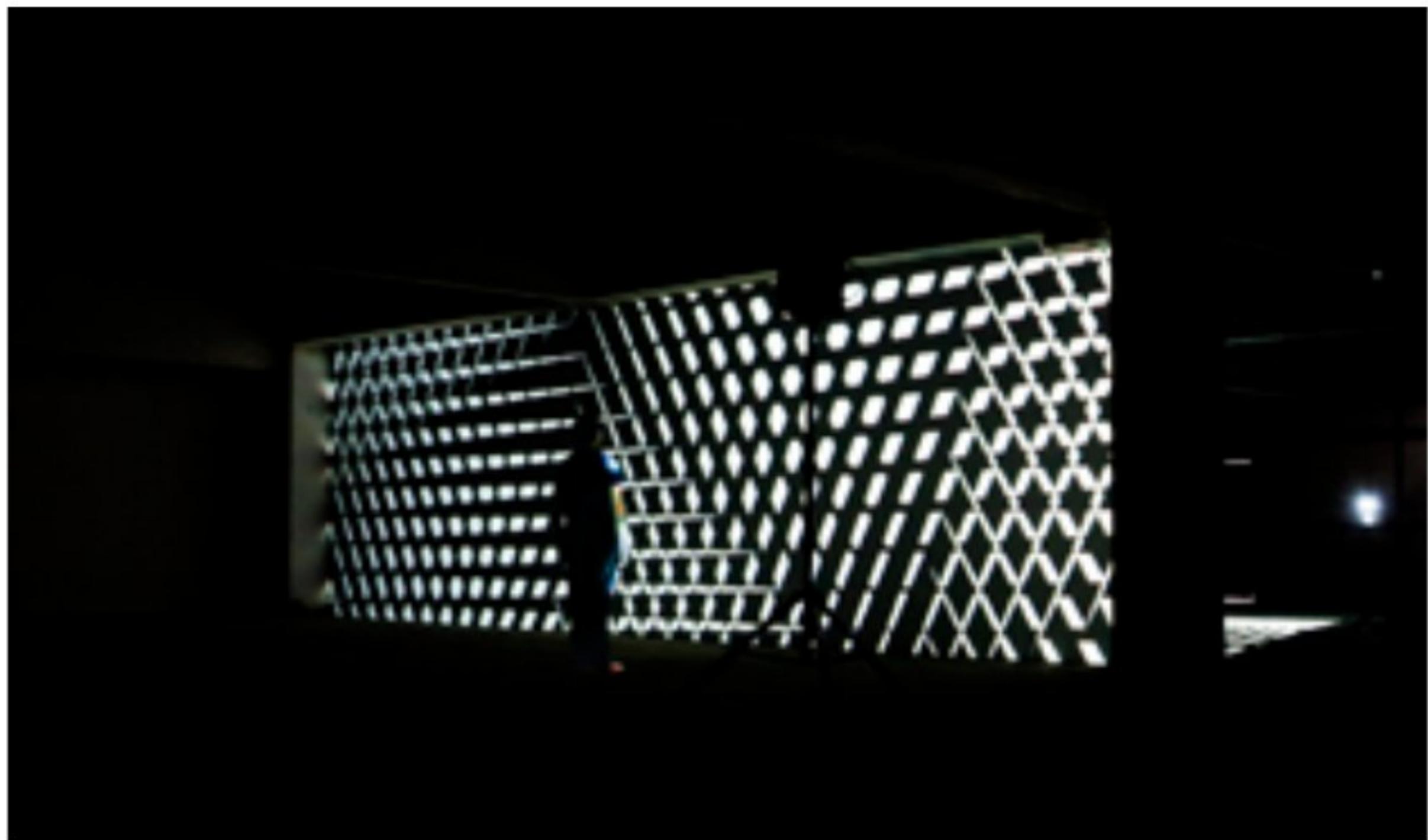
Interactive Installation
Conwy, Wales

In Flow is about material and psychological changes in state. Originally staged in an expansive former retail park, the immersive and playful work is comprised of light responsive prints, a Moiret- generating sculpture and an audience-responsive audio-visual installation.

Tools

Arduino Mega, Protoshield, PIR
sensors, Max MSP and Ableton Live

Through the use of a motion sensor the activity and actions of the audience are captured. The presence of the audience transforms the work's audio-visual output in real time – reacting and generating emergent and unpredictable audio-visual responses. Unique experiences are therefore created upon each engagement with the work.



Landscape Representation -Essay IV

Julia Romano

Still Image
Córdoba, Argentina

Addressing the concept that it is in fact the depiction of the territory that makes the existence of the landscape possible, Julia Romano's work reflects on the role of representation to make things real.

Tools

Adobe Photoshop

Landscapes have been a subject throughout art history, and Romano questions whether artists have encouraged us to view our surroundings in a static, unique way or as a plastic production. It is by creating a dialogue between painting and photography that *Landscape Representation – Essay IV* strives to be a mechanism for revealing the value of representation on the construction of an image of the world.



Mutator 2 Triptych

William Latham

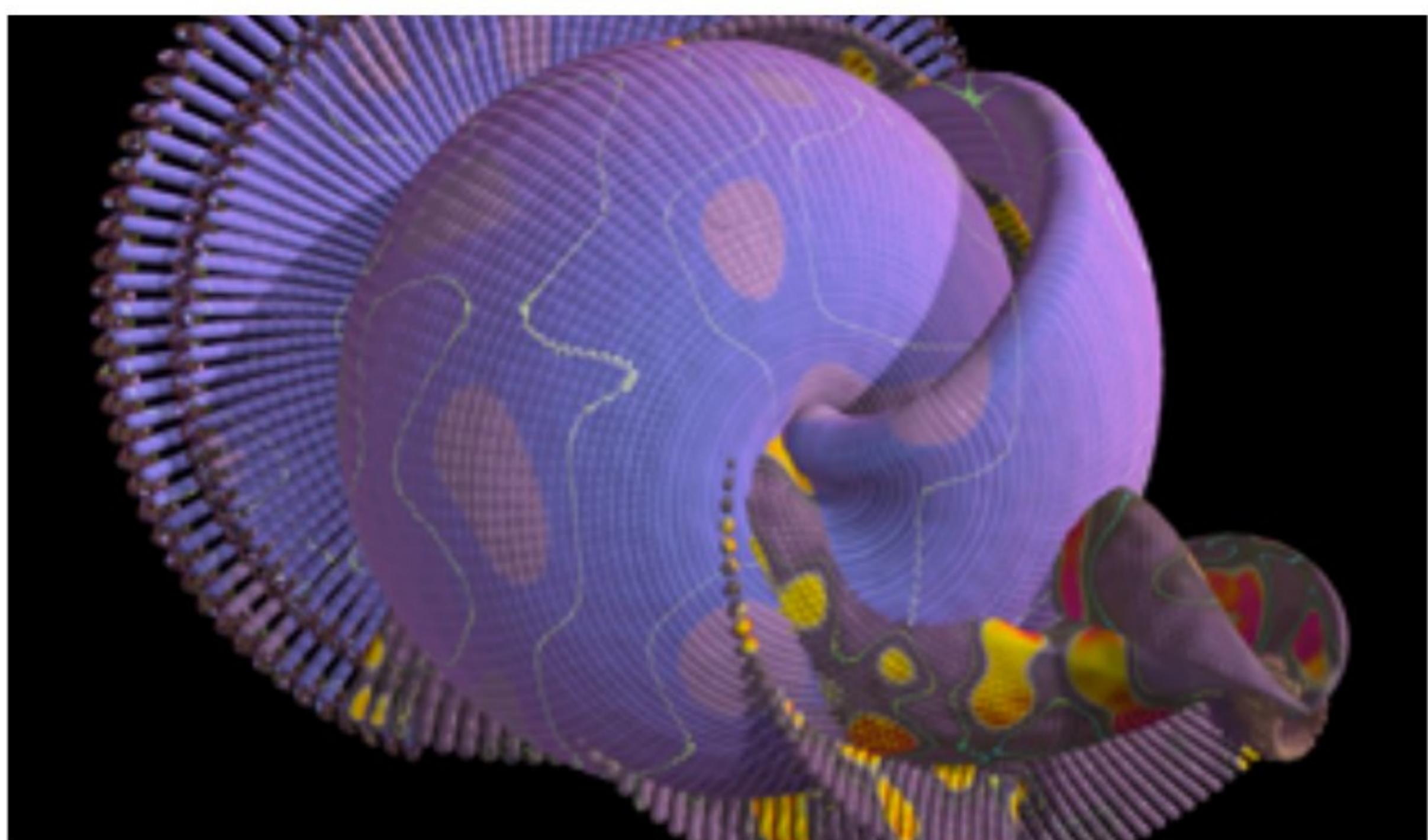
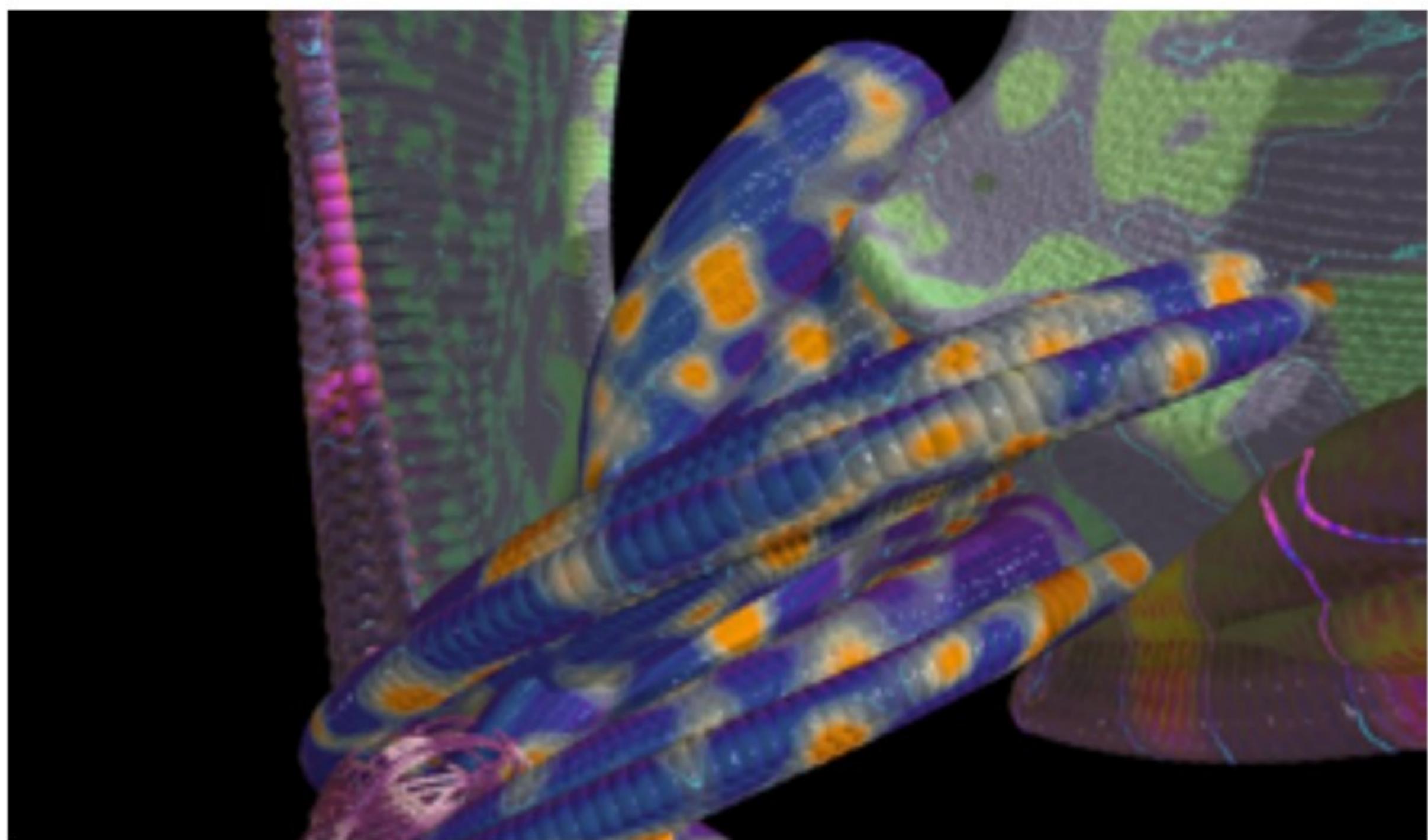
Interactive Video Projection
London, England

Mutator 2 Triptych is a large-scale interactive video projection installation created using software modelled on the processes of evolution. Responding to audience participation, the work blends organic imagery and real time 3D computer animation. It is through body movement and touch screen interaction that the viewers are able to shape and mutate vibrant animating forms.

Tools

Kinect, Mutator2 and FormGrow2
grammar code and Mutator2
Generative Audio

Building on from Latham's early work *Mutator 2 Triptych* revisits the theme of "virtual evolution by aesthetic selection". Beginning with a simple horn-like shape, the work introduces random 'mutations' in order to generate increasingly complex three-dimensional creations that resemble futuristic organisms that change endlessly over time.



Omega Point

Marios Athanasiou

Interactive Installation
London, England

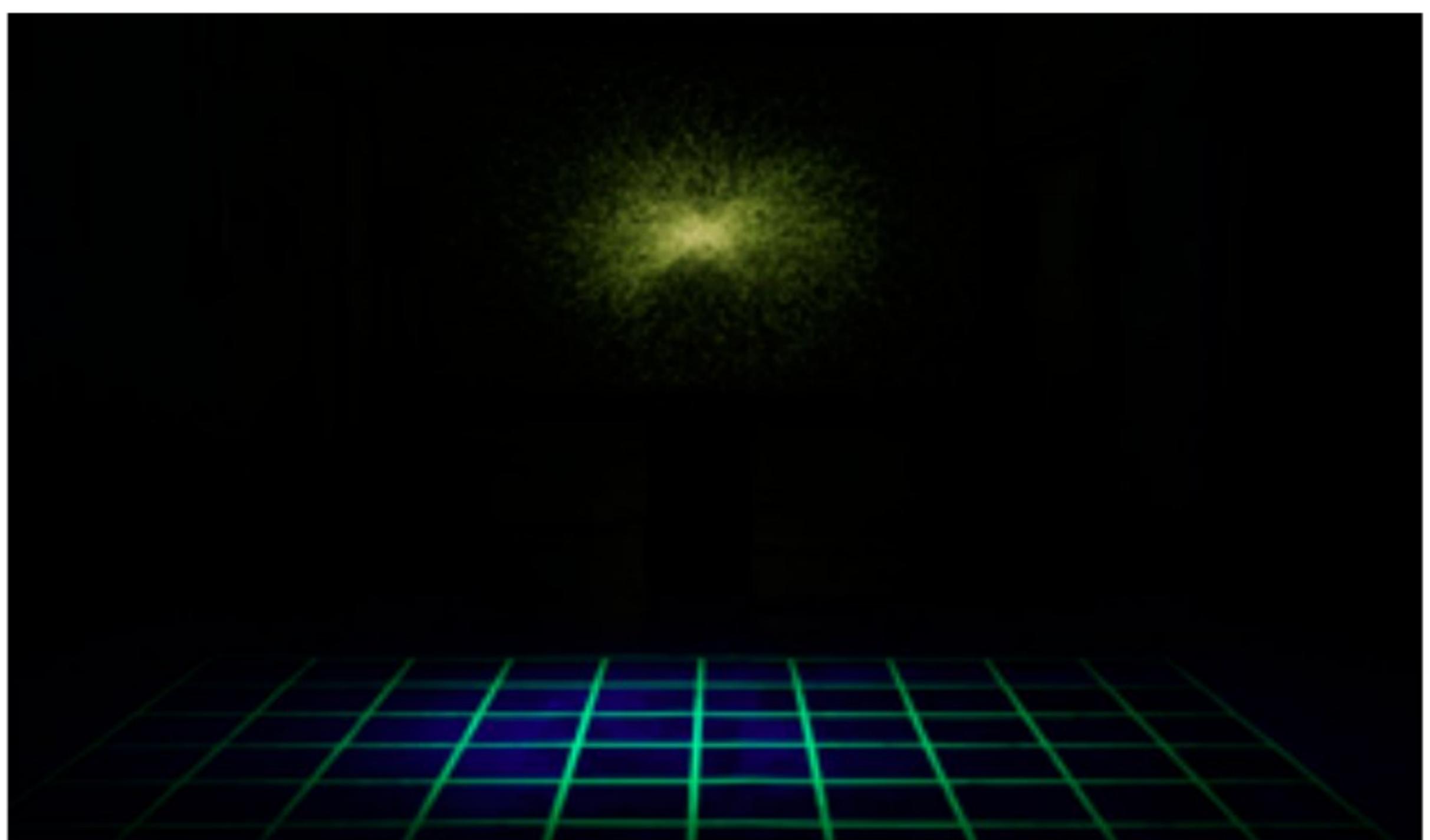
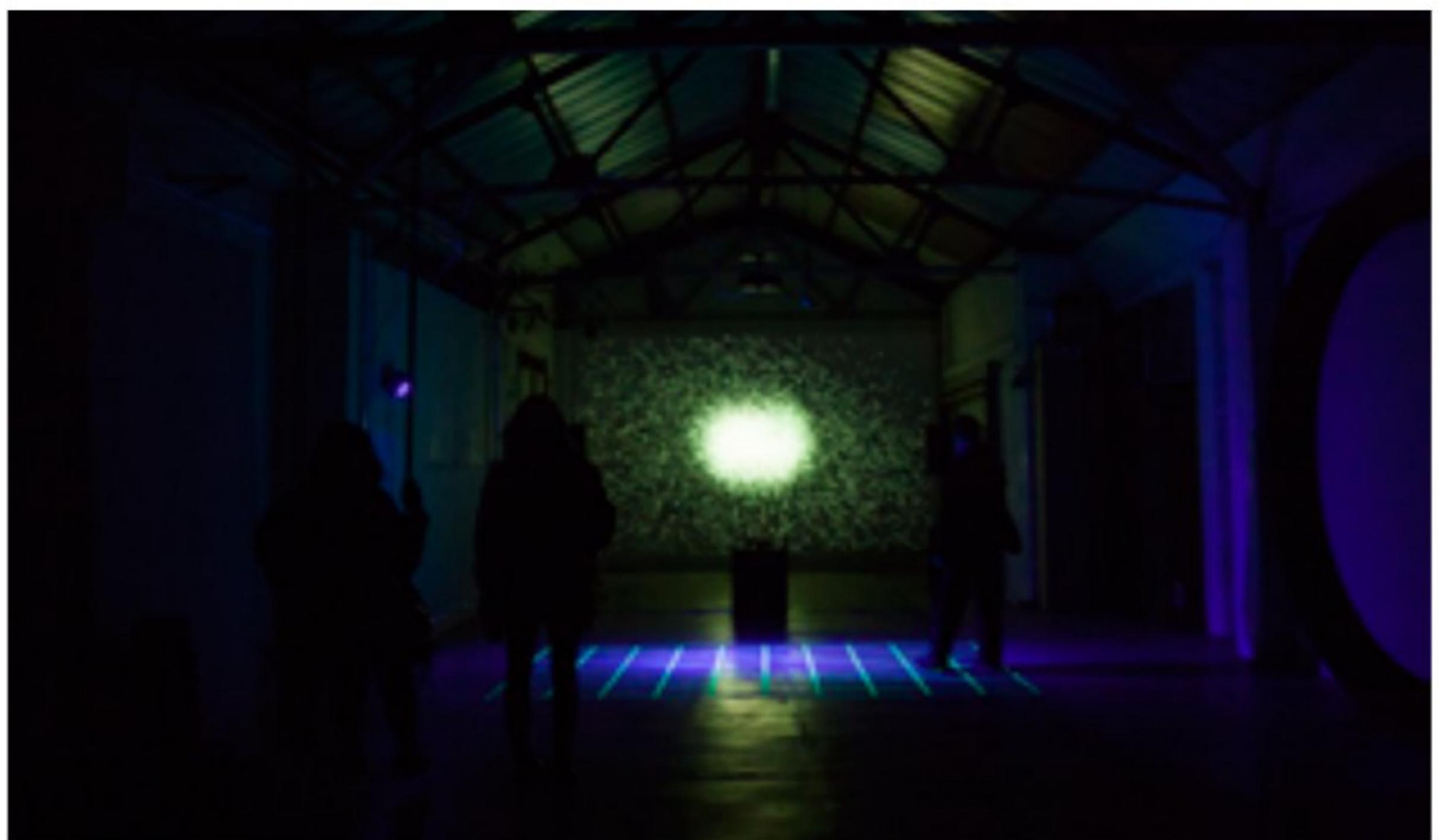
Marios' work explores the effects of real-time processing technologies and communications on the human perception of reality and examines the role these technologies play in the convergence of physical and virtual reality.

Tools

Kinect, Max

Omega Point is an audio-visual, interactive installation that explores the theme of consciousness as a quantum physics phenomenon. The work invites the participants to perceive themselves as part of a cybernetic universe, creating a space in which the energy flow is in a constant flux of transformation.

The work was created using custom software and presented in a darkened room using an overhead HD projector and one Kinect sensor placed one meter away from the screen.



Ones

Menglong Wu and Simiao Yu

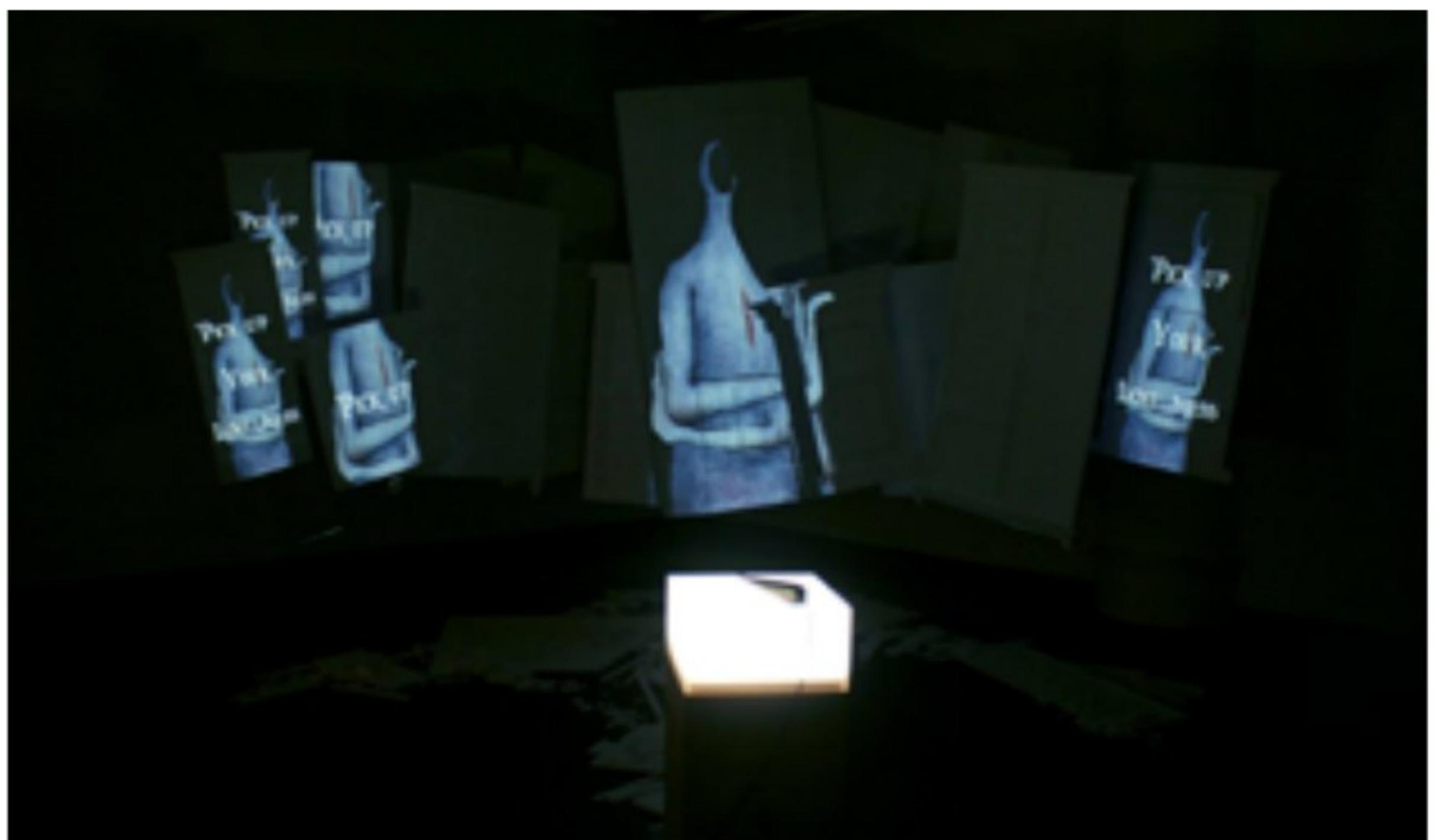
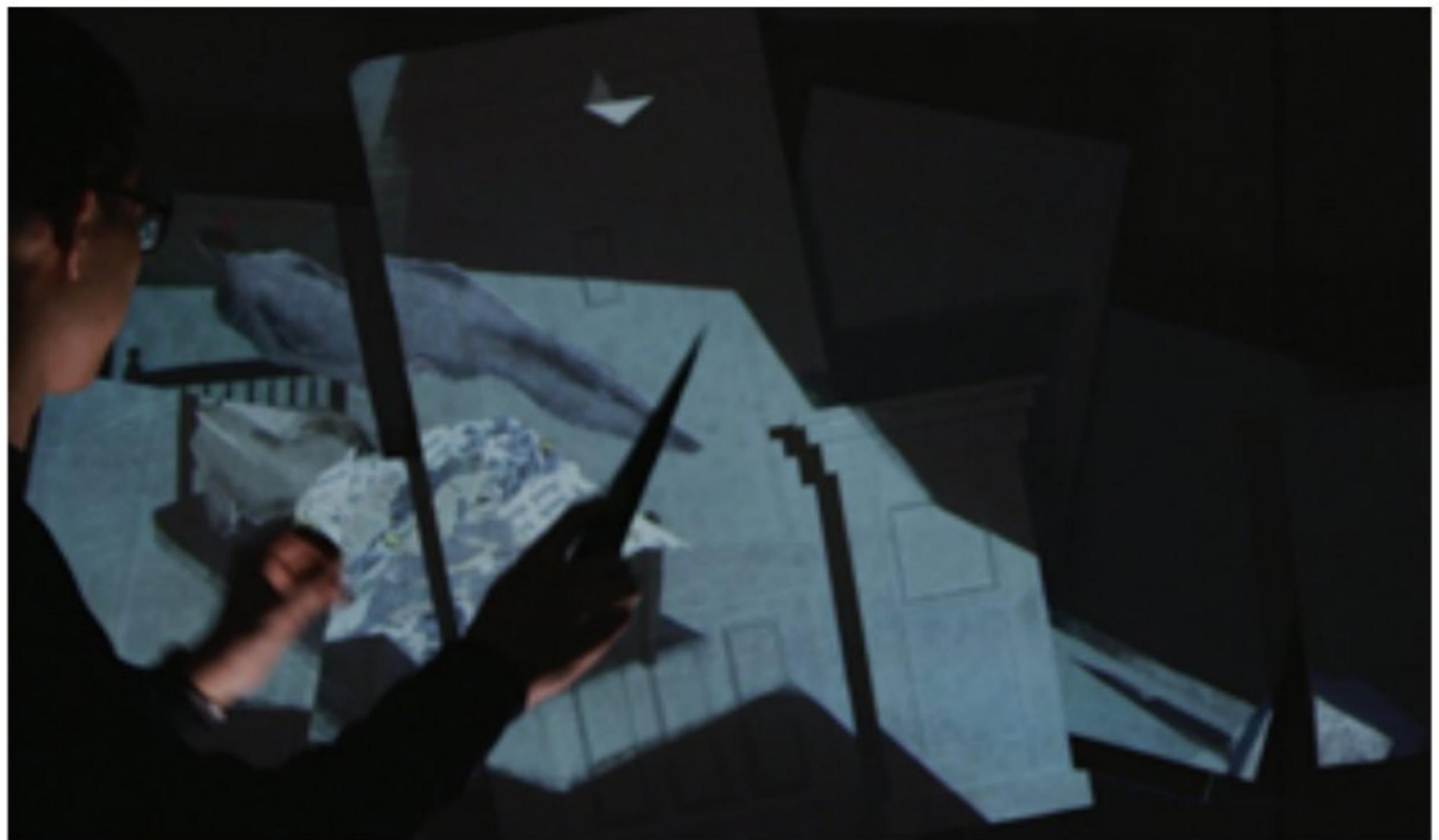
Interactive Installation
New York City, NY, USA

Ones is an interactive installation that combines motion graphic videos with sound in an immersive environment. The stereo-audio and projection-mapped video that compose the installation are triggered by the gestures made by the participants as they wave a controller that resembles the baton of a music conductor.

Tools

Mac mini, Arduino Uno (with accelerometer, compass sensor), Madmapper, Max MSP, Adobe Photoshop, After Effects and Premiere

Standing at the head of a full orchestra, the conductor is simultaneously alone and socially engaged. By taking on this role the participants discover the physical and emotional sensations of loneliness that are inherent in such a position of power.



Particle Man

Glenn Marshall

Digital Animation
Belfast, Northern Ireland

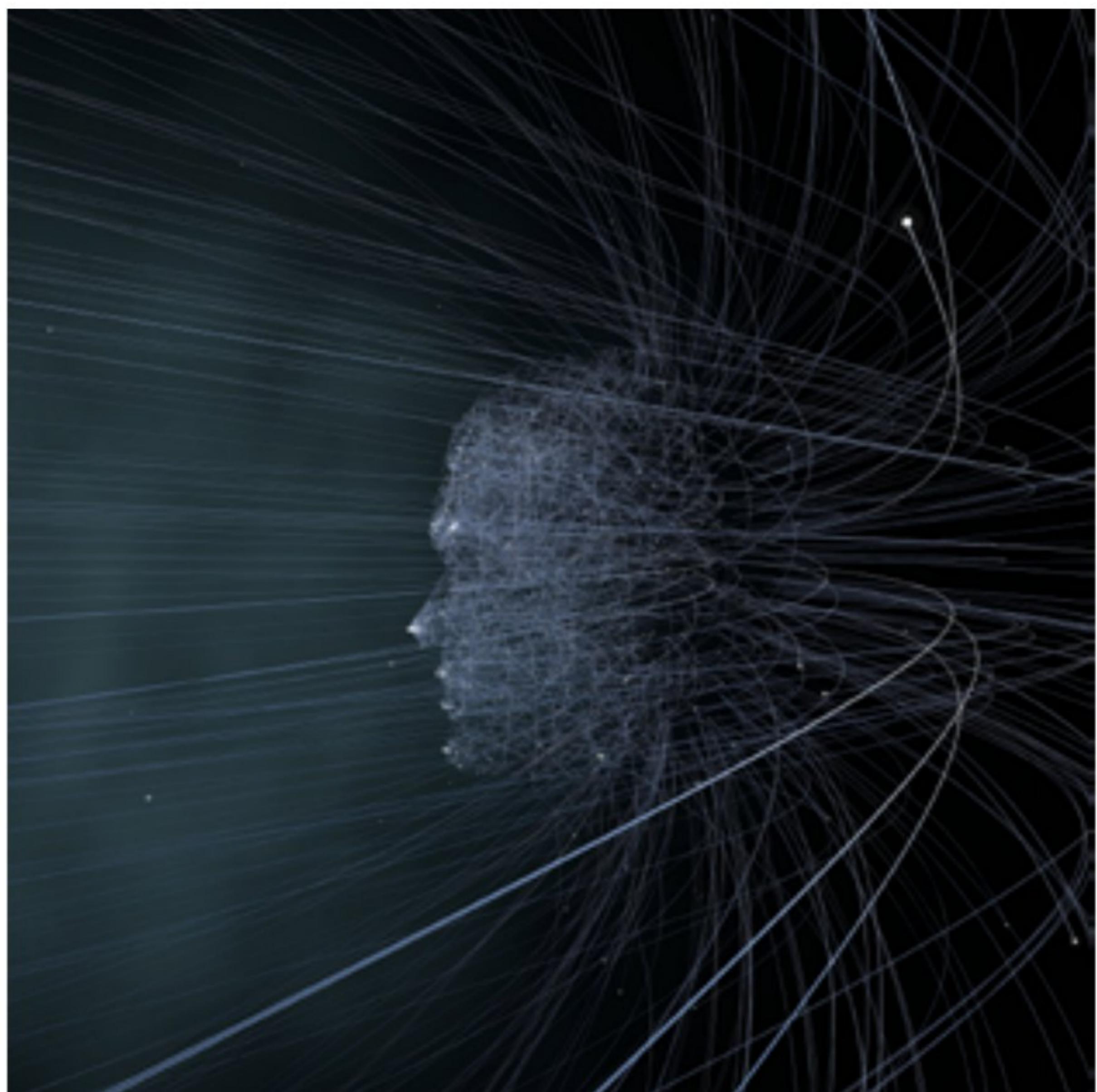
Particle Man has been created using a programming code that simulates mathematical and scientific models of particle collisions to produce a three dimensional sculptural form.

Art and physics collide in this work as Newtonian laws are used to calculate the force, acceleration and mass of each particle that build up to produce the human head. The software code used by the artist is able to simulate the trajectory and collisions of each particle – some of these converge and create the image while many ‘miss’ and end up in orbit around the form.

Tools

Python, Cinema 4D

Referring to this work as ‘emergent art’ Marshall has no preconceptions of the final result. Instead, the final image is left up to chance and relies on a complicated simulation system that produces unexpected results.



Rheotaxis

ALTERA

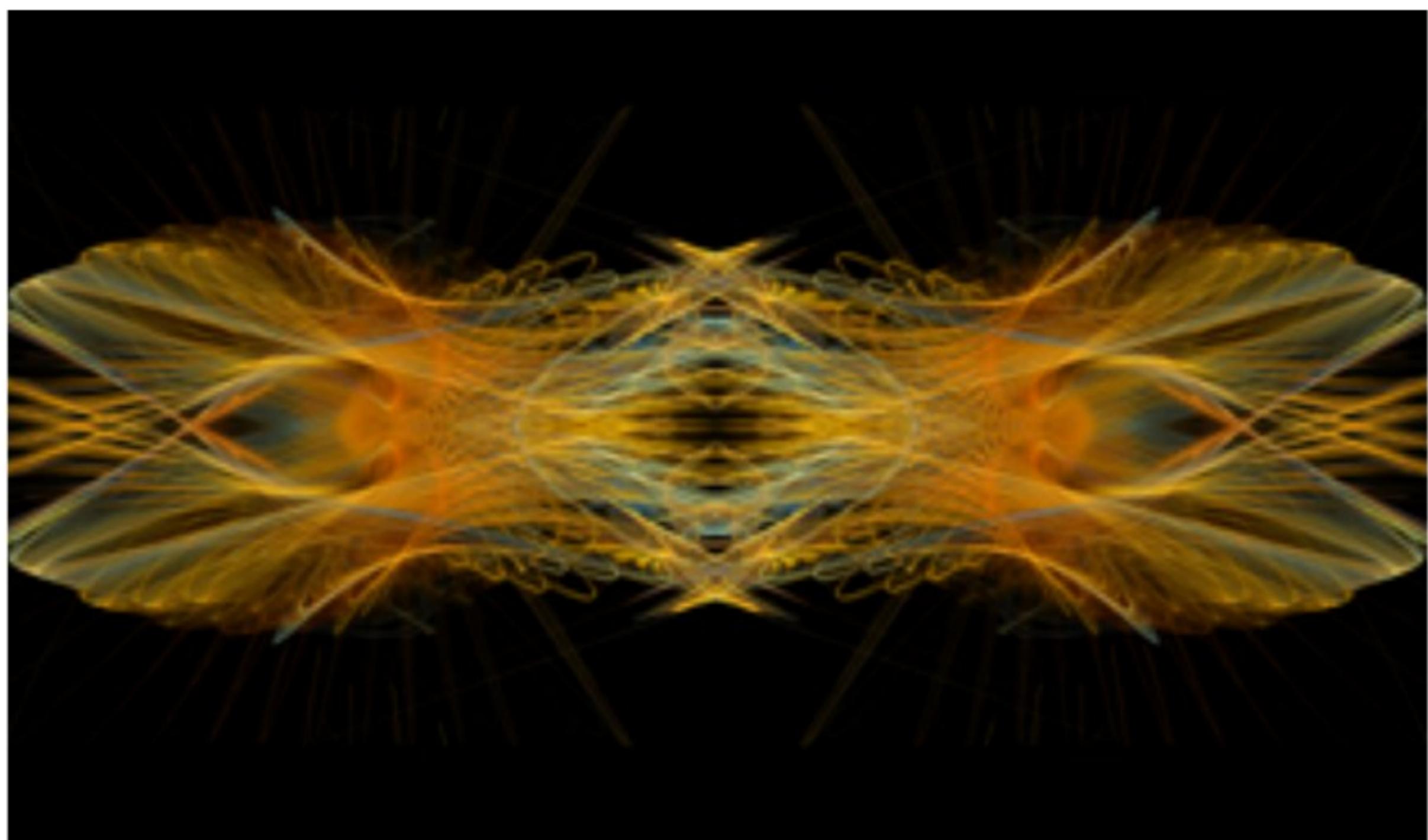
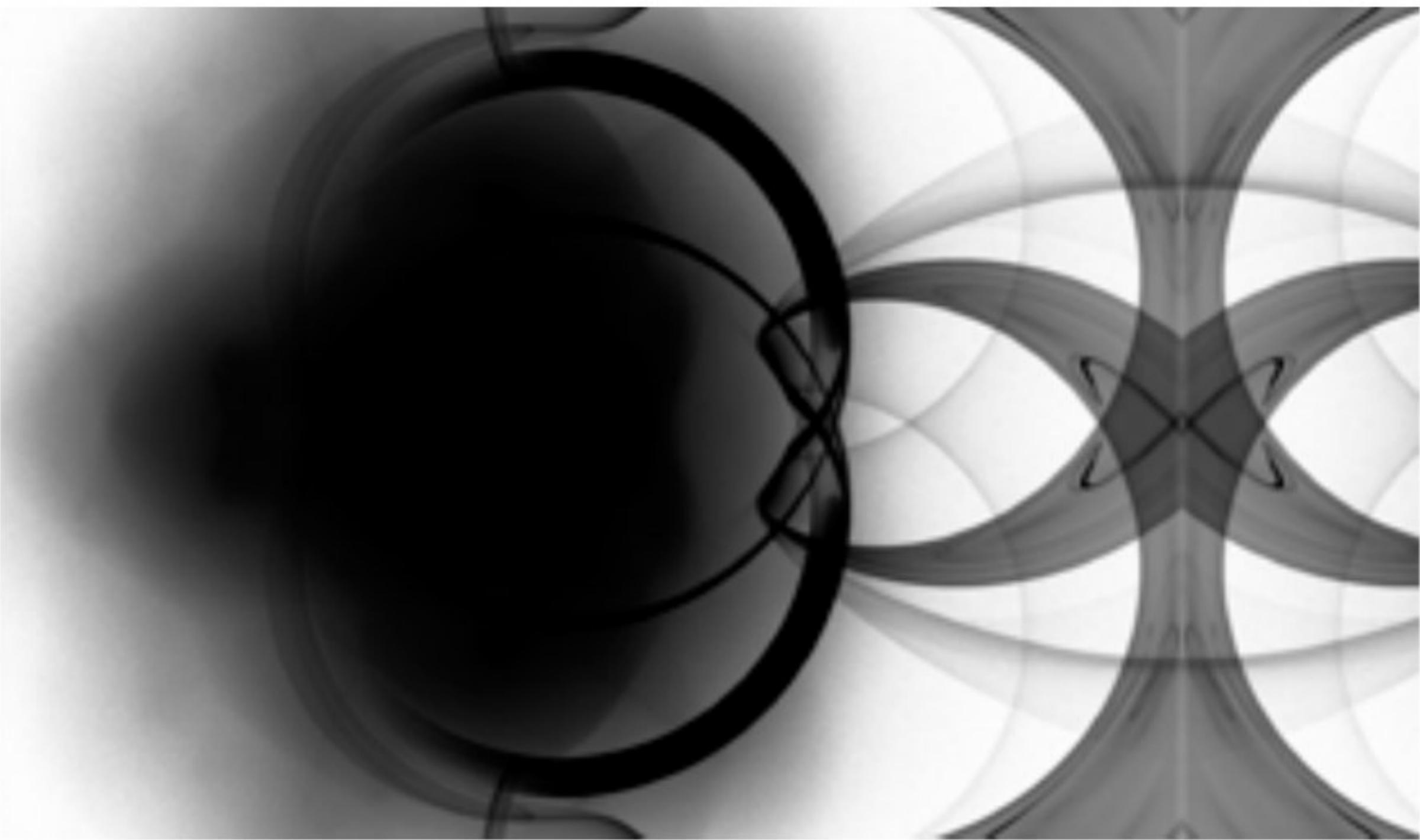
Moving Image
Petropolis, Brazil

Water is at the centre of *Rheotaxis*. Part of a comprehensive project on the dynamics of water in Southeast Brazil, with reference particularly to estuarine environments, the work aims to capture waters natural movement and bring focus to the different kinds of forms and colours created from it.

Tools

Apophysis, Adobe After Effects

Inspired by the evolution of simple life forms under the cold and harsh water stream, the work has been created by overlaying randomness, selection, and intended design. The collective have developed a very dense multi-layered audio-visual which has allowed each individual frame to have an aesthetic value of its own.



Salvadore

Judith Brown

Digital Painting
Adelaide, Australia

Nature is the sole inspiration for this work. The artist explores ways in which digital photography and photo manipulation software can create two-dimensional digital compositions using everyday objects, most of which are found within the immediate environment of the artist.

Tools

Adobe Photoshop

The objects retain a sense of their original function within the composition, while simultaneously adopting a new meaning. Utilising chance combinations Judith aims to communicate particular ideas and memories associated with the chosen object. Sometimes these works become reminiscent of fantasy or dream-like imagery, but they ultimately rely on the viewer to construct their own meaning for the image.



The Platform of Suffering

Seok-Jun Ha

Interactive Video Sculpture
Seoul, South Korea

The Platform of Suffering is an interactive video sculpture that is based on the artist's earlier 'Walking TV Media Performance' and seeks to explore life as unavoidably suspended between utopia and dystopia.

Tools

C++, openFrameworks

An aluminium praying human figure stands behind two curved TVs which reflect our reality – we have no choice but to live with and subsume ourselves to technology and media. A Kinect camera, placed on the display, detects the presence of the viewer and our movements stimulate the images that appear on the screens, which are then recorded through smartphones.



The Rabbit Hole

Nina Dunn

Immersive Installation
London, England

The Rabbit Hole is a site-specific installation that was created as part of the immersive show ‘Alice’s Adventures Underground’ which took place at the Waterloo Vaults, April 2015. It draws upon the Victorian physicality of the Zoetrope and Zoopraxiscope and transforms it into a digital flight of the imagination.

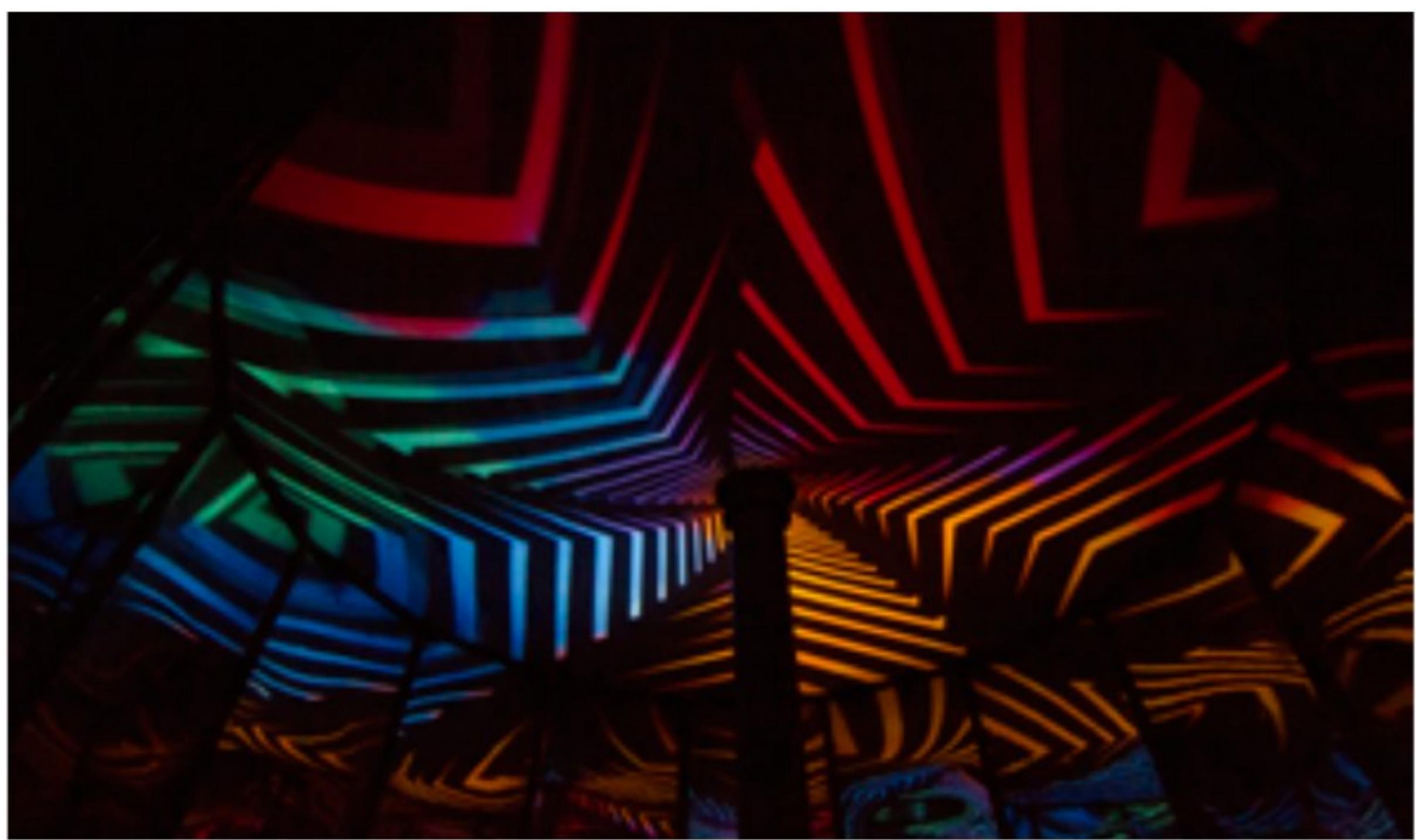
Aimed to provide the sensation of tumbling down the rabbit hole the work is a direct response to Lewis Carroll’s *Alice in Wonderland* which celebrated its 150th anniversary this year.

Tools

Qlab 3, 15-side mirrored zoetrope structure, Mac Pro, Mac Mini

Transported into the novel, you are whisked along as Alice narrates her descent ‘down, down, down’ the rabbit hole.

The work was produced in collaboration with directors Oliver Lansley and James Seager and the designer Samuel Wyer.



The Reverberant Ambience of Interpretative Codes for an Ancient Artifact

Ryota Matsumoto

Digital Painting

Tokyo, Japan

Demonstrating a hybrid and multi-layered process, this work presents a visual metamorphosis. Varying scales and forms are intertwined with textures and tones to create a work of art that reflects the spatio-temporal conditions of our ever-evolving urban and ecological environments. The artists' intention is for the work to act as a catalyst for defining speculative changes in our notions of cities, societies and cultures.

The work explores a hybrid drawing technique that combines both traditional media, such as ink, acrylic and graphite, with digital media.

Tools

Maya, Rhino, Grasshopper, Photoshop,
Processing & custom software



Trio

Béatrice Lartigue

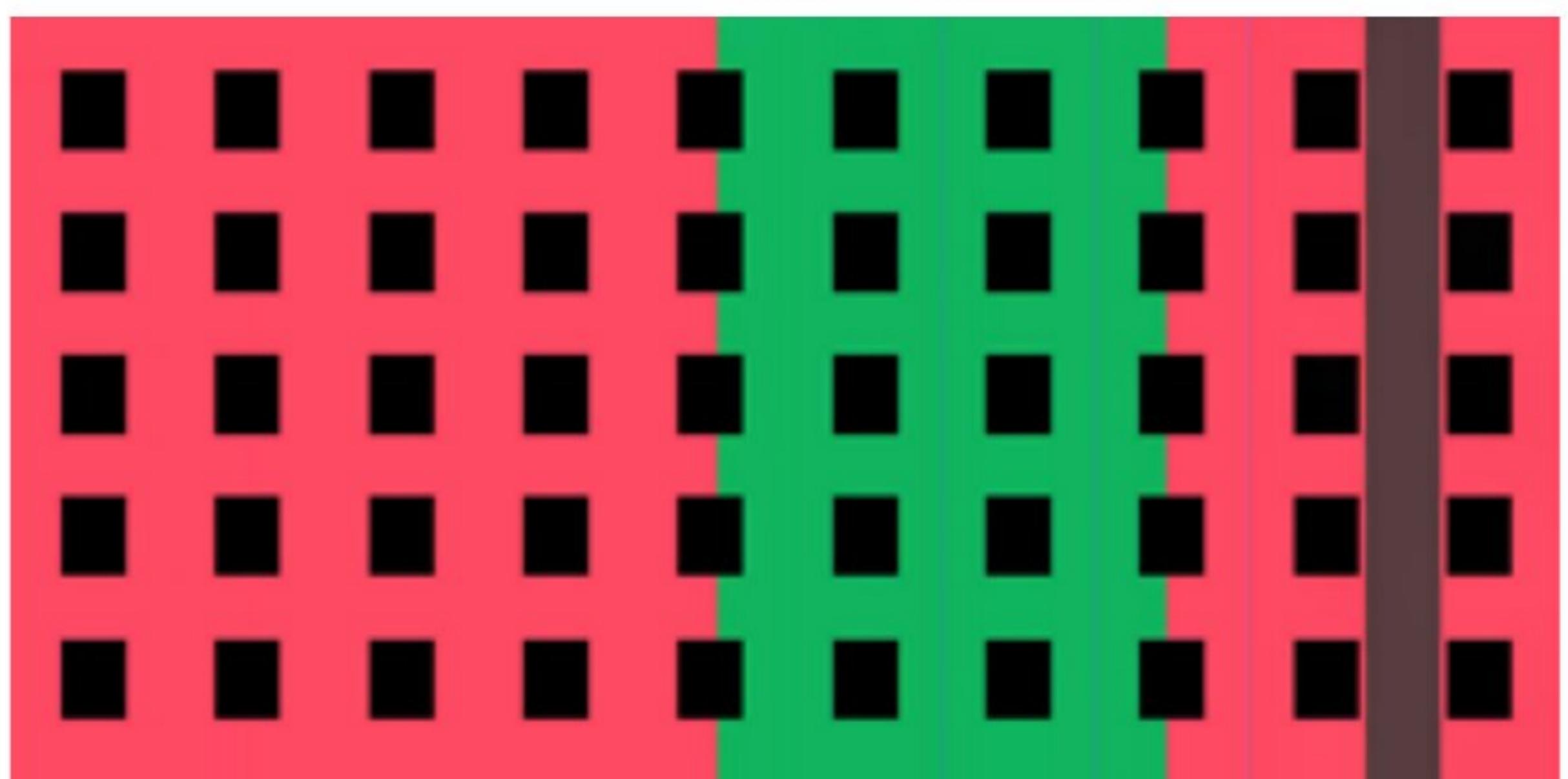
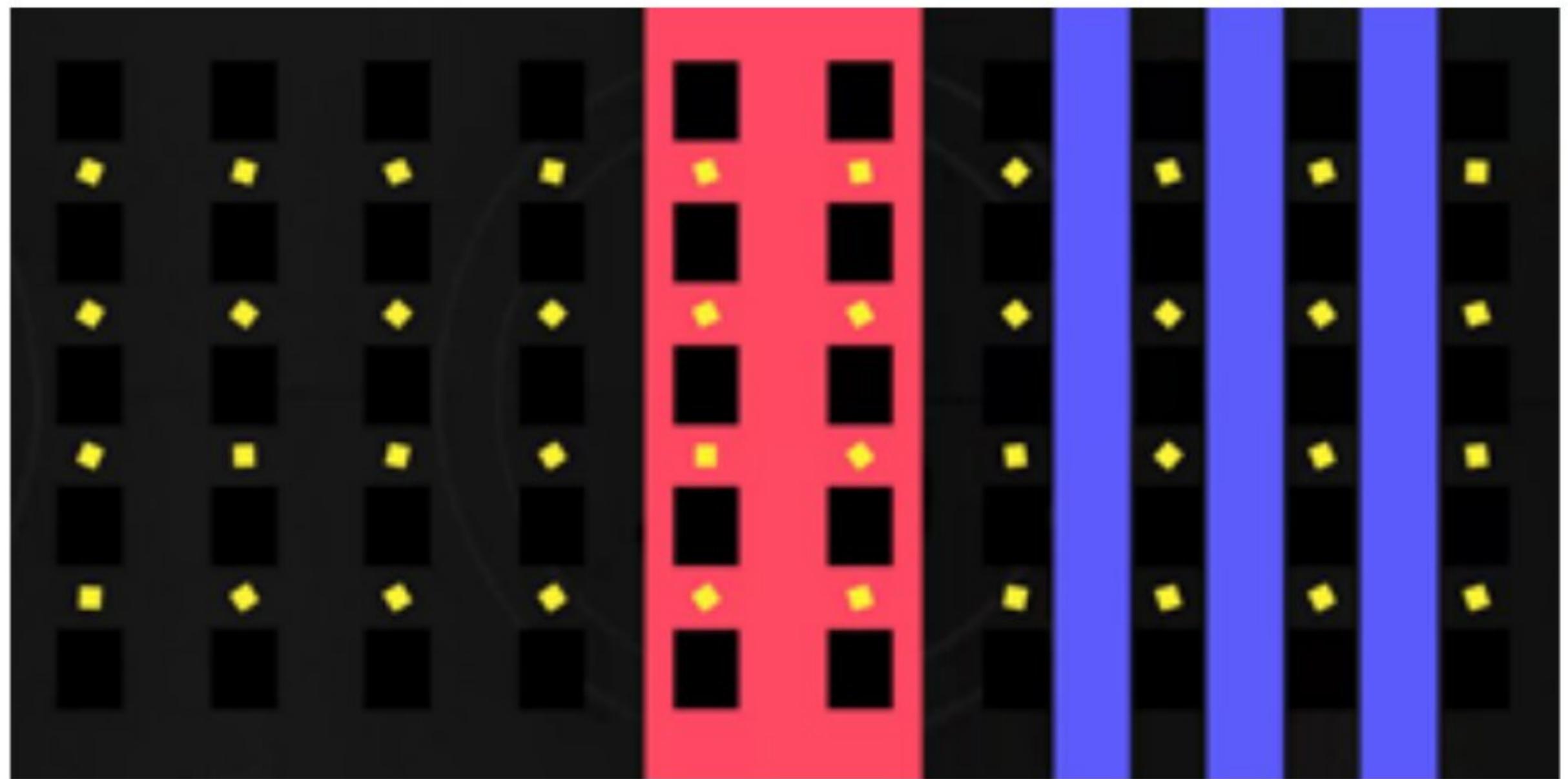
Moving Image
Paris, France

Trio is a monumental video projection in homage to Norman McLaren's 1971 film *Synchromy*. Responding to the synchronising of image and sound achieved through the work of McLaren, *Trio* aims to highlight the link between music and abstract animated graphics.

Tools

Adobe After Effects

Using minimalist projection mapping, the visuals react to the music in real time: each individual track generates a specific shape and colour.



Visus Sonitus I

David Moraton

Audio Visual Animation
London, England

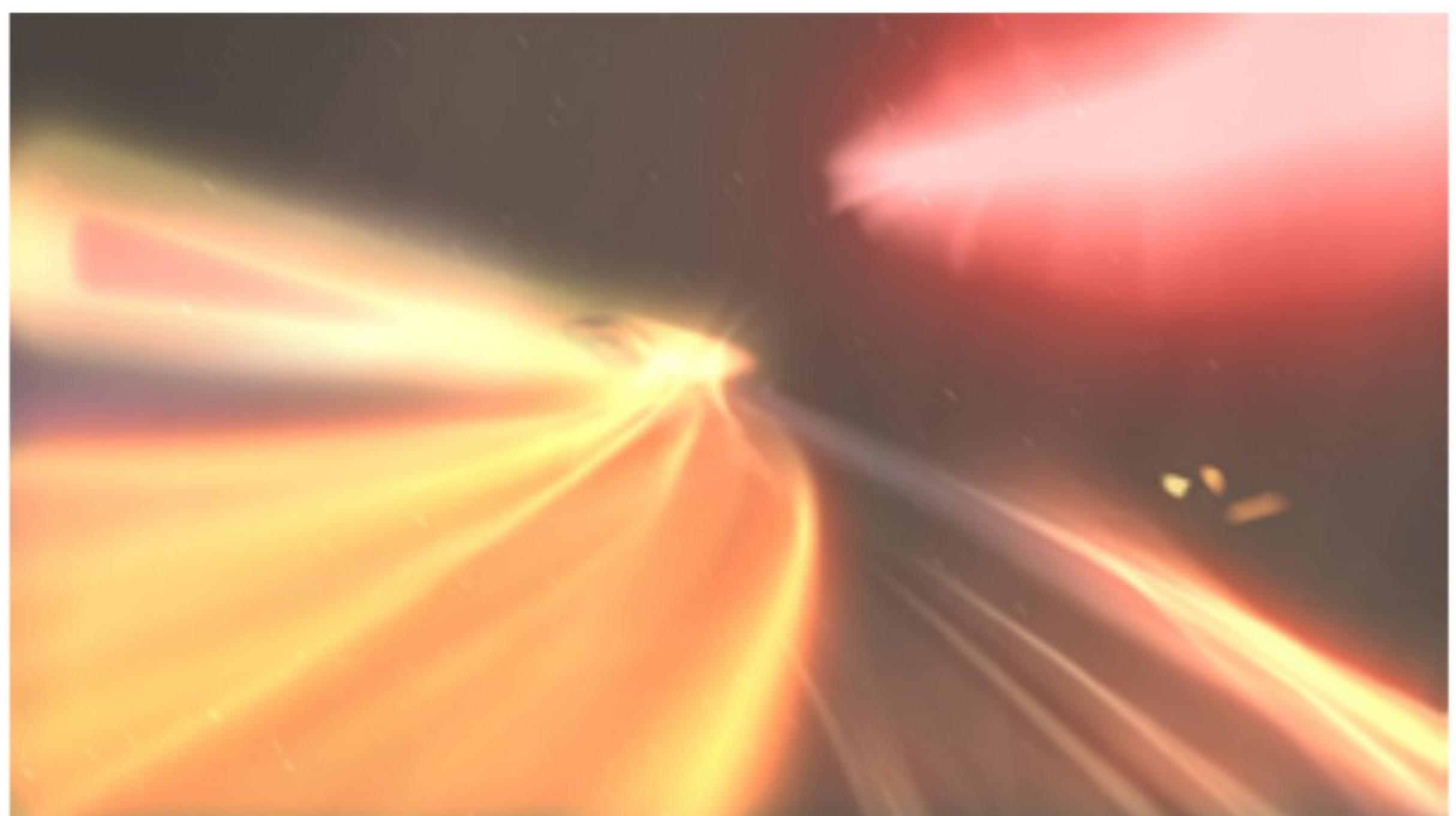
Visus Sonitus I is a reflection of the artists' own internal experience that occurs when he listens to music. Concentrating on the concept of synaesthesia – the ability to see colours from sound – the artist aims to make visible the invisible.

Tools

Speedy Midi, Musescore, Code: Blocks
and Houdini Indie

Working on from the tradition started by Disney's *Fantasia* and the work of Kandinsky

Visus Sonitus I provides a visualisation of sound. Choreographed to the 1972 'Cantus Arcticus' by the Finnish composer Einojuhani Rautavaara, the work takes music into a whole other dimension, providing the audience with a stereoscopic experience.



World of Water

Anne Spalter

Moving Image
Providence, RI, USA

Based on the footage the artist shot while at Volcano Falls, Illinois, *World of Water* transforms holiday photographs into kaleidoscopic imagery. Colours become hypnotic as the waters swirl endlessly across the pulsating composition, warping the natural world into something spell-binding. Channelling the work of the Action Painters, the work engages physically with the environment leaving chance to play a fundamental role in the final piece.

The work continues the artists' long-standing goal of integrating art and technology. Drawing inspiration from painting, mathematics as well as Buddhist and Islamic art, original footage is morphed into patterned compositions through which the concept of the 'modern landscape' is explored. Each work involves adventure and many unexpected and often serendipitous moments are created as a result.



Binary oppositions or a complementary whole: the role of collaborating couples in contemporary digital art.

Dr Nicholas Lambert, Head of Research, Ravensbourne

Over the past decade, my work with the Computer Arts Society (CAS) has enabled me to meet a broad cross-section of artists using digital technologies. CAS was originally established in 1969, following from 'Cybernetic Serendipity' at the Institute of Contemporary Art (ICA) the previous year; but it was re-established in 2004 as part of the CACHe Project at Birkbeck, University of London, that investigated the history of British Computer Art. CAS has hosted a great variety of computer artists and allied researchers from around the world. We have also collaborated with numerous universities, galleries and other organisations and set up several exhibitions of which our 2012 show "Intuition and Ingenuity", a celebration of Alan Turing's work through contemporary digital art, toured the UK and was seen by over 20,000 people.

Most recently we have been working with the Lumen Prize, founded in 2011 as a series of awards for current practitioners of computer-based art. Through Lumen I have been introduced to an expanding range of artists, attracting over 500 entrants from some 40 countries this year alone.

The idea for this short paper, which is extracted from a longer presentation made to the Borders of Digital Art conference at Oxford in September 2015, came from an observation I made a few months ago and am in the process of developing. Indeed this short presentation is a very preliminary study of this issue which has come to interest me greatly. I realised that of the active computer-based artists known to me in the UK (and I use the term "computer-based" to draw the area as widely as possible), a surprising proportion are made up of couples who are actively collaborating to create joint works of art.

In a year when the Lumen Prize Gold Award was won by Gibson / Martelli (formerly Igloo, comprising Ruth Gibson and Bruno Martelli), it is also interesting

to note amongst the Lumen ranks Genetic Moo (Nicola Schauerman and Tim Pickup), We Are Müesli (Claudia Molinari and Matteo Pozzi) and Sala Wong & Peter Williams. All these couples create their art jointly and present collaboratively. In the wider area of digital-based art, one can point to Boredom Research (Vicky Isley and Paul Smith); Thomson & Craighead (Jon Thomson & Alison Craighead); Anna Dumitriu and Alex May; the digital gallery and online space Furtherfield (Ruth Catlow and Marc Garrett); London Fieldworks (Bruce Gilchrist and Jo Jelson – not strictly digital artists but including strong digital elements in their work); and until recently Tale of Tales (Auriea Harvey and Michaël Samyn). This list is not exhaustive, but it indicates this is a phenomenon worth examining.

It is interesting to consider whether the digital medium has made it easier to draw together partnerships of varied skills and concepts that challenge the long-established paradigm of the solo artist. Many of these collaborative couples articulate the importance of the boundary-crossing nature of their work, which is to some degree facilitated by the computer and digital methods more generally. Of course we are now more familiar with the connectivity engendered by the Internet, but the area of collaborative practice owes a great deal to movements such as Fluxus that challenged previous models of artistic media and the gallery system. Ruth Catlow and Marc Garrett of Furtherfield explain this position in an interview about their artistic and curatorial approach:

"Our shared approaches consist of being playful, messing with and challenging existing hierarchies and top down behaviours. [...] For us the world is our medium, not necessarily just the technology. Technology for us is also a medium as one of a collection of ingredients towards a greater whole."

[\[http://www.digicult.it/digimag/issue-035/marc-garret-ruth-catlow-net-visions/\]](http://www.digicult.it/digimag/issue-035/marc-garret-ruth-catlow-net-visions/)

The issue of technical understanding, skill and technique, and artistic vision are drawn away from a gendered division between the participants and related instead to the overarching themes and aims of the work. In their explorations of movement through virtual and real landscapes – the urban surroundings of Swanquake giving way to the Canadian wilderness of House – Ruth Gibson and Bruno Martelli pool their knowledge to produce a distinctive shared aesthetic

that combines Ruth's knowledge of physical forms in space with Bruno's appreciation of the cinematic and ludic qualities of the games engines that provide the platform for their work. As Ruth says in her interview with Janis Jefferies (2009):

"We're addressing problems and the connections between interface and design and the best materials to use to express ourselves. Our newer works deal with the unknown and unattainable, we're trying to put the spectator in a position of privilege and discovery. Over our collaborative partnership we have been researching the potential for visual languages in interactive environments."

[Chapter 3 "Blurring the Boundaries: Performance, technology and the Artificial Sublime – An Interview with Ruth Gibson and Bruno Martelli, Igloo" Janis Jefferies]

The interweaving of knowledge, performance and visual tropes by both partners in the collaborative relationship throws some central issues in digital art into stark relief. The need for at least some inherent knowledge of computational procedures has always encouraged collaborations in computer art, as far back as the mid-1960s at Bell Labs in New York State. Here, Ken Knowlton worked closely with a roster of artists including Stan Vanderbeek and Lillian Schwartz, and developed some of the first graphics software to enable non-programmers to make images on the computer. Although later repudiated to some extent by Knowlton himself, who tired of artists claiming credit for what he saw as an equal contribution, this mode of working has lengthy precedents in the visual arts where artists have drawn on the knowledge and techniques of master craftsmen - in the broadest sense - to make art.

In the early days of computer art, Charles and Collette Bangert began making drawings that perhaps exemplified the male/female dichotomy with Charles as the mathematician and programmer, and Collette as the visual artist. The Bangerts' approach was outlined in Ruth Leavitt's 1976 book *Artist and Computer*, a series of interviews with contemporary digital artists that is fascinating primary material for the history of computer art, and still very relevant today. Collette explained their artistic aims as follows:

"Using a computer-plotter extends my hand-eye-head. The computer draws, my eyes see, my hand draws, the computer is programmed by Jeff, the computer draws...in an endless productive cycle. Computer drawn lines enrich my hand lines which in turn enrich my computer drawn lines..." [Leavitt, Artist and Computer, 1976]

Thus, although the roles are defined in ways that Knowlton would understand, and perhaps Collette had more control in terms of giving direction to the artwork, it is nevertheless a genuinely collaborative process. Interestingly, the works are signed "CB", taking advantage of their shared initials. Although Collette conceives of the computer as an extension of her hand and eye, it is clear that Charles plays an essential part in the cycle of computer drawing described above.

Though collaborations long predate the computer, it seems that the digital medium has enabled a new generation of artists to collaborate on a number of levels; perhaps best illustrated by the way that motion capture provides the means by which Ruth Gibson's inherent knowledge of physical performance and movement can be encoded into a form that enables Bruno Martelli to engage with it in a virtual landscape. Likewise, Colette Bangert's perception of the computer as an extension of her hands and visual senses, enabled by Charles's programming that encoded new forms for the pen plotter to execute, suggests the computer as a place where the abstract and the concrete can be unified. There is a certain alchemical resonance there, calling to mind the concept of the chymical wedding and the union of different elements, which is an apt symbol for this process.

This area requires longer-term study and I think this is a worthwhile study, not only for the ongoing understanding of collaborative practice, but also as a way of rebutting the accusation that computer art is somehow determinist, anti-human or unnatural. The fact that it engages the creativity of couples suggests otherwise.

Dr Lambert is also chair of the Computer Arts Society and a Director of Lumen Projects Ltd, parent of The Lumen Prize.

Adaptable, magical ambiguity

Jonathan Kearney, Postgraduate Programme Director at the University of the Arts London (Camberwell College) & Course Leader for MA Fine Art Digital

Arthur C Clarke's third law states: 'any sufficiently advanced technology is indistinguishable from magic' (Clarke, 1985). Art in a digital environment can often generate a feeling of magic or at least confusion. Standard taxonomies of art are challenged and new definitions remain elusive. The curator and media theorist Christiane Paul captures this perfectly: 'the fact that new media art successfully evades definitions is one of its greatest assets and attractions, but at times the art seems more alive than its practitioners want it to be' (Paul, 2012, p. 168).

In 2010 Will Gompertz, the BBC Arts Editor wrote a blog post discussing the internet and why as far as he was aware 'no contemporary artist has yet harnessed this extraordinary technology to make a significant artwork' (Gompertz, 2010). He was inundated with comments and suggestions and a few days later responded with an update saying that 'my question was of eminence not of existence' (2010), he still felt that he had not seen a great work of art created using this medium.

Although this discussion was around a narrow category, 'net art', this raised significant questions and Charlotte Frost summarised many thoughts when she said: 'his (Gompertz) enquiry indicated a lack of recognition of the fact that Net art, for example, belongs to a different system and demands a wholly different approach to (amongst other things) value judgments in art' (Frost, 2011).

In considering this need for a 'wholly different approach' it is worth engaging with Beryl Graham and Sarah Cook's seminal book *Rethinking Curating: Art after New Media* (2010). In this they explore the 'development of a set of critical vocabularies for the fluid and overlapping characteristics of new media art' (2010, p.283) They suggest that the metaphor of 'behaviours' is a valuable way of understanding the nature of work they categorise as 'new media art'. 'Behaviours' provides a non-media specific framework for engaging with the work. It asks, for example, whether it is time-based, performative, generative or participatory and they conclude that the best way to 'curate — to produce, present, disseminate, distribute, know, explain, historicise (give a prize to?) — a work of art is to know

its characteristics and its behaviors, rather than imposing a theory on the art' (2010, p303-305). Christiane Paul agrees, stating that: 'New media art is an extremely hybrid practice, and each of the different manifestations of the art [...] poses its own set of challenges and requires an often distinctly different approach' (Paul, 2012, pp. 169 – 170). In reviewing *Rethinking Curating: Art after New Media*, Nathaniel Stern sums up the dialectic approach of the book and describes a posture that I believe is a very helpful, if somewhat uncomfortable, position to take: 'every time the trajectory coheres into a singular point or argument, it is then broken up again, into a constellation of ideas that make us rethink, again' (Stern, 2010).

So what role does a prize play? Can the Lumen Prize add anything to this environment of magic and elusive definitions? The obvious response is with more questions, why should the Lumen Prize try to bring definitions? If things are changing and evolving so quickly why try and create boundaries that exclude rather than widen the space? If Christiane Paul is correct and 'at times the art seems more alive than its practitioners want it to be' (Paul, 2012, p. 168) is there a danger a prize might squeeze the life out of some art? The good news is that my experience with the Lumen Prize over the past 5 years is that their generosity and openness means that many of these dangers are being avoided. With plans now for the individual prizes to morph and adapt each year, the Lumen Prize has the opportunity to both catch the prevailing winds of creativity and contribute to shaping those prevailing winds. A prize by definition creates validation, it attempts to put an 'objectively verified stamp of quality on an otherwise highly subjective industry' (Jeffreys, 2015). Therefore the Lumen Prize is in a delicate position, on the one hand being part of the art system and on the other, recognising and celebrating the demands for a different approach to judgement. In a world of 'new media', in a landscape of ever evolving digital bits, in an environment that is shifting, shaping, challenging and morphing; then an adaptable response to validation would appear to be vital. Get the balance right and this will avoid narrowing the options and instead encourage further and wider exploration.

* Graham and Cook use the term 'new media art' in the book 'to emphasise the moment of new media art as it was understood in the years between 2000 and 2006, when the term new in new media art was most widely accepted and used' (2010, p. 21). They go on to suggest that the relationship between new media and contemporary art has changed significantly and 'the use of the term new has become outmoded'. Christiane Paul appears more comfortable with the term 'new media art' but also regularly uses 'digital art'

including as the title of her 2003 book. Graham and Cook suggest that 'we are still at an inconclusive point for a future definition' (2010, p.21). Despite much ongoing discussion I suspect we are no closer to any definition nor should we be. Art history contributes significantly to wider comprehension with taxonomies and definitions but in such a complex changing environment maybe we need to be more comfortable with ambiguity for quite some time yet?

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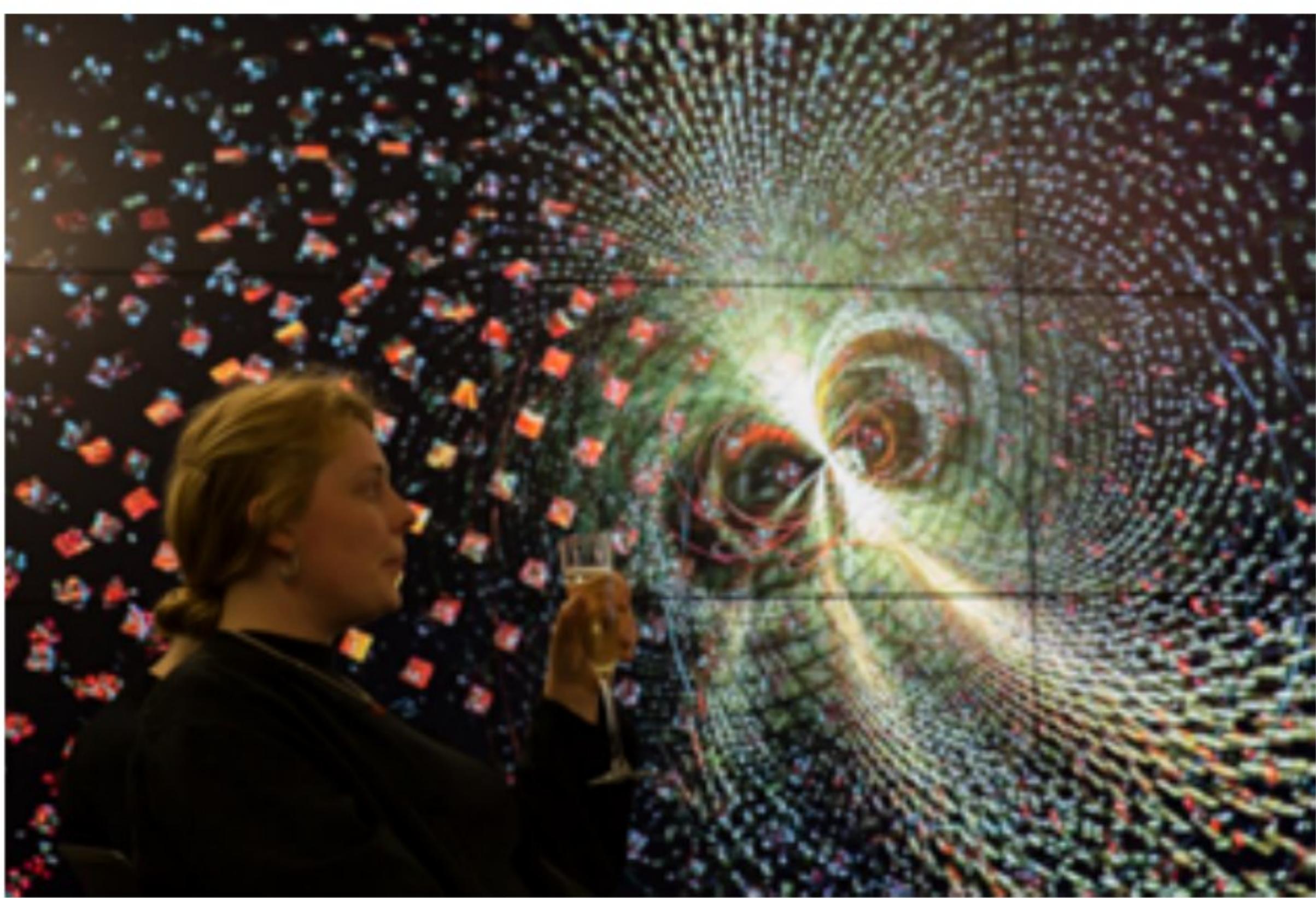
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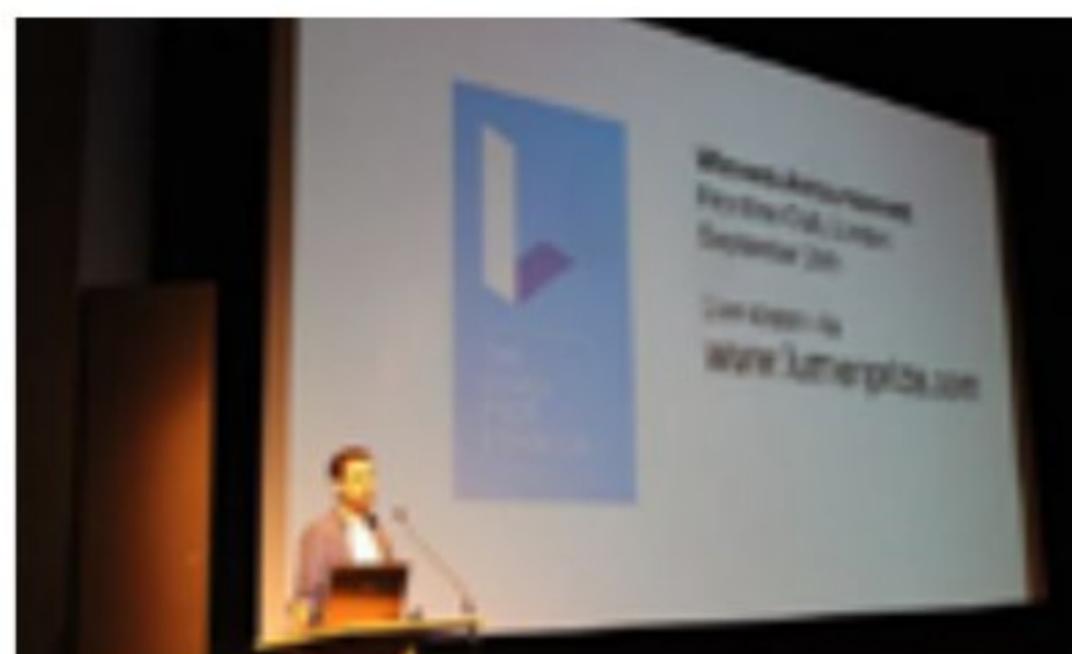
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Global Exhibition Schedule



Vancouver, Canada
ISEA
August 19th 2015



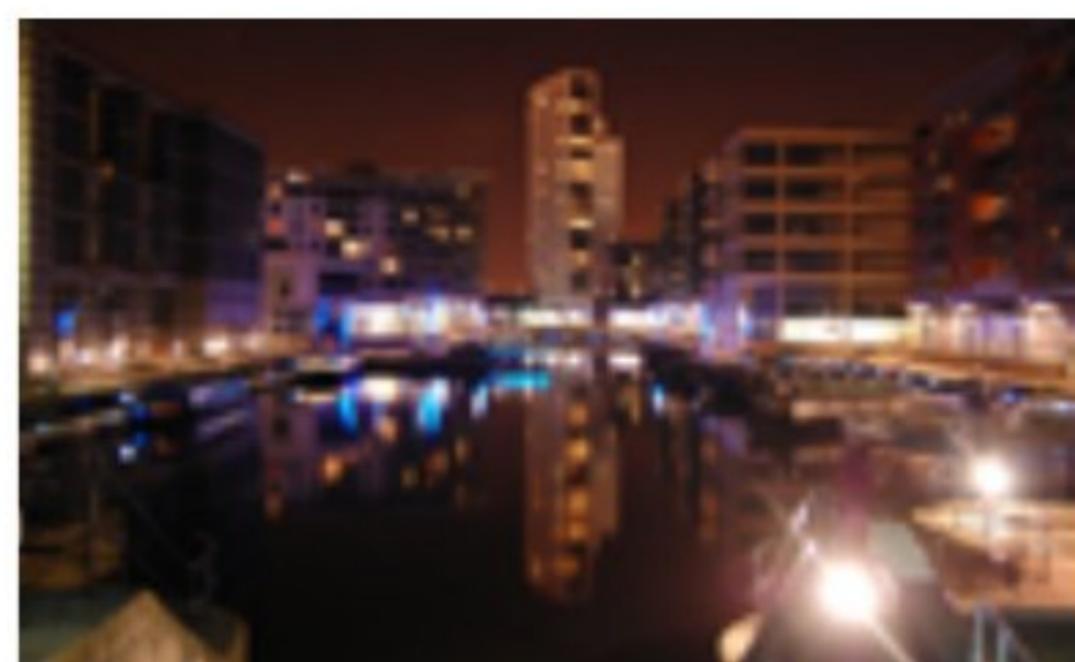
Shanghai, China
Jin Space Gallery
November 20th - 22nd 2015



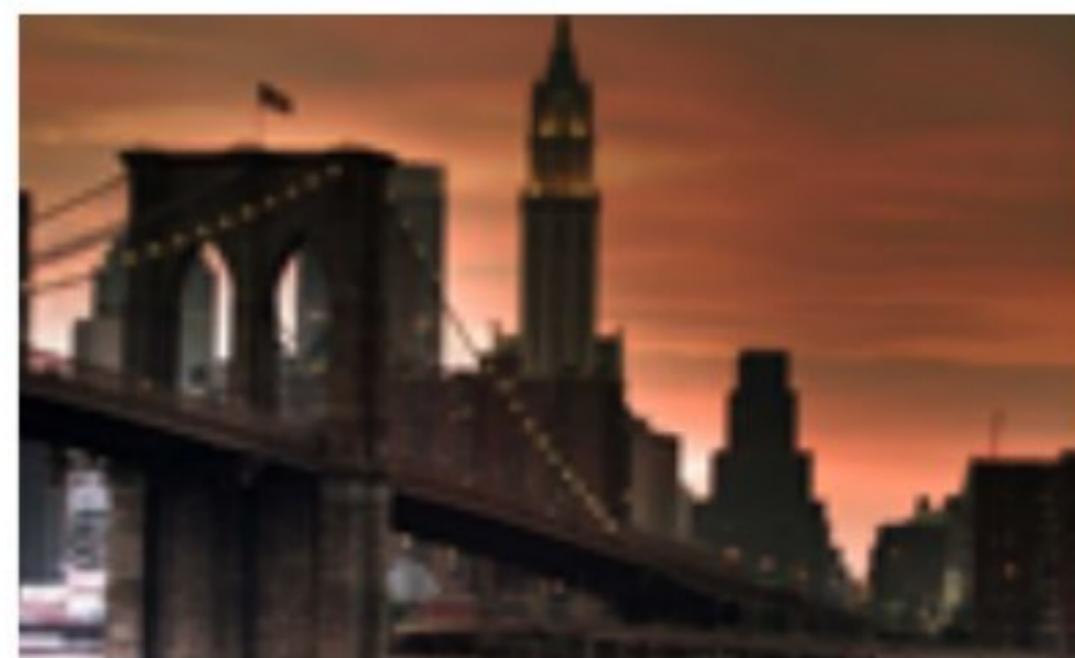
New York City, NY, USA
NYIT Auditorium on Broadway
December 8th - 10th 2015



London, England
Winter Lights Festival
January 11th - 22nd 2016



Leeds, England
Leeds Digital Festival
April 25th - 30th 2016



New York City, NY, USA
Creative Tech Week
April 30th - May 5th 2016

Highlights Shows

London, England

Winners' Gala - Frontline Club
September 24th 2015

London, England

Art at the FCA
November 12th 2015

Cardiff, Wales

Art at CBTC
November 25th 2015

Swansea, Wales

Swansea University School of Management
February 29th 2016

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THE COMPUTER ARTS SOCIETY

The Computer Arts Society (CAS) promotes the creative uses of computers in the arts and culture.

It is a community of interest for all involved in creating, developing, interpreting and understanding the cultural potential of information technology.

CAS was established in 1968 to:

- Bring together artists and technologists
- Exchange techniques and ideas
- Formulate needs for support
- Help to get works known
- Explore new forms

Membership

Membership is free and open to all who are interested in the aims and activities of the group. To join go to the list archive <http://www.jiscmail.ac.uk/cas> and create an account there and then join the group.

The British Computer Society (BCS)

The CAS is a Specialist Group of the BCS and receives their support and funding.

CAS Website

<http://www.computer-arts-society.org>

CAS on Facebook

<http://www.facebook.com/groups/111026792741/>

Publication

PAGE the Bulletin of the Computer Arts Society appears irregularly and low resolution pdf copies can be downloaded from the CAS website. Some printed copies are available for sale as indicated there.

Archiving computer arts

The first period of CAS activity lasted from 1968 until the mid 1980s, and there are significant archives of material from this era, mainly stored in homes and offices of people then active in the group.

The CAS worked closely with CACHe, a project in the Art History Department of Birkbeck, University of London, documenting UK computer arts in the years to 1980. This project led to the creation of the National Archive of Computer Art at the Victoria & Albert Museum, under the aegis of Douglas Dodds, Senior Curator of Computer Art.

Present & future computer arts

With so many novel and exciting developments in the creative uses of computers in the arts the society will continue its original aims of bringing together those active in this area.



Computer Arts Society
Specialist Group

EVA – Electronic Visualisation and the Arts

The annual EVA Conference focuses on the creative use of computers in the arts, industry and academia.

Collaboration

The society holds joint events with other BCS Specialist Groups and collaborates with other organisations.

Education

CAS continues to make students and practitioners aware of the history of computer art, and supports current student practitioners through its lecture series and conferences

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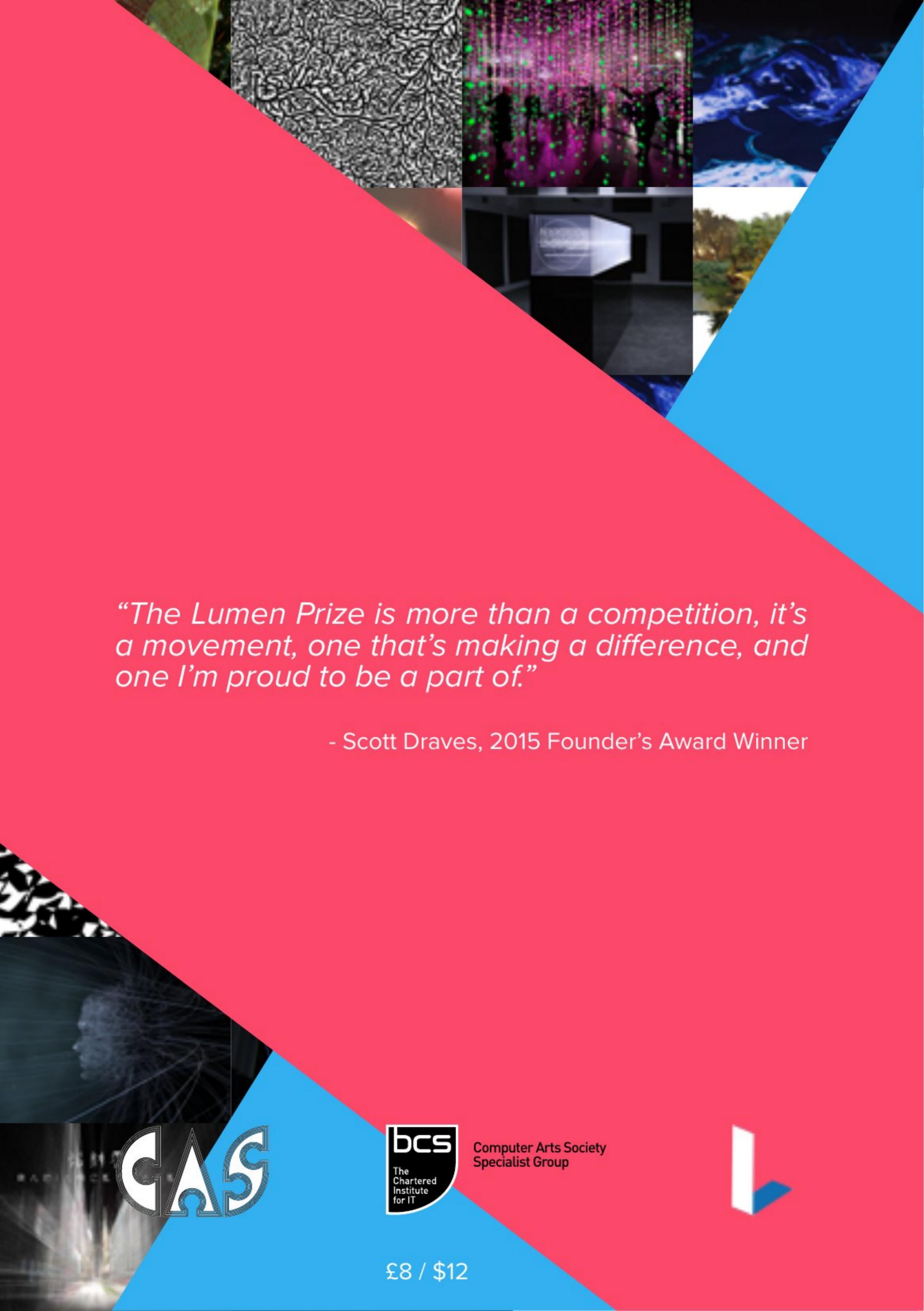
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“The Lumen Prize shows how beautiful the digital art landscape is all over the world.”

- Beatrice Lartigue, 2015 Lumen Artist



“The Lumen Prize is more than a competition, it’s a movement, one that’s making a difference, and one I’m proud to be a part of.”

- Scott Draves, 2015 Founder's Award Winner



Computer Arts Society
Specialist Group



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