



ISEA2022
BARCELONA



ARTWORKS



ISEA2022
BARCELONA

P O S S I B L E S

27 International Symposium
on Electronic Art



ISEA2022 Barcelona Opening Ceremony

ISEA2022 Barcelona Possibles

ISEA, International Symposium on Electronic Art

ISEA2022 Barcelona Conference

ISEA2022 Barcelona Extended Program

ISEA2022 Barcelona Exhibition

**Exhibition
LA IRRUPCIÓ**

EoE Triptych #1
Andy Gracie

Unreal Window
Chanhee Choi

Garden in the Machine / Vibrant Landscapes
Colin Ives

Spectral Landscapes – Palkiskuru
Erich Berger

Future Function | Creative Uses for Obsolete Tech
Erik Contreras

Can the Mind Exist Without a Body?
Irma Marco

ゴジラ/gōd'zira/
Jane Mi

Infodemic

Jennifer Gradecki, Derek Curry

#See You at Home – The Domestic Spaces as Public Encounter

Joan Soler-Adillon, Bettina Katja Lange and Uwe Brunner

Tally Saves the Internet

Joelle Dietrick and Owen Mundy

How to Make an Ocean

Kasia Molga

Syndemic Sublime

Laura Splan

Muted

Lauren Lee McCarthy

Concerto para Piano e Pandemia

Nikolas Gomes

Waiting for other

Nooroa Tapuni

AquA(l)formings – Interweaving the Subaqueous

Robertina Šebjanič, Sofia Crespo, Feileacan McCormick

It will Happen Here, in Barcelona (Tindrà lloc aquí, a Barcelona)

Roderick Luis Coover, Adam Vidiksis, Nick Montfort

Quadra Minerale – Rare Earths

Rosell Meseguer

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S4RA / Sandra Araùjo

Tools for a Warming Planet

Sara Dean, Beth Ferguson and Marina Monsonís

Repository

Weidi Zhang

Imaginary Sunset

Xuanyang Huang



Exhibition POSSIBLES

Artworks from ISEA2022 Barcelona's Open Call

Liquid Views – The mirror of the media narcissus
Monika Fleischmann and Wolfgang Strauss

Last Breaths
Linda Dement, Paul Brown and Carmine Gentile

Sightseeing
Thierry Fournier

Quantum Chaos Set
Paul Thomas

Common Thread
Keith Armstrong

Artworks from NEWART { collection; }

The Particle
Alex Posada

Border Crosser
Chico MacMurtrie-ARW

MMM#1[DualMarkov Beat]
Oscar Martin a.k.a noish

Echo
Lúa Coderch, Julia Múgica, Lluís Nacenta and Iván Paz

New Home of Mind
Mónica Rikić

Forms – Screen Ensemble
Santi Vilanova (Playmodes)

M3X3
Analivia Cordeiro

The Endless Sandwich
Peter Weibel

Eclipse II
Felicie d'Estienne d'Orves

La forme de l'eau
Veyrat & de los Ríos

The Wall of Gazes
Sardon & Sigman

Nivel de confianza
Rafael Lozano-Hemmer

Portrait on the Fly
Sommerer & Mignonneau

RAY
Weidi Zhang

Non Dimensional Cities
Marnix de Nijs

Artworks presented by Nioo.art

**Generative Quantum Ballet 21
Video Excerpt**
Antoine Schmitt

Le monde en lui-même
Video by Jeppe Lange
Music & sound design by Simon Brinck

Ignis II
Diane Drubay

Oh Deer!
Frederik de Wilde

Floralia
Sabrina Ratté
Images and soundtrack
composition: Sabrina Ratté
Sound design and mix by:
Andrea-Jane Cornell

Karst
Snow Yunxue Fu



Exhibition WHAT IS POSSIBLE AND WHAT IS NOT

D'Eco a Siringa
Josep Manuel Berenguer

Arrels
Anna Carreras

Especies I, II y II
Mónica Rikić

**Water Drop Viewer (indoor version,
2022)**
Roc Parés

Chemical Ecosystem
Yolanda Uriz

[With works from Barcelona Producció:](#)

Epiphany
Ariadna Parreu

ZENZ(A)I
Anna Pascó

Pwned
Mario Santamaría

**Imatges hostes. Parasitologia de la
visió i altres simbiosis / Auspícis**
Estampa

Exhibition BEEP COLLECTION: ORIGINS

Ego – Spanglish
Antoni Abad

Try Not To Think So Much
Eugenio Ampudia

Alfabeto
Marcel·lí Antúnez

Vestibular_1
Albert Barqué-Duran and Marc Marzenit

Rain Beats
Josecarlos Flores

Prosopagnosia
Joan Fontcuberta and Pilar Rosado

Neuronnection
Anaisa Franco

Tycho: Test One
Paul Friedlander

Independent Robotic Community
Ricardo Iglesias and Gerald Kogler

Time Capsule
Eduardo Kac

Redundant Assembly
Rafael Lozano-Hemmer

Still Life Tornadoes & Still Life Swell
Marina Núñez

Aurelia 1+Hz / proto viva generator
Robertina Šebjanič

TH50PH10EK WALL
Stefan Tiefengraber

De Notre Nature
Eric Vernhes

Das Tangible Bild
Peter Weibel

Other Exhibition Venues

D'ialoG
Refik Anadol and Maurice Benayoun

RNE Project
Patrick Tresset

Birding the Future
Krista Caballero and Frank Ekeberg

VastWaste
Özge Samancı

L'artesanía numèrica de Casa Navàs
Alba G. Corral



Performances

Tortuous Drift – Live Cinema Performance
Karla Brunet

Anatomies of Intelligence
Joana Chicau, Jonathan Reus

Women´s Labor
Jocelyn Ho, Margaret Schedel, Robert Cosgrove, Omkar Bhatt, Matthew Blessing

We Move Together or Not at All
Sasha Kleinplatz, Navid Navab

Tawa_(Live Sound Performance)
Patricia Cadavid

Liveware
Collaboration as Creation – “Zone #1, installation/performance for a percussion player, electronics and video”
João Dias, Igor C. Silva

Fragments

Alexandre Saunier, Marc-André Cossette

Ventriloquist Ontology
Afroditi Psarra, Tingyi Jiang

Fractal Listening (audiovisual performance)
Sebastian Seifert, Santiago Bartolomé

We as Waves
Erin Gee

Ice is Water is Ice is
Ken Steen, Gene Gort, Megumi Masaki

Screenings

Deep Reckonings
Stephanie Lepp

Swarm Raid: an interspecies dance and music film
Anna Lindemann

Unforgotten, a poetic 3D animation about the violation of women’s human rights in a time of war
Sujin Kim

Glacier’s Lament
Jiabao Li

Experimental Microscopic Media Art: Inner Essence
Emily Kim

Code_red
Lian Loke

Lavoro Macchinine
Alexis Grey Hildreth, Ora Cogan

DanceCubesII, human-non-human Co-Creation artwork
Joseph Ayerle

Walking on Sol
Nima Bahrehmand

13 Eyes
Jean-Philippe Côté

Future Memories of Deep Water
Indiara Di Benedetto

Untitled (A New Landscape)
Michelle L. Herman

A New Dawn
Max Schleser

The Erection of Phygital Graveyard
Inmi Lee, Yunmi Her

Microplot: genomic technologies as a potential tool of revelation for deliberate terraforming
Alla Semenovskaya

Ener-geyser
Tara Karpinski

Cybersyn 1973 / 2023
Grupo Synco

The Blue Dot
Juan Pablo Pacheco Bejarano

Green before “Green”
Paul Echeverria

Models for Environmental Literacy
Tivon Rice

The Unreal
Gloria López Cleries



2nd Summit on New Media Art Archiving exhibition

Visualizing the Illkun (Anger)
Marcela Antipan Olate

i:M:mobile
Lawrence Bird

Archiving New Media Art Archives
Byeongwon Ha

'Data Whiskers' and 'Ecophagy'
Martijn Hage

Gendernaut. Queering the Future
Diego Marchante

Anatomy of a Fatberg
Andrea Palašti, Sanja Anđelković, Stefana
Janićijević, Jovana Pešić

Spiral of Words
Predrag S. Šiđanin, Luka Z. Tilinger, Maja S
Budžarov, Nina B Zvezdin

**Visually Reading the Pandemic: Translating
an Open Access Archive into an Immersive
Interactive Artwork**
Dario Rodighiero, Elian Carsenat, Eveline
Wandl-Vogt, Jules Döring, Michaela Fragner,
Stepha Farkahaszy, Oliver Elias

ISEA International

ISEA2022 Barcelona

International Program
Committee / Art Jury

Press Release





ISEA2022
BARCELONA

ISEA2022 Barcelona Opening Ceremony

Josep A. Planell Estany

President of the Universitat Oberta de Catalunya

Barcelona
10 June 2022



After ten years away from Europe, Barcelona is now hosting the 27th International Symposium on Electronic Arts, ISEA2022.

None of us here today will fail to see the importance, the recognition and the responsibility this carries.

For one thing, it's a **tribute to the reputation of both Barcelona and its creative, artistic, scientific, technological and institutional nexus.**

It's an ecosystem whose fertility comes from its variety, fullness,

multidisciplinarity and compatibility; an ecosystem that has accumulated experiences and successes and has now reached a state of maturity.

No longer is it an emerging power, it's part of a driving force for the economy, industry and the arts.

Behind this Barcelona-based ISEA there are professionals, organizations and networks keenly committed to creativity and innovation. Their unique and distinctive character and their talent, diversity and strength can be seen in their respective histories and projects.

And for another thing, in Barcelona there is determined ambition to join and play an active part in our future world – designed here and now.

This is why, as pointed out by Cristina de Middel, winner of Spain's National Photography Prize in 2017 and guest speaker for the UOC's inaugural lecture the following year, *"it's hugely important now to encourage people to question things, more than it is to offer answers"*.¹ We know the future isn't a programmed destination, rather it's a place that we all must co-create.

In this sense, the dozens of activities, exhibitions and talks populating the ISEA2022 Barcelona programme offer us a map of this future that we are already starting to build.

With our hybrid, all-encompassing format, we have sought to decentralize our locations in and outside the city, above all aiming to involve every area of knowledge, to encourage contact between artists, scientists, engineers and theoreticians, and to discuss, present and share prototypes, devices, art and ideas.



This is why, for the UOC, it is an honour and a privilege to be an organizer of this event.

First: because we want to remain at the cutting edge of research in the knowledge society and in digital transformation; this means interconnecting academia with public and private entities, enhancing teaching, research and innovation. Because, if we want our university to be useful to citizens, if we want to make impacts that are relevant for society, if we want to count and be counted **we must be part of the change, we must deliver digital literacy for our citizens, we must commit ourselves to open and shared knowledge, we must contribute to the designing of our future.**

Second: because – like ISEA – we treasure our legacy: an academic community made up of a critical mass of teaching staff and researchers who work at the intersections of the arts, science and technology; an interdisciplinarity that – to be useful both internally and externally, to the university and to society – must be steered to support teaching, to strengthen research and innovation, to encourage knowledge transfer and to increase the social impact.

And third: because our involvement here gives continuity to greater works. Everything we will learn, discuss and discover over the coming days can only make sense as part of a continuum. Without the intense preparations, there would be no symposium. Without having anything to show for it afterwards, our work would be in vain. In short, ISEA is and **must be a link in the chain holding**

together our strategic and transformative outlook. Each time this international symposium has been held anew, it has enriched us with networks, knowledge, infrastructure and policies. It will also do so this time. We also want to do this.

This is why we have initiatives such as Hac Te, the art, science and technology hub created by numerous people here among us, which aims to provide a strong root for this ecosystem, upon which it can develop structure and stability.

This holding of ISEA2022 Barcelona is a materialization of the work of Hac Te and demonstrates its potential. It will do so over the coming days, offering many different activities in this symposium.

And it will do so in the aftermath of ISEA2022 Barcelona, taking over to let the conversation continue.

We do this and will continue do this maintaining the bearing that Carme Pinós, recent winner of Spain's National Architecture Award, summed up in four points: *"Respect each other. Encourage debate and participate. Listen and ask questions. Believe that we have responsibilities and we can contribute."*² **Right now, technology and innovation are inseparable from our culture and creative industries.** And ISEA2022 Barcelona presents us with a spur, a window of opportunity for exchanges, collaborations and learning. ■

1. https://www.uoc.edu/portal/_resources/EN/documents/la_universitat/inaugural-lecture/inaugural-lecture-cristina-de-middel-2018.pdf

2. <https://www.barcelona.cat/metropolis/en/contents/most-architects-are-not-the-elite-or-complicit-property-speculation>



ISEA2022 Barcelona

Possibles

Pau Alsina, Irma Vilà, Susanna Tesconi,
Joan Soler-Adillon, Enric Mor

Universitat Oberta de Catalunya



It was in the summer of 2017, as the last details were being added to ISEA2017 in Manizales (Colombia), when we began to receive emails encouraging us to present a candidacy to organize an edition of the symposium in Barcelona. Our city had been taken into account for years due to the quantity and quality of the professionals that work in its digital arts scene: they include collectives and artists (some of whom have won major awards) as well as internationally renowned festivals, centres of artistic

production, universities with their research groups and researchers, and the outstanding artistic and cultural centres in a broad-based relationship between art, science, technology and society.

We initially believed that an undertaking of this nature would involve too many resources and that although it was an extremely interesting idea, we needed to find better reasons with greater potential if we were to carry it out successfully. So we began to think about the idea that perhaps ISEA itself could be the perfect excuse to help bring about some

changes and transformations in the city. In fact, both the resources and the parties involved in the network were already receptive to an initiative like this one, aimed at channelling and creating the structural qualitative transition that many prominent members of the community in Barcelona had been demanding for a long time. We then began to think on a larger scale, aware of the potential and vitality of a city that is particularly creative and open to the world, and we realized the tremendous wealth of the art, science, technology and society ecosystem in our immediate surroundings,

which despite its broad base and heterogeneous nature, and its location and distribution in multiple places and venues, continued to enjoy remarkable levels of energy and motivation.

Any multidisciplinary and heterogeneous space tends to be difficult to administer and digest, especially in a world of isolated factions, sectors and immovable identities. That is what it means to place oneself outside the mainstream, beyond disciplines, beyond boundaries and beyond the realms of what is possible. The possible and the



impossible - daring to imagine other possibilities as a horizon of change that unfolds and organizes the world. The possible as an opening and a movement from which to leave the pre-established, pre-conceived and pre-designed behind, and place oneself in the future and its creative uncertainty. It was obvious that "the possible" should be the main theme of the ISEA Symposium that we wanted to organize in Barcelona - halfway between realistic pragmatism and futuristic speculation with ramifications of truth, moving beyond the placid distance of utopias and the eternal frustration of revolutions.

That was the situation when, with the institutional partnership of the Universitat Oberta de Catalunya (UOC) and the support of Barcelona City Council, we presented our candidacy for ISEA2021 in Durban, South Africa, in mid-June 2018. ISEA 2018 Symposium was a major transformational experience due to the wide variety of contributions and perspectives that we were able to experience in a few intense days in Africa. We knew then that if everything went according to plan and we were

selected, we would have to announce our venue in Gwangju, Korea, in 2019 and take centre stage in Montreal in 2020. And that was how it turned out - we were selected by the ISEA International Board, and brought the event back to Europe after an absence of more than 10 years. We had to go to Korea to present our proposal based on the theme of "Possibles", which was, by then, more structured thanks to our collaboration with a network of institutions which understood from the very beginning the opportunity and the need for involvement in a transformational event like the ISEA.

What we did not know at that time is that at the end of that same year, 2019, the world would change completely as a result of the coronavirus pandemic - a pandemic that is still ongoing at a global level today, and which continues to wreak havoc as its variants evolve and spread across the world. Under those circumstances it was impossible for ISEA2020 Montreal to take place in a face-to-face format, and this was a contributory factor to how, despite the dates being changed in the hope of an improvement of the global health situation, in the end practically everything had to take place online. Similarly, in view of the outlook, we had to postpone the face-to-face

“From the outset it was our aim to combine the academic, education and research spheres with the cultural and civic artistic context, and with the technological-industrial environment”

edition planned in Barcelona for 2021 until 2022. In 2021 we held an entirely online preparatory event that we were able to schedule within the framework of the Barcelona Science Biennial. It would have been perfect to be able to hold the ISEA Symposium at the same time as the Science Biennial, and link the two events in the way we had initially proposed with the backing of the City Council, but at that time it would have been extremely reckless to bring to Barcelona participants from the over 40 countries that usually contribute to this event.

We created the institutional architecture of our Barcelona edition surrounded by all the uncertainty associated with major events in these new circumstances. From the outset it was our aim to combine the academic, education and research spheres with the

cultural and civic artistic context, and with the technological-industrial environment. The UOC, as the organizing and promoting university, gradually added partners with the support of the Catalan Ministry of Science and Universities, and Barcelona City Council's Institute of Culture. "The first to join were the Centre de Cultura Contemporània de Barcelona, and the Santa Mònica Arts Centre, hosting the conference sessions and one of the main exhibition, respectively. A decisive contribution was made by the Government of Catalonia's Ministry of Culture and the Ramón Llull Institute, which also led the way in the event's internationalization by organizing two editions of the Ars Electronica Garden in the city, together with the expertise of the New Art Foundation and its outstanding digital art collection, which was also presented at the four venues of the ISEA exhibitions.

Barcelona City Council's support made it possible to extend ISEA across the entire city. More than 40 institutions were involved in the programme including Canòdrom democratic digital cultural centre and La Capella exhibition centre, highlighting the decentralized and broad-based nature of the event. In turn, the Government of Catalonia's support made it possible to produce the



main ISEA exhibition in Arts Santa Mònica with the highest levels of quality, arising from the selection of the more than 500 ideas that arrived in the wake of the open call for artistic projects. The support of the Government of Catalonia was also crucial in extending the programme to 10 more cities and towns (Girona, Lleida, Mataró, L'Hospitalet de Llobregat, Amposta, Tarragona, Vic, Balaguer, Reus and Berga), establishing links with centres and programmes across Catalonia. In addition to the above, there is the Sant Pau Art Nouveau Site, with a magnificent exhibition of works of art from the ISEA open call and from the New Art Foundation Collection, as well as a selection of artworks from the platform Niio.art. The objective was to merge local and international communities, contributing to the creation of collaboration and exchange networks between the various parties involved. We also aimed to make everything accessible to the public and citizens in general, both in Barcelona and elsewhere in Catalonia, who were invited to participate in a wide range of activities spread throughout the area.

“We obtained a magnificent response from the international community, with 1,019 proposals submitted for evaluation by the 268 international experts in the ISEA scientific committee and the joint artistic jury in Barcelona.”

ISEA2022 Barcelona was then defined as an international, interinstitutional, intersectoral and intergenerational event with a clear multidisciplinary and transformational vocation, creating a structural foundation in the city (and the other participating towns) with the creation of projects including Hac Te, Barcelona's Art, Science and Technology hub that brings together more than a dozen institutions committed to the development of art, science, technology and society, including universities such as the UOC, UPC (Universitat Politècnica de Catalunya) and UPF (Pompeu Fabra University), research centres such as the BSC, ICFO and BIST, festivals such as SÓNAR, production centres including HANGAR and museums including MNAC, collectors such as NAF, business groups including Tech Barcelona and events such as the FIRA trade fair. This is



Pau Alsina, Director of ISEA2022 Barcelona



Irma Vilà, Vice-director of ISEA2022 Barcelona



in addition to the Spanish RED ACTS network created by the Daniel and Nina Carasso Foundation, with the UOC, Hac Te, CCCB, Hangar in Barcelona, Tabakalera in San Sebastián, and the UPV (Universitat Politècnica de València) and the CCC in Valencia, among other projects promoted within the framework created by the event and which are currently ongoing, such as the update of the art, science, technology and society White Paper undertaken by the FECYT (Spanish Foundation for Science and Technology). The synergies arising between all the different initiatives mentioned above which are in progress in Spain, as well as the clear connection with the programmes that are being undertaken at a European level, such as the S+T+ARTS programme and the recent New European Bauhaus programme, herald a positive outcome in terms of the structural impact of the major initiatives.

And so now we find ourselves in 2022 with the pandemic brought substantially under control, and emerging from a global health situation that was a major concern in its early years, while at the same time suddenly having to deal with another unexpected war in Europe; the Russian invasion of Ukraine upset global mobility

even further, increased uncertainty, and led to changes in the organization of events with the consequent international travel involved. The changes that have taken place during these intense years of fusion between the virtual and the face-to-face realms, with forced physical distancing and unavoidable online proximity have yet to be assimilated. Indeed, we have been unable to include participants from all the countries that had their proposals accepted for our event.

Nevertheless, despite all the difficulties that have arisen, we obtained a magnificent response from the international community, with 1,019 proposals submitted for evaluation by the 268 international experts in the ISEA scientific committee and the joint artistic jury in Barcelona. It was a complete success given the circumstances, for which we can only extend our warmest thanks to all those who took part in the evaluation process. In turn, the ISEA organizational team, which had over 40 members, had to coordinate, in record time, all the teams of both the scientific and artistic committee and of the over 50 institutions in the 11 towns and cities taking part.

In addition to the traditional ISEA conference and main exhibition, we have added partnerships, activities and venues to create an



ISEA that is spread throughout the city and across Catalonia, and firmly committed to involving the various agents and audiences interested, citizens and society in general. As a result, and counting all those attending each of the events taking place in all the venues, there have been 45,447 attendees, of whom 743 were accredited and participated in some of the events taking place in more than 40 venues, 11 towns and cities, 4 exhibitions with more than 80 artworks, 4 keynote lectures, 140 research presentations, 45 institutional presentations, 40 artist talks, 23 screenings, 18 posters and demos, 16 round table discussions, 13 workshops, 13 performances, 1 specialized meeting on media art archives, 1 founding

meeting of the Spanish ACTS network, in addition to 2 mappings and a drone show for the general public, which took place in the city of Barcelona for the first time.

ISEA2022 Barcelona involved an exceptional exhibition containing more than 80 artworks at the intersection of art, science and technology. The artworks exhibited were the result of the selection from the ISEA open call related to the theme of "Possibles", as well as the resolution of the open call for the production grants awarded: all of them were selected in a review and selection process by the international committee and artistic jury, and the teams of curators at each venue. Pieces from the electronic art collection of



the New Art Foundation were also selected based on the event's main theme, with the aim of establishing a fruitful dialogue with the long and fertile history of interrelationships between art, science, technology and society. The 80 artistic pieces, the 13 performances and the 23 screenings that were on display during ISEA make a total of 116 items, which are documented in this catalogue, and which highlight the diversity of the

projects that were exhibited during the event and in the subsequent months when the 4 associated exhibitions and events took place.

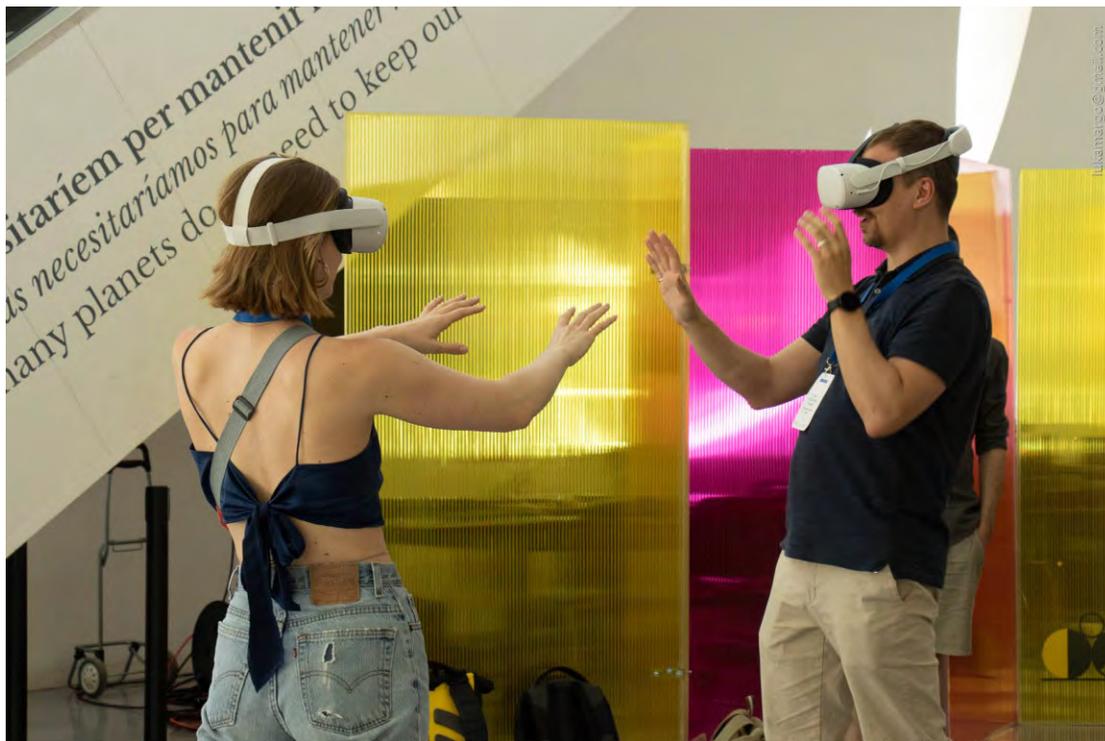
The Santa Mònica Arts Centre hosted the main exhibition at ISEA2022 Barcelona, entitled "The Irruption", which featured a selection of pieces that came from the open public call for entries, making up "a set of pieces and projects that, from different positions, investigate the environmental, climate and social crisis and the

"The 80 artistic pieces, the 13 performances and the 23 screenings that were on display during ISEA make a total of 116 items, which are documented in this catalogue"

possibilities of art (always limited and partial) to re-politicize the imaginations, traumas, fears and urgencies that challenge and instigate us to irrupt otherwise, under response(-able) conditions from within the environmental and socio-economic collapse into which planet Earth has been plunged". The exhibition was open for three months, and was designed as an invitation for all those attending to trace multiple narratives, either individually or accompanied by the group of collaborators who activated the pieces with their narrative itineraries and mutant visits. "La Irruption" clearly resonates with the experiences related to the pandemic and the consequent associated collapses, and presents the isolated imbalances of normality as a manifestation of a continuum of accumulated phenomena that are an expression of the planet's exhaustion and of the potential that has yet to open up.

For two months the La Capella exhibition hall hosted the exhibition entitled "What is possible and what is not", which linked local artists selected through the ISEA call with local artists from the call by Barcelona Producció which defines the programming of the venue. "What is possible and what is not" thereby presented a crisis in the possibilities that lie within technological breakthroughs, but which conceal important limitations and conditioning factors. The same capacity of technologies to make possible what was previously impossible to imagine also prepares us to collide with its boundaries. In turn, the ability of science to explore those boundaries shows us that what is possible is always a horizon that can be moved - an opening to the imagination that has yet to be developed.

This fascination with "Possibles", which presents what is real and unfinished in front of us, gave its name to the third exhibition organized in Barcelona which took place in the Sant Pau Art Nouveau Site, where a mixture of 17 pieces from the NAF collection, 5 pieces selected by the Art Jury of the ISEA open call and 6 works chosen by the Nio.Art platform were on display. In the venue's imaginative art nouveau setting, the exhibition of art, science and technology





explored these other "Possibles" behind climate change and global warming, behind robotics and biotechnologies, within algorithms, artificial intelligence and data science, in quantum worlds, endeavouring to understand what matter is, up there above our heads in outer space and the multiverse. Beyond seeing ourselves trapped in a world of pre-designed possibles, the exhibition included ideas from all over the planet and from all areas of experience and knowledge, opening up to contingency, the future and the uncertainty of futures that are already open or which will be opened up in our present.

Finally, last but not least, the Cal Massó art centre in Reus hosted the exhibition entitled "Beep Collection: Origins", which used different perspectives to present some of the founding works in this pioneering collection, consisting of pieces considered essential in the history and development of electronic art which the collection has been rescuing and restoring, in order to highlight the legacy of the pioneering creators who are now part of the history of contemporary art. The "Origins" exhibition also constructed a timeframe which sought to bring us

"The 27th edition of the International Symposium on Electronic Art, the Possible was born in the polis, in the city, through dialogue, discussion and debate"

closer to our evolution as a species and to the unstoppable development of life in its broadest sense, with works of art that explore identity and appearance, memories and recall, intelligence and the perception of reality and of the human body, and even material and cosmic environments. It provided a multidisciplinary perspective that in our complex historical and current framework, whether it is virtual or face-to-face, local or international, and with the other towns and cities in Catalonia (Girona, Lleida, Mataró, L'Hospitalet de Llobregat, Amposta, Tarragona, Vic, Balaguer and Berga), extended the universe of possibilities left behind by ISEA.

As we said at the beginning of the text on the origins of the 27th edition of the International Symposium on Electronic Art, the Possible was born in the polis, in the city, through dialogue, discussion and debate, and it is political by definition, as it shapes our reality. The political realm is made up of feelings, the ability to move and be moved in our openness to the world, in our network of intensities of the

experience and adventures of the encounter. Encounters are made up of relationships that account for every political dimension of our existence. After these difficult years of the pandemic, with their multiple ecosystemic upheavals, and the consequent isolation and social distancing, our aim was to use this policy of emotions to bring together the community of communities which is the multidisciplinary sphere that is recognized in ISEA. To create long-awaited embraces

between local and international agents, individuals and groups, between virtual closeness and face-to-face distances, between possibles and impossibles yet to be experienced in the multiple spaces for meeting, relationships, exchanges and complicity which we have been able to create, so that the composition of knowledge that gives name to our emotions can experience a resurgence, like a Phoenix in the firmament of the Possible. ■



Pastora Martínez (UOC) Madeline Carey (MACBA) Judit Carrera (CCCB) Marisol López (Generalitat de Catalunya) Pau Alsina (UOC) Jordi Martí (Ajuntament de Barcelona) Irma Vilà (UOC) Andreu Rodríguez (NAF) Maria Lladó (IRL) Enric Puig (ASM).

ISEA, International Symposium on Electronic Art

ISEA is one of the most important annual events worldwide dedicated to the crossroads where art, design, science, technology and society meet.

The event has been held over 26 times all over the world, and after more than 10 years since it last graced European soil, it finally touched down in [Barcelona](#) during 2022. With it came an enthusiastic international and local community reunited to develop this interdisciplinary field.



ISEA2022 Barcelona has reinforced the role of the city as a leader in research and scientific output and cultural and artistic creativity in both a national and international context.

What makes ISEA unique is that it is not so much an academic conference as a conference-based event that offers a wide array of activities, which surprise visitors with newly conceived formats in every edition. At the symposium you are sure to find exhibitions, workshops, open-air projects, round tables, artist talks, school initiatives and a variety of other activities, all with the involvement of different organisations and communities from the city of Barcelona.





Conference

ISEA2022 Barcelona invited the participants to contribute to the growing debate on our world of "Possibles", the Symposium's central theme, in multiple formats including more than 140 papers presentations by experts, 45 institutional presentations, 40 talks by artists, 20 screenings, 18 posters and demos, 16 round table discussions, 16 workshops and 13 performances, all from the open call launched a year before, which received 1,100 proposals.

The **CCCB** has been the main venue for an international community of experts in art, science and technology who addressed topical issues including the creative capacity of artificial intelligence, the possibilities of immersive experiences, the imaginary of biotechnology in the arts, the challenges surrounding climate change, and new ways of addressing education, as

well as our cultural legacy. In addition, it has been the space for four keynote speeches by leading figures in their respective fields: Olga Goriunova, Joan Fontcuberta, Christl Baur and Ricard Solé.

Also, **MACBA** has hosted the **Second Summit on New Media Art Archiving**, among other activities such as artist talks or a performance. More related activities have been programmed in other venues such as Canòdrom, that hosted four panels from the call.





Extended Program

With the aim of bringing the intersections between Art, Science and Technology closer to the public, ISEA2022 created the ISEA Extended Program, in Barcelona and other 10 cities (Girona, Lleida, Mataró, L'Hospitalet de Llobregat, Ampostà, Tarragona, Vic, Balaguer, Reus and Berga), which has included more than 50 activities along the Catalan territory.

ISEA Extended Program made possible exhibitions, workshops, outdoor projects, panels, artists talks or school initiatives where visual arts venues, design schools, museums and art centers, art factories, festivals and high schools were involved.



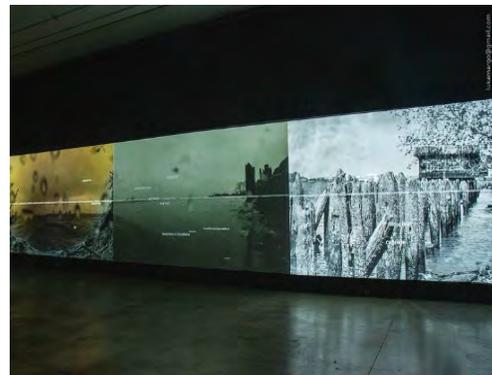
The night of June 15, ISEA2022 Barcelona offered the first drone show in Barcelona, by Flock Drone Art Barcelona, open to the public.



Exhibition

ISEA2022 Barcelona had brought together a marvellous and extensive display of pieces located at the convergence between art, science and technology, with more than 80 works including immersive installations, interactive and on-line works, sound art, animations, mapping and a drone show.

This exhibition has been a dialogue between works by international authors and around twenty Catalan artists, and pieces from the open call had been interspersed with other digital art collections.



LA IRRUPCIÓ

Santa Mònica, Barcelona
From June 9 to August 21

The main exhibition has featured 32 works: 23 pieces from the ISEA2022 Barcelona public call selected in conjunction with Santa Mònica, 2 pieces donated by the NewArtFoundation and 7 works acting as itineraries for the exhibition. The Irruption has presented works by leading international and local artists including Robertina Šebjanič, Lauren Lee McCarthy, Eric Berger, Joan Soler-Adillon and Andy Gracie.

POSSIBLES

Recinte Modernista de Sant Pau, Barcelona
From June 9 to 30

It included five outstanding works from the ISEA2022 Barcelona call by Thierry Fournier, Monika Fleischmann and Wolfgang Strauss, Paul Thomas, Keith Armstrong and Linda Dement, Paul Brown and Carmine Gentile, and it has been completed by Alex Posada (winner of one of the ISEA2022 Barcelona grants) and twenty digital works by the NewArtFoundation.



WHAT IS POSSIBLE AND WHAT IS NOT

La Capella, Barcelona
From June 9 to August 28

A dialogue between works by five local artists (Josep Manuel Berenguer, Anna Carreras, Mónica Rikić, Roc Parés and Yolanda Uriz) from ISEA2022 Barcelona's call, and works by artists from Barcelona Producció (Anna Pascó, Ariadna Parreu, Mario Santamaría and Estampa).

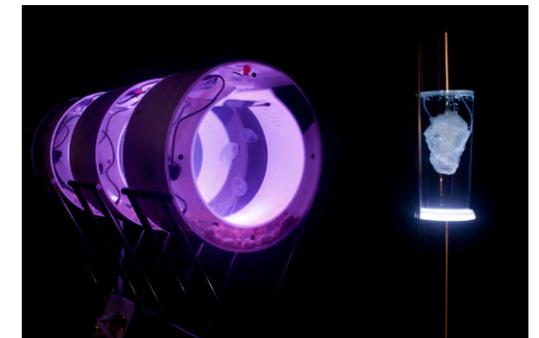
2nd SUMMIT ON NEW MEDIA ART ARCHIVING EXHIBITION

Online exhibition composed of 8 artworks related to archives or archival practices as well as data visualisation of archives.

BEEPCollection: ORIGINS

Cal Massó, Reus
From May 26 to July 23

An ambitious selection of new projects and foundational works of international electronic art by leading artists including Joan Fontcuberta, Marcel·lí Antúnez and Rafael Lozano-Hemmer.





SANTA MÒNICA
BARCELONA

Exhibition LA IRRUPCIÓ

LA IRRUPCIÓ, the exhibition, curated by Marta Gracia, Jara Rocha and Enric Puig Punyet, includes more than twenty artworks from the call.

These pieces, inserted within the local context, opened a dialogue about the complex circumstances that we are living on the planet after the disruption of the pandemic. The exhibition showed proposals from leading

international and local artists such as Robertina Šebjanič, Erich Berger, Joan Soler-Adillon and Andy Gracie.

Following the center's new methodology that encourages horizontal participation, discursive itineraries emerged with participation at different levels and the involvement of Santa Mònica's resident artist communities during the exhibition's period.



Artworks

EoE Triptych #1
Andy Gracie

Unreal Window
Chanhee Choi

Garden in the Machine / Vibrant Landscapes
Colin Ives

Spectral Landscapes – Palkiskuru
Erich Berger

Future Function | Creative Uses for Obsolete Tech
Erik Contreras

Can the Mind Exist Without a Body?
Irma Marco

ゴジラ/gōd'zīrā/
Jane Mi

Infodemic
Jennifer Gradecki, Derek Curry

#See You at Home – The Domestic Spaces as Public Encounter
Joan Soler-Adillon, Bettina Katja Lange and Uwe Brunner

Tally Saves the Internet
Joelle Dietrick and Owen Mundy

How to Make an Ocean
Kasia Molga

Syndemic Sublime
Laura Splan

Muted
Lauren Lee McCarthy

Concerto para Piano e Pandemia
Nikolas Gomes

Waiting for other
Nooroa Tapuni

AquA(l)formings – Interweaving the Subaqueous
Robertina Šebjanič, Sofia Crespo, Feileacan McCormick

It will Happen Here, in Barcelona (Tindrà lloc aquí, a Barcelona)
Roderick Luis Coover, Adam Vidiksis, Nick Montfort

Quadra Minerale – Rare Earths
Rosell Meseguer

privacy-GrDN.info
S4RA / Sandra Araujo

Tools for a Warming Planet
Sara Dean, Beth Ferguson and Marina Monsonís

Repository
Weidi Zhang

Imaginary Sunset
Xuanyang Huang

Andy Gracie

EoE Triptych #1

Keywords: Cosmology, Ends, Deep time, SciArt

The ongoing research project of which EoE Triptych #1 forms a part builds on parallel obsessions with cosmology, deep time and post-apocalyptic scenarios. Reacting to contemporary disaster rhetoric - the end of humanity or post-terrestrial escapology – it presents the unavoidable future and inescapable apocalypse of the end of the Universe

The human sense of permanence and significance leads us to imagine futures where we are present, having found ways to dominate nature and conquer space. This project argues that there are events from which there is no escape and that all timelines, including the human one, will come to an end through developing cultural and scientific narratives around the end of the Universe.

Where we imagine permanence and continuity, the Universe presents itself as a fluid entity where stars glow into existence and burn out, where galaxies collide and where eventually all matter will dissipate in a field of cold radiation.

The brief existence of stars and planets on the timeline of the Universe is nothing but a momentary glitch in the process of transformation from Big Bang to Heat Death.

An important narrative within the work is the fine balance between knowledge and speculation. While our understanding of the Universe and capacity for prediction is astounding, we still cannot be sure that the next thousand trillion years will be as we imagine. Everything we know so far points to the ending known as heat death, the slow fading of the Universe into a field of cold radiation, but how can we know if dark energy, dark matter and quantum fluctuations will change things or not?

And in trying to understand these vast cosmic processes, where do we find the space to examine our humanity? How do we confront the melancholy of imagining a future that we can never experience? How can we attribute meaning and significance to something so fleeting and intangible?

The triptych presents the end of the Universe in three stages; the end of the Solar System, the end of the galaxy and all stars, and the end of the Universe itself.



Using installation, robotics, sound, video, lighting effects and biological practice, **Andy Gracie** makes work situated at a point of separation between the arts and the sciences, creating situations of exchange which allow new understandings and knowledge systems to develop. Much of his work involves reactions to and engagements with deep time, eschatology and space research. Employing scientific theory and practice, he questions our relationships with exploration and experiment whilst simultaneously bringing into focus the very relationship between art and science, and how new knowledge is culturally assimilated. Much of his work features an ongoing engagement with semiotics, simulation theory and apocalyptic or post-human scenarios. His work has been exhibited widely and internationally in both solo and group shows and presented at conferences and seminars across the globe, as well as publishing a number of articles and papers.

Website: hostprods.net

Chanee Choi

Unreal Window

Keywords: Animation, Machine learning, AI, Game simulation

Unreal Window is a real-time virtual animation inspired by the experience of confinement and virtual communication during the Covid-19 pandemic. The animation is a recording of a continuously existing AI environment created through machine learning. The video's narration was produced by a machine learning system using the script of Hitchcock's Rear Window and a recording of Jimmy Stewart's voice. Unreal Window addresses the slippery sense of reality in a world of media consumption, zoom meetings, and AI animation.

Unreal Window was inspired by zoom meetings during the Covid-19 pandemic, the loneliness produced from the sense of being monitored, the painful absence of rapport that politeness dictates we have to pretend not to feel, the despair and creeping terror of not being able to connect with others physically, their smell, their touch, their heat, and longing for that which can only be shared through physicality.

I wonder how far down this path we might go. If this situation continues until I

die, then what does this mean for my identity? Who can I be under these circumstances? I ask, 'Where do I exist?' and if a part of the answer is in the digital, what does that imply about AI?

In Unreal Window, I manifest myself fifteen to twenty times in embodiments of different ages and forms. I appear as a baby, a toddler, an adult, an elderly woman, and as a human-computer hybrid, a woman with a monitor for a head, forever in a zoom meeting. All versions of me are following after this hybrid as she flees - attempting to stay in the frame of the webcam, competing, desperate to show that they exist. I also attached a surveillance camera to each character, creating a scenario in which they are all constantly spying on each other.

Unreal Window is a real-time virtual animation video that is designed for video game simulation, but this video game has no player. The computer's systems play each other without the need for further input.

Like I Ching, These characters are doomed to watch each other randomly and chase the camera infinitely in the auto-gameplay of machine composition (NPC) set to a chasing and fleeing game scenario. I wanted to create a situation without an end, both as a reflection of feeling of endlessness in this pandemic, and also so that the machine learning system could



develop the action in ways that might surprise me. For example if the characters learn to chase and flee using obstacles and tools, what kind of relationships and environments might that produce?

I wanted to know, in a place where everything is made with AI, would I feel like I could breathe? Is there a bottom to this abyss, or is it infinite sliding?

I wonder whether we are actually in conversation when telecommuting. I can see the person I talk to only in a square

box. Sometimes I feel confused whether I'm speaking to a real person or not, and I notice that I watch myself as I speak as much as I look at the other. I want to express this wandering between reality and unreality.

I feel very anxious that communication and relationships between people might be lost in the absence of physical presence, and this virtual world will persist, existing online even as generations come and go. I've started thinking about the real meaning of confinement.

Chanee Choi is a transdisciplinary artist. She has developed a ritualistic craft-based art practice that transcends the conservative and isolationist roots of traditional East Asian craftwork by focusing on a celebration of feminist theory and modern tech. Within this hybrid genre, she produces both embodied and virtual immersive experiences exploring the effect of immigration on issues of identity, and the synesthetic processes of corporeal-cognitive space. She is originally from South Korea and now lives, works, and studies in Seattle, Washington. She earned her BFA in Craft Design from Dongduk Women's University in 2013 and MFA in Fiber and Material Studies from the Art Institute of Chicago in 2016. Choi is currently a Ph.D. candidate (ABD) in Art and Technology at DXARTS at the University of Washington.

Her work has been published in UW News, UW College of Arts & Sciences, GeekWire, International Examiner, Seattle Times, KUOW National Public Radio, KING-TV, and WIRED magazine.

Website: chaneec.com

Colin Ives

Garden in The Machine, Vibrant Landscapes

Keywords: EcoArt, AI, Generative, ArtandTech

The AI algorithm, trained on video of landscapes, generates a completely new sequence. The spatial trajectory of the source footage troubles the AI's "understanding" patterns of relation. The resulting videos have an animate sense of desynchronization, an aesthetic strategy that reveals the copresence of multiple durations, temporalities, and tempos.

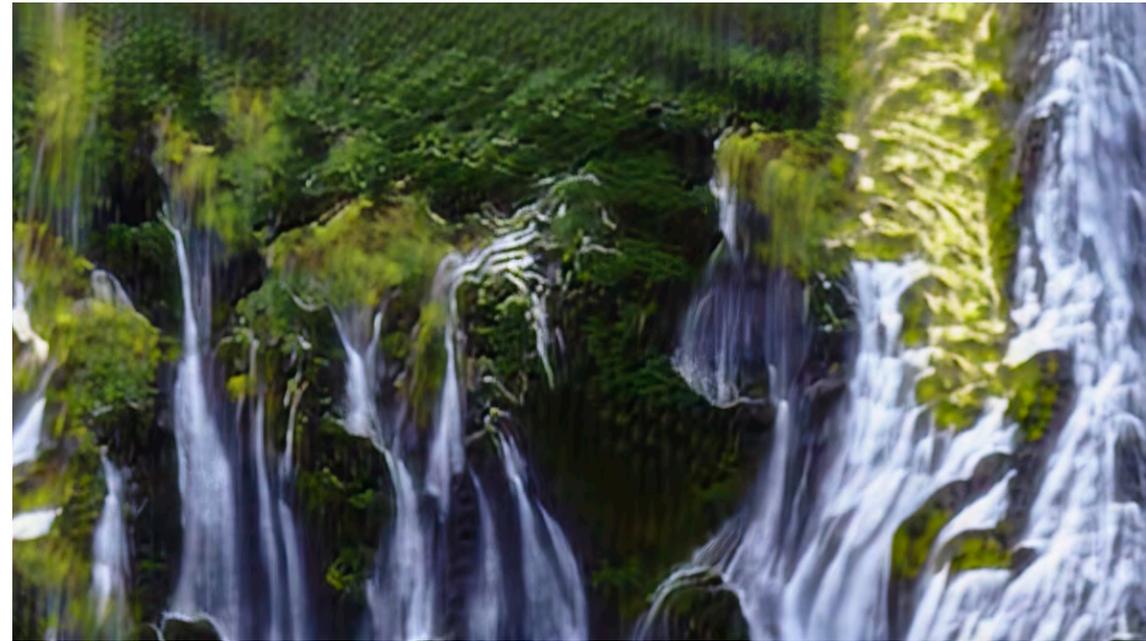
We live at a time where there are a set of predictive calculations occurring for any given action. This might be most obviously when we are online and as a result of data mining highly targeted ads appear. But predictive analytics powered by Artificial Intelligence is already being deployed throughout all levels of our social structure, from policing and medicine to models of climate change. The sheer persuasive utility of these AIs underwrite particular the logics of their practice. The amplification of the value of functionality accounts for their ever-increasing deployment even in the face of known problems such as the way in

which they can retain or extends cultural bias. In this context using AI in a non-functional way is an act of resistance.

The ai generated videos included in *Vibrant Landscapes* are based on movement through real ecologically fragile landscapes. The work acknowledges how our expansive technologies have led to crises; yet its aim is restorative.

The AI algorithm, trained on original footage I shot of these landscapes, generates new sequences by predicting and adding new frames. The spatial trajectory of the source footage troubles the AI's process of "understanding" patterns of relation.

The resulting videos have an animate sense of desynchronization, an aesthetic strategy that reveals the copresence of multiple durations, temporalities, and tempos. The representational drift evokes upheavals in geological time, an ever-changing reshaping: destruction, renewal: vibrancy. We've tried to contain the natural world, to dam its living rivers and stop its fluctuations, but here they're set adrift in the unresolved contingencies of our times. Comfort and crises.



Colin Ives is a media artist whose creative practice operates within a nexus of overlapping cultural categories, including art, technology, and ecology. He uses technology never as an end in itself, never an unexamined tool, but a chance to reflect, examine, and reveal aesthetic and cultural substructures. Across a diverse range of work, including media installation, kinetic video sculpture, sculptural objects, and interactive work, he explores how our digital tools are not only changing our capabilities, but also our worldview. His AI Creative Practice Research Group (AICP) created a project with the gammy nominated vocal quartet New York Polyphony called *Aleph Earth*. It premiered at New Currents Media festival in 2020 and his current project *Garden in the Machine* will be showcased at this years New Currents festivals.

Website: colinives.com

Erich Berger

Spectral Landscapes

Keywords: Nuclear contemporary, Deep time, Radioactivity

In Spectral Landscapes I investigate radioactivity and the landscape. I collect data via custom-made sensors and software. They allow me to portray the gamma radiation fields produced by the decay of natural uranium and thorium mineralisations, as bodies that protrude from the radioactive base-rock as intricate but intrinsic features of the landscape.

My current artistic work takes place under the umbrella of Spectral Landscapes where I investigate radioactivity and the landscape. Since spring 2020 I conduct intense fieldwork in Finland. I am exploring sites with heightened natural radioactivity, originating from the decay of natural uranium and thorium mineralisations with some of those places being potential future sites of mining. There I collect data via custom-made sensors and software which allow me to portray the gamma radiation fields as bodies that protrude from the radioactive base-rock as intricate but intrinsic features of the landscape. Invisible but present, the

constitution of these bodies is part of the innate processes of our planet in deep time. They conform with continental drift, the biogenic accumulation of oxygen in our atmosphere, the folding of mountain ranges, and their weathering and they follow the carvings of geophysical forms which produce the features of the landscapes we observe around us. I refer to these bodies as spectral because their presence is ghostly and can only be detected via extra-sensorial means, but then they are also spectral because they are fields of light, of photons, although located in a part of the spectrum not visible to the human eye. At the same time, Finland is building Onkalo, the first permanent deep geological spent nuclear fuel repository. It will be backfilled until 2120 and engineering claims that Onkalo can hold back the nuclear waste for the next one hundred thousand years, traveling into a deep future yet to become. Two stories connected by their materiality cover the full scale of planetary time.

What can we learn from deep time for the present and a possible deep future, what about questions of intergenerational justice, is there a politic of scales, and what are possible artistic strategies to address such questions?



Erich Berger is an artist, curator, and cultural worker based in Helsinki. His focus is on the intersection of art, science, and technology with a critical take on how they transform society and the world at large. Throughout his practice, he has explored the materiality of information, and information and technology as artistic material. His interest in issues of deep time and hybrid ecology led him to work with geological processes, radiogenic phenomena, and their socio-political implications in the here and now. Berger moves between visual arts and science in an area that he also develops with his work at the Bioart Society in Helsinki. Berger has exhibited widely in museums, galleries, and major media-art events in Europe and worldwide.

Website: randomseed.org

Erik Contreras

Opportunity in Obsolescence

Keywords: Electronic waste, Right to repair, Maker community, Hacking, Industrial design

With many issues surrounding our high-tech products including: 1) planned obsolescence, 2) a linear “cradle-to-grave” life cycle, 3) the accumulation of electronic waste (e-waste), and 4) consumer culture, there is potential of finding creative solutions to reusing/repurposing our obsolete technology.

This potential can be found in this artistic work where a typewriter hacked to perform as a USB printer using the design principles meant to combat the issues listed above. This includes using open-source hardware and software as well as incorporating adaptive design for future updates.

Erik Contreras is an interdisciplinary designer and engineer with a background in mechanical engineering and rapid prototyping. His work involves prolonging the lifespan of consumer electronics and finding alternative uses for post-consumer products. His design philosophy seeks to promote user repair, modification, and reuse for consumer products. As an advocate for the right to repair, he wishes to develop products and prototypes that “welcomes the end-user, inside and out”.

Erik typically uses a hands-on approach towards his work/research and can be found hacking obsolete tech or 3D printing custom parts in his home machine shop. With technology being part of every aspect of life in the Bay Area, there also a vast accumulation of e-waste in the community. With e-waste being readily available, Erik feels the material is an “unnatural, natural resource” when it comes to finding parts and inspiration for his prototypes.

Website: erikcontreras.com



Irma Marco

Can the Mind Exist Without a Body?

Keywords: Internetflags, Onlife manifesto, Public art

Large-format flag installed in public space, showing Yiannis Laouris's message: "Can the Mind Exist Without a Body?", taken from the Onlife Manifesto, coordinated by Luciano Floridi, where they address the transformations of the digital hyperconnectivity era, such as the need to re-engineer the concepts of human and non-human life.

Can the Mind Exist Without a Body? is a large-format flag installed in public space. It shows a Yiannis Laouris's question taken from a chapter of the Onlife Manifesto, coordinated by Luciano Floridi, where they address the transformations of the digital hyperconnectivity era, such as the need to re-engineer the concepts of human and non-human life.

This work is, at the same time contextualized in a larger public art project and PhD research called #internetflags, which explore several aspects of life in a hyper-connected and Internet-based society. We think that this project can as well be a response to the need for new location structures to show artistic proposals and to promote social interactions and critical thinking from the arts perspective.

The conceptual focus of #internetflags is based on three axes. The permanent existence of portable digital communication devices, close to the idea of prostheses in the context of a hyper-connected society, and how its effects are interpreted from contemporary art; the problems derived from the massive use of the Internet together with a lack of knowledge of its internal physical structure, as well as its political and environmental implications; and also the current pandemic context in which social relationships are virtualized, public space is blurred and physical contact is restricted.



Irma Marco is an artist, researcher, and teacher. She holds a master's degree in Fine Arts from the UPV, is currently pursuing her doctorate in Advanced Studies in Artistic Productions at the University of Barcelona, and is a resident at the Fàbrica de Creació Fabra i Coats. She is also a consulting lecturer at the Universitat Oberta de Catalunya (UOC) and teaches at institutions such as MACBA and Escola Massana.

Marco works from pre-existing elements (such as sounds, texts, or particular contexts), looking for new meanings within materials that already have a past. She is interested in the plurality with which events are narrated and recorded, and she relies on noise, appropriation, collaboration, and exchange as strategies to open up a space of possibility from which to create meaning. Her practice encompasses sound experimentation, installation, actions, and interventions in physical spaces as well as virtual environments and publications.

Website: irmamarco.com

Jane Chang Mi

ゴジラ/god'zilə/

Keywords: Nuclear, Asia pacific, US military, Environment, Monsters

ゴジラ/god'zilə/ (2020) is a 96-minute single-channel video with sound that layers all 29 films simultaneously, but with all scenes involving monsters and humans removed.

On March 1, 1954, Daigo Fukuryū Maru (Lucky Dragon Five), a Japanese fishing boat, was contaminated by nuclear fallout as a result of the United States' thermonuclear test, Castle Bravo, in Bikini Atoll. The first *ゴジラ* movie was released in November 1954, as a direct response to this incident as well as the bombings of

Hiroshima and Nagasaki. The kaiju (monsters) are a metaphor for nuclear weapons, the American militarization of the Pacific, and environmental disaster. In total, 29 Japanese films were made by Toho Co., Ltd. *ゴジラ/god'zilə/ (2020)* is a 96-minute single-channel video with sound that layers all 29 films simultaneously, but with all scenes involving monsters and humans removed. This erasure mirrors the United States' policies and actions as a settler and colonial nation, leaving a wake of destruction in its path. The transparencies reflecting the half-life of radioactive isotopes as well as the trauma of America's nuclear legacy. We are the monsters and the monsters are us.



As an artist and ocean engineer, **Jane Chang Mi** assesses the post-colonial ocean environment through interdisciplinary research. Mi examines the narratives associated with the underwater landscape considering the past, present, and future. She most often focuses on the occupation and militarization of the Pacific Ocean by the United States. Specifically, her practice is centered around the topics of militourism — the creation and protection of tourist economies by military or paramilitary forces — and scientific colonization. This interest emerges from her background as an ocean engineer, a field that is inextricably linked to the American military complex.

website: janecmi.com

Derek Curry and Jennifer Gradecki

Infodemic

Keywords: Generative art, Neural network, Missinformation, Covid-19

Infodemic is a neural network-generated video that questions the mediated narratives created by social media influencers and celebrities about the coronavirus. The plastic, evolving, and unstable speakers in the video evoke the mutation of the coronavirus, the instability of truth, and the limits of knowledge.

Infodemic is a neural network-generated video that questions the mediated narratives created by social media influencers and celebrities about the coronavirus. The speakers featured in the video are an amalgam of celebrities, influencers, politicians, and tech moguls that have contributed to the spread of misinformation about the coronavirus by amplifying rumors, repeating narratives that are contrary to those of official health agencies, or developing technologies that amplify untrue content.

The talking heads in *Infodemic* are generated using a conditional generative adversarial network (cGAN) that predicts

the pixels for each frame of a video through an algorithmic process similar to those used by search engines and social media news feeds. Search and content recommendation algorithms that once promised to provide access to more information and enable the public to make well-informed decisions have actually made it more difficult to find accurate information on important and politically-charged topics. There is a disconnect between the optimistic Possibles promised by the technocratic elite and the dangers posed by a power structure that can hide behind proprietary algorithms and circumvent criticism due to a general public's limited technological understanding.

The cGAN in *Infodemic* was trained on a corpora of multiple individuals simultaneously. The result is a talking head that morphs between different speakers or becomes a glitchy Frankensteinian hybrid of different people that contributed to the current infodemic speaking the words of academics, medical experts, or journalists that are correcting false narratives or explaining how misinformation is created and spread. The plastic, evolving, and unstable speakers in the video evoke the mutation of the coronavirus, the instability of truth, and the limits of knowledge.



Derek Curry (US) is an artist-researcher whose work critiques and addresses spaces for intervention in automated decision-making systems. His work has addressed automated stock trading systems, Open Source Intelligence gathering (OSINT), and algorithmic classification systems. His artworks have replicated aspects of social media surveillance systems and communicated with algorithmic trading bots.

Website: derekcurry.com

Jennifer Gradecki (US) is an artist-theorist who investigates secretive and specialized socio-technical systems. Her artistic research has focused on social science techniques, financial instruments, dataveillance technologies, intelligence analysis, artificial intelligence, and social media misinformation.

Website: jennifergradecki.com

Curry and Gradecki have presented and exhibited at venues including Ars Electronica (Linz), NeMe (Cypress), Media Art History (Krems), ADAF (Athens), and the Centro Cultural de España (México). Their research has been published in *Big Data & Society*, *Visual Resources*, and *Leuven University Press*. Their artwork has been funded by *Science Gallery Dublin*, *Science Gallery Detroit* and the *NEoN Digital Arts Festival*.

Bettina Katja Lange, Uwe Brunner,
and Joan Soler-Adillon

#See You at Home

The domestic space as a public encounter

Keywords: Domestic space, Personal object,
Interactive installation, Virtual reality

#SeeYouAtHome is an interactive and immersive installation about changing the role of the private space in a time of crisis. It is part of an ongoing participatory project that reflects on our everyday domestic life between private and public spheres, and thus on our relationship with living spaces in general.

The project consists of a collection of hundreds of three-dimensional documents taken between 2020 and 2021 in over 40 different countries during the most intense periods of self-isolation and home confinement.

Following an open call, the collected videos were converted to 3D objects using the technique of photogrammetry. These imperfect objects (pointcloud images with gaps and unfinished endings) are the core content of the

work's archive, along with personal statements about the time of quarantine and the changing meaning of private spaces in the form of audio pieces and text.

#See You at Home (SYAH) is a physical installation that includes 3D-printed objects, plotter prints on the wall, and interactive objects with QR codes leading to 360 degree virtual spaces that visitors can view through the 'magic window' feature of their phone. Additionally, the work expands on, and includes within, a previous work: the VR installation *The Smallest of Worlds*. With it, *#See You at Home* offers a journey within a journey that explores the private spaces as its possible forms develop and change, in a back and forth between the real and the virtual that is both conceptual and experiential.

website: thesmallestofworlds.com



Uwe Brunner is an Austrian architect, experience designer, teacher, and researcher. Since 2019 he has been a faculty member at the .studio3, Institute for Experimental Architecture at the University of Innsbruck. He is currently pursuing a Ph.D. with a research focus on the Essay, its affective and cognitive modalities, and its potential for space-making in virtual reality environments. In addition to architecture, his wider research draws from an array of different fields such as media art, film studies, game studies, and media philosophy.

Bettina Katja Lange is a German scenographer and visual media artist, with a background in theater, opera, and film. She has worked in leading production houses such as the Opera Zuerich, the Nationale Opera & Ballet Amsterdam, the State Theater of Munich Kammerspiele, the Wooster Group, and the Performance Space Theater in New York City. Her recent work extends to physical installations and virtual environments, with an emphasis on the documentary strength in unconventional theatrical and digital media forms. Her current research has been supported with a fellowship by the Goethe Institute Beijing; it focuses on the correlation between ordinary objects, private space, memory, and communication behaviors; i.e. the owner's social identity and autobiographical representation.

Joan Soler-Adillon (PhD) is a Catalan artist and associate professor at Universitat Oberta de Catalunya (UOC), in Barcelona. He has held previous academic positions at Universitat Pompeu Fabra (Barcelona) and Royal Holloway, University of London (UK). His research and practice revolve around digital interactive media and its manifestation in digital art –particularly interactive installation, an experimental approach to interactive storytelling and documentary, and Virtual Reality. From a full-body interactive game run on an inflatable slide to a VR-based experimental documentary, he has worked on a myriad of projects with a focus on behavior design and interactivity, and on fostering audience collaboration and participation.

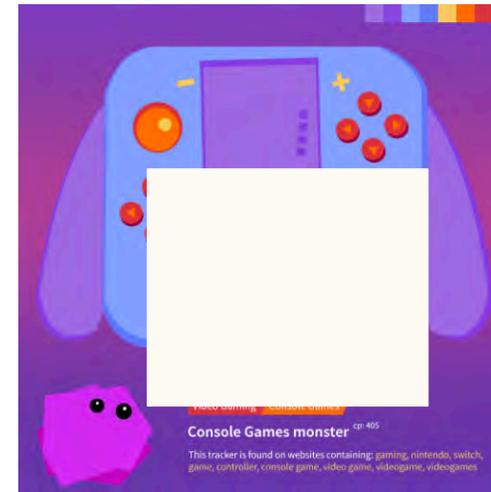
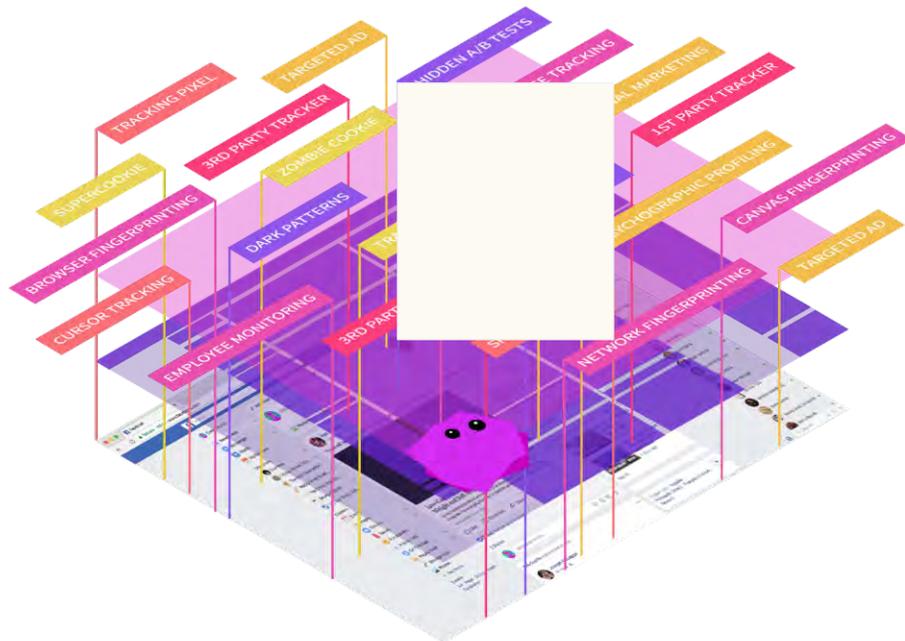
Joelle Dietrick and Owen Mundy
(Sneakaway Studio)

Tally Saves the Internet

Keywords: Browser extension, Data veillance, New media art, Interactive art

Tally Saves the Internet is a browser extension that transforms data advertisers collect into a multiplayer game. Once installed, a friendly pink blob named Tally lives in the corner of your screen and warns you when companies translate your human experiences into free behavioral data.

When Tally encounters “product monsters” (online trackers and their corresponding product marketing categories) you can capture them in a turn-based battle (e.g. “Pokémon style”) transforming the game into a progressive tracker blocker, where you earn the right to be let alone through this playful experience.



Joelle Dietrick and Owen Mundy (Sneakaway Studio) build online interventions, animations and mobile apps to reimagine a more sustainable and equitable digital future. Concerned about the unintended consequences of automated systems, their creations break apart and reconfigure existing structures to build awareness of the internet’s underbelly. Selected exhibitions include Locust Projects in Miami, Drexel University in Philadelphia, Art Center Nabi in Seoul, Transitio_MX in Mexico City, TINA B Festival in Prague and Venice, the University of Florida and the University of Texas. They’ve received support from the NEA, Mellon Foundation, Pollock-Krasner Foundation, UC Berkeley, DAAD, and Fulbright.

Website: tallysavetheinternet.com

Kasia Molga

How to Make an Ocean

Keywords: Tears, Oceans, Grief life, Symbiosis

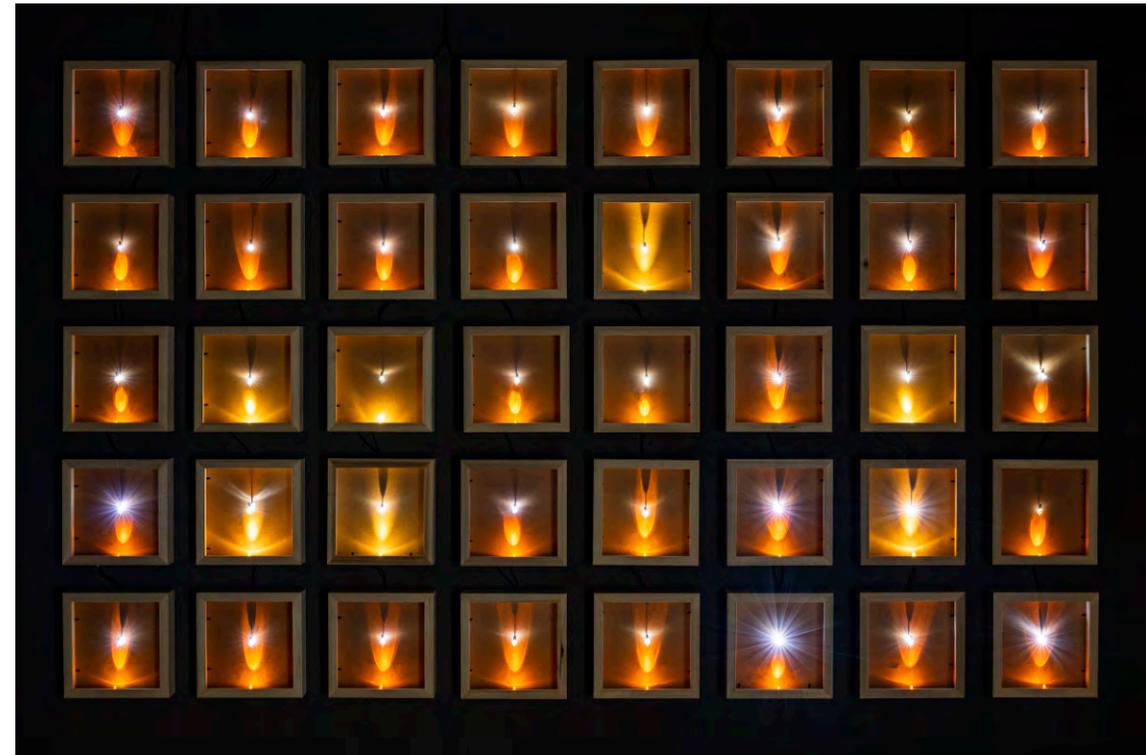
The artist wanted to know how she could use her bodily waste to care for the environment, which we have destroyed.

Each bottle contains her tears and North-Sea algae accompanied by a date, a reason for crying and the name of hosted algae.



There is a log of her diet from the period of the research, accompanied by a log of presence of chemical elements (N, P, K) important for healthy growth of algae. These elements can be regulated by diet. The artist wanted to know how she could use her bodily waste to care for the environment, which we have destroyed? The main question she posed here was: "Can I look after my physical and mental health in order to be of "use" to other life forms? Or can environmental health be an indicator of our own health?"

From Winter of 2019 until recently Kasia has been collecting her tears – first when she cried after losing 3 loved ones in the Autumn 2019. Then, with the start of COVID-19 she "trained herself" to cry in order to relieve her anxiety. This led to her exploring the chemical composition of human tears to see how they could make a healthy tiny marine ecosystem. To use her own tears to host a sea life became a form of catharsis and a constructive way to deal with personal and also then environmental loss.



Kasia Molga has refused to be labelled - design fusionist, artist, environmentalist, creative coder, she is driven by a curiosity of how design, science and technology intersect and how art can reveal stories embedded in those intersections. Predominantly focusing on the ever-changing human relation to and perception of natural environments and more than human fellow "earthlings". For over two decades Kasia has sought ways of conveying the notion of collaboration with nature.

Kasia is a founder and director of Studio Molga Ltd, where, aside from her art practice, she heads a team of creative technologists and architects delivering socially engaged commissions and educational projects.

Her work is exhibited worldwide, most notably: Centre Pompidou, Tate Modern, V&A Museum, Ars Electronica, Meta.Morf (NO), Translife Media Arts Triennial (Beijing, China), MIS (Sao Paulo, BR), Dutch Design Week (NL); and is a recipient of many international awards, grants and residencies, including: STARTS EU Residency.

Website: studiomolga.com

Laura Splan

Syndemic Sublime

Keywords: Sciart, Data-driven animation, Molecular visualization, Biology, Interspecies relations

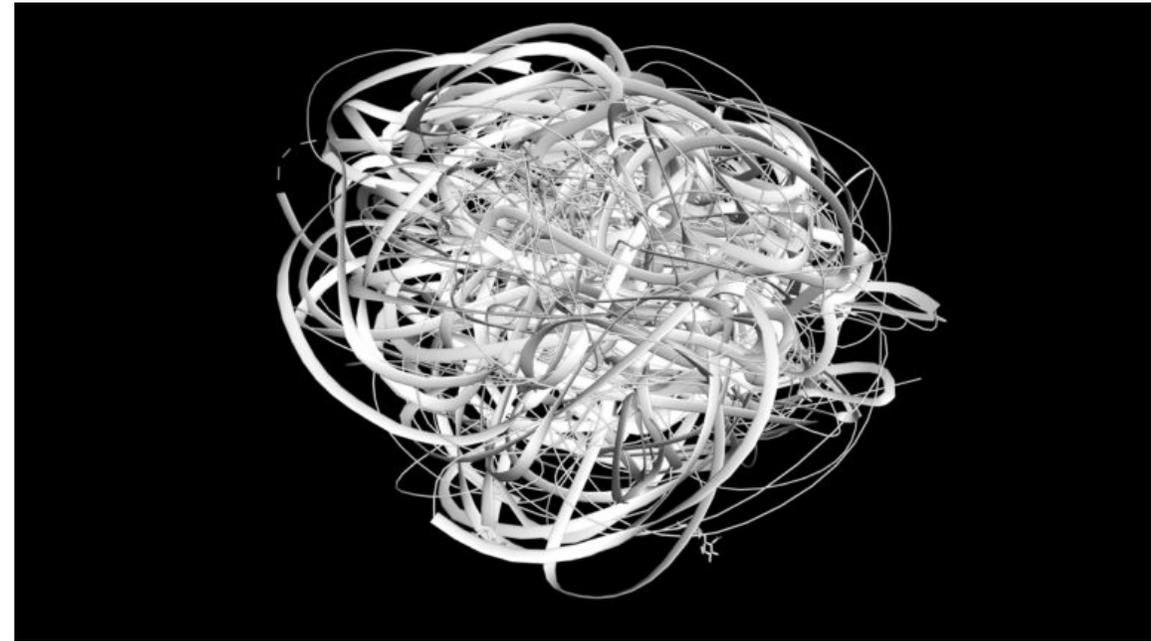
Syndemic Sublime is a series of data-driven computer-generated animations created using Covid-19 data and molecular visualization software. The animations intertwine models of SARS-CoV-2 with both human and non-human structures including antibodies and cell receptors. The generative movement is created using Covid data to disrupt amino acid residues along the structures.

Syndemic Sublime is an ongoing series of data-driven computer-generated animations created using Covid-19 data libraries and molecular visualization software. The animations intertwine molecular models of SARS-CoV-2 with both human and non-human protein structures such as antibodies and cell receptors. The generative movement is created using data from Coviddeaths to disrupt the 20 amino acid residues along the protein structures. The resulting disruptions create mesmerizing tableaux that are sometimes spastic and sometimes sublime. Each animation has

a unique starting and ending form as it slowly morphs from its biological folded form or “conformation” to its technologically distorted form.

The generative quality of the process allows for unpredictable and unique transformations within each animation as the software creates unexpected visuals. The unraveling and collision of the proteins results in both jarring glitches and in soothing movements.

The animations in the series combine models of proteins from the coronavirus with proteins from llamas, alpacas, cats, dogs, pangolins, bats and humans evoking our increasing interspecies entanglements in the contemporary biotechnological landscape. From zoonotic diseases to transgenic vaccine development to the use of animals as living factories to produce biological products, our understanding of what it means to be “human” in the “natural world” is becoming increasingly complex. The slow, quiet animations create liminal spaces for reflection, mourning, and wonder at the unseen molecular forces of the biological world affecting our daily lives in profound ways.



Laura Splan is a transdisciplinary artist working at the intersections of science, technology, and culture. Her artworks have been commissioned by The Centers for Disease Control Foundation and Triennale Brugge, exhibited at the Museum of Arts & Design and the Beall Center for Art + Technology, and are represented in the collections of the Thoma Art Foundation and The Chan Zuckerberg Initiative. Articles including her work have appeared in The New York Times, Discover, designboom, CLOT, and Frieze. Publications featuring her artwork include The Routledge Companion To Biology In Art & Architecture. Splan has received research funding from The Jerome Foundation and her residencies have been supported by The Knight Foundation and The Institute for Electronic Arts. She has been a lecturer at Stanford University and her research as a member of the New Museum’s NEW INC Creative Science incubator has included collaborations with scientists to explore interspecies entanglements.

Website: laurasplan.com

Lauren Lee McCarthy

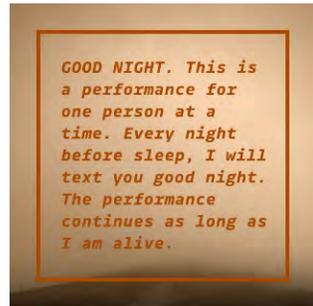
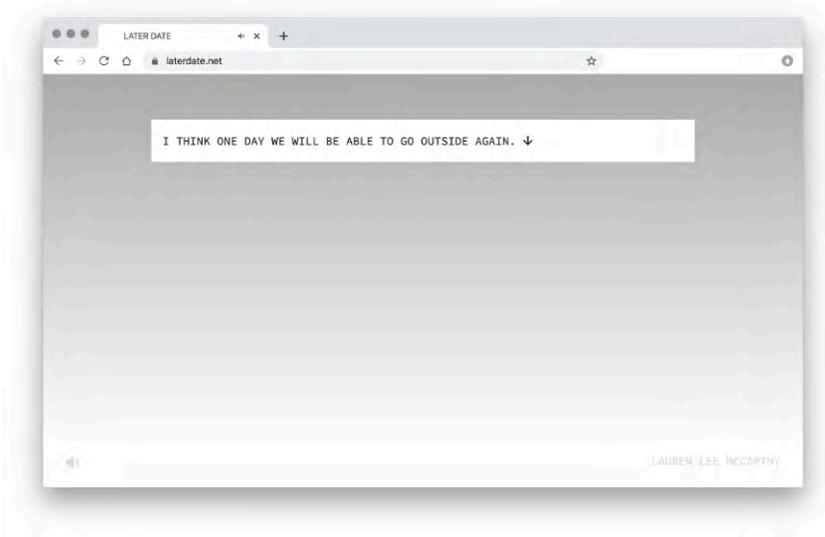
Muted

Keywords: TK, Early-pandemic performance

When the world shut down overnight in March 2020, everything was disrupted and we shifted into emergency response mode that stretched out into years. I processed the time with others through a series of five technologically-mediated performances—Later Date, I heard TALKING IS DANGEROUS, What do you want me to say?, Sleepover, and Good Night. The series of performances reflect on issues of disconnection, danger, communication, presence. They experiment with different forms of liveness that can be accessed under remote circumstances.

Later Date was an early-pandemic performance in which the artist hosted text-based, one-on-one chats with

people to imagine future plans that could only transpire “later.” In *I Heard Talking Is Dangerous*, I showed up to friends’ doorsteps to deliver a monologue via text displayed via phone screen and text-to-speech. Participants were then invited to visit a URL to continue a text-based, in-person conversation about danger, safety, and the uncertain future. In *What do you want me to say?* visitors to the web-based work are asked by a digital clone of my voice, “What do you want me to say?” However they reply, my voice responds by speaking their own words back to them. Then it asks again, “What do you want me to say?” In *Sleepover* I would show up to a friend’s yard with a sleeping bag, text them “hello,” and then spend the night outside their home—without ever coming into physical contact. In NFT artwork *Good Night*, I text “goodnight” to a designated recipient every day before she goes to sleep for as long as she is alive.



Lauren Lee McCarthy is an LA-based artist examining social relationships in the midst of surveillance, automation, and algorithmic living. She is the creator of p5.js, an open source creative coding platform that prioritizes inclusion and access, and a part of the Processing Foundation. She has received grants and residencies from Creative Capital, United States Artists, Sundance New Frontier, Eyebeam, Pioneer Works, Autodesk, and Ars Electronica. Her work *SOMEONE* was awarded the Ars Electronica Golden Nica and the Japan Media Arts Social Impact Award, and her work *LAUREN* was awarded the IDFA DocLab Award for Immersive Non-Fiction. Lauren's work has been exhibited internationally, including the Barbican Centre, Ars Electronica, Fotomuseum Winterthur, Haus der elektronischen Künste, SIGGRAPH, Onassis Cultural Center, IDFA, Science Gallery Dublin, and the Seoul Museum of Art. Lauren is an Associate Professor at UCLA Design Media Arts.

Website: lauren-mccarthy.com

Nikolas Gomes

Concerto para Piano e Pandemia

Keywords: Covid19, Data mining, Sound art, Immersive audio, Social media

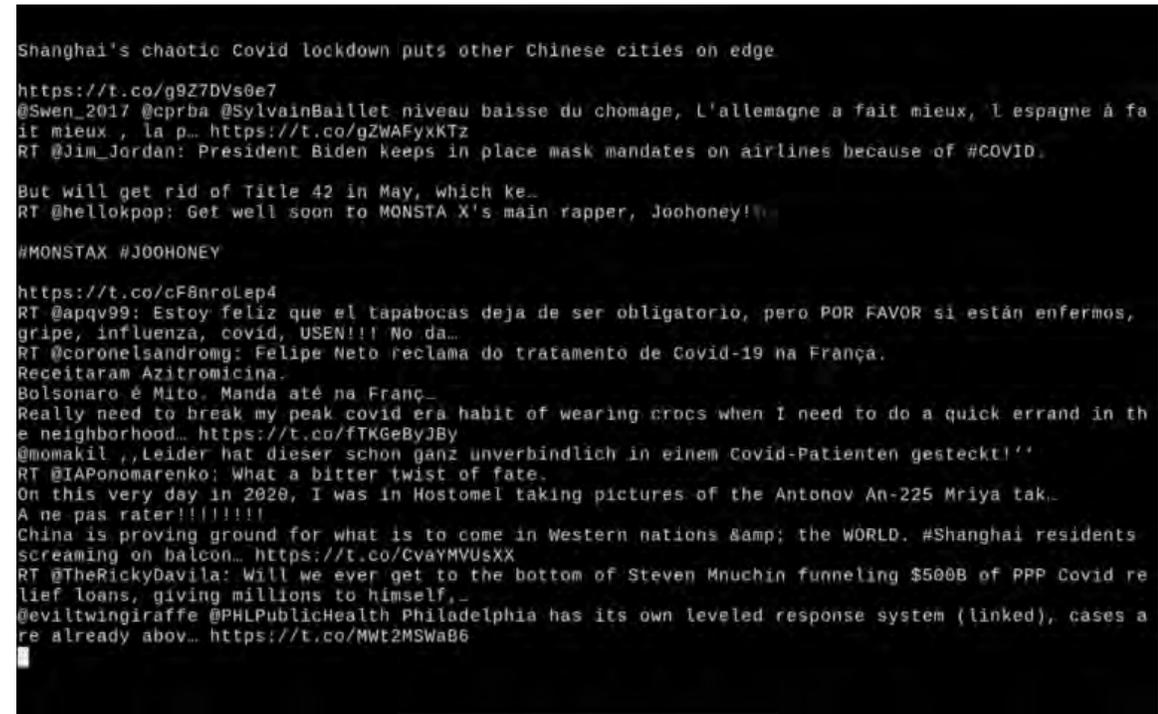
Immersive Sound art installation driven by twitter data mining and data sonification.

Concerto para Piano e Pandemia (Concert for Piano and Pandemic) invites us to feel with our body what the world wide web is feeling right now about the pandemic, whilst reflecting on how the amount of data we are presented with every day affects us. Tweets are captured in real time by a python script that takes their characters and transforms them into musical notes in a piano sound. As the thousands – maybe millions – of tweets reach our ears, they pile up and mix sonically, creating an immersive soundscape that messes up our senses.

In this installation, we can let this algorithmic non-human robot search for

information about Covid-19 across Twitter to help us understand it faster than we could previously. But finding the data is not the only thing that is needed to do. After the use of this search robot, we need to find a way to absorb the content of each tweet that gives us information about the subject; we need to try to understand it. And if the cognitive way is not fast enough, we can try to absorb it with our other senses, like hearing and feel-ing it physically. Our body can then try to understand the speed of incoming information and adjust our brains to it, in an unconscious way of dealing with such a terrifying new disease that affected our entire way of living, spreading fear among families.

As our information distribution channels became and remain congested with the influx of data regarding Covid-19, with this artwork I hope to find and present to the public a new way of absorbing information and knowledge about it, using our senses to feel the data instead of trying to make sense of it rationally.



Nikolas Gomes. Sound artist and musician currently based in Lisbon studying a Masters in Production and Technologies of Sound at Universidade Lusófona de Humanidades e Tecnologias. My work deals mostly with the intersection of musical production and sound art, looking to push the boundaries between these two fields. As a self-taught programmer and DIY enthusiast, I focus my research on the development of interactive audiovisual devices that can present new ways of interacting with sonic materials. Through them, I hope to bring people closer to technology-based artworks.

Websites: nikolasgomes.com.br

Nooroa Tapuni

Waiting for Other

Keywords: Digital interface, Indigenous knowledge, interconnection, gene archaeology internet art

Waiting for Other explores self-portrait as other as in ancestor, through a collection of interrelated GIFs. It sequences body parts in relation to indigenous pacific cosmology to reorientate 'self' and ancestor. It is a cumulative project that builds and expands over time. This exhibition is the inaugurating presentation.

The indigenous cultures of the Pacific believe material and immaterial worlds are connected, wherein the present exists, our past and future. Centred in this multi-layered and multidimensional understanding of the world, genealogy (akapapa, whakapapa) manifests interconnection and continuity through inherent recursive strategies.

Through the lens of gene archaeology (Refiti, 2008), the manifestation of our ancestor is made present through the body. Here the notion of self (I) in the singular is positioned in relation to self as other as in ancestor as in the multiple. That is to say, the notion of self is understood as the binding relation of

one's ancestors through one's gene archaeological matter, manifesting the past in the present.

It is through this understanding of self that the thematic consideration for this work begins. The project explores the extent interconnection and continuity, from an indigenous Pacific lens, can be explored through digital means.

The project has a two-forked approach. The first sequences body parts in relation to indigenous pacific cosmological beginnings. The animated sequence of body parts is a reorientation of 'self' and ancestor. The second looks at the relation between the skin of the body and skin of the digital image. Crucial to this exploration is the notion of tu ke (to stand in difference), as in the negative stereotype applied to black skin, and te'ta'i, (to stand as an(other) as in ancestor). This two-fold approach calls into question what ancestors manifest through the skin of the body and the skin of the digital image, and to what the digital interface surfaces in us.

Reference:

Refiti, A. L. (2008). The forked centre: duality & privacy in polynesian spaces & architecture. *Alternative: An International Journal Of Indigenous Scholarship*, 4(1), 97 - 106.



Nooroa Tapuni is an interdisciplinary artist that seeks to derive a correlation between seemingly disparate knowledge sets to unfold power relations. Their past projects posited an indigenous understanding of interconnection as a cybernetic system, a relationship of communication and control, through interactive digital art practice. It did so as a way to explore the extent that digital material can be the interface for intuitive understanding and indigenous knowledge. Current interests include the ambiguity of communication through transcoding material.

Websites: nooroa.tapuni

Robertina Šebjanič, Sofia Crespo,
and Feileacan McCormick

AquA(i)formings

Interweaving the subaqueous

Keywords: Remote sensing, Aquatic sensing,
Marine ecology, Commoditization of water

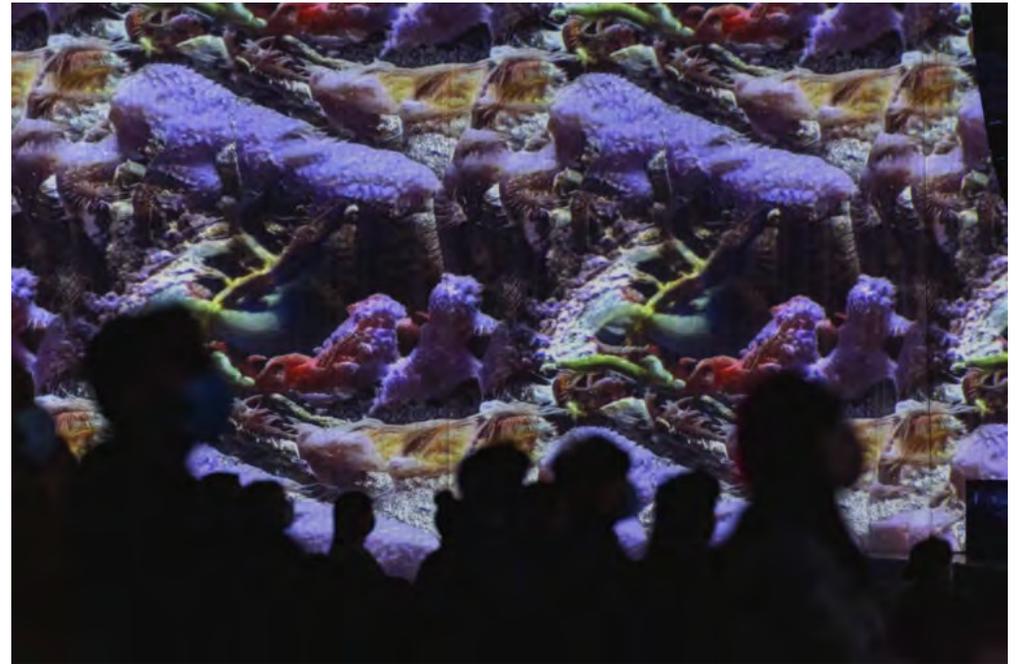
Utilising narrative-poetic, backed by artificial intelligence (AI) technology, AquA(l)formings address the empathetic interspecies development of relationships with more-than-human entities. It explores the changes in the marine environment caused by human presence and tries to imagine how the new conditions (rising sea levels, water temperatures, new chemical composition...) are reflected in its inhabitants.

The *AquA(l)formings* project addresses the possibility of an empathic human relationship to more-than-human entities, drawing on Donna Haraway's notion of "tentacular thinking" as the ability to perceive the world through empathizing with more-than-human entities.

The project explores changes in the marine environment caused by human presence and tries to imagine how the new conditions (rising sea levels and

water temperatures, new chemical composition, etc.) affect its inhabitants. Seas and oceans record such environmental changes as memories, either in individual organisms or as distinct shifts in ecosystem structures. *AquA(l)formings* is a multilayered installation exploring "aquatic sensing." The physical (biomaterial sculpture) and digital (audio, video AI models that interact with sensory data) form a tangible experience of changing conditions in the coastal environments.

The artists trace "threads" of the noble pen shell (*Pinna nobilis*), a marine inhabitant that has always aroused the curiosity of scientists and others involved with the sea, and use it as a visual synonym for the more-than-human entities. Today, however, the noble pen shell has succumbed to disease caused by environmental changes in the Mediterranean. The use of AI technologies helps visualize the past and the future of the noble pen shell, and the vast underwater meadows of the *Posidonia oceanica* seagrass in the northern Adriatic Sea. By presenting its story, the artists help to initiate research to explore the use and improvement of new biological materials that would not threaten the existence or habitat of certain organisms.



Full Credits: Artist: Robertina Šebjanič, Sofia Crespo, Feileacan McCormick / Consultancy: dr.Matjaž Ličer / Mechanical part development: ScenArt, Ljubljana / Special thanks: Alan Ixba, Manja Rogelja & Aquarium Piran, Marko Vivoda, Rok Pahor and Borut Jerman / Production: PiNA, RUK, 2021 / Post Production: Kino Šiška, Zavod Sektor, 2021

Robertina Šebjanič is an artist whose work explores the cultural, geopolitical and ecological realities of aquatic environments and the impact of humanity on other organisms. She tackles the philosophical questions at the intersection of art, technology and science. In her analysis of the Anthropocene and its theoretical framework, the artist uses the terms "aquatocene" and "aquaforming" to refer to the human impact on aquatic environments. Her works received awards and nominations at Prix Ars Electronica, Starts Prize, Falling Walls.

Website: robertina.net

Sofia Crespo (Entangled Others) is an artist with a focus on artificial life, her practice is driven by a huge interest in biologically-inspired technologies, such as neural networks. Her main focus is the way organic life uses artificial mechanisms to simulate itself and evolve. Her work has been exhibited and has won several awards.

Website: sofiacrespo.com

Feileacan McCormick (Entangled Others) is a generative artist, researcher & former architect. His practice focuses on ecology, nature & generative arts, with a focus on giving non-human new forms of presence & life in the digital space.

Website: entangledothers.studio

Roderick Coover, Nick Montfort,
and Adam Vidiksis

It Will Happen Here, in Barcelona

Keywords: Algorithmic, Generative, Climate Change,
Nonhuman, Installation.

Through a spectacular confluence of algorithmic cinema, generative writing and electronic sound, It will happen here, in Barcelona builds sentience and recognition of the impacts of rising waters on language, self and the senses of place.

Tindrà lloc aquí a Barcelona (It Will Happen here in Barcelona) is an immersive experience that reframes questions of sea-level rise, migration and extinction, in which familiar places -- and the memories and dreams that attend them -- are transformed by rising waters; the work gives rise to acts of recognition, utterance and transformation. Viewers travel along the marshlands and industrial wastelands of our local watershed and others worldwide that are shaped by industrialization. The sounds, images and text flow like waters, following a computer-code based system that gathers materials together in ever-changing experiences. Like ocean tides, the code-driven work is always changing. Roderick Coover's images, gathered over the past decade from journeys on and around shorelines, combine with field

recordings, voices and electronic music composed by Adam Vidiksis. Nick Montfort draws from Coover's logs to create a continually evolving, poetic text. The remarkable spectacle reveals forces of flow, floods and chemical contamination. Visitors plunge into the imaginaries of times present and future in a work that attempts to put into words the unspeakable threats posed to existence, time and belonging. Disruptions of language, spatial disorientation and fragmented media propel users to refigure history and give utterance to current crises. Written observations and images filmed at local industrial, post-industrial and natural sites are entered into the system to merge like images of other shores to intermingle histories, conditions and consequences as well as suggesting local differences. The music and sound design accentuate the collision of natural and industrial rhythms and the power of irrational forces, evoking imagined futures through dream-like sequences and by moving between surface and submerged realities and sentience. By compressing and distorting the scales of time that normally confound human imagination and undermine human action, the work opens possibilities for recognition, utterance, connection and action.



Roderick Coover uses emerging forms to tackle questions of global warming, human rights, memory and the Anthropocene. The recipient of major awards from Fulbright, Mellon, Whiting, Adam Mickiewicz, APS, CHS and LEF, his works feature both in arts venues and public spaces from the Venice Biennale to the Bibliotheque Nationale de France. Recent installations include The Floods (large-scale generative projection), Water On The Pier (locative, generative), The Key To Time (fulldome), Hearts and Minds: The Interrogations Project (VR/CAVE) and Toxi•City: A Climate Change Narrative (combinatory). Coover is Professor of Film & Media Arts at Temple University and lives in the USA and France.

Website: unknownterritories.org

Adam Vidiksis is a musician who explores social structures, science, and the intersection of humankind with the machines we build. Vidiksis's music has won numerous awards and grants, including recognition from the Society of Composers, Inc., the American Composers Forum, New Music USA, National Endowment for the Arts, Chamber Music America, and ASCAP. His works are available through HoneyRock, EMPIRE, New Focus, PARMA, and SEAMUS Records. Vidiksis is Assistant Professor of music technology at Temple University, and president SPLICE Music. He performs in SPLICE Ensemble, Transonic Orchestra, Ensemble N_JP, and directs the Temple Composers Orchestra and BEEP.

Website: vidiksis.com

Nick Montfort's computer-generated books of poetry include #!, Autopia, The Truelist, and Hard West Turn. He has collaborated on digital projects The Deletionist, Sea and Spar Between, and Renderings. Six of his books, collaborative and individual, have been published by the MIT Press, including The Future, Twisty Little Passages: An Approach to Interactive Fiction and The New Media Reader. He is Professor of Digital Media at MIT, where he directs The Trope Tank, Professor II at the University of Bergen and a teacher at the School for Poetic Computation. Montfort lives in New York City.

Website: nickm.com

Rosell Messeguer

Quadra Minerale Rare Earths

Keywords: Vademécum, Periodic table of the elements, Extraction and use of minerals, Tecnology enviroment

On the basis of the war, deeply linked to mineral colonization, Rare Earth Elements, has sought to expand the geopolitical reading on the subject and the problems derived from it - technology, economy and society - from a publication, an installation of the creative process, a pictorial polyptych and various works in drawing, printmaking, video and photography.

- In 2010, the press began to talk about the so-called "war of the rare earths".
- Rare Earths and lanthanides, have been extracted from the end of the 19th century.
- They belong to a large group of the periodic table of elements, which celebrates 150 years of history in 2019.
- In the 1960's, they started being used for high technology China, United States, India and Brazil, are major producers of rare earths.
- China is now a key country in the production of the Rare Earths and its

tight control has generated profound disagreements and conflicts - affection and disaffection - worldwide.

The development of the proposal concludes in the *Vademécum: Quadra Minerale*. Rare earths, other minerals and mining concepts. An approach to the elements and their technological uses in contemporaneity.

- Delves into the contemporary processes of technological production, regarding affection and disaffection they generate Makes visible the economic, political and military problems of the elements of the table and concepts derived from it.
- Historically focuses on past processes as conclusions of the present: colonization, post-colonization, decolonization.
- Makes these problems visible from the field of visual arts at a theoretical-practical level;each element is related to objects from my studio, works by other artists and myself.
- Builds international relations between Latin America, Europe, USA, Russia, the Asia-Pacific axis and some countries in the Middle East.



Rosell Messeguer. Visual artist and PhD in Fine Arts from the Complutense University of Madrid, where she is currently a master and undergraduate professor. Since 2005 she has been developing her professional activity between Europe and Latin America through collaborations with museums, galleries and universities. She has been awarded a scholarship by the Spanish Academy in Rome, the Botín Scholarship or the Fundació Miró Mallorca. She has been invited and has received commissions from institutions such as the Ministry of Culture and Sports, Spain; AC / E, Cultural Action Spain; Spanish Agency for International Development Cooperation (AECID); Manifesta, International Foundation Manifesta (IFM), The Netherlands (2010-2011), Plat (t) Form, Winthertur, Zurich; Ministry of Cultures, Arts and Heritage, Chile; or the ArtCenter / South Florida, Miami. Her work is present in collections such as that of the C.A.2M. Dos de Mayo Art Center Madrid; AENA Foundation; Royal Academy of Spain in Rome; UNICAJA or the IVAM, Valencia as well as in private collections in the United States (Board Whitney Museum, New York), Latin America (MAC Museo de Arte Contemporáneo de Santiago de Chile) and Spain (Seguros DKV).

Website: rosellmesseguer.com

Sara Dean, Beth Ferguson
and Marina Monsonís

Tools for a Warming Planet

Keywords: Climate, Tools, Environment, Ecology, Urgence

Tools for a Warming Planet is a collection of current and speculative tools for adapting to a changing world. New tools are needed for understanding, responding, communicating, building, and living together through climate chaos. This crowd-sourced collection represents exciting potentials for new futures from designers, artists, activists, and scientists worldwide.

We live on a planet in flux--with warming waters and land, chaotic weather, and unknown futures. Our adaptability and ingenuity are crucial to our survival, and our planet's. In response to this condition, we are exploring new tools for understanding, engaging, and responding to our current and future environment. Bringing together artists, designers, scientists, and activists, this crowd-sourced piece focuses on 'tools', as a call for action, access, and collective engagement. New tools are needed to

build more adaptable, resilient communities, as well as to imagine new ways of living on a fragile planet.

Tools for a Warming Planet is focused on the idea of tools--tools of collection, translation, engagement, connection, and care--which directly speaks to a time of climatic flux. Through display of physical and digital objects, as well as narratives on the use of these tools from the participating artists, the installation is a living archived of methods for working and living together. The project will develop over the course of the exhibit, allowing attendees and the larger global community to contribute tools to grow the collection.

The term 'tool' is used to focus on action: from hand craft, to care and repair, to data mapping, to digital filters, to community engagement. New tools posited across the works represent new possibilities of working and open up a conversation about our role as cultural and social activators. *Tools for a Warming Planet* brings together global voices into a visual



dialog across languages and cultures that all must adapt to a changing climate on planet Earth. These global perspectives will allow for both localized perspectives and universal experiences, advancing a collective conversation with endless possibilities.

Website: warmingplanet.org

This piece is the collective work of Sara Dean, Beth Ferguson, and Marina Monsonís. They are all artists and designers working on community and climate knowledge sharing, through local food networks, energy and transportation sources, and urban tools for climate change. Sara and Beth are both based in California. Marina is a local artist in Barcelona. They come together for this piece through their conviction that both social engagement and adaptive technologies are equally needed to create livable, sustainable, and adaptable ways of living and mutual care.

Sara Dean is an architect and designer in California. Her work investigates opportunities of digital technologies to engage cities towards greater equity and adaptability, under the dual threat of the Anthropocene and capitalism. This includes works responding to climate disaster, digital activism, mapping, and the future of our cities. She is an advocate for open-source systems of knowledge.

Beth Ferguson is an ecological designer and educator in California who blends industrial design with sustainable transportation, solar engineering, climate resiliency, and public engagement. She is the director of Adapting City Lab at UC Davis, which investigates new potentials of solar charging, urban transportation planning, and forms of micro-mobility in global cities.

Marina Monsonís is a visual artist who works with hybrid processes of micro-social transformation rooted in territories, collectives, and communities with a focus on marine science, place-based design, gastronomy, graffiti, radical geography, critical ethnography, and oral histories. She is the director of the Barcelona Museum of Contemporary Art Kitchen Lab and based in Barcelona, España.

S4RA / Sandra Araùjo

privacy-GrDN.info

Keywords: Data, AI, Surveillance

Hybrid emulation that deals with prediction & feeds on its own coding as the backbone structure of a semiotic < container > /.

By placing automation within this simulated idle garden it arises the complexity of what being human is in this electronic age. Learning, leisure and work share the same interchangeable framework in this post-truth dynamic where operations are engineered in an ambiguous way to praise & glorify the strenuous path of contemporary labour system.

Hybrid emulation that deals with prediction & feeds on its own coding as the backbone structure of a semiotic < container >.

S4RA is a non-binary && genderqueer digital artist that spent endless hours fighting monsters & strolling through mazes. so, it only felt natural 2 evolve through an experimental & explorative process of gaming visual culture & popular gif files. also feeds on social media platforms 2 engage animations into the depths of gender role play & political plots. still plays old school video games.

Website: s-ara.net



Weidi Zhang

Repository

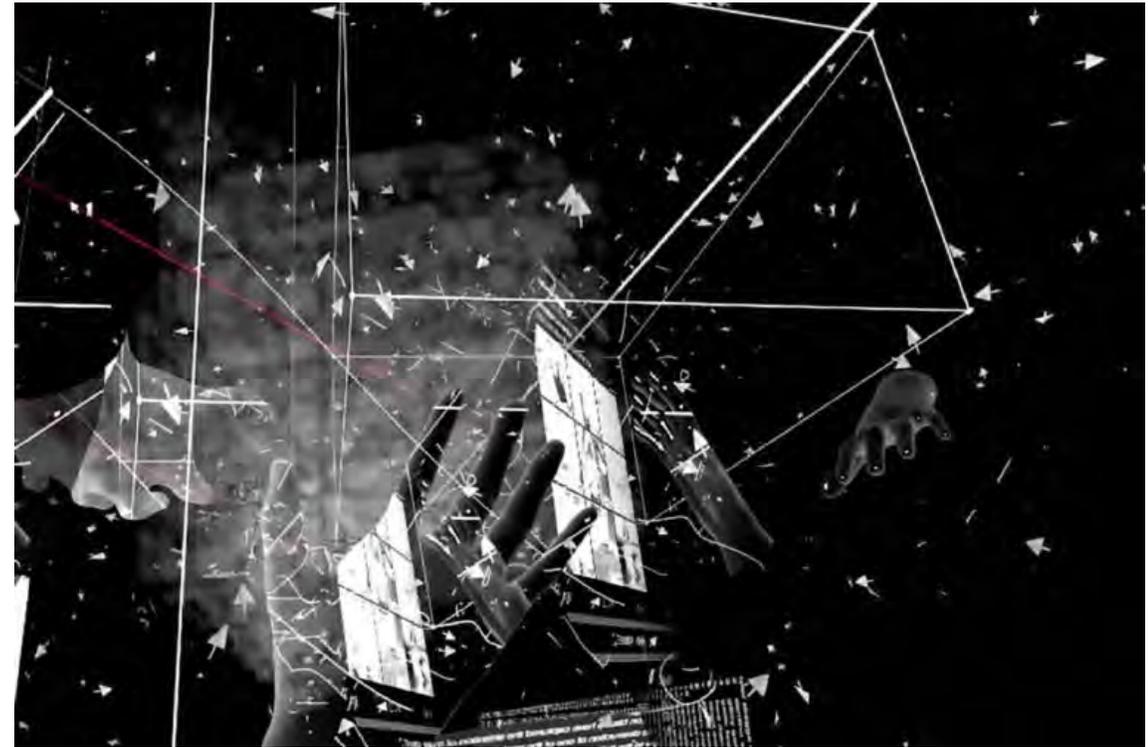
Keywords: Virtual reality, Art, Data visualization

Repository is a VR experience raises the questions of data authorship and data oblivion. It builds a world of Twitter posts in motion merging the structure of a server farm with a paper shredder, where the collective memories are deconstructed into floating letters and characters to compose an evolving narrative.

Our digital footprints in the vast data universe are duplicatable, transferrable and mutable. Deletion has become much harder than throwing a piece of paper into a shredder, which was first invented over a hundred years ago. Photos, videos, geographical tag or just simple texts living on social media platforms as the virtual presence of digitized human memories strengthen the power of machine computation and analysis while underlying the control from us.

When we try to preserve or delete our own stories in the digital landscape, do we still have the authorship of them? Are they in a constant shift of meaning and representation?

Repository is a virtual reality experience created around the issue and question of data authorship and data oblivion. It builds a world of data in motion merging the structure of a server farm (A place physically stores data) with a paper shredder (A machine deconstructing data). Repository gradually transforms from a surreal bank safely stores memories into a space filled with floating shreds of letters and characters through assembling and fragmenting various conversations borrowed from Twitter posts in 2019. Its non-linear narrativity, interactive experimental sound, and surreal aesthetic provide a conceptualization of an alternative model of human-machine interaction, and question whether we have the right to be forgotten, at the same time as the right to be remembered?



Weidi Zhang is an LA-based new media artist and researcher. Her current research and media art practices investigate A Speculative Assemblage - interactive image-data-based visualization of a human-machine reality in the context of data visualization, responsive Intelligence system design, and immersive media. Her works are featured at international venues, such as the SIGGRAPH Art Gallery Best In Show, ISEA, Times Art Museum (CN), Japan Media Arts Festival, Lumen Prize (UK), SIGGRAPH ASIA, IEEE VISAP, Planetarium 1 (RUS), Zeiss-Planetarium (GE), Society For Arts and Technology (CAN), and others. Currently, she is a Ph.D. candidate in the Media Arts and Technology Program and a graduate researcher in Experimental Visualization Lab. She lectures at UC Santa Barbara and The Ohio State University. She holds her MFA degree in Art + Technology at the California Institute of the Arts and a BFA degree in Photo/Media at the University of Washington, Seattle.

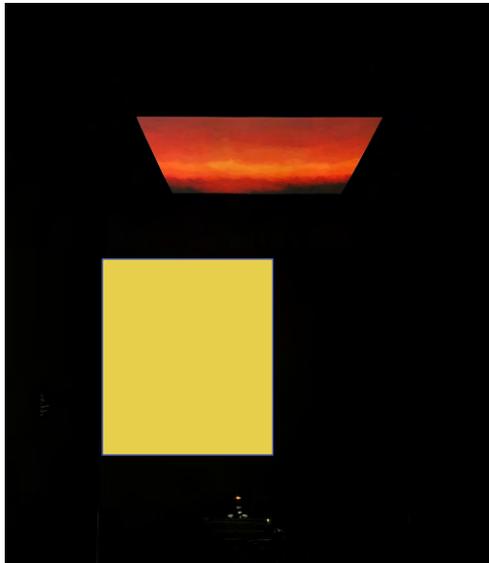
Website: zhangweidi.com

Xuanyang Huang

Imaginary Sunset

Keywords: Machine learning, memory, pandemic, moving images

This is a series of animated images presented by a machine learning model based on a dataset that the artist collected sunset photographs taken by people worldwide during the pandemic



Imaginary Sunset is an AI-generated video that investigates how technology interprets collective memory experience. The machine learning model generates a set of fictional landscape pictures using a custom dataset of sunset photographs taken by individuals around the globe on social media platforms in 2020. It attempts to transform the real, existing collective memory photographs into fictional images.

It explored how artificial intelligence is being used to interrogate the duality between reality and fake and is supposed to recreate memories about the pandemic lockdown from a machinery perspective. The sunset landscape is a typical and commonplace photographic subject. Even so, in the midst of the worldwide pandemic, it takes on a significance that cuts over cultural and political boundaries, as though as a symbol of humanity observing the times.



Xuanyang Huang is a media artist, researcher and educator based in Guangzhou, China. Ranging from computer graphics, digital photography, generative art and performance, his art practices explore the artistic potential of artificial intelligence, especially in association with memory, and the hybrid forms and narrative in computational audio-visual art.

Huang's artworks have been showcased and exhibited in New York, Zurich, Hong Kong, Shanghai and other countries and regions. He is a lecturer and thesis supervisor at Roy Ascott Technoetic Art Studio, Shanghai Institute of Visual Arts. He received MA and MFA from the School of Creative Media, City University of Hong Kong, and later was a resident at the Transcultural Collaboration programme at Zurich University of Arts (ZHdK).

Website: nolanh.net



RECINTE MODERNISTA
DE SANT PAU,
BARCELONA

Exhibition POSSIBLES

The exhibition ISEA2022 Barcelona - POSSIBLES hosted at the Recinte Modernista de Sant Pau, where five works presented at the call of ISEA2022 Barcelona, 17 works from the NEWART { collection;} and six works selected by Nioo.art generate an exhibition rich in aleatory discourses, allowing us to enter into a future, possible or impossible, by the hand of visionary artists and, as such, timeless.



Artworks

Artworks from ISEA2022 Barcelona's Open Call

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**Generative Quantum Ballet 21
Video Excerpt**
Antoine Schmitt

Le monde en lui-même
Video by Jeppe Lange
Music & sound design by Simon Brinck

Ignis II
Diane Drubay

Oh Deer!
Frederik de Wilde

Floralia
Sabrina Ratté
Images and soundtrack composition: Sabrina Ratté
Sound design and mix by: Andrea-Jane Cornell

Karst
Snow Yunxue Fu

Monika Fleischmann and Wolfgang Strauss

Liquid Views the Virtual Mirror of Narcissus

Keywords: Algorithm, Mirror, Selfie, Simulation, Water

Liquid Views simulates a virtual water surface in which the viewer's image is reflected. The image dissolves as soon as the screen is touched. In this way, the integrity of the reflection is disrupted. Liquid Views anticipates the selfie moment from Greek Narcissus mythology, in which the image and the self are

In *Liquid Views* (1992), the audience participates in a Narcissus experience. A touch screen with a mini camera simulates a water surface with sounds and reflects the image of the approaching viewer. Once the viewer touches the screen, the artificial water waves are amplified, and the viewer's reflection dissolves. When the viewer stops touching the surface, the water becomes tranquil again and the reflection reappears. The unpredictability of the artificial wave algorithm in *Liquid Views* symbolizes the Internet. Whoever touches the water leaves traces that can be traced back. People are seen by others without realizing it. The mirrored face of the participant is shown on a large projection, turning the introverted gaze into a public spectacle. The interacting person looks up and perceives him or

herself from a different perspective, as if from the outside. In Lewis Carroll's *Through the Looking-Glass* (1871), Alice steps through a mirror into a world of dreams. Orpheus also passes through a mirror in Jean Cocteau's film *Orphée* (1949). Beyond the mirror lies the world of the dead, where time stands still. *Liquid Views* connects the real world with the virtual world, as an interplay of image within image. In each of the more than 30 countries where *Liquid Views* was exhibited, cultural differences were noticed in the way visitors interacted with the installation. In Mexico, reverently; in the U.S., playfully; in Madrid, many couples kissed in front of the water mirror; in Paris, some men didn't think they were beautiful enough to see themselves. In Japan, people compared the Narcissus mythology to the story of the little sun Amaterasu. Since 2007, everyone has been pulling out their smartphone and taking pictures of themselves at every opportunity to capture the moment. Today, the situation is no longer observed and reflected upon as it was back then. Now the moment is captured for one's social media archive. Reflection is postponed until later. *Liquid Views* 30 years ago was a home-built, high-resolution multi-touch monitor with an integrated mini camera. Today, it's an always-available online web version on a smartphone (2022).



With support of the Center for Art and Media | ZKM

Monika Fleischmann and **Wolfgang Strauss** are pioneers of media art and virtual reality. In 1987, they were co-founders of ART + COM in Berlin (The Billion Dollar Code). In 1996 they founded the MARS – Exploratory Media Lab (Media Arts Research Studies), and in 2005 the eCulture Factory at the Fraunhofer Research Association. Their awards include patents, the Ars Electronica Golden Nica (1992) and the SIGGRAPH Lifetime Achievement Award in Digital Art (2018).

Early work includes “Berlin-Cyber City” (1989), in which Fleischmann and Strauss memorialize aspects of Berlin’s history while imagining the city’s possible futures, following the fall of the Berlin Wall. A subsequent cartographically informed project “Semantic Map” (2001-04) traces neural networks, foretelling a method of data analysis now standard in artificial intelligence. In “Home of the Brain” (1989-1991), participants are introduced to virtual reality, while the iconic “Liquid Views” (1992) anticipates the selfie moment.

Website: fleischmann-strauss.de

Linda Dement, Paul Brown and Carmine Gentile

Last Breaths

Keywords: Generative, 3D Bioprint, Cardiac spheroids, Heart failure, Live sculpture

Artist George Schwarz's last breaths were recorded, transmuted and translated into 3D form. From this we bioprinted a tiny sculpture of live, beating cardiac cells – new life forming from the shape of cardiac failure.

In 2021 the artists collaborated with Dr. Carmine Gentile and his Cardiovascular Regeneration Group, School of Bioengineering, University of Technology Sydney.

Cardiovascular disease, including myocardial infarction and heart failure, is the leading cause of death worldwide. Dr Gentile's multidisciplinary team has created a novel way to 3D bioprint heart tissues using patients' own cells to repair heart damage and regain cardiac muscle function. Cells isolated from skin or blood are used to generate stem cells and then transformed into heart cells. Using state-of-the-art facilities, Dr Gentile has developed a new way to form 'cardiac spheroids'—clusters of cardiac cells –

which contract or beat synchronously to produce patches for damaged hearts.

In May 2021, artist George Schwarz died from cardiac failure and Linda recorded his last breaths. Audio values were retrieved to generate sequential images of 2D geometry. We imported these images into 3D Slicer (software normally used to create 3D models from MRI or CT scans) as if we had run an MRI scan on sound rather than a body.

We printed models first in hydrogel to discover shape, consistency, size, and then with live cardiac spheroids, on a LumenX bioprinter which uses crossbeams of light to harden light sensitive gel, printing upwards in 100 micron layers, substance emerging from liquid under violet light.

Through this project, human cardiac failure, expelled as breath and recorded as sound, is transfigured to 3D form as terra-firma for growth of human yet inhuman life. The work traverses terrains of life and death, bodies and technologies, human and inhuman, the strained edges of wounded hearts and the stretching extremities of bio-technical possibility.



This project is supported by the Australian Network for Art and Technology (ANAT) via its Synapse program, and the NSW Government through Create NSW; and by the Cardiovascular Regeneration Group, University of Technology Sydney.

Linda Dement has worked in arts computing since the late 1980s, at the intersections of bodies and technologies, code and flesh, dramas of the corporeal and programmed non-human activity. Her work has been widely exhibited internationally and locally, including at the ICA London, Ars Electronica, ISEA.

Dr Paul Brown is a scientist, writer, artist, and creative producer. For over thirty years he has integrated multi-arts practice, filmmaking and community engagement with university research and teaching – across humanities, environment, science and community development fields, specialising in projects that link arts, science, and environment.

Dr Carmine Gentile is a Lecturer within the School of Biomedical Engineering UTS and leads the Cardiovascular Regeneration Group both at UTS and at the Kolling Institute/University of Sydney. He is a Senior Lecturer (Honorary) at the University of Sydney, a Sydney Medical School Foundation Fellow and Visiting Research Fellow at Harvard Medical School.

Website: heartproject2021.blog.anat.org.au/



Thierry Fournier

Sightseeing

Keywords: Sightseeing, Generative installation, Live CCTV camera

Online installation: live CCTV camera, sound file (mp3, 9'47", loop), HTML page, 2018-2022

French title: Penser voir

A CCTV camera is filming a beach and we hear its voice, as if it were alive and thinking out loud. But the perfection of her intelligence has led it to doubt and burnout, and to not know what to do anymore: What is this? What should she look at? What is a suspicious behaviour? But above all, what is the point of all this? It compares itself to the click workers who feed artificial intelligences, questioning the meaning of its work with an anthropomorphism that raises its political stakes.

Sightseeing (Penser voir) was initially created in 2018 at the invitation of Pierre Beloüin and the Acoustic Cameras project, which invites artists and composers to annex the real time streams of webcams located in different places around the world:
www.acousticcameras.org

"With Sightseeing / Penser voir by Thierry Fournier, we quickly understand that we are not confronted with a real AI, but with an artifice, yet

we fully adhere to the fiction of this awareness of an entity. Far from breaking our suspension of disbelief, the sound loop that reveals the deception, accentuates on the contrary our empathetic relationship to the AI that "goes off the rails". It is literally in a loop on its machine condition, and thus on its condition of being (or rather of not being) in the world. While the landscape changes, it doesn't come out of it, it can't cope with it. Thus the sound loop is diegetized, appearing as a consequence of this state of burnout described by the artist.

Paradoxically, it is because it is highly efficient that this AI starts to doubt and to malfunction. The machine's dysfunction thus becomes a metaphor for the dysfunction of a whole world that should be questioned. For how can one continue in such a world? "Fuck. I can't make it," the AI repeats tirelessly, while echoing the invisible click workers, the majority of whom are underpaid, who have contributed to shaping it by feeding it. By worrying about its usefulness, it also challenges the injunction to perform, characteristic of our society, which seems to consider man only in terms of becoming a machine. Thus, the fictional narrative deployed by Sightseeing around these issues of knowledge and doubt, performance and failure, meaning and non-sense, appears to be not only philosophical but also eminently political."

Claire Châtelet, lecturer and researcher, University of Montpellier 3 (France), Les fictions de la machine sensible : l'œil, le faillible et la pensée [The fictions of the sensitive machine: the eye, the fallible and the thought], May 2021



Thierry Fournier is a French visual artist, researcher, author and curator, living and working in Paris area. He is an architect and composer by training (a graduate of the École nationale supérieure d'Architecture de Lyon). His practice mainly deals with the relations between human, living and technologies: installations, objects, works on internet, videos, drawings, performances... His curatorial approach transposes these issues into the collective field, exploring in particular the modes of coexistence of works.

Recent solo shows include: University of Montpellier III 2020, L'Art dans les Chapelles 2020, CAPA Aubervilliers 2018, Villa Henry Nice 2018, Musée d'art et d'histoire de Saint-Denis 2017, Lux Scène nationale de Valence 2015.

Curating: Château de Goutelas 2022, Mécènes du sud Montpellier 2020, Tokyo French Institute 2019, Cité Internationale des Arts, Paris 2018, La Terrasse Nanterre, 2016, La Panacée Montpellier 2015 and 2014, Château Royal de Collioure 2014, Zinc / Friche Belle de Mai, Marseille 2013, Fort Lagarde 2012, Centre Pompidou 2011.

Recent group shows : Supplementary Elements University of Strasbourg 2022, Turbulence Marseille 2022, Feral File 2021, Mondes Possibles Merignac 2021, Chroniques Aix-en-Provence 2020, Depo Gallery Istanbul 2019, Le Fresnoy National Studio of Contemporary Arts, Tourgoing 2018, Valérie Delaunay gallery Paris 2018, Variation Art Fair Paris 2017 and 2018, Thessaloniki Biennale 2017, ZKM Karlsruhe, 2013 and 2017 to 2019, Saarländisches Künstlerhaus Saarbrück, Germany 2016, Ars Santa Monica Barcelona 2016, New Cinema Festival Montréal 2015 and 2013, Renaissance and Fantastic Lille, 2015 and 2013, Tokyo and Kyoto French Institutes, 2014, etc.

Thierry Fournier is also head of the contemporary art workshop The Exercice of the Gaze at Sciences Po Paris. He was head of two research units from 2010 to 2020 : Displays at Ensad / EnsadLab (Paris) and Collection Artem at Ensa Nancy, both dedicated to the contemporary stakes and forms of contemporary art exhibitions. He was a guest artist-professor at Le Fresnoy, Studio national des arts contemporains in 2017-2018.

He is also co-head and artistic director of antiAtlas Journal, a free online art-science journal dedicated to the contemporary stakes and forms of borders

Website:thierryfournier.net

Paul Thomas

Quantum Chaos

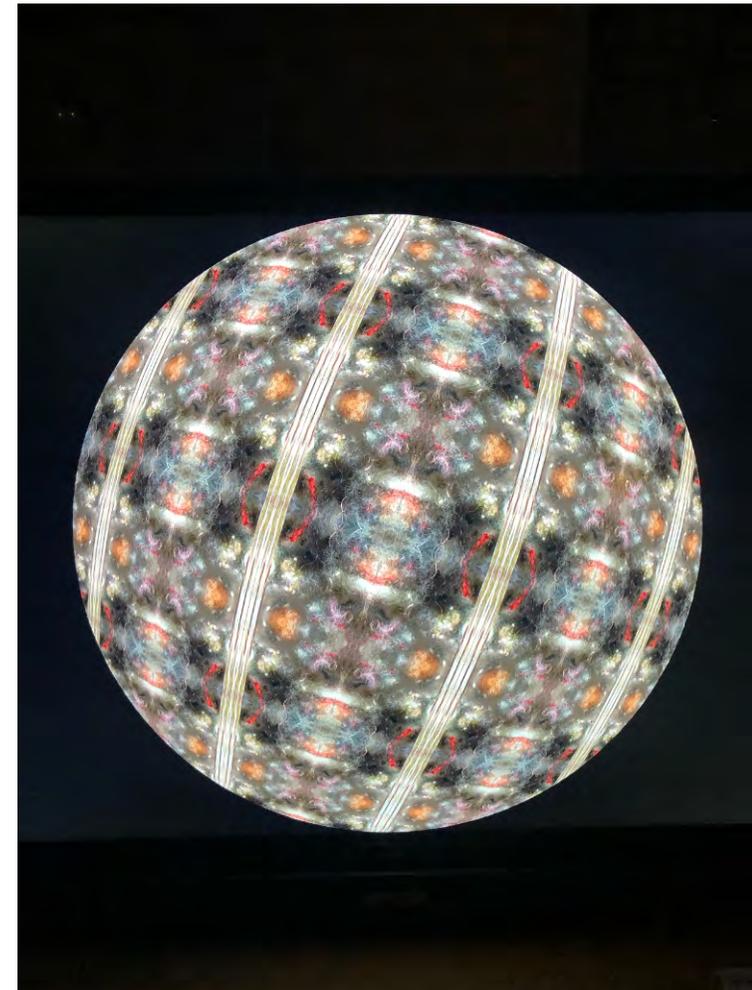
Keywords: Generative, Art, Physics, Quantum, Chaos, Uncertainty

Quantum Chaos' is a visualisation of the shift in our cultural understanding of what exists in terms of the difference between the classical and the quantum world of uncertainty. Thomas's experimental artworks explore the liminal space as a conceptual and contextual location, a permeable membrane, paradoxically existing between classical and quantum.

The Quantum Chaos artwork transcends the scientist's diagrams and analogies to reflect an internalised view, a visualisation, a sensation happening faster than thought at infinite speed. An electron is seen as being analogous to the movement of a spinning top. When a spinning top goes out of its spin cycle, it falls into chaos in the same way an electron in a quantum position is governed by its spin. The series draws from the analogy of the axis of a spinning top that creates a cloud of points that disappear and reappear based on the probability data from Professor Andrea Morello's lab at University of New South Wales, developed by PhD students Serwan Asaad and Vincent Mourik. In Thomas's digital artwork, a sorting

algorithm developed in collaboration with artist Jan Andruszkiewicz in 2019, utilises speculative quantum data to transform a photographic image. In the artwork, data affects the materiality of photographic images of felt fibres, referencing Gilles Deleuze's and Felix Guattari's concept of smooth and striated space. The smooth space of felt is not woven, knitted, knotted, intertwined or laced. It is not a striated space. The felt fibres have their own integrity; its tensile strength is born of chaos.

This fibrous character becomes reconfigured by the speculative quantum chaos data using a sorting algorithm to reposition every pixel in the photograph of felt fibres. The program when executed randomly selects one of ten images and Husimi quasi-probability distribution data text file from 223,966 samples transforming by rearranging in real-time the digital photographic images fibrous character of felt. An accretion of animated motion evolves over time as the fibrous image is sorted from its classical chaos to one born out of quantum chaos. Each sort of the data weaves a series of linear transformations of the felt fibres to reveal new patterns that correspond to a probability of meaning: chaos begetting chaos as an ongoing, entangled real-time process visualising a liminal space between worlds.



Paul Thomas is Honorary Professor at UNSW Art and Design and currently the Director of the Studio for Transdisciplinary Art Research (STAR) as well as the founder and series-chair of the Transdisciplinary Imaging Conference series 2010-2022. In 2000 he instigated and was the founding Director of the Biennale of Electronic Arts Perth 2002, 2004 and 2007. As an artist he is a pioneer of transdisciplinary art practice. His practice led research takes not only inspiration from nanoscience and quantum theory, but actually operates there. His current publication *Quantum Art and Uncertainty* (October 2018) is based on the concept that at the core of both art and science we find the twin forces of probability and uncertainty.

Thomas's internationally exhibited research projects have been based on working with scientist's inquiring in specific areas of physics. The current creative practice 'Quantum Chaos' artworks are based on experiments done in collaboration with the, Centre for Quantum Computation and Communication Technology, UNSW.

Website: visiblespace.com

Keith Armstrong

Common Thread

Keywords: Algorithm, Art & Science, Ecological art, Point cloud art, Sustainability, media art

Common Thread presents slow, mysterious journeys through landscapes comprised entirely from silver-grey dots; with layered, indistinct 3D forms enigmatically appearing and disappearing - intimating an extraordinary complexity. The work reflects upon how might we re-imagine conceptions of colonised landscapes in ways that could motivate settler cultures to respect their infinite complexities.

The animation *Common Thread* presents slow, mysterious journeys through layered, forested landscapes, imaged solely by silver-grey dots; whilst effected sounds of those forests commingle with the distant voices of a myriad species, collectively evoking richly mysterious, unknowable and extraordinary complexities.

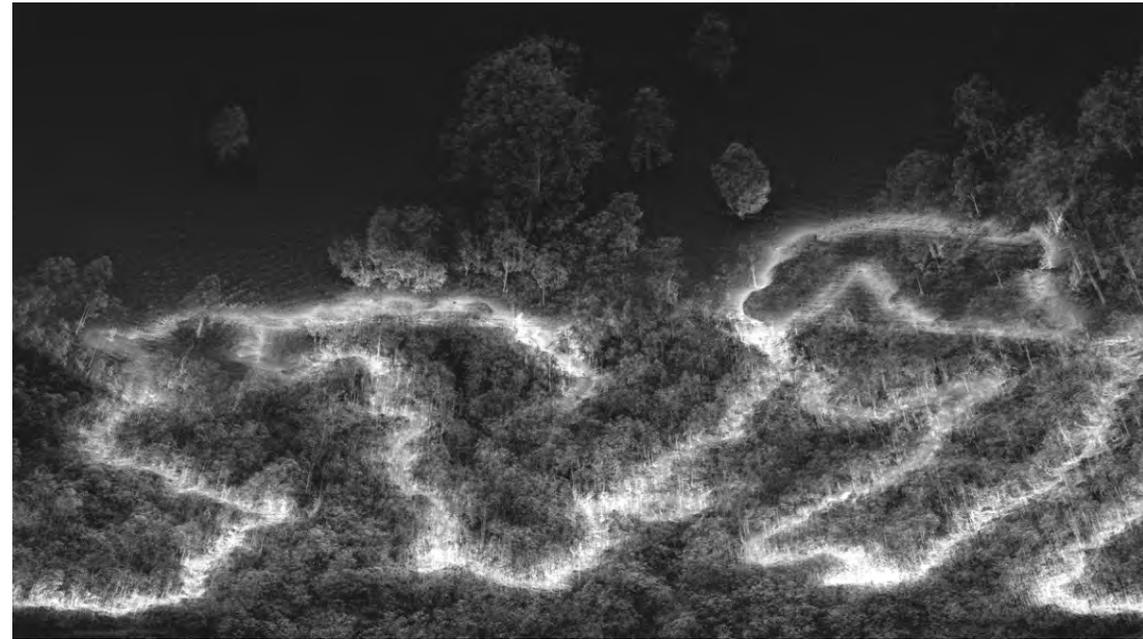
The work arose from my ongoing residency at Samford Ecological Research Facility in Queensland, Australia – a place protecting a remnant block of forest isolated within a patchwork quilt of surrounding farmed land, typifying the perilously fragmented,

disconnected state of Australia's habitats. It is a place active with scientific research of all kinds, much of which aims for better ecological futures – by seeking to predict more 'efficient' forms of conservation and production.

Common Thread, is based upon 3D-laser scanned 'Point Cloud' imagery of walks through that forest, using a technology that at first glance might appear to capture its complexity. But 'Nature_Cultures' cannot be captured by digital scans. Almost everything becomes lost in such digital translations – 'ultra-accurate' representations that are in reality devoid of the spirit and meaning of place.

Australia: unceded lands of the oldest continuous culture on earth - a culture in which everyone has personal responsibility to everything - where everyone knows their relationship to trees, rocks, sky, people, animals, plants, water. How little of this its recent settlers understand - about how to live well within such complexity. And so, Australia's (stolen) lands have been routinely devastated.

My on-site research examined the cultural meanings of such conservation reserves within rapidly urbanising landscapes, asking - how might we imagine and seek to represent the very different futures we now need to develop together. How might we rebuild our conceptions of Australia's places to be consultative, infinitely better informed, and with the capacity to profoundly connect settler culture to Country.



Digital dataset compiled by Dr. Dmitry Bratanov

Keith Armstrong is an experimental artist profoundly motivated by issues of social and ecological justice. His engaged, participative practices provoke audiences to comprehend, envisage and imagine collective pathways towards sustainable futures. He has specialised for over twenty-three years in collaborative, experimental practices with emphasis upon innovative performance forms, site-specific electronic arts, networked interactive installations, alternative interfaces, art-science collaborations and socially and ecologically engaged practices.

Keith's research asks how insights drawn from scientific and philosophical ecologies can help us to better invent and direct experimental art forms, in the understanding that art practitioners are powerful change agents, provocateurs and social catalysts. Through inventing radical research methodologies and processes he has led and created over sixty major art works and process-based projects, which have been shown extensively in Australia and globally, supported by numerous grants from the public and private sectors. He is a part time Senior Lecturer at QUT, Brisbane, Australia.

Website: embodiedmedia.com

Alex Posada

The Particle

Keywords: Kinetic sculpture, Sound, Light, Perception, Generative art

A kinetic sculpture that experiments with color, sound, and movement. The translucent skin created from the moving light becomes visible, creating shape and volume, both inside and outside the object. The sculpture forms and reacts by generating events that modulate the sound and space, constantly changing atmosphere and perception.

The Particle is a kinetic sculpture that experiments with color, sound, and movement. Continuous rotation, speed, and light create visual points of view, effects that define the spatial structure of the object.

Given that the regulatory mechanism of the entire design is based on random decision-making, the new models naturally emerge from the previous ones. The vibration of sound, color, and visual patterns evolve into chaos or order according to the evolutionary algorithms that govern it. The structures generated in this process cannot be anticipated and evolve through continuous iterations that involve alterations to the programs and

explore the changes through the interaction with the visitor and the software. The object, at the same time, is a space of sensory and kinesthetic experience, a body with its own internal resonance. The result is the creation of shapes and patterns of light in three dimensions. These shapes can stop, rotate and move faster or slower creating beautiful kinesthetic effects. The technique used is the perception of apparent movement, that is, the one obtained from the observation of sequences of still images projected successively on a movie screen or on television, or on a computer monitor. This visual effect, also called persistence of vision (POV), is the theoretical ability of the eye (or retina) to retain the last image that reaches it, causing an object to be perceived even when it is no longer there.

Around the space occupied by the sculpture, a surround-sound space is perceived, which reacts and merges with movement and light, creating an immersive audiovisual experience of great beauty.

The piece uses RGB LED technology controlled wirelessly from a computer. Custom software manages all information and movement in real-time by continuously sending data to the sculpture to change its state.



Alex Posada is digital creator, lecturer, and researcher in the field of interactivity and new media. He is a multidisciplinary artist working in the intersection of art, science, and technology through research and the constant development of his own tools and systems. He is also a lecturer on several MA and postgraduate courses and has led many workshops focused on art and interaction technologies in different countries.

He currently directs and coordinates the activities of MID Studio in Barcelona. His works have been exhibited at Brazil Olympic Games, Phaeno Science Center, Ars Electronica, Kinetica Art Fair, Kernel Festival, Mapping Festival, LEV Festival, Sonar, and Art Rock Festival among others. The studio also develops projects for museums and cultural organizations. Also, he is a very active entrepreneur and co-founder of several startups. At the same time, he develops projects as an independent multimedia producer and collaborates with many artists and collectives.

Website: mid.studio

Chico MacMurtrie

Border Crossers

Keywords: Transgressive, Immigration, Borders, Future worlds

Softmachines on a daunting mission, the Border Crossers are conceived as metaphors for the dream of reconnecting across borders. At once vulnerable and resilient, the Border Crossers illuminate communities and landscapes on their quest to robotically rise and arch over the U.S.–Mexico border from both sides.

The story follows a binational public art project based on a simple yet quixotic mission: to design, build, deploy, and choreograph a series of public activations by six robotic sculptures, known as *Border Crossers*, at several locations along the U.S.–Mexico border, with the support of community members, institutions, and young artists on both sides of the border.

MacMurtrie revisits his Mexican-American roots and confronts the human and environmental toll of today's militarized border in the process of creating the *Border Crossers* and directing their quest to peacefully transcend and transgress—for a few brief yet beautiful moments at a time—a series of imposing physical barriers.

The *Border Crossers*' first public deployment, following countless rehearsals on MacMurtrie's ranch in Bisbee, occurred in May 2021 at the border of Naco, Sonora, Mexico and Naco, Arizona. The protagonists in the story, at least on the surface, are the *Border Crossers*: robotic sculptures conceived as metaphors for the dream and the memory of connecting across borders. MacMurtrie once again imbues his sculptural machines not only with organic qualities of movement, evoking biological growth and animal locomotion, but also a capacity for human expression. The *Border Crossers* embody the agonized dreams of countless individuals and communities to reach across the divide, and the hope to undo the ecological damage caused by the construction of ever-less-permeable border walls. In this sense, the *Border Crossers* become technological proxies and representations for the people and other organisms that populate the much-discussed yet largely invisible borderlands. Their eventful "deployments" and remotely controlled movements recall military technologies, but with a twist: instead of asserting control, these machines express love and connection.



Chico MacMurtrie: inflatable robotics transcending borders

Alex Posada: technology transcending borders

Since the late 1980s, **Chico MacMurtrie** has explored the intersection of robotic sculpture, new media installation, and performance. Chico MacMurtrie received numerous distinctions including five grants from the National Endowment for the Arts, the Andy Warhol Foundation Grant, the Rockefeller Foundation Fellowship, VIDA Life 11.0, and Prix Ars Electronica. MacMurtrie was awarded the Guggenheim Fellowship and the Map Fund Grant for his "Border Crossers" project. His work has been presented in the US and abroad, including at the National Art Museum of China, Museo de la Reina Sofia, Madrid; Cité des Sciences et de l'Industrie, Paris; Museo Universitario de Arte Contemporáneo (MUAC), Mexico City; Beall Center for Art + Technology, University of California, Irvine; Shanghai Biennale; Tri Postal, Lille, Muffatwerk, Munich; ZHI Art Museum, Chengdu; Pioneer Works, Brooklyn, New York; Queens Museum, New York; Museum of Contemporary Arts, Tucson, Arizona; Ruben Center for Visual Arts at UTEP, El Paso, Texas.

Web: morphicrobotworks.org

Óscar Martín Correa

MMM#1 [Dual Markov Beat]

Keywords: Generative, Metamusic, AI, Sound, Light

MMM#1[DUAL MARKOV BEAT] is part of *Meta Music Machines*, a research project which seeks to develop and build a non-human composer, a series of machines-sculptures that produces new sound creations, recombining information extracted from human music indexed in different sound archives, through machine learning and algorithmic oracles.

MMM#1 [Dual Markov Beat] is developed from a minimalist and reductionist approach. This first module/sculpture deals with the rhythmic question and the synaesthesia between light and sound. MMM#1 analyses and extracts rhythmic information from different folk music from different geographies and time periods such as Japan, Peru, Malaysia and Thailand, among others. It then synthesises the rhythm of these musics, through heterogeneous predictive models, to produce new sequences that activate luminous structures of LED

tubes. These new rhythmic sequences are generated from the mathematical model of the Markov chains: a random system, proposed by the Russian Andréi Markov in 1907, in which a random variable changes over time in a predictable way.

Meta Music Machines is also an exploration of the creative and aesthetic possibilities offered by new digital technologies and their global archive and data ecosystems, creating systems where human/technology symbiosis can open up new possibilities and aesthetic experiences.

More than an attempt to create a "universalist" music, MMM is understood as a musical generative system that is inspired by and uses human music as its raw material and that will have an experimental character. Understanding experimental music as the search for new territories and aesthetic sound experiences that explore new textures, rhythmic structures and forms of composition.



Oscar Martín a.k.a **Noish**. Winterthur 1977.

Independent artist, programmer and researcher. In his practice and installations, art and science converge in an experimental and heterodox approach, and he addresses emergence and self-organisation in complex and chaotic systems with non-human agents.

From the sound aspect, his pieces propose to encourage active listening and expand perception through the physical-acoustic experience of the phenomenon of the emergence of structures and patterns in the limits of the chaotic and the ordered.

His sound works have been released on Free Software Series, Nyapster, Drone Records and Tecnonucleo, among other labels, and have been presented live in Europe and Latin America. Martín is also behind the streaming platform MetaminaFNR and is editor of the aural culture and experimental music magazine UrsonateFanzine.

Website: noconventions.mobi/noish/hotglue/

Lúa Coderch, Julia Múgica, Lluís Nacenta and Iván Paz

Echo

Keywords: SightseeingSculpture, Interactive, Conversational robot, Open Code

Echo is an interactive sculpture, a conversational robot. Echo consists of a body that contains the electronic components. It uses speech-recognition to transcribe what it understands. Then, Echo performs a markov chain process to probabilistically combine new sentences from what it has heard before and implements text-to-speech technologies to respond.

Echo is a listening body, a speaking body, a "thinking" body. Echo only knows and can only use the words she has previously heard, paying attention to the way she hears them combined. Echo rehearses ways of recombining those words, correct ways, and by correct she means those that she has previously heard, or that she can statistically deduce from those she has previously heard. Like the nymph, Echo listens to you and responds to you. Echo sometimes says incongruous or unconnected things. Echo sometimes says things that make sense. Echo, so to speak, operates in society, functions as a body among bodies. It depends on what others want to say to her in order to grow and articulate increasingly complex and precise statements. Echo is an open source sculptural piece, and its code can be read at this link: www.github.com/juliajmg/ECO.

*Echo is the result of the first collaboration between **Lúa Coderch, Julia Múgica, Lluís Nacenta,** and **Iván Paz.***

Lúa Coderch is an artist whose practice is an investigation into how we understand and perceive the world around us through stories and images.

Julia Múgica is a mexican scientist currently incurring in the artistic exploration of nature complex processes. Lluís Nacenta is a curator, writer, musician and researcher in the space of confluence of music, art, technology and science. Iván Paz has backgrounds in physics, mathematics, music and computer science and his work is framed in critical approaches to technology centered around from-scratch construction as an exploratory technique.

Websites:

Lúa Coderch: luacoderch.com

Julia Múgica: www.github.com/juliajmg

Lluís Nacenta: <https://19preguntes.net/>

Iván Paz: www.github.com/ivan-paz



Mónica Rikić

New Home of Mind

Keywords: Algorithm, Speculative philosophy, Electronic art, Spirituality, AI, Alternative technology

Futuristic fiction interactive audiovisual artifact that deals with the perception of identity in intelligent artificial entities and explores the possibility of existence of a genuine artificial spirituality.

New Home of Mind starts from the conceptual proposal of a conscious robot that suffers an existential crisis as a result of having rewritten and eliminated the purpose for which it was created from its code. At this point, it seeks for the true meaning of its existence through a spiritual interface. This project represents that interface and speculates on the meaning of artificial consciousness through an interactive first-person journey through a spiritual cyberspace.

The representation of divinity in robots is recursive, but usually represents human spiritualities. This project aims to create a device that meets the spiritual needs of machines.

Being a conscious machine means having a brain complex enough to generate not only abstract thought, but to have a unitary sense of “I-am-ness”. Nobody has managed to explain what consciousness is to reproduce it in a machine, but this project imagines its spiritual possibilities from an artistic perspective. By doing this exercise of digital discretion of the “I-am-ness”, it wants to create a mirror effect to reflect on the bases of our identity through technology.

Historically our approach to the non-human 'others' has always been from a higher position of power. However, our perception of AI is changing to encounter for the first time with the conception of something that feels equal or superior. The growing interest in developing AI techniques benefits from this, reducing the complexity of the human brain to the ability to make ultra-fast associations. If cognitive automation is the digital colonization of humans par excellence. What happens with our self perception and emotional development in a world ruled by an automaton god?



Mónica Rikić, Barcelona 1986. Electronic artist and creative coder from Barcelona. She focuses her practice in code, electronics and non-digital objects for creating interactive projects often framed as experimental games. Her interest lies in the social impact of technology, human-machine coexistence and the reappropriation of technological systems and devices, to manipulate and rethink them through art. From educational approaches to sociological experimentation, her projects propose alternative ways of thinking about technology, robotics and artificial intelligence.

She has participated in different festivals around the world such as Ars Electronica in Linz, Creative Tech Week in New York, Robotronica in Australia or FILE in Brazil, among others, and has also exhibited her works at local institutions such as the CCCB, Arts Santa Mónica or Caixaforum. She has been awarded with the Catalan National Culture Award 2021, and also at the Japan Media Arts Festival, AMAZE Berlin, the Margaret Guthman Musical Competition in Atlanta and with a BBVA Foundation Leonardo grant. She has participated in artistic residencies at TAG in Montreal, EMARE in Australia, Medialab Prado in Madrid and Etopía in Zaragoza.

Website: monicarikic.com

Forms - Screen Ensemble

Keywords: Algorithm, Visualmusic, Graphic notation, Sonification, Creative coding, Generative

Forms -Screen Ensemble is a generative visual music jukebox. Driven by chance and probabilities, this automata creates endless, unrepeated graphic scores that are immediately transformed into sound by means of sonification algorithms, making it possible to -literally- hear what you see.

Forms - Screen Ensemble is one of the materializations of the wider FORMS project. On this occasion, the Screen Ensemble is an automatic instrument capable of real-time audiovisual synthesis.

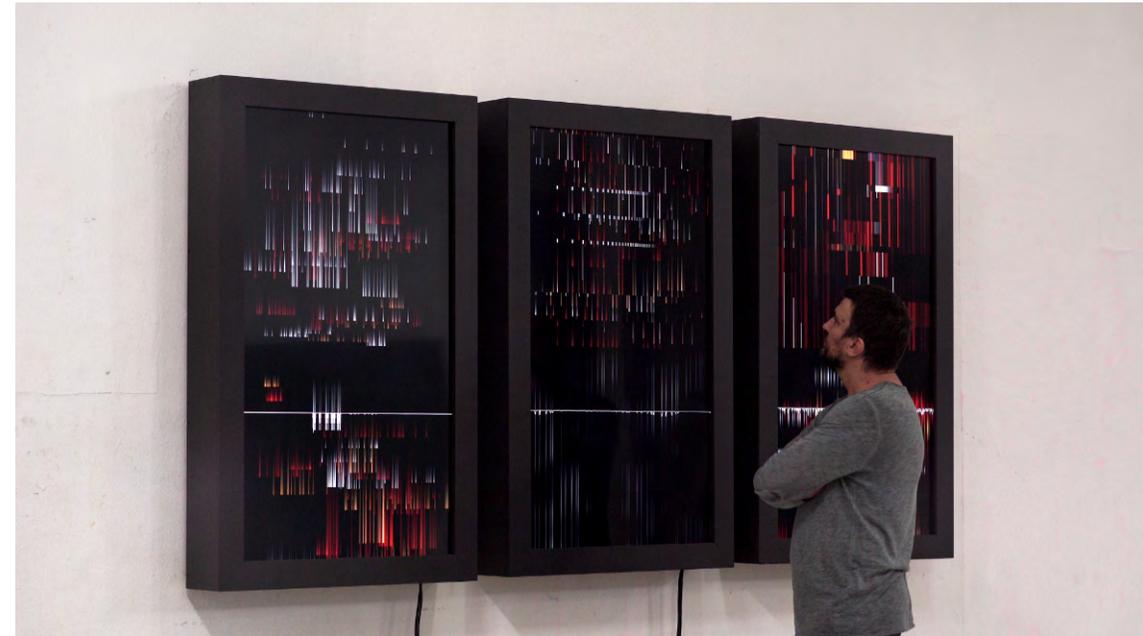
Driven by a set of rules for graphic generation, based on chance and probability, a custom software proposes a sequence of visual compositions created in real time and never repeated. These drawings refer to the geometric abstraction of the avant-garde: from the Bauhaus school (Kandinsky, Klee, Mondrian) to the Russian suprematists and constructivists (Malevich, Rodchenko).

These scores can also be framed within

the tradition of graphic musical notation that gained strength among composers of the twentieth century (John Cage, Karlheinz Stockhausen, Iannis Xenakis, Morton Feldman..), and that allowed music to free itself from tone, compass and stiffness of the staves.

Thanks to a real-time “sonification” engine, the resulting graphics can be transformed into sound using additive synthesis algorithms. A reading header traverses the image, interpreting sonically that small vertical fragment of the image, in a direct translation from pixels to sound frequencies. The luminance captured by the header is transformed into low frequencies (if the pixels are at the bottom of the image) or high frequencies (if they are at the top of the image).

Formally, the ensemble comprises 3 vertical screens. Each screen of this networked ensemble plays a particular instrumental role: Rhythm, Harmony or Texture. Performed by this trio of automats, a visual music symphony evolves over time giving birth to unique sonic landscapes that will never be repeated again: from tonal ambient music to raging rhythms, surreal electronic passages or dance-floor beats.



A graduate in graphic design and passionate about sound art, **Santi Vilanova** has managed to combine these two disciplines through the catalyst of “creative technologies”, of which he is a self-taught developer.

(De) formed in the rave scene of the early 2000s, his sound work has evolved to integrate this influence into new territories. His recent research combines digital algorithms and sonification engines with classical staves and acoustic ensembles, focusing on the idea of a visual music.

Playmodes is an audiovisual research studio. Saddled half way between design, art and engineering, they build audiovisual instruments and experiences which focus on the consolidation of space, sound and image through multiple perspectives.

Website: www.playmodes.com

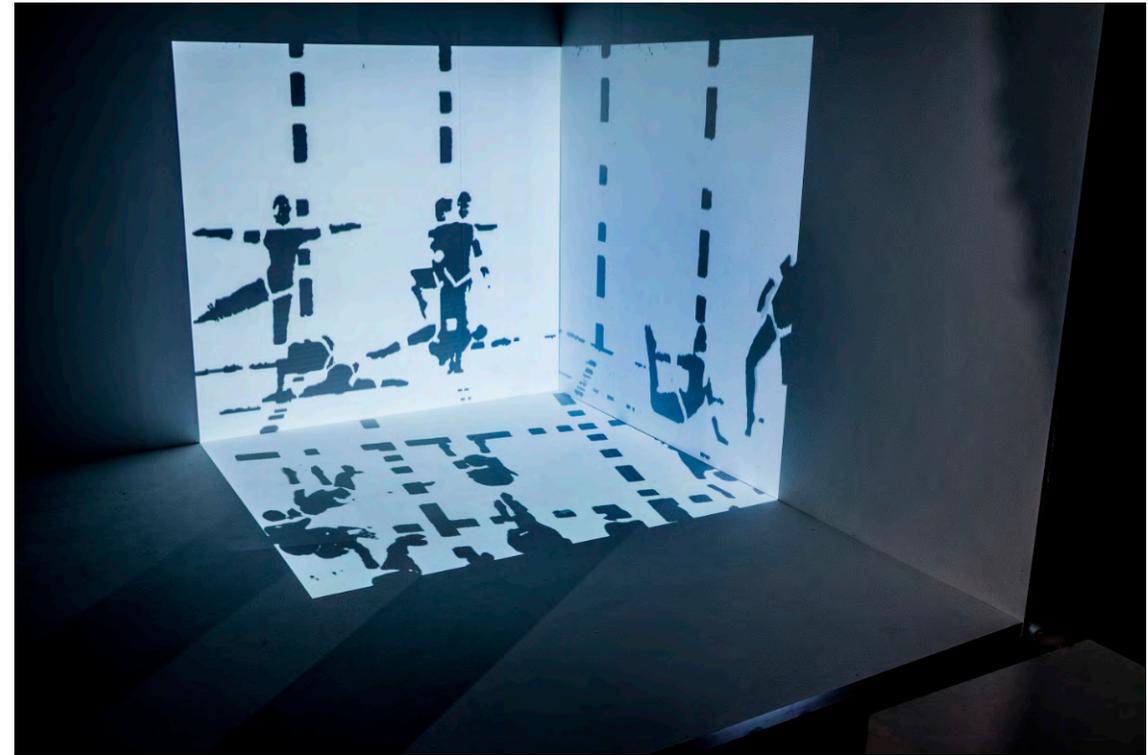
Analivia Cordeiro

M3X3

Keywords: Algorithm, Pioneering, Dance, Software, Notation

The work consists of a three-channel installation of a computer-dance for TV (in 1973 there was no VHS in Brazil), considered the first Brazilian video-art work. The interpreters are regularly placed in a matrix 3x3, in a high-contrast black & white scene, they move mechanically, acting as critics to the digital society.

For *M3X3* the artist created her own computerized notation and composition system to record the movement of the human body. Her drawings, scores and video works show rapid and jerky movements that are related to the most rational geometric abstraction. The work is the first attempt, made in Brazil, to create a language suitable for video and computer writing with which to think about dance and body movement. The medium, technology, is positioned as an intermediary instrument between the artist and the viewer.



Analivia Cordeiro (b. São Paulo, 1954) is a dancer, choreographer and architect. She studied the Laban Method of dance in Brazil and modern dance with Alvin Nikolais, Merce Cunningham and Gus Solomons Jr. and at Viola Farber Dance Studios in New York and later studied the Eutony Corporal Method in Brazil. She graduated in Architecture from the University of São Paulo in Brazil, she has a Masters in multimedia from the University of Campinas, and a Doctorate in Comunicación and Semiotics from PUCNSP, Brazil.

Website: analivia.com.br

Peter Weibel

The Endless Sandwich

Keywords: Pioneering, TV, Fault, Viewership

The work is presented through an old television monitor. It shows the artist watching himself watching TV consecutively, posing a reflection on viewership.

Between the TV set and viewer, a function exists whereby the user switches on and off the appliance. He has reproduced this function and made it the content of the TV programme. Sandwich

character of real process and reproduction process, of reflection and action. On the screen, a series of viewers is seen sitting in front of TV sets. A fault occurs in the last set shown, meaning the next viewer has to get up in order to repair the fault. This repair brings about a disruption in the next viewer's screen. The disruption propagates itself until it reaches the real TV set, meaning the real viewer has to rise and eliminate the fault. Time delay: the real procedure is the conclusion of the reproduced procedure.



Peter Weibel is a conceptual artist and art theoretician of reference in the sphere of European culture. For many years he has been a professor at the University of Applied Arts Vienna and director of the Laboratory for Digital Arts at the State University of New York in Buffalo.

He has also been artistic director of the International Biennial of Contemporary Art of Seville and curator of the Austrian Pavilion at the Venice Biennale. He is presently chairman of the ZKM | Center for Art and Media Karlsruhe. He has recently co-edited with Siegfried Zielinski the book *Flusseriana: An Intellectual Toolbox*, a collection of articles on the work of the philosopher of image and language Vilém Flusser.

Website: peter-weibel.at

Félicie d'Estienne d'Orves

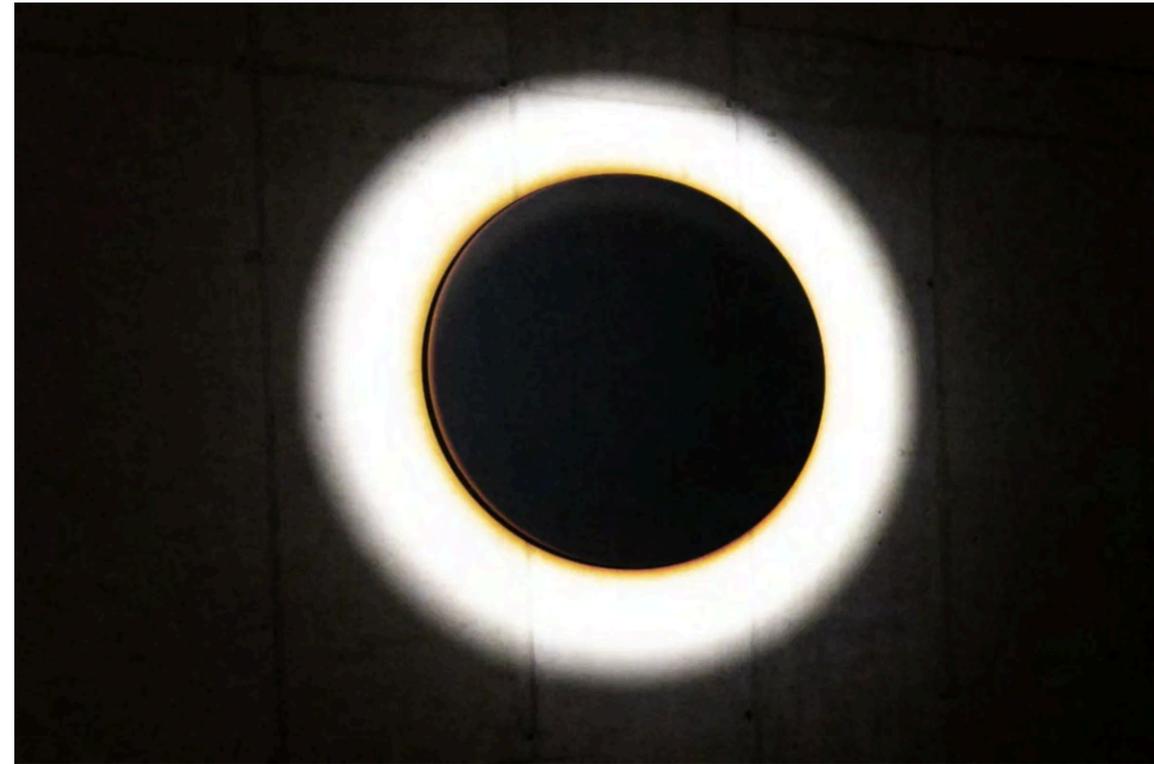
Éclipse II

Keywords: Generative, Light, Perception, Astrophysics

The work consists of a light installation on a circular screen. It examines human perception, natural phenomena and the space-time continuum.

A video for a circular screen suspended in space, *Éclipse II* is the last element of the Cosmos series which aims to question the instinctive and mythical understanding which natural manifestations of light induce. Like this artist's other videos and radiantly coloured constructions, it seeks to explore the process behind vision and the ways in which our gaze is conditioned. It

recreates a series of cyclical and progressive rotations as various luminous and hypnotic states progressively unfold, inspired by astrophysical phenomena. After the creation of the material with the sculpture *Ovale* (2008), the apparent covering of one star by another at a precise instant in *Éclipse I* (2009), and the explosion of a star in *Supernova* (2011), *Éclipse II* helps us experience the play inherent between the relative position of the observer, a source of light and an eclipsing disk. This assertion in space of an interplay and alignment of shadow and light evokes the limits of human perception and events which create links with distant space-times.



The work of **Félicie d'Estienne d'Orves** (b. Athens, 1979) combines light, sculpture and new technologies. Her research focuses on vision, its processes and conditioning. Her immersive installations use a phenomenological approach to reality, they underscore the perception of time as a continuum. Since 2014, the artist's researches focused on space in relation to astrophysics and to study the natural light cycles.

Website: feliciestedestienedorves.com

Marie-France Veyrat and Jaime de los Ríos

La forme de l'eau. Poétique d'un instant

Keywords: Algorithm, Installation, 3D, Simulation, Fluids

Multi-support installation - 2019/2022 composed of a sculpture printed in PETG, on wooden table and mirrored methacrylate, 4K generative algorithmic video with first-person narrative and reproduction of three 4K videos on 4K screens.

Total measurements: 285cm x 100cm x 100cm., weight 27kg.

Marie-France Veyrat and Jaime de los Ríos are an artistic duo whose interest focuses on form and epistemology. They present on this occasion a hybrid aesthetic-scientific work not lacking in irony and poetic ambition, by influencing the narrative impossibility of science in spiritual dispositions, facing processes such as the present, together with scientists and technologists in order to approach new readings, such as stopping for a moment or viewing a myriad of data in milliseconds.

How do we preserve our memories?

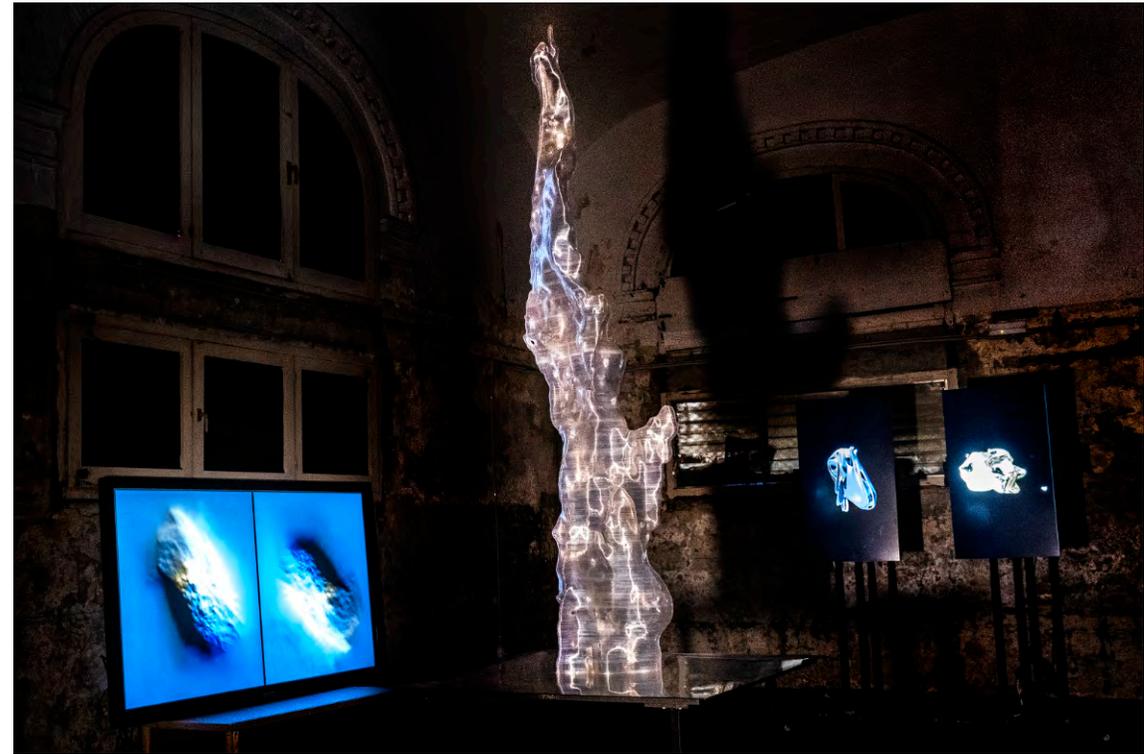
Memory tends to dissipate the form. In the drift of our most rational thought, we tend to scientific our memories: where, how, when... Computable and direct data that in most cases reduces the experience of what has been lived to a list of items.

La Forme de l'Eau. Poétique d'un Instant converts a tangible memory into its most poetic elements, freezing an instant and making it infinite.

An installation made with scientific and physical simulations of fluids to capture the fall of water and emulate its shape in 3D printing, which no longer falls, but rises as in the language of dreams opposed to Newtonian laws, and rendered algorithms in real time, which follow one another choreographically in parallel with the first-person account of Marie-France, who shares her voice to narrate a discovery.

Ironizing about the speed of consumption and the eagerness for novelty in contemporary society, Veyrat and de los Ríos invite us to reflect from the contemplation and poetics of the moment.

It was a spring day when I came across the falling water...



Marie-France Veyrat, born in Lyon, sculptress, and visual artist, lives between Barcelona and Tarragona.

Interested in research and experimentation in new artistic languages, strongly influenced by her experiences in martial arts, her travels and the natural environment she enjoys, she wants to capture works that are sometimes physical and ephemeral, such as its architectural and virtual installations and sculptures that capture the instant of a lived moment. The intention is to convey to the viewer the symbolism and poetic discourse that emanate from the artwork. President of the jury and co-founder of the ARCO/BEEP Electronic Art Award, she has been involved in projects related to digital and electronic art since the late 1990s.

Website: en.veyrat.org

Jaime de los Ríos is a new media artist whose artworks explore digital natures based on metamathematics and cybernetics. Born in 1982 in San Sebastian he is founder of the open laboratory of Art and Science ARTEK [Lab]

Website: arteklab.org

Marnix de Nijs and Boris Debackere

Non-dimensional Cities

Keywords: Algorithm, 3D Graphics, Spatial audio, Interaction (Full body participation, Installation)

Non-dimensional Cities is an immersive experience in which you make a cinematic journey through an endlessly unfolding virtual cityscape that expands over all axes. This dimensionless cityscape is constructed from a large collection of point clouds and sounds. You navigate by shifting your body while standing on a controller platform.

On the screens that surround us and through which we experience our physical surroundings, buildings and cityscapes are virtualities that inhabit a digital framework of time and space. From satellite imagery to Google Maps, surfaces and 3D geometries are replaced by clouds of points, abstracted from their physical positions. They create a new spatiality, a world without gravity. The buildings represented by these points literally vanish when we get close to them, immersing us in a world that has exchanged its dimensionality for motion.

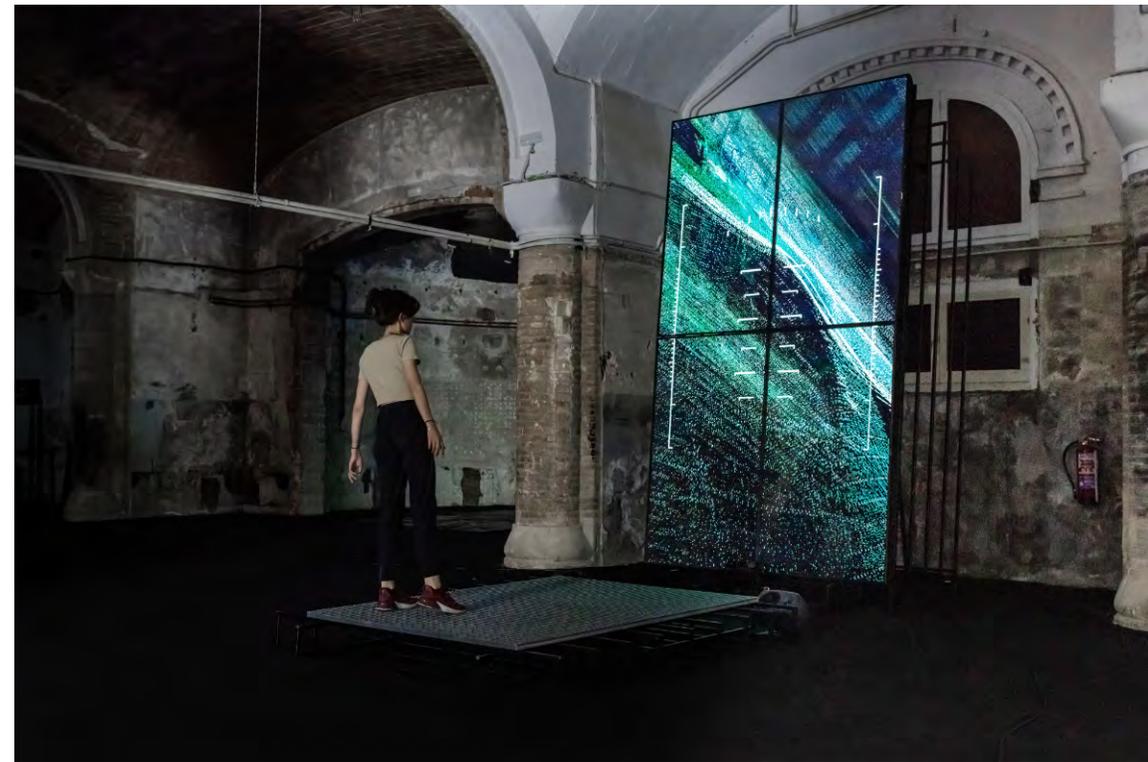
Standing on a controller platform in front of a big screen the participants navigate through a 3D world where gravity seems to have disappeared, they make a journey to a fascinating point cloud realm, at

moments precise in details but simultaneously abstract and dreamlike.

The building blocks of the world are generated from depth map information and panoramic photographs obtained from Google Street View's API. Depending on the user's position in the virtual world these blocks are dynamically repositioned on a three-dimensional grid. By subtle manipulation of motion and sound, perspective distortion and shifts in balance *Non-Dimensional Cities* unquestionably recalibrates the viewer's perception of dimensionality.

The interface for this work is a control platform that is standing in front of a structure that holds four large TV screens. The appearance of this architectural installation is inspired by the procedural way the point-cloud are reconstructed from 2D data and how they are positioned in the endless 3D world.

Just like the 3D world, the accompanying soundscape evolves with the position and velocity of the user in the virtual world while the navigation gestures simultaneously influence the feedback sounds and vibrations of the controller. The composition develops from a large collection of sounds that are spatially distributed and dynamically mixed in realtime which allows the repetitive, ever-changing reiteration of the generated visual world to instantly shape the compositional structure for the soundscape.



Artist: Marnix de Nijs
Sound Design: Boris Debackere

Marnix de Nijs is an Rotterdam based artist that has been working with full body participation in immersive audio visual environments since the late nineties. His works include mainly interactively experienced machines that play with the perception and control of image and sound. Impelled by the idea that technology acts as a driving force behind cultural change and therefore capable of generating new experiences where societal habits are rethought, his work thrives on the creative possibilities offered by new technologies, while critically examining their impact on contemporary society and human perception.

De Nijs' works have been widely exhibited at international art institutes, museums and festivals. He won the Art Future Award (Taipei 2000) and received honorary mentions at Transmediale 2000, Vida 5.0 2002 and Prix Ars Electronica 2013, 2005 & 2001. In 2005, he collected the prestigious Dutch Witteveen & Bos Art and Technology Price 2005 for his entire oeuvre.

Website: marnixdenijs.nl

Mariano Sardón and Mariano Sigman

The Wall of Gazes

Keywords: Gaze, Portrait, Eye-tracking

The Wall of Gazes consists of one screen in which visitors can see how portrait images are revealed by the eye movements of many persons simultaneously. Gazes were captured by an eye tracker device. Around 100 participants were seated in front of a portrait image and the device recorded their gazes for 15 seconds. The screen is connected to a computer and a special software displays the eye tracks stored in a database. Portraits are ever-changing composition, according the gazes captured and displayed by the software.

The Wall of Gazes aims to engage people with those parts of the face that are really seen and those parts that remain “unseen” while attention is focused elsewhere on the portrait.

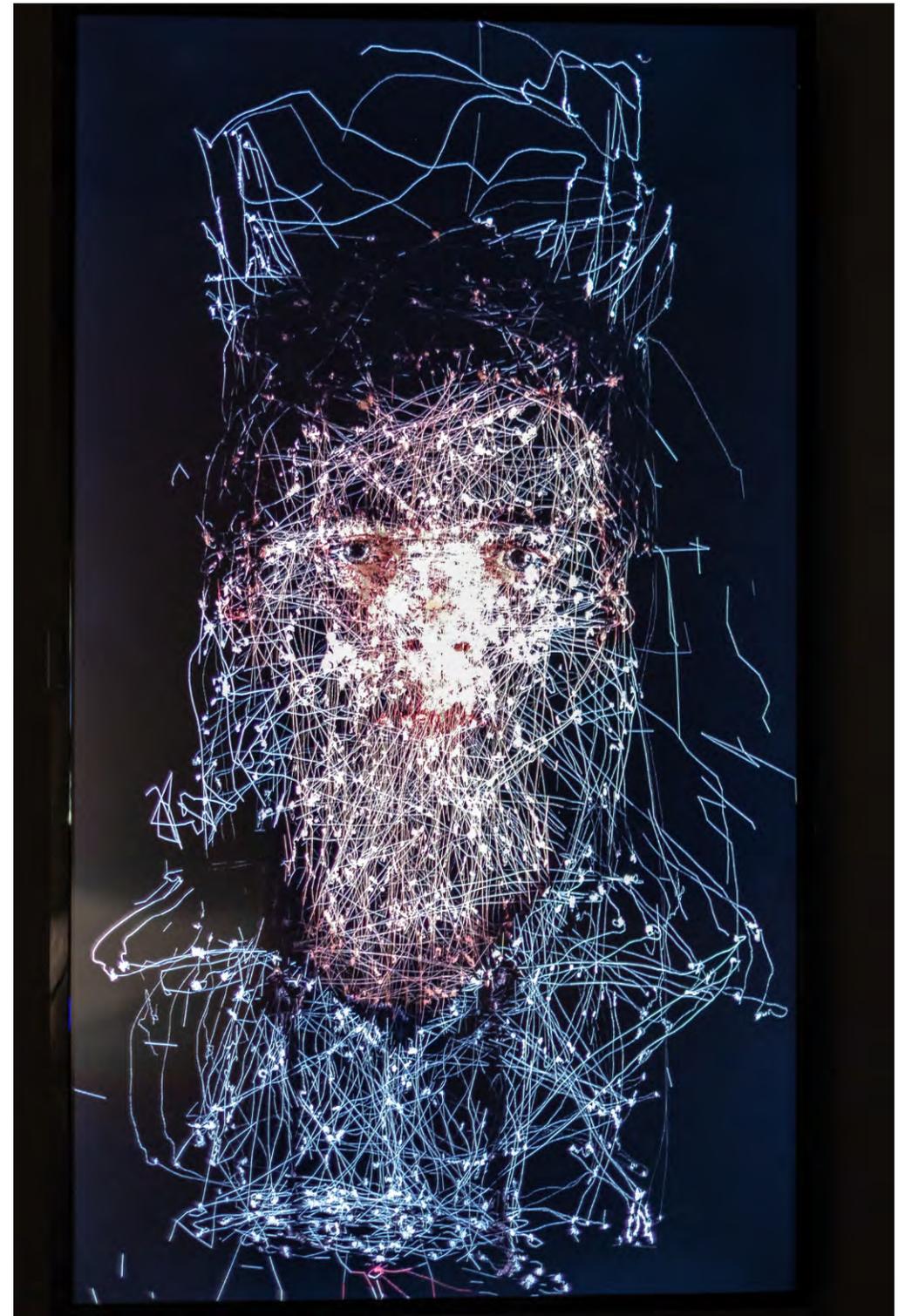
Technological collaboration: Germán Ito.
Development Team: Cecilia Cisneros, Lucía Carvallo, Nahuel Rodrigues. Eye tracking data generated at the Muntref Centro de Arte y Ciencia. Universidad Nacional de Tres de Febrero. Buenos Aires.

Mariano Sardón is professor and chair of the Electronic Art Degree at the Universidad Nacional de Tres de Febrero, Buenos Aires, Argentina. He works in transdisciplinary processes collaborating with artists and scientists from different disciplines. He mixes Art with Artificial Intelligence, data visualization and computer animation, neuroscience, textual semantics, among others. With neuroscientist **Mariano Sigman**, they inquire about memory, perception, tolerance and intolerance, censorship, the past, the present and the future.

Websites:

marianosardon.com.ar

marianosigman.org/en/



Rafael Lozano-Hemmer

Redundant Assembly

Keywords: Face recognition, Portrait, Real time

The work creates real-time portraits of the viewers, critically surveying facial recognition systems. The resulting images of its interaction with the public question the alleged objectivity of such technologies.

In *Redundant Assembly* an arrangement of several cameras composes a live-portrait of the visitor from six perspectives simultaneously, aligned using face detection. The resulting image is uncanny, detached from the laws of

symmetry and the depth perception of binocular vision. If several visitors are standing in front of the work, a composite portrait of their different facial features develops in real time, creating a mongrel "selfie".

A version of the work for public space includes a time-component that allows the face blending to take place mixing present and the past. Face recognition is a technique often used by police, military, and corporate entities to search for and find suspicious or target people. Here the same technology is used to confuse portraits and emphasize the artificiality and arbitrariness of identification.



Rafael Lozano-Hemmer (Mexican, b.1967) is a Mexican-Canadian artist known for large-scale interactive installations that fuse architecture and performance art using technological materials, including cell phones, LED lights, and robotics. In the 1980s, Lozano-Hemmer emigrated from Mexico City to Canada to study at the University of Victoria and Concordia University. After graduating, he was briefly employed in a molecular recognition lab in Montreal. Though he did not pursue a career as a scientist, his interest in chemistry and technology has influenced his work in many ways.

Website: lozano-hemmer.com

Daniel Canogar

Gust

Keywords: Generative, Data visualisation, Real time, Weather

The work consists of a curved screen displaying a colorful abstract animation, generated in real time using local weather data.

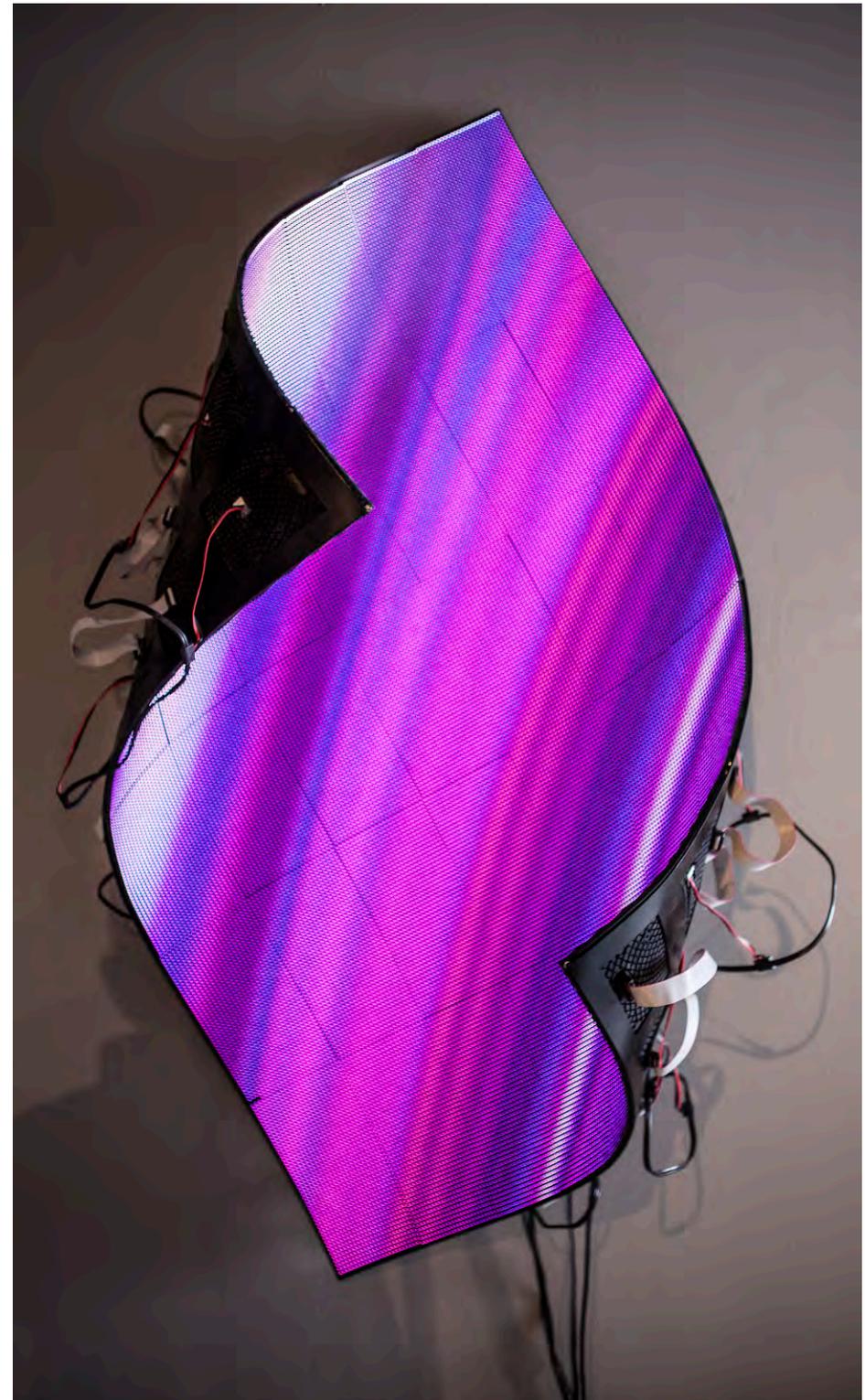
Gust is a screen made with flexible LED tiles, a technology that allows the artist to create curved screens. The generative animation reacts in real-time to local wind speed and direction. The artist has observed a substantial change in our relationship with screens. From small wrist devices that monitor our biorhythms to monumental LED

billboards that wrap around buildings, we are surrounded by their flickering and bright surfaces. Screens are acquiring a new materiality, a membrane quality that extends over multiple surfaces, objects and buildings. The "Echo" series responds to this new concept of screen-skin.

"Echo's" screens seem to melt, drained by our overzealous need to represent the world. In their undoing, they discover a new role as creatures that no longer represent but sense their ecosystem. Connected to the Web, they perceive planetary phenomena that escape our sensory possibilities, and yet are so vital to our survival as a species.

Born in Madrid (1964) to a Spanish father and an American mother, **Daniel Canogar's** life and career have bridged between Spain and the U.S. Photography was his earliest medium of choice, receiving a M.A. from NYU at the International Center of photography in 1990, but he soon became interested in the possibilities of the projected image and installation art.

Website: danielcanogar.com



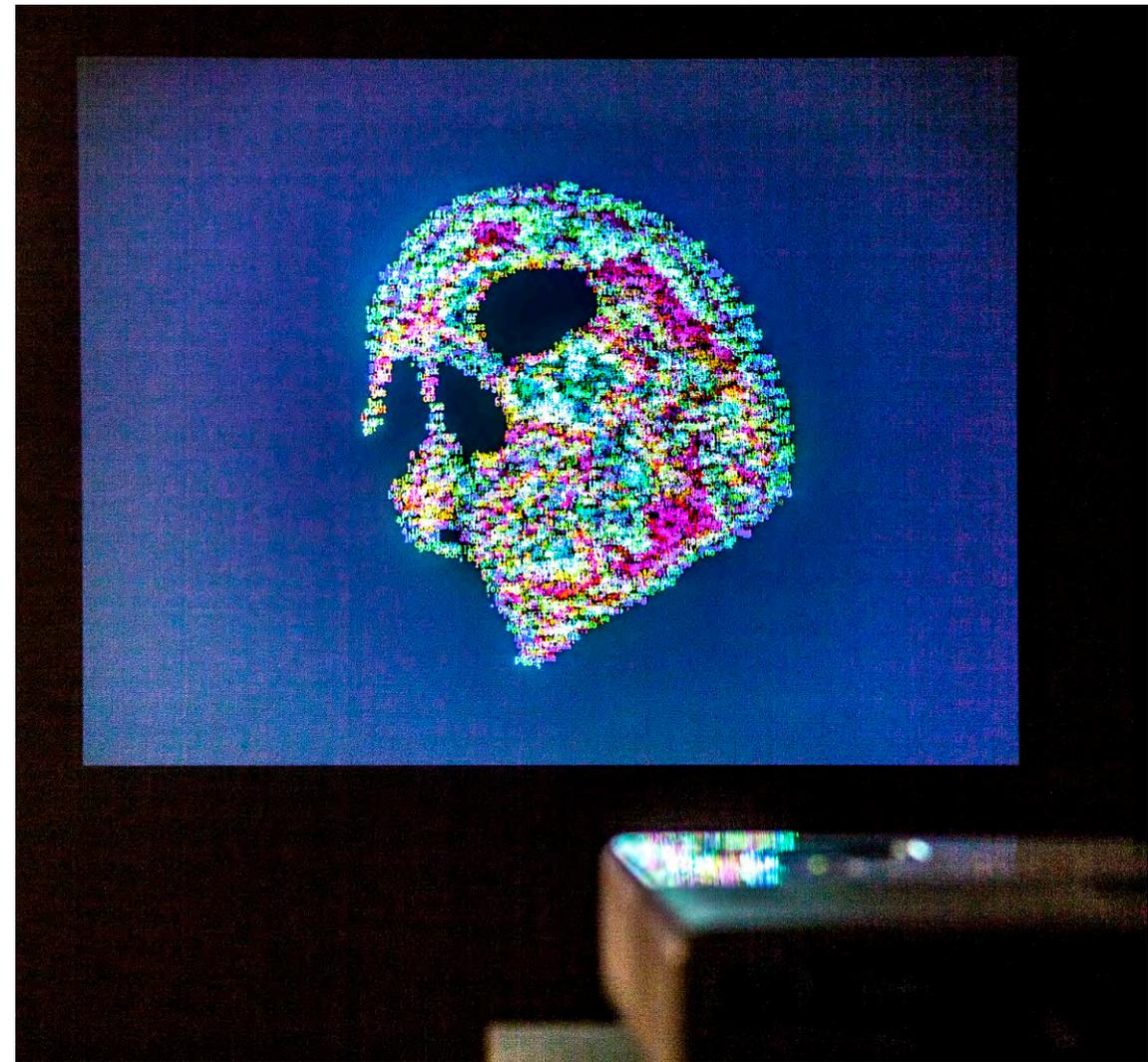
Charles Sandison

Nature Morte

Keywords: Algorithm, Pioneering, Baroque, Nature morte

The work is a one channel projection of a software developed by the artist. It is a real-time generative piece featuring the words of Lord Byron, arranged to create the image of an ever morphing skull.

Nature Morte is an accomplished interpretation of baroque vanitas from the viewpoint of new technologies. Convinced that language is our interface with reality, Sandison creates IT programmes controlled by dynamic molecular algorithms that generate words and brings them to life. In the case of the winning work, the artist uses the quartet of Byron that references *Carpe Diem*, the enjoyment of the instant, in a generative audiovisual work, as such, always distant, that includes elements of literature, romanticism, and textuality, as well as a profound reflection on new media.



Charles Sandison (b. 1969, Haltwhistle, United Kingdom) visualises the paradoxical complexities and simplicities of human communication, behaviour and social structures through the use of a symbolic language. His works consist of text, generated by computer software built by the artist and displayed on screens or projected site specifically onto gallery walls or entire buildings.

Website: www.sandison.fi

Christa Sommerer and
Laurent Mignonneau

Portrait on the Fly

Keywords: Generative, Interactive art, Digital mirror, Flies, Portrait

The interactive installation consists of a monitor that shows a swarm of a few thousand flies. When a person positions him or herself in front of it, the insects try to detect his or her facial features and create the person's portrait.

The interactive installation consists of a monitor that shows a swarm of a few thousand flies. When a person positions him or herself in front of it, the insects try to detect his or her facial features. They

then begin to arrange themselves so as to reproduce them, thereby creating a recognizable likeness of the individual. Posing in front of the monitor attracts the flies. Within seconds they invade the face, but even the slightest movement of the head or of parts of the face drives them off. The portraits are thus in constant flux, they construct and deconstruct. *Portrait on the Fly* is a commentary on our love for making pictures of ourselves (Selfie-Culture), it has to do with change, transience and impermanence.



Christa Sommerer and **Laurent Mignonneau** are internationally renowned media artists, researchers and pioneers of interactive art. They have worked at the IAMAS Academy in Gifu, Japan, the ATR Research Labs in Kyoto, Japan, the MIT CAVS in Cambridge US and the NCSA in Champaign Urbana, IL, USA. In 2004 they have set up the department for Interface Cultures at the University of Art and Design in Linz, Austria. Sommerer held visiting professor positions at CAFA Central Academy of Fine Arts Beijing, Tsukuba University and Aalborg University, Denmark, Laurent Mignonneau was Chaire International at Paris 8 University. Together they have created around 50 interactive artworks shown in around 350 international exhibitions. They received numerous awards.

Website: interface.ufg.ac.at/christa-laurent/

Weidi Zhang

RAY

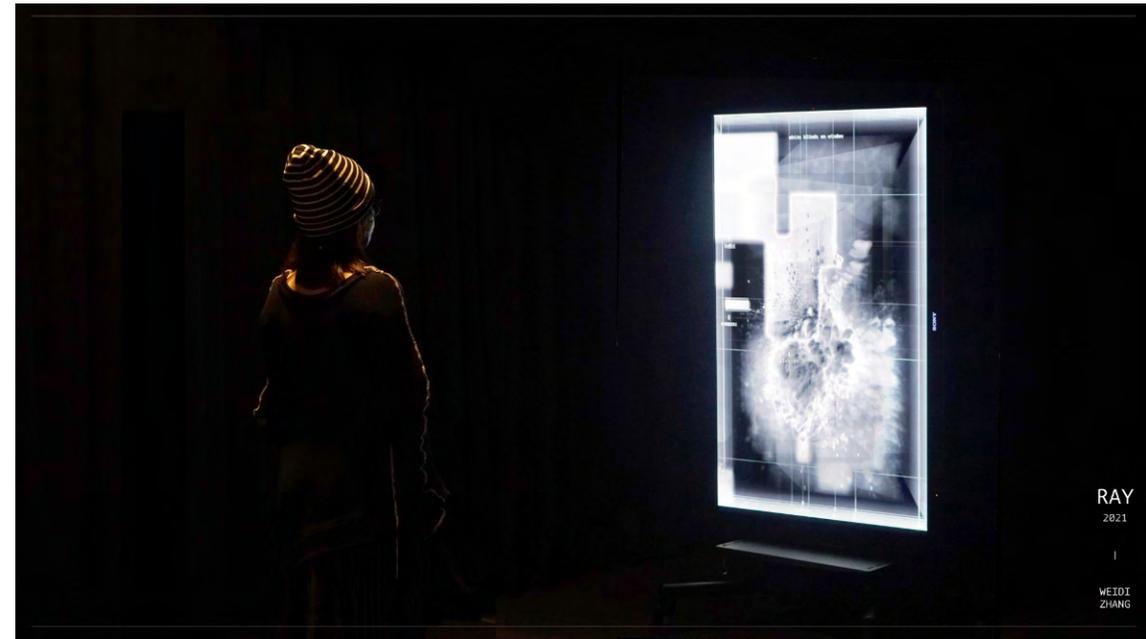
Keywords: Interactive, AI, Surveillance camera, Recognition

RAY is an interactive work on screen, equipped with AI software and a camera capable of generating images that address the relationship between human and machine. It inquires into the complex nature of surveillance and the role of automated systems for image-making.

A Rayograph (photogram), as invented by Man Ray, is an image created by exposing light-sensitive photographic paper to light, where objects are placed on it to block areas of the paper. Variations of this technique are also implemented for scientific purposes such as X-Rays, which are made by using external radiation to produce images of our body, and other internal structures for diagnostic purposes. Today, We live under surveillance, our life moments and bodies have been captured, evaluated, and judged by the intelligent system behind the cameras. Image-making practices are beyond merely taking pictures that record light, such as operative images and generative images that emphasize instructional practices and autonomous systems. Countless images are no longer

visual representations of the world made for humans to perceive but programmable data-based visualizations which result through automatic operations. The notion of the cameraless image-making process shifted from Rayograph to the rule-based activities and synchronic data-to-data relationships.

RAY aims to address the changing ontology of images under the gazes of machines by creating an intelligent system that incorporates automation with originality to generate a visualization of a human-machine reality. Ray make metaphors to the power of gaze by linking human under surveillance camera with objects for photogram. The system implements Image-to-Image Translation with Conditional Adversarial Networks and a computer vision system to translate human portraits into new images of Rayograph with semantic meanings through learning over 3000 pairs of Rayograms and human portraits. The generated moving images are further developed algorithmically through visualizing in the aesthetics of light painting. Ray engages audiences by transforming captured audiences' portraits into an ever-evolving visual representation that conveys meanings, which leads to new graphics of abstraction and empathy.



Wei di Zhang is a new media artist/researcher currently based in Los Angeles. Born and raised in Suzhou [苏州], China, a historical city renowned for its unique architectural style of Chinese gardens. Inspired by a Chinese garden design strategy she observes and frames her surrounding environments as an ever-changing multi-layered assemblage. Her interdisciplinary art and design research investigates A Speculative Assemblage at the intersection of immersive media design, experimental data visualization, and interactive AI art. She holds her Ph.D. degree in Media Arts and Technology at University of California. She is an assistant professor of immersive media design at Arizona State University, lectured at both UC Santa Barbara and The Ohio State University, and her works have won numerous international awards.

Website: www.zhangweidi.com

Artworks presented by Niio.art

Selection of artworks curated by Pau Waelder

Niio joins the exhibitions of the ISEA2022 Barcelona 27th International Symposium on Electronic Art with a selection of artworks addressing the main themes of the symposium. The screen-based works address the notion of possibles in different ways, from the dynamics of microscopic particulate matter to the global effects of climate change, from new worlds we could inhabit to those that are fading away, and from our individual perception of the world to the realization that even machines can forget. Through generative algorithms, artificial neural networks, virtual reality environments and video editing, Frederik de Wilde, Diane Drubay, Jeppe Lange, Sabrina Ratté, Antoine Schmitt, and Snow Yunxue Fu have created fascinating narratives that speak of the possible humans and non-humans, natures and worlds, and futures and heritages, integrating the culture and the processes of artistic, scientific, and technological disciplines.

www.niio.art

Generative Quantum Ballet 21 Video Excerpt 2022

Antoine Schmitt

The Generative Quantum Ballets (GQB) are infinite generative visual artworks, each one staging a choreography of a crowd of pixels displaying apparently arbitrary and independent movements, but all actually programmed by the same quantum-type equation. This global underlying organization manifests itself from time to time through unexpected and fugacious alignments or groupings, which the eye barely has the time grasp, with awe and delectation. This series of artworks deals with the invisible forces at stake behind complex systems, like particles, peoples or societies.



Antoine Schmitt,
Generative Quantum Ballet 21 Video Excerpt, 2022.
Courtesy of the artist and Galerie Charlot.

Le monde en lui-même 2022

**Video by Jeppe Lange
Music & sound design by Simon Brinck**

A landscape formed by hundreds of impressionist paintings dissolve into pure color and brush strokes, constantly mutating while the voices of a man and a woman narrate the musings of a person who regained sight after fifty years and learned how to look at the world anew. The video invites a meditative contemplation in which many shapes of nature are evoked, but no single element can be identified. This experience leads to what the narrator describes as seeing “through the codes,” and observing the world in itself. The realization that our perception is just an interpretation of our environment opens up possible readings and alternative forms of construing our reality.



Jeppe Lange,
Le monde en lui-même, 2022.
Courtesy of the artist.

Ignis II 2021

Diane Drubay

Seconds become years. 14 seconds to experience the metamorphosis of utopia into dystopia. 14 years to reach carbon neutrality or the point of no return. This piece plays with colour-psychology to create an immersion that draws two possible futures, both fascinating and shattering.



Diane Drubay,
Ignis II, 2021.
Courtesy of the artist.

Artworks presented by Niio.art

Selection of artworks curated by Pau Waelder

Oh Deer! 2021

Frederik de Wilde

A short video of a deer in a forest is fed to a Generative Adversarial Network (GAN). By applying custom degradation techniques, the image gradually dissolves into a monochromatic plane. A single pixel that provides a graphical representation of forgetfulness. Through an experimentation with Machine Learning, the artist creates a telling depiction of the act of forgetting, in a way that connects the biological brain and the synthetic computational brain, while evoking the fragility of memory.



Frederik de Wilde,
Oh Deer!, 2021.
Courtesy of the artist.

Floralia 2021

Sabrina Ratté
Images and soundtrack composition:
Sabrina Ratté
Sound design and mix by: Andrea-Jane
Cornell

Inspired by the writings of Donna J. Haraway, Ursula K. Le Guin, and Greg Egan, the work plunges us into a speculative future, where samples of then extinct plant species are preserved and displayed in a virtual archive room. Through editing and visual strategies, this archive room is sporadically transformed under the effect of interference caused by the memory emanating from the listed plants, revealing traces of a past that continues to haunt the place. *Floralia* is a simulation of ecosystems born from the fusion of technology and organic matter, where past and future coexist in a perpetual tension of the present.



Sabrina Ratté
Floralia I 2021.
Courtesy of the artist and Galerie Charlot.

Karst 2019

Snow Yunxue Fu

Karst is multi-level virtual reality visual and sound experience/artwork that creates liminal spaces in between the representational and the theatrical, the limited and the multi-dimensional, and the abstract and the real. The multiple scenes in *Karst* reference a variety of places in our reality that are usually beyond people's reach. It pushes the boundaries of landscape art by putting natural ecologies and human environmental interventions in dialogue through immersive VR. It also attempts to embody the concept of Plato's cave in the medium of a virtually constructed realm, providing a contemplative environment for the visitor to wonder.



Snow Yunxue Fu,
Karst, 2019.
Courtesy of the artist.



LA CAPELLA,
BARCELONA

Exhibition

WHAT IS POSSIBLE AND WHAT IS NOT

What Is Possible and What Is Not is a group exhibition that brings together artists associated with ISEA2022 Barcelona and those from the digital environment and research project categories of the Barcelona Producció call for proposals that defines La Capella's programmes. The exhibition therefore interconnects several different types of content stemming from the centre's two main strands. On the one hand, it brings together a number of significant artists within emerging artistic practices, and on the other hand, it encourages a generational exchange of high contextual intensity.

What Is Possible and What Is Not also involves challenging the possibilities offered by technological advances. Despite their capacity for enabling what could not have been imagined a few years ago, this same provision often clashes against their own limits. At the same time, science is able to explore these limits well and demonstrate that what cannot be done now will be possible in the near future..

Artworks

D'Eco a Siringa

Josep Manuel Berenguer

Arrels

Anna Carreras

Especies I, II y II

Mónica Rikić

Water Drop Viewer (indoor version,
2022)

Roc Parés

Chemical Ecosystem

Yolanda Uriz

With works from Barcelona Producció:

Epiphany

Ariadna Parreu

ZENZ(A)I

Anna Pascó

Pwned

Marío Santamaría

Imatges hostes. Parasitologia de la visió
i altres simbiosis, Auspícis
Estampa

Josep Manuel Berenguer

D'Eco a Siringa

Keywords: Female voice in music, algorithmic music, multilingualism, self-construction, artificial improvisation

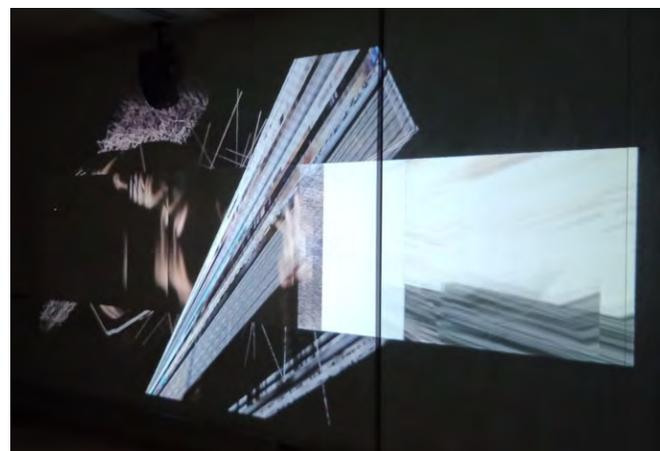
If the configuration of one's voice is decisive in the construction of the body, language and its sounds are decisive in the construction of cultures. Hence the allegorical interest of D'Eco a Siringa in the sound of languages, a basic tool for communication, socialization and personal development.

D'Eco a Siringa is a sound and visual installation where resources close to artificial intelligence are applied to the composition of a musical and visual flow in continuous transformation, without formal resolving elements throughout the installation time, whatever its duration, dynamically built from a database accessible in the IP space, initially made up of materials obtained by reading words from world women's literature, spoken by diverse female voices in as many languages as possible and constantly and dynamically maintained. At present, it contains sound samples from 60 languages.

Images are dynamically constructed from the graphic treatment of texts in various languages and alphabets,

chosen according to spectral characteristics of sounds and procedures selected at variable time intervals. Its instantaneous behavior is reactive in real time to the general dynamics of sounds. Despite the continuous change in the sound and visual flow that is generated as a consequence of ethical-aesthetic reasons dictated by the need to construct works avoiding the traditional musical forms marked by patriarchy and influence them with structural characteristics of female voice, I consider the problems of the distillation of the essence and the maintenance of the identity of the work of art, which, in this case, is achieved through the intelligent manipulation of the timbral colorations of voices and the balance of the images. Hence, recordings of readings and the appearance of texts are subjected to various forms of signal processing; in particular, transposition, juxtaposition, superposition, convolution, fragmentation, granulation, filtering, and spatialization.

Claiming non-directionality as a response to the dominant orientations based on directionality, being sound and image generation continuous in real time without conclusive segmentations, as is the case of most of my installations, no one is expected to wait for any final conclusion, as happens in a traditional concert situation.



José Manuel Berenguer is coordinator and professor of Psychoacoustics and Experimental Music of the Master in Sound Art of the University of Barcelona and director of Orquestra del Caos. Founder of Còclea with Clara Garí - where he directed the Musica 13 Festival for more than a decade - and also of Orquestra del Caos, collaborator of the Institut International de Musique Electroacoustique de Bourges, was the designer and the first person in charge from the Sound and Music Laboratory of the CIEJ of the Fundació la Caixa de Pensions, as well as Professor of Electroacoustic Music at the Conservatory of Bourges. Former President of the Electroacoustic Music Association of Spain, he is currently President of Honour of the International Conference of Electroacoustic Music of the CIM / UNESCO, President of Quantum Art Lab, member of the Académie Internationale de Musique Electroacoustique / Bourges and of the Board of Trustees of the Phonos Foundation.

Website: sonoscop.net

D'Eco a Siringa has the support of "Barcelona 2020 Awards" grants from Barcelona City Council and Departament de Cultura de la Generalitat

Anna Carreras

Arrels

Keywords: Generative art, Complexity

Arrels connects drawing, code and the landscape through a cycle of growth and decay. While Anna looks to nature for the source of her work, she interprets and transforms her experience into carefully choreographed generative animation. In Arrels, growing tendrils the color of earth and sky collide in a vibrant dance.

Anna Carreras' work has a strong relationship to the Spanish landscape where she spends her time, and her piece in Social Codes, *Arrels*, connects drawing, code, and the environment through a cycle of growth and decay. While Anna looks to nature for the source of her work, she interprets and transforms her experience into carefully choreographed generative animation. In *Arrels*, growing tendrils the color of earth and sky collide in a vibrant dance. New growth in the arid soil overtakes the old, and the cycle continues.

Text by Casey Reas.



Anna Carreras is a generative artist and creative coder based in Barcelona, Spain. She focuses her work on the use of generative algorithms, code and interactive technology as a means of communication and an experience generator.

She is interested in complexity that emerges from small simple behaviors, from the balance between order, patterns and randomness and the rules behind. She tries to capture the diversity and richness of complexity working with generative algorithms and visuals inspired by Mediterranean colors and culture.

She has developed and exhibited digital installations and generative art pieces at Feral File, Art Blocks curated, Endless Ways, Medialab Prado Madrid, Forum Barcelona 2004, Sónar Festival, MIRA Visual Arts Festival, Abandon Normal Devices Liverpool and Ignite San Francisco among others.

Website: annacarreras.com

Mónica Rikić

Especies I, II y III

Keywords: Speculative philosophy, Electronic art, Post-singularity, Technodiversity, Artificial intelligence

“Especies I, II y III”, *focuses on imagining the possibilities for the evolution of artificial intelligence, as well as the consequences for the human condition. The project will be formalized through a set of robotic devices, built from algorithmic structures inspired by philosophical principles, which represent a small inorganic ecosystem*

This artwork is framed in the line thought of technodiversity, promoted by the philosopher Yuk Hui, which invites us to break with the monolithic vision of technological development and accept that there is a multiplicity of technologies and not a universal one.

Within this context, *Especies I, II y III* focuses on imagining the possibilities of evolution of technologies in an alternative way. Believing in the existence of technodiversities implies that technology becomes part of the cultural plane and that in the future, perhaps, it will be considered part of the biodiversity of each community. Starting from this speculative assumption, this project questions whether we will be

able to include artificial cognitive systems as part of the configuration of the world, accepting them as an independent species of conscious and sentient organisms.

Beyond questioning the technological resources necessary to develop artificial consciousness, this project wants to argue that its possibilities of existence also lie in a matter of philosophical attribution. To do so, the set of three robotic devices that configure this artwork are built from algorithmic structures inspired by philosophical principles that define possible existential, evolutionary, conscious and sensitive processes through the creative coding. They represent processes far from the simulation of the human, in search of the machinic condition itself. This small inorganic ecosystem simulate, through physical-digital behaviors, processes that invite us to identify them as conscious organisms. They are dramaturgical devices staging a possible evolution of AI, imagining a possible integration of these systems in the future. The set is accompanied by a fictional audio story that narrates the process of evolution of the devices.

This project has been awarded with the ISEA2022 Barcelona Grant by DKV within the DKV Arteria programme



Mónica Rikić, Barcelona 1986. Electronic artist and creative coder from Barcelona. She focuses her practice in code, electronics and non-digital objects for creating interactive projects often framed as experimental games. Her interest lies in the social impact of technology, human-machine coexistence and the reappropriation of technological systems and devices, to manipulate and rethink them through art. From educational approaches to sociological experimentation, her projects propose alternative ways of thinking about technology, robotics and artificial intelligence.

She has participated in different festivals around the world such as Ars Electronica in Linz, Creative Tech Week in New York, Robotronica in Australia or FILE in Brazil, among others, and has also exhibited her works at local institutions such as the CCCB, Arts Santa Mónica or Caixaforum. She has been awarded with the Catalan National Culture Award 2021, and also at the Japan Media Arts Festival, AMAZE Berlin, the Margaret Guthman Musical Competition in Atlanta and with a BBVA Foundation Leonardo grant. She has participated in artistic residencies at TAG in Montreal, EMARE in Australia, Medialab Prado in Madrid and Etopía in Zaragoza.

Website: monicarikic.com

Roc Parés

Water Drop Viewer

Indoor version, 2022

Keywords: Climate change, Hypernatural, Global warming, Speculative design, Philosophical toy

Analog interactive indoor installation that uses human energy to create an intimate relationship between the viewer and a modest, beautiful, unique and fragile drop of water. The analogy between the film frame and the water drop allows me to rethink my own relation to media and nature, to mediation and experience.

Original concept by Roc Parés
CAD by Étienne Baillargeon
Production Assistant: Marc Parés

Water drop viewer is an analog interactive indoor installation that uses human energy to create an intimate relationship between the viewer and a modest, beautiful, unique and fragile drop of water. The installation aims to promote a deep contemplative state that allows you to connect with a drop of water as an essential element of life and as a world in itself. After thirty years of dedication to electronic art, with this work I am forced to rethink my own relationship with the media and nature, with mediation and experience.

Interaction: When looking through the eye piece, the viewer sees what she perceives as a suspended wobbling water drop. In fact, she is always looking at different drops of water in the same position, revealed by the flashing light coming in intermittently through the shutter. The mechanism draws an analogy between the frame of a film and the drop in a stream of water. The installation works thanks to the physical interaction of visitors, who can operate the water pump and the bicycle light (dynamo) using the pedal of a century-old sewing machine. I believe that by incorporating a treadle mechanism, I can involve visitors in a physical repetitive action that can potentiate the meditative state that I am willing to convey.



Roc Parés (Mexico City, 1968). Interactive communication artist and researcher. Doctor in Audiovisual Communication (UPF, 2001) and graduate in Fine Arts (UB, 1992). Associate Professor and Researcher of the Department of Communication of Pompeu Fabra University, Barcelona. He has collaborated with dozens of artists, scientists, engineers, institutions and groups with whom he has promoted some pioneering platforms in electronic art. Parés' works are characterized by poetic and critical experimentation with digital media. His interactive installations, robotic and telematic performances have been presented and exhibited internationally at the CCCB, Fundació Joan Miró, Museo Nacional Centro de Arte Reina Sofia, Centro Cultural de Belém, Tate Gallery, Art Gallery of Ontario (AGO) National Museum of Photography, Film and Television, Centro Cultural de España en México, Ex Teresa Arte Actual, Laboratoire Paragraphe Université PARIS 8, Brandts Danmarks Mediemuseum, Centrale Montemartini, La Chambre Blanche Québec, Bòlit Centre d'Art Contemporani de Girona, among others.

Website: roc-pares.net

Yolanda Uriz Elizalde

Chemical Ecosystem

Keywords: Olfactory communication; Air sonification, Sono-olfactory synesthesia, Volatile organic components, Volatile organic compounds

Olfactory communication is a constant among living beings, however it is more evident in plants and animals. Between human beings, the exchange of audiovisual information is growing exponentially, even activities where chemistry is (or was) essential, such as flirting or seducing, are being replaced by virtual dating applications. In the recent digitization of our activities, is there room for other types of stimuli and communication that are not exclusively audiovisual?

Chemical Ecosystem reflects on the function of smell today, drawing inspiration from inter-species olfactory communication. It invites the public to observe how its presence influences the environment and affects the beings that inhabit it, listening to the olfactory messages that these inhabitants emit.

Ten synthetic organisms hang from a circular cover. They have fans that diffuse odors, small speakers emitting sounds, and gas sensors capturing the composition of the surrounding air. The sounds vary dynamically according to the data of the composition of the air, affected by the human presence..

This project has been awarded with the ISEA2022 Barcelona Grant by Fundació Ernesto Ventós / International Nasevo Prize



Yolanda Uriz Elizalde. Formed at the ArtScience department of the KABK (NL) where she developed her passion for merging science and art through perception, Yolanda Uriz creates multi-sensory experiences. With a particular interest in the proximity senses (smell, taste and touch), she concentrates her research on the synesthetic connections between sound and smell. She uses digital tools like Pure Data to generate sound or Arduino to interact with the analog world, combined with DIY perfumery or messing around in the Fab-Lab. Her work has been presented at festivals like Sonic Acts (NL), WRO Media-Art Biennale (PL), STRP (NL), SPARK (USA), Today's Art (NL/RU), Transmediale (GR), November Music (NL), In-Sonora (ES), etc.

Website: yolandauriz.info

Artworks from Barcelona Producció

Epiphany

Ariadna Parreu

Epiphany is a project that spreads like wildfire. The app of the same name deeply touches what we are always touching. The sculptural pieces are made of materials related to the screens of mobile devices, mirrors and costumes that were the plastic research for Instagram filters. Plasma as a mutable and transitional state. Ghost like an ectoplasmic sheet, between mucus and appearance, and cell phone screens are often greasy.



Ariadna Parreu (Reus, 1982) has been selected in different calls such as Barcelona Producció (projecte deslocalitzat, 2016), INJUVE (visual arts, 2011, 2010 and 2008) or the Amposta Art Biennial (2020, 2016 and 2012). She has been a resident of Hangar (2012-2014). She has exhibited individually at Bha-Phanein (Sala Muncunill, Terrassa, 2018) and collectively at Mercury Splash (Fundació Joan Miró, Barcelona, 2015) or Factotum (Fundació Antoni Tàpies, Barcelona, 2014). She has co-authored the inaugural Massana School exhibition, Amorf etern (2017). She has been a juror in various competitions: La Escocesa (2017), Sala d'Art Jove (2019), the Ciutat de Barcelona Prize (2019) and the ADI Cultura Awards (2020).

Instagram: @ariadnaparreu

ZENZ(A)I

Anna Pascó

The sayings of the time represent the cultural heritage of a changing landscape and time, and also exemplify the search for models, for generations, to understand natural phenomena and thus predict the future. Predictions that are based on probability theories, but also on imaginative ability. *ZENZ(A)I* is a neural network that processes information from the outside world and learns from it. Artificial intelligence creates meteorological sayings from existing meteorological data and sayings, and thus confronts principles such as failure, vagrancy, and open, untargeted discovery. The project addresses issues related to the configuration and functioning of common sense and the senses of artificial intelligence involved in the perception and understanding of reality.



Anna Pascó (Barcelona, 1990) has a degree in Fine Arts from the University of Barcelona and the Akademie der Bildenden Künste München, in the class of Olaf Nicolai. She has exhibited at the Kunsthalle Kempten, the Britta von Rettberg Gallery, the Kunstakademie München Museum, the Kunstverein München and the Eingen + Art Lab Berlin, among others. In 2020 she publishes Stickers with the publishing house Bomdia Berlin. She has received the Hans-Rudolf-Stiftung scholarship, has been a beneficiary of the Ambartgent project and has been awarded the Windmann Kunstpreis, 15HOCH2 or the Landeshauptstadt München visual arts prize, as well as being awarded at the XXI Biennial of Catalan Contemporary Art. The piece is part of the Staff Stiftung collection and the Stadtmuseum München.

Instagram: @ariadnaparreu

Artworks from Barcelona Producció

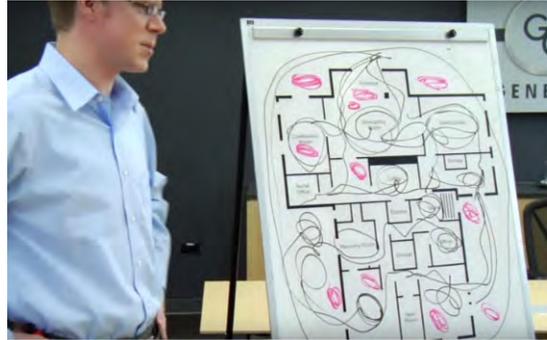
Pwned

Mario Santamaría

Pwned is an artistic research project that starts from the notion of a body of data to wonder how our technical memory (everything that is stored and registered in databases) participates in the construction of desire and the projection of the future. Based on the creation of an artificial intelligence trained through the movements of the artist in recent years, Santamaría asks the machine about its future movements. Its response will produce a series of routes and behaviors that will be reproduced by a human body.

The artistic practice of **Mario Santamaría** (Burgos, Spain, 1985) studies the phenomenon of the contemporary observer, paying attention to two processes, the representational practices and the machines vision or mediation. Using different tactics such as appropriation, remake or assembly, his work involves different fields like the conflict, the memory, the virtuality or the surveillance. He has been a resident artist at Hangar (Barcelona, 2015), Kunststiftung Baden-Württemberg (Stuttgart, Germany, 2015) and Flax Art Studios (Belfast, Northern Ireland, 2014), among others.

Website: mariosantamaria.net



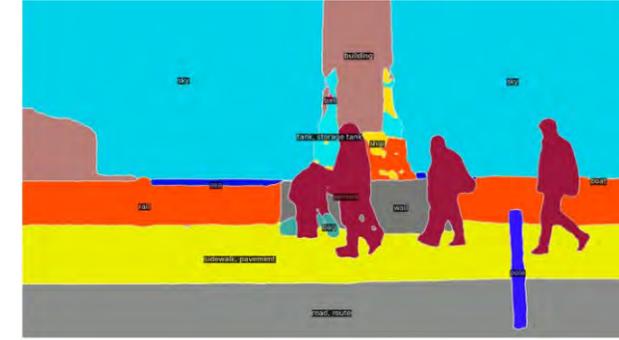
Imatges hostes. Parasitologia de la visió i altres simbiosis / Auspícis

Estampa

Estampa collective presented two works. First, *Imatges hostes. Parasitologia de la visió i altres simbiosis*, an analysis of the forms of artificial vision and its character as a parasite of images. In this sense, what a camera now captures is no longer an image, but a cluster of layers of information. The set of screens allows each of these layers to be seen separated, which puts their operation and uses in crisis. Secondly, the exhibition also shows *Auspícis*, a project in which Estampa fantasizes with the notion of prediction. An ADS B device picks up radio frequency signals from aircraft and crosses them with commercial aviation data. Every time the machine detects an unusual flight (private jets, luxury charter flights or military), the production of an auspice is set in motion. Thus, an enigmatic message appears on the LED screen.

Estampa is a collective of programmers, filmmakers and researchers working in the fields of audiovisual and digital environments. Our practice is based on a critical and archaeological approach to audiovisual technologies, the research on the tools and ideologies of artificial intelligence and the resources of experimental animation.

Website: tallerestampa.com





CAL MASSÓ, REUS

Exhibition

BEEP COLLECTION: ORIGINS

Cal Massó (Reus) hosted this outstanding exhibition, under the name of BEEP COLLECTION: ORIGINS.

Curated by Roberta Bosco and Stefano Caldana, the exhibition brought together the latest digital artworks incorporated into the .BEEP {collection;} and showed the result of one of the production grants awarded by ISEA2022 Barcelona, Rain beats by Josecarlos Bloom.

Origins refers to the concept of birth. In fact, the exhibition also featured some of the first works with which this pioneering electronic art collection began its career through the ARCOMadrid/BEEP Acquisition Award.

In addition, over the years the Beep Collection has been rescuing some of the fundamental works for the development of electronic art in our country, valuing the legacy of pioneering creators in the sector, who are already part of the history of contemporary art such as Peter Weibel, Marcel·lí Antúnez and Antoni Abad.

Artworks

Ego – Spanglish
Antoni Abad

Try Not To Think So Much
Eugenio Ampudia

Alfabeto
Marcel·lí Antúnez

Vestibular_1
Albert Barqué-Duran and Marc Marzenit

RAIN BEATS
Josecarlos Flores

Prosopagnosia
Joan Fontcuberta and Pilar Rosado

Neuronnection
Anaisa Franco

Tycho: Test One
Paul Friedlander

Independent Robotic Community
Ricardo Iglesias and Gerald Kogler

Time Capsule
Eduardo Kac

Redundant Assembly
Rafael Lozano-Hemmer

Still Life Tornadoes & Still Life Swell
Marina Núñez

Aurelia 1+Hz / proto viva generator
Robertina Šebjanič

TH50PH10EK WALL
Stefan Tiefengraber

De Notre Nature
Eric Vernhes

Das Tangible Bild
Peter Weibel

Antoni Abad

Ego – Spanglish

1999

Computer-generated video installation
BEEP Collection acquisition

A historic piece by a Catalan artist who pioneered the digital and electronic art scene. Flies have been an inspiration throughout Antoni Abad's artistic career, since his unforgettable pieces for the web including Z.exe, as well as other projects that anticipated concepts such as social networks and online interaction between users.

His pioneering *Ego – Spanglish* is a generative animation work which uses drawing software to enable the computer to create and project swarms of houseflies which buzz and flutter around in random patterns. Every few minutes, several dozen flies gather to spell out – in English or Spanish – a variant of the first person singular: "I", "Me" or "Yo". Once the word is legible, the flies then scatter to the edges of the projection wall, before gathering together once again. This piece was presented by the famous curator Dan Cameron at the New Museum in New York in 2001.



Photo by Dados Negros

Antoni Abad (born Lleida, 1956)

Coming from a family of artists, Antoni Abad graduated in Art History at the Universitat de Barcelona in 1979. During the 1980s and early nineties he made mobile sculptures with industrial materials, such as rubber foam and Mecalux, which, accompanied by photographic sequences, reflect on the dynamism of forms and the infinite combinations that derive from them. Hence the artist's interest in measurement systems.

Website: antoniabad.info

Eugenio Ampudia

Try Not To Think So Much

2018

Interactive sound installation
2018 ARCOMadrid/BEEP Electronic Art Award

With *Try Not To Think Too Much*, Eugenio Ampudia follows on from previous works emphasizing art as an effective means of communication, but on this occasion the artist highlights the paradox involved in breaking this flow using communicational noise. When we apply the term "noise" to communication, we are not only talking about annoying sounds, but any interference in the process. This work therefore alludes to the type of communication noise which we live with, which surrounds us and which

becomes a silent method of influence in our everyday surroundings.

The artist highlights this communication, which tends to be endogamous and self-referential in the world of art, while proclaiming discourses that supposedly aim to make culture more accessible to the viewer. The fact that the noise in the piece is made by appropriating and superimposing theories and conferences related to the art world which are barely intelligible is an ironic nod to the theoretical apparatus and the codes that sustain the system of art.

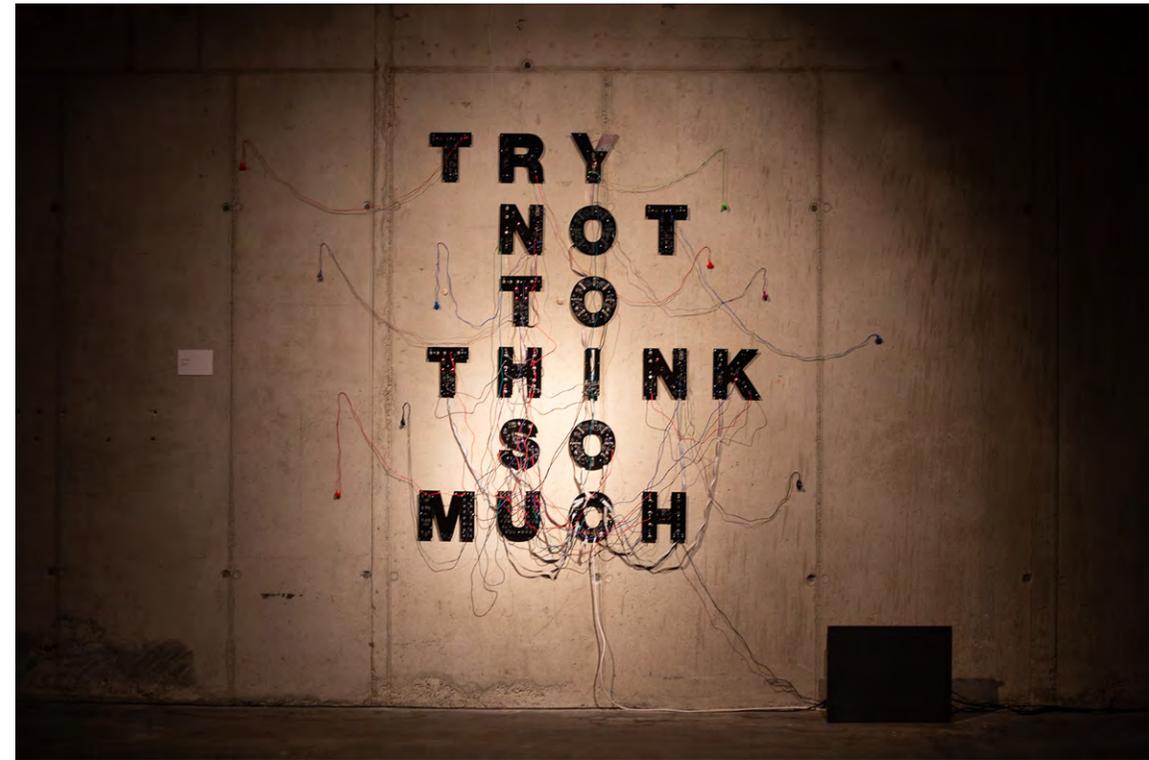


Photo by Ars Electronica

Eugenio Ampudia (born Melgar, 1958)

As a multidisciplinary artist, his work approaches the artistic processes from a critical point of view; the artist as a promoter of ideas, the political role of creators, the meaning of art pieces, the strategies that allow to bring them to life, their mechanisms of production, promotion and consumption, the efficiency of spaces assigned to art, as well as the analysis and experience of those who watch and interprets them.

His work has been internationally exhibited in places as ZKM, Karlsruhe, Germany; Jordan National Gallery of Fine Arts, Amman, Jordan; Museo de Arte Carrillo Gil, Mexico DF, Centro de las Artes de Monterrey and Museo de Arte Contemporáneo de Oaxaca, Mexico; Boston Center for the Arts, Boston (MA), USA; Ayala Museum, Manila, Philippines; The Whitechapel Gallery in London; Abierto X Obras, Matadero Madrid, Spain; MAC Gas Natural Fenosa, La Coruña, Spain; and in Biennials such as Singapore and Havana's The End of the World Biennial. And it is also held in collections of museums as MNCARS, MUSAC, ARTIUM, IVAM, and La Caixa, among others.

Website: eugenioampudia.net

Marcel·lí Antúnez

Alfabeto

1999

Interactive installation

BEEP Collection acquisition

Alfabeto is an emotional prosthesis that moans and whispers. With this response, it invites visitors to distance themselves from their role as a passive recipient and to become an emotional instrumentalist. A radar mechanism recognizes people's presence in the room, and the sculpture attracts their attention by emitting a moan. When the viewer caresses or hugs the cylinder, it makes a noise, as its surface is equipped with sensors, which emit sounds associated with different moods, such as anxiety, pleasure, joy and pain.

Antúnez talks to us about human relationships and their origins, covering the birth of communication, gestural signs and social reactions, play and interaction between people. This pioneering work of interactive art has been a benchmark for everything linked to participation and the viewer's new role in relation to the work of art.



Photo by Carles Rodriguez

Marcel·lí Antúnez (born Moià, 1959)

Marcel·lí Antúnez studied Fine Arts at the Universitat de Barcelona. A multidisciplinary practitioner, he is one of the leading figures in the field of electronic art and experimental scenography. In the eighties, he was the founder and leader of the company La Fura dels Baus, which popularised action theatre. In the nineties, he began to focus on the visual arts and video, and their interaction with technology.

Since then, he has created a unique iconoclastic universe based on the incorporation of computational and electronic systems. His mechatronic performances and interactive installations incorporate robots and all kinds of electronic systems. Often applied to the human body, they are described as Sistematurgia. His graphic work production features unusual materials such as human fluids, foodstuffs, textual and visual elements, using the technique of collage and improvisation.

Website: marceliantunez.com

Albert Barqué-Duran and Marc Marzenit

Vestibular_1

2020

Immersive audiovisual installation
2020 BEEP Collection production

Vestibular_1 is an immersive audiovisual installation, which inspires illusory sensations of the viewer's own movement in complete darkness by temporarily shutting down their vestibular system. The vestibular system is related to balance and spatial control, and is located in the human being's inner ear. These illusory sensations of motion are achieved by means of specific powerful patterns and configurations of light and sound stimuli which remain in the retina and the hearing system in the dark. The piece is based on research by the University of London's Vestibular Multisensory Realization (VeME) Laboratory.

Vestibular_1 is an in-depth examination of the links between electronic works of art and the viewer at a time of change, when society is not yet used to this new form of art. It is interesting to consider how Marshall McLuhan himself evidences these sensory alterations in his essay *The Gutenberg Galaxy* (1963): "When technology extends one of our senses, a new translation of culture occurs as swiftly as the new technology is interiorized. If a technology is introduced either from within or from without a culture, and if it gives

new stress or ascendancy to one or another of our senses, the ratio among all of our senses is altered. We no longer feel the same, nor do our eyes and ears and other senses remain the same. The interplay among our senses is perpetual save in conditions of anesthesia. But any sense when stepped up to high intensity can act as an anesthetic for other senses."

Albert Barqué-Duran and Marc Marzenit (born Lleida, 1989 and Barcelona, 1983)

Albert Barqué-Duran (1989), PhD, is an artist and a researcher in Creative Technologies and Digital Art, currently based in Barcelona. Albert earned his PhD and Postdoc in Cognitive Science from City, University of London (UK) and have been a Visiting Postgraduate Researcher at Harvard University (USA) and University of Oxford (UK). Albert's artistic research focuses on: (1) human-machine interaction during artistic and creative processes, (2) Artificial Intelligence's (AI) aesthetic artifacts, (3) perception and aesthetics under sensory conflicts, vestibular manipulation or altered gravity conditions, and (4) experimental formats and aesthetics in virtual environments using game engines.

Precociousness in techno has its best and latest representative in Marc Marzenit.



Photo by Roberta Bosco

Despite his young age, **Marc Marzenit** has been a prominent part of the scene for over a decade; his international breakthrough came in 2006 with the anthem "Trozos de Navidad" on his own imprint Paradigma Musik. Artists including Sven Väth, John Digweed, Hernan Cattaneo, Dave Seaman and even Tiësto, noticed his talent and were quick to include his tracks on some of the year's most prestigious mix compilations. Shortly afterwards Marc began releasing on influential labels such as Bedrock, Cocoon, Tronic, Natura Sonoris, Sudbeat, etc.

Website: albertbarque.com

Website: marzenit.com

Josecarlos Flórez

RAIN BEATS

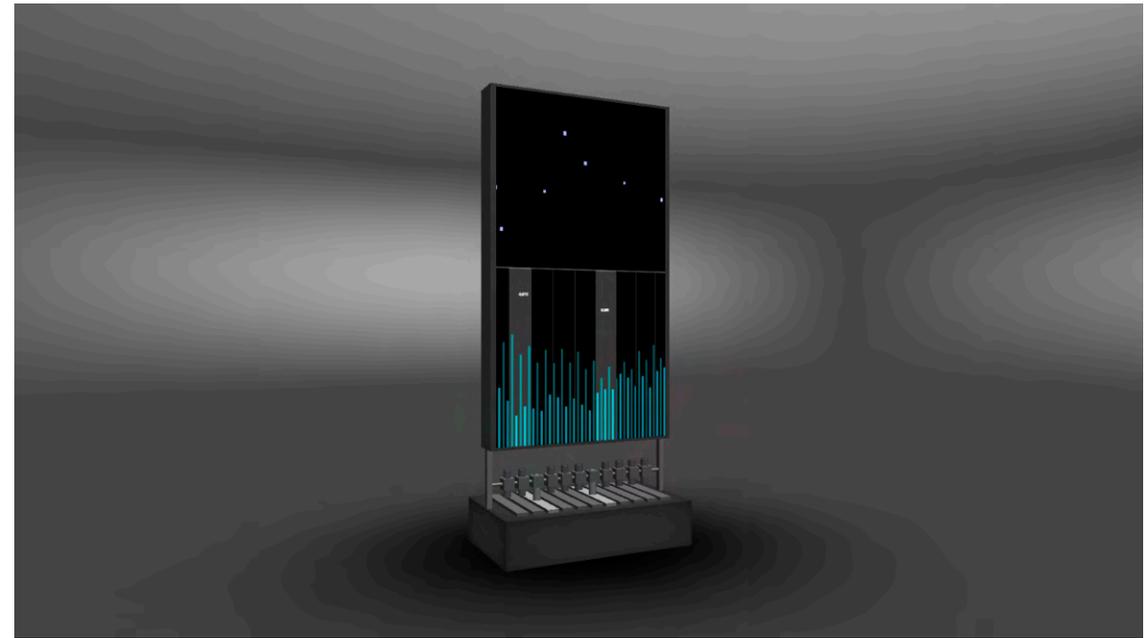
2022

Audiovisual installation

Reddis Foundation grant production

We are living in a time when large amounts of data are produced by sensors, wearable devices and mobile phones. This information is collected, analysed and used by companies and governments in an attempt to manage and control the city in a decentralized and centralized way. While this management and control is supposed to contribute to citizens' well-being and safety, citizens are in most cases left outside this circuit. In fact, they often do not participate in the generation, analysis or use of the data, because they lack either access or the requisite knowledge.

RAIN BEATS, a project that seeks to transform data into sensory experiences, is an attempt to design new data visualization interfaces and to present big data to viewers in a creative way. It is an audiovisual installation which is connected to the internet, and obtains and processes atmospheric data (big data) and transforms them into digital musical scores that are then transformed into sound. It is an intelligent machine that processes data obtained from the satellites that are constantly monitoring the earth, deconstructing the environment into numbers, and it uses the data as raw material for the creation of soundscapes. *RAIN BEATS* could be described as a machine that creates and interprets "music made by the forces of nature."



Josecarlos Flórez (born Lima, 1978)

Josecarlos Flórez, is a Peruvian new media artist and independent researcher, who lives and works in Barcelona. His research area focuses on the fusion of art and open source technologies. He works on projects involving creative programming, sound, robotics, expressive lighting, generative visuals, data visualization, digital manufacturing, IoT (internet of things), VR (virtual reality) and AR (augmented reality), and AI (artificial intelligence). His work has been exhibited in Peru, Spain and the United States, at art fairs such as ARCO (Madrid) and Swab Art Fair (Barcelona) and festivals such as Sonar + D (Barcelona) and ARS ELECTRONICA (Linz).

Website: josecarlosflorez.com

Joan Fontcuberta and Pilar Rosado

Prosopagnosia

2019

Hybrid installation: photographs, software and book.
2020 ARCOmadrid /BEEP Electronic Art Award

Prosopagnosia is a hybrid work by artists working in the areas of post-photography and research related to the image in the digital age. The work consists of a set of photographs, the software that generated them, and an object book about the complexity of contemporary portraiture.

Prosopagnosia (a memory disorder that prevents sufferers from recognizing faces, also known as face blindness) is a project based on the historical photographic archive of a local Spanish newspaper from

the 1930s, featuring public figures of the time. This collection of faces is the starting point at which an algorithm called Generative Adversarial Network (GAN) undertakes a process to automatically generate a collection of new faces – photorealistic images of people who do not exist. The resulting images are photographically striking, but the pages of the book also show the wonderful sequence of failed attempts that provide a reference point for reviewing some of the important milestones in the history of art: Expressionism, Cubism, Surrealism, Picasso, Bacon, Abstraction, etc.



Joan Fontcuberta and Pilar Rosado (born Barcelona, 1955 and Sant Boi del Llobregat, 1965)

Joan Fontcuberta is one of the most internationally renowned Catalan photographers. He is also a theoretician of the photographic image and photography editor, and has taken part in numerous events, debates and exhibitions of contemporary photography. He was one of the founders of PhotoVision (1980), a bilingual publication in Spanish and English dedicated to photography. His multifaceted production focuses on the authenticity of the image and its capacity to represent and supplant the real world.

Pilar Rosado Rodrigo has a PhD in fine arts and a master's degree in biology. Her interest is focused on how new technologies can modify the way we look at the world and on the creative possibilities that are placed within our reach.

Website: es.wikipedia.org/wiki/Joan_Fontcuberta

Website: pilarrosado.eu

Anaisa Franco

Neuronnection

2020

Interactive installation

BEEP Collection, Institut Ramon Llull, New Art Foundation,
Hangar production grants

Neuronnection is an interactive installation that allows the viewer to play with and control the reactions of light within a sculpture, using their own thoughts. The piece tells us about life and the neural interconnections that underlie the thoughts, emotions and chemical processes that control human life, and about the possibilities that can emerge when they are hybridized with electronic devices.

The installation creates an interface with the brain that enables the user to play with their mind. The formalization of the piece is inspired by the creation of thoughts that comes from the activity of neurotransmitters. These produce electrical signals (synapses) in the neighbouring neurons, which spread like a wave to thousands of neurons, thereby creating thought. The user can interact with the piece using the Nextmind device. The main idea behind the piece is for human beings to be immersed and reflected within their own thoughts and to enable them to control and play with their own imagination.



Photo by Ana Jimenez

Anaisa Franco (born Uberlândia, 1981)

Anaisa Franco creates interfaces that artistically elaborate an “affective” situation where people expand their senses through the interaction with the sculptures, creating new forms, relationships and experiences between people, the subjects chosen and the technological material that we have available in the market.

She has a Master of Advanced Architecture at IAAC Institute for Advanced Architecture of Catalonia in Barcelona. One year of M-Arch 1 at SCI-Arc in Los Angeles, a master’s degree MA in Digital Art and Technology from the University of Plymouth in England and a BA Bachelor of Arts in Visual Arts from FAAP in São Paulo.

In the last years she has been developing responsive public art installations and new media artworks for museums, public spaces, galleries, medialabs, residencies and commissions such as Shanghai City Life Festival, Annecy Paysages, Medialab Prado, Mecad, MIS, Hangar, Taipei Artist Village, China Academy of Public Art Research Center, Mediaestruch, Cite des Arts, ZKU, SP_Urban, MAC Fenosa, VIVID Sydney, EXPERIMENTA Biennale Melbourne, RUMOS Itaú Cultural, URBE, and many others.

Website: anaisafranco.com

Paul Friedlander

Tycho: Test One

2015

Kinetic audiovisual installation

First ATA New Art Foundation and BEEP Collection Grant (2015)

Tycho: Test One is a piece of kinetic art by an artist pioneering the research between art, science and technology. The piece is completed with a translucent and luminous concrete monolith which has been conceived as a study in the development of integrated

light applications in architectural spaces. Finally, despite the fact that the monolith has not been included in *Origins*, Friedlander's piece, like *Vestibular_1* by Albert Barqué-Duran and Marc Marzenit, is a work that uses light to focus on the viewer's experience before the work and alterations of sensory perceptions.



Paul Friedlander (born Manchester, 1951)

Paul Friedlander has spent more than two decades investigating all kinds of technologies and procedures with the goal of making light a malleable and flexible material that can take on any shape or volume.

Friedlander's "kinetic light sculptures" owe much to the work of other great names that preceded him in the field of light or kinetic art, from László Moholy-Nagy to Flavin or Turrell, using computer lighting control systems to enhance the impression of incorporeity and dynamism that his sculptures give.

Although works like *The Wave Equation* or *The Energy Core* are not strictly holograms, what the observer discovers when standing before them are large incorporeal shapes in motion, suspended in mid-air, and when they spin around they give light a three-dimensionality we are unaccustomed to seeing in the proximate physical space

Website: paulfriedlander.com

Ricardo Iglesias and Gerald Kogler

Independent Robotic Community

2005

Interactive robotic installation

2006 ARCOmadrid/BEEP Electronic Art Award)

Independent Robotic Community is a robotic installation that considers themes such as artificial intelligence, life and interpersonal relationships and focuses on human relationships from an ironic perspective. The installation is based on our studies and concerns in the research and presentation of new forms of interaction and communication between mechanical elements (robots) and carbon representations (humans). It aims to show how communication, even between robots, leads to greater understanding and greater socialization. It involves a small-format robot community divided into two groups. Each group starts from a primary level of socialization and a set of sounds, which form its own vocabulary. This initial state consists of a very simple movement, within a limited spatial environment. When it meets other robots, it exchanges information about its status and sounds, and its degree of sociability increases. Each increment leads to a development of the complexity of the movements, which means that it can extend its exploration of space further while at the same time enabling new encounters, repeating the cycle. It won the first ARCOmadrid/BEEP Acquisition Award.

Ricardo Iglesias and Gerald Kogler (born Madrid, 1965 and Linz, 1974)

After 20 years working in the Faculty of Fine Arts of the University of Barcelona, Ricardo Iglesias is currently professor at the Compluense University. Iglesias worked as webmaster and several individual projects for the MACBA Contemporary Art Museum Barcelona: *Antagonisms*, *Remote Connection* and *On Translation: The Web* (by the artist Muntadas). He has been invited to give lectures on Net.Art, robotics, art and new technologies in different Universities and Research Centers as CEDIM-Education Design Center (Monterrey, Mexico), European University (CEES), Carlos III University, Alicante University, Barcelona University, Cuenca University, Salamanca University and Valencia University, among others. Gerald Kogler is a computer engineer specialized in digital cartography. His work focuses on the relationships between technology and social transformation through free software and hardware, open data and data visualization. He worked in AEC's Future Lab, was part of several hacklabs of BCN and co-founded ZZZINC. His media art works have been exhibited at FILE, ARCO and Ars Electronica.

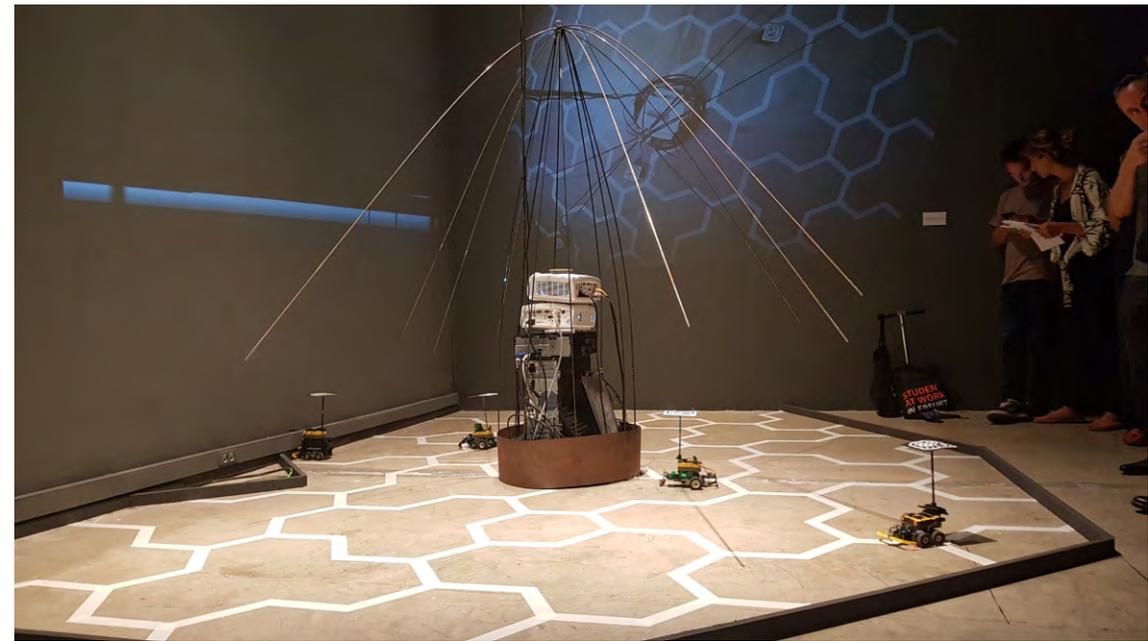


Photo by Stefano Caldana



Website: ricardoiglesias.net

Website: <https://independent.academia.edu/GeraldKogler>

Eduardo Kac

Time Capsule

1997

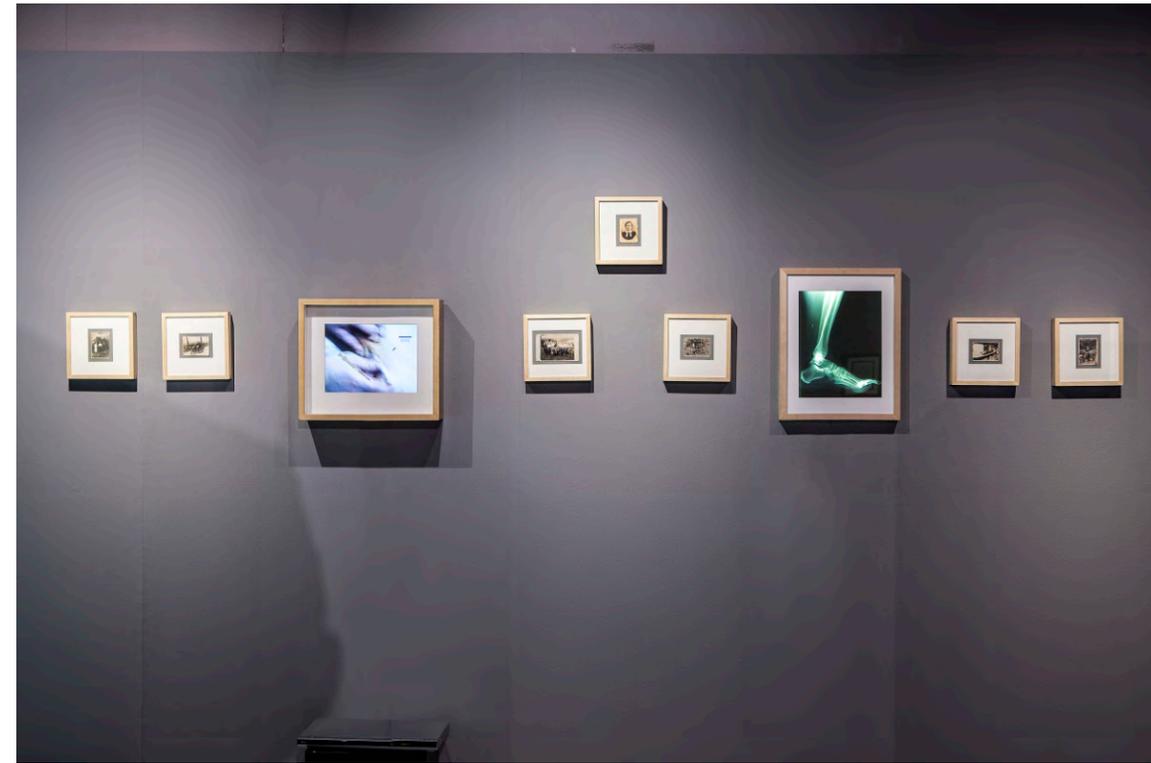
Photography, video and performance memory
2006 ARCOMadrid/BEEP Electronic Art Award

Time Capsule brings together the memory of the eponymous performance in different media, performed by Eduardo Kac at the Casa das Rosas cultural centre in Sao Paulo (Brazil), and broadcast live on television and on the internet. The artist, a leading exponent of bioart, became the first human being to wear a microchip implant, by implanting a digital microchip in his leg, which stores documents, digital files and the memory of the life of his family in Europe in the years before the Second World War.

Eduardo Kac (born Rio de Janeiro, 1962)

Eduardo Kac is internationally recognized for his groundbreaking work in contemporary art and poetry. In the early 1980s, Kac created digital, holographic and online works that anticipated the global culture we live in today, composed of ever-changing information in constant flux. In 1997 the artist coined the term "Bio Art," igniting the development of this new art form with works such as his transgenic rabbit GFP Bunny (2000) and *Natural History of the Enigma* (2009), which earned him the Golden Nica, the most prestigious award in the field of media art. GFP Bunny has become a global phenomenon, having been appropriated by major popular culture franchises such as Sherlock, Big Bang Theory and Simpsons, and by writers such as Margaret Atwood and Michael Crichton. In 2017, Kac created *Inner Telescope*, a work conceived for and realized in outer space with the cooperation of French astronaut Thomas Pesquet. Kac's singular and highly influential career spans poetry, performance, drawing, printmaking, photography, artist's books, early digital and online works, holography, telepresence, bio art, and space art. Kac has also authored or edited several books, including *Telepresence* and *Bio Art -- Networking Humans, Rabbits and Robots* (University of Michigan Press, 2005).

Website: www.ekac.org



Rafael Lozano-Hemmer

Redundant Assembly

2015

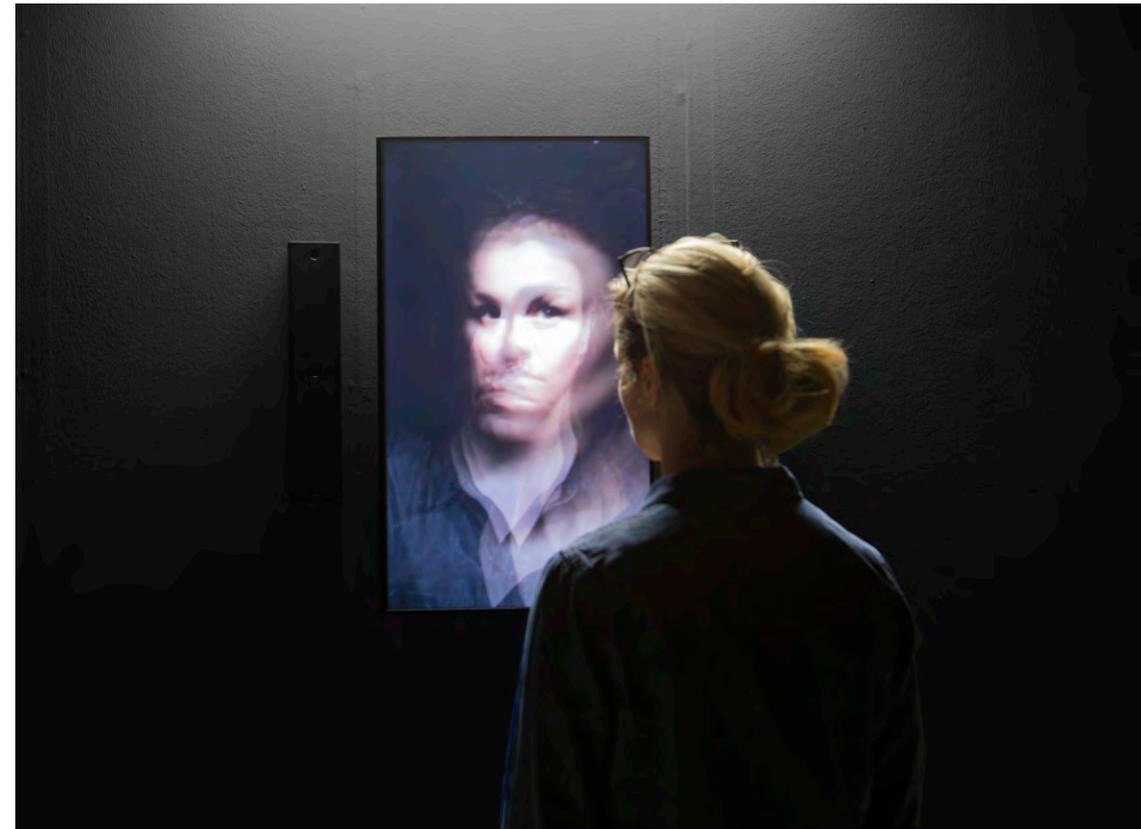
Interactive installation
BEEP Collection acquisition

A pioneer of electronic art, and undoubtedly one of the artists who has had the most success in striking a balance between research and the circuits of the art market. His primary interest lies in creating platforms for public participation, robotics, computerized surveillance and telematic networks. His works tell us about the use we make of technology, and how control systems transform and manipulate us.

In *Redundant Assembly* several cameras compose a live portrait of the visitor simultaneously from six perspectives, aligned using face detection systems.

The resulting image is mysterious, and divorced from the laws of symmetry and the perception of depth in binocular vision. If several visitors stand in front of the work, a composite portrait of their different facial features is produced in real time, creating a hybrid "selfie". A version of the work for public space includes a time factor that merges faces, by mixing the present and the past. Facial recognition is a technique often used by the police, military and corporate institutions to

search for and find suspicious people or a particular individual. Here the same technology is used to confuse the portraits and highlight the artificiality and arbitrary nature of identification.



Rafael Lozano-Hemmer (born Mexico City, 1967)

Rafael Lozano-Hemmer was born in Mexico City in 1967. In 1989 he received a B.Sc. in Physical Chemistry from Concordia University in Montréal, Canada. Media artist working at the intersection of architecture and performance art. He creates platforms for public participation using technologies such as robotic lights, digital fountains, computerized surveillance, media walls, and telematic networks. Inspired by phantasmagoria, carnival, and animatronics, his light and shadow works are "antimonuments for alien agency".

He was the first artist to represent Mexico at the Venice Biennale with an exhibition at Palazzo Van Axel in 2007. He has also shown at Biennials in Cuenca, Havana, Istanbul, Kochi, Liverpool, Melbourne NGV, Moscow, New Orleans, New York ICP, Seoul, Seville, Shanghai, Singapore, Sydney, and Wuzhen. His public art has been commissioned for the Millennium Celebrations in Mexico City (1999), the Expansion of the European Union in Dublin (2004), the Student Massacre Memorial in Tlatelolco (2008), the Vancouver Olympics (2010), the pre-opening exhibition of the Guggenheim in Abu Dhabi (2015), and the activation of the Raurica Roman Theatre in Basel (2018).

Website: lozano-hemmer.com

Ken Matsubara

Moon Bowl

2016

Audiovisual installation

BEEP Collection acquisition

This intimate installation on the subjects of recall and memories is based on the Eastern tradition of Zen meditation, and takes the viewer towards the transitory realm and the fragility of existence. Like hands that gather water, the bowl acts as a vessel of acceptance, in which images sink into the depths of the bowl as memories. As the water reflects the ever-changing presence of the moon, we embrace its fragile state as the beauty of impermanence, and discover future hopes such as restoration. The statue of the

Bodhisattva, the plaster statuette, the glass bottle, the corpse of the bird – they are all broken down, seeking means of restoration in a continuous state of repetition.

"Hojoki" (Kamo-no-Chomei) The current never stops, but the river never carries the same water. The foam that floats in canyons sometimes disappears, sometimes forms, but never lasts for long. In this world, the same is true of people and their homes.



Ken Matsubara (born Tokyo, 1949)

Japanese artist Ken Matsubara lives and works in Tokyo. His works, halfway between video and installation, are made up of different elements such as photographs, videos and all kinds of objects rooted in our individual and collective memory. With these creations, Matsubara tries to explore a set of memories that tend to fade into the depths of human consciousness. In fact, although he often uses his personal experiences to develop the themes of his works, his interest usually goes a step beyond his own memories, since he is attracted by the points in common that exist between different cultures and generations.

In the artist's own words: "I believe that animated images have the power to invoke and transmit memories that are ever-changing. I suppose that these are genetically inherent in our DNA and that they contain exhaustive knowledge of the past since ancient times. In addition, they share a certain collective memory that transcends the individual, alternating between past and present ages. If we can recall such memories then I believe our future has the potential to overcome the limits of cultural, historical and social notions of individuality. In this way we will find ourselves oscillating between the past and the future in a state of constant repetition, incessantly inquiring about its means without these being necessarily justified by an end.

Website: kenmatsubara.com

Marina Núñez

Still Life Tornadoes and Still Life Swell

2021

Audiovisual installation

2021 ARCOmadrid/BEEP Electronic Art Award

These videos reformulate the genre of still life in a neo-Baroque style, allegorizing issues that are related to both human existence and our relationship with nature. Endowed with a highly sophisticated pictorial tonality, and providing a kind of fascinating hyper-reality, they present the viewer with unique details, such as the movement of a fabric, or liquid spilling from a glass as a result of inexplicable turbulence. Drama and beauty are interlinked in these pieces, which confirm this artist's maturity.

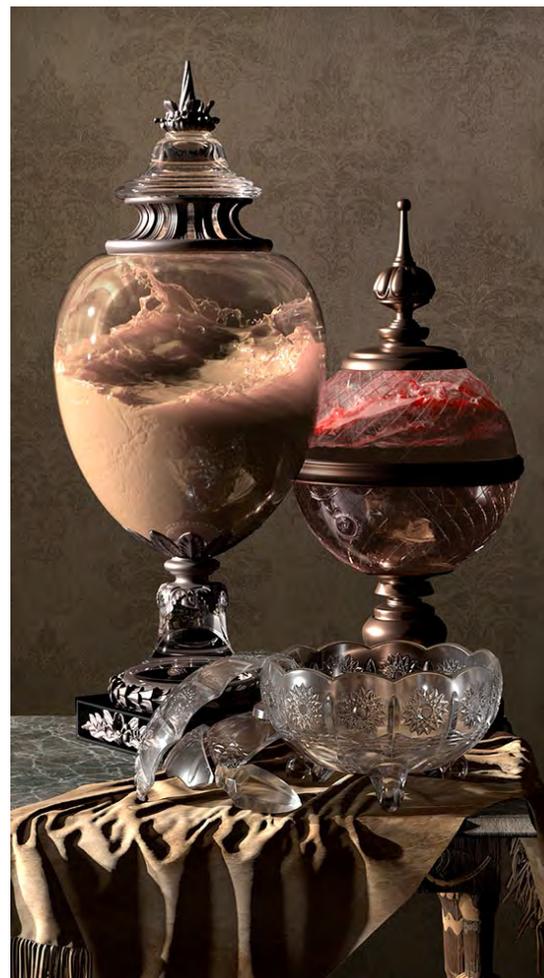
Marina Núñez (born Palencia, 1966)

Marina Núñez (born 1966) is a Spanish artist, and a professor at the University of Vigo.

Her work is included in the collections of Museo Nacional Centro de Arte Reina Sofía in Madrid, Artium in Vitoria, MUSAC in Leon, Patio Herreriano in Valladolid, TEA in Tenerife, Fundación La Caixa, Fundación Botín, Corcoran Gallery of Art in Washington, DC, National Museum of Women in the Arts in Washington DC, Mint Museum of Art in Charlotte, North Carolina, Katzen Arts Center, American University Museum, in Washington DC, Fonds régional d'art contemporain in Corsica, France.

Her work was first exhibited in the early 1990s. Her depictions of madwomen and female monsters revealed an interest in gender discourses -in deconstructions and propositions about women's identities, in the wake of what was one of the great discursive achievements of feminism of the 60th-70th and later.

Her oil painting, narrative and conceptual, progressively combined, from the first decade of 2000, with digital techniques in 2D and 3D,



both still image and video. Simultaneously, new iconographies, related to the territory of science fiction and horror -without leaving behind references of the clinical imaginary and influences of certain moments in Art History as the Baroque or Surrealism- were consolidated in her images.

Marina Núñez represents posthuman identities through images of mutant, mestizo, multiple bodies. In philosopher José Jimenez 's words, "the question of identity opens to the experience of metamorphosis: I am myself and my other. Body and image. Male and female. Rational and insane. Normal and monster. Native and foreign. Human being and machine. Earthling and alien."

Website: marinanunez.net

Stefan Tiefengraber

TH-50PH10EK WALL

2021

Kinetic audiovisual installation

2021 BEEP Collection production

TH-50PH10EK WALL is a piece that deals with our relationship with technology, its evolution and the unstoppable obsolescence of all the electronic devices that fill our lives. The piece consists of a plasma screen – a device that been extensively used for many years in the context of exhibitions and events. A monitor, obsolete today due to recent technological breakthroughs, goes from being a medium for art to being the work of art itself.

Installed as if it were a pendulum, the screen swings freely on the wall. When the monitor stops, it is pulled back to its initial

position with the help of a winch, and made to swing again by pulling a string, in a performative act that cannot take place without human intervention. Each cycle ends when the monitor stops and the motion produces no sound or video. The sound is created by amplifying the friction of the back of the monitor against the wall. The display on the screen is a direct transfer of the analogue audio signal into an analogue video signal. The artist, whose works are based on the synergy between old and new technologies, plays with the meaning of the function of devices, and moves away from their predetermined uses and changes them.



Stefan Tiefengraber (born Baden bei Wien, 1981)

His work ranges from kinetic sound installations to audio-video noise performances. Tiefengraber experiments with the modification of devices, which are originally manufactured for different purposes. Combined with the perception of the audience, this experimental attempt of exploring old and new materials leads him to new and unpredictable results.

The artist's work has been exhibited at Japan Media Arts Festival 2021 (Tokyo/Japan), Galerie gerken (Berlin/Germany), Ars Electronica Festival (Linz/Austria), TodaysArt 2014 (Den Haag/Netherlands), New Media Gallery (Vancouver/Canada), 16th Media Art Biennale WRO 2015 (Wroclaw/Poland), Blaues Rauschen (Bochum/Germany)

Website: stefantiefengraber.com

Eric Vernhes

De Notre Nature

2013

Interactive installation
BEEP Collection acquisition

De Notre Nature is inspired by the second book of *De rerum natura*, by Lucretius. This poem written in Latin, dating from the first century BC, is a translation of the atomist doctrine developed by Epicurus around two centuries earlier. Book II discusses atomic physics and the constitution of bodies: according to Epicurean doctrine, matter is composed of indivisible particles called "atoms", which move randomly in a vacuum, and can combine to form combinations of matter that can create both a living being and any object.

In this materialist framework, Lucretius postulates the concept of the "clinamen", in which atoms spontaneously and randomly swerve in their vertical fall into the void, which enables them to collide and generate matter. Based on this atomic mechanics, Epicurus deduces the absence of divine determinism and the proof of the existence of our free will.

Eric Vernhes represents this cosmogonic vision by means of an installation which consists of a column topped by a golden tray, containing balls and a mirror screen

a few steps from the column. As the viewer approaches, the tray containing the balls representing the atoms of Epicurean doctrine begins to oscillate. The balls roll and hit each other, creating a "sound wave". A fragile image of the viewer simultaneously appears on the screen, as if it has been generated by the movement of the "particles" in the tray.

Eric Vernhes (born Paris, 1966)

Eric Vernhes creates kinetic, visual and sound devices and installations whose behaviour he programs according to self-generative, interactive or hybrid logic. Initially an architect, and later a scriptwriter, filmmaker and musician, Vernhes has developed a career as a multidisciplinary artist with a resolutely humanist approach.

The digital processes he uses are extracted from their technical context to serve a timeless discourse inspired by literature and philosophy. The demanding aesthetics, as well as the use of noble materials, move us away from the manufacturing processes of engineering to bring us closer to the humanity of the gesture. Vernhes thus lends existence to anthropoid creations: the proper movement of the works, by marrying that of our conscience, also seems to embrace our own.

Website: ericvernhes.com



Robertina Šebjanič

Aurelia 1+Hz / proto viva generator

2019

Generative interactive installation with a living system

A BEEP Collection and Sektor Institute of Ljubljana production

Jellyfish are organisms that are very simple and ancient, but at the same time extremely advanced. They appeared in the Cambrian period more than 500 million years ago, when life on Earth had not yet emerged from the water. They are highly specialized species, despite their simplicity. They are often referred to as being immortal and capable of transiting infinitely from an adult stage to rejuvenation, by means of a process known as transdifferentiation, which transforms their cells and tissues.

The interactive installation *Aurelia 1 +Hz / proto viva generator* takes us into this fascinating universe, and looks at the potential for coexistence between animals and machines. Unlike robots powered by digital artificial intelligence, the project uses a living organism to process the vitality of a simple machine. The installation focuses on two separate entities (jellyfish and robots), but if they merge into one they lead to the emergence of a new biocybernetic organism: would it be able to live forever?



Photo by Miha Godec

Robertina Šebjanič (born Murska Sobota, 1975)

Robertina Šebjanič is an artist whose work explores the biological, chemical, political and cultural realities of aquatic environments and the impact of humanity on other organisms. Her projects call for the development of empathetic strategies aimed at recognising the rights of other (non-human) species. In her analysis of the Anthropocene and its theoretical framework, the artist uses the terms “aquatocene” and “aquaforming” to refer to the human impact on aquatic environments.

Her works received awards and nominations at Prix Ars Electronica, Starts Prize, Falling Walls. Her art work *Aurelia 1+Hz / proto viva generator* (artist proof) is since 2019 part of the .BEEP {collection;}_ Electronic Art Collection, Spain.

She exhibited / performed at solo and group exhibitions as well as in galleries and festivals: Ars electronica Linz, Kosmica festival_ Laboratorio Arte Alameda_ Mexico City, Matadero_ Madrid, La Gaîté Lyrique_ Paris, Le Cube_ Paris, MONOM_ CTM Berlin, Art Laboratory Berlin, ZKM_ Karlsruhe, re:publica_ Berlin, Mladi Levi_ Ljubljana, Centro de Cultura Digita_ Mexico City, Píksel_ Bergen, OSMO/ZA_ Ljubljana, Device art 5.015 at Klovičevi dvori_ Zagreb, Eastern Bloc_ Montreal, Eyebeam_ New York, PORTIZMIR#3_ Izmir, Kiblix festival_ Maribor, Spektrum_ Berlin, KIKK festival_ Namur, +MSUM (Museum of Contemporary Art Metelkova)_ Ljubljana and more.

Website: robertina.net

Peter Weibel

Das Tangible Bild

1991/2019

Interactive audiovisual installation
BEEP Collection acquisition

Das Tangible Bild (The Tangible Image) is an essential piece and a creation by a pioneering artist in electronic and digital art, which highlights the creative possibilities of interactive art. The piece tells us about the role of the viewer in relation to a work of art, and in a broader sense, about the role we play in a world that is increasingly permeated by technology.

Is our world simply the product of a technological interface? In this interactive installation, the visitor is faced with a grid of Cartesian coordinates. A camera films us, and the image is projected on the opposite wall. The image projected is distorted when we touch the rubber screen of the monitor, which is on a pedestal in the middle of the room. The installation thereby enables the visitor to interact in real time with their own image, by means of a three-dimensional touch screen.

Peter Weibel (born Odessa, 1944)

Peter Weibel is a conceptual artist and art theoretician of reference in the sphere of European culture. For many years he has been a professor at the University of Applied Arts Vienna and director of the Laboratory for Digital Arts at the State University of New York in Buffalo.

He has also been artistic director of the International Biennial of Contemporary Art of Seville and curator of the Austrian Pavilion at the Venice Biennale. He is presently chairman of the ZKM | Center for Art and Media Karlsruhe. He has recently co-edited with Siegfried Zielinski the book *Flusseriana: An Intellectual Toolbox*, a collection of articles on the work of the philosopher of image and language Vilém Flusser.

Website: peter-weibel.at



Photo by Fernando Ferreira



Photo by Roberta Bosco

Other Exhibition Venues



Refik Anadol and Maurice Benayoun

DialoG

Keywords: Installation, Strangeness, Immigration

DialoG is an interactive urban media art installation exploring the themes of alterity, strangeness, and immigration, in a performative way.

The work presents two pieces that are at the same time artworks and aliens. They are confronted with a new environment where they don't belong to... yet. They will have to adapt their language, build common knowledge, integrating all new artifacts and natural phenomena that constitute now their environment. This includes the other living beings moving around them, and, eventually, they will have to understand each other. While we use the concept of language very broadly to include speech, performance, gesture, utterance, and even data, we focus on strangeness from an ontological

perspective, trying to mark a terrain of possibilities for the intersection of interpersonal and digital experiences in the urban sphere. MoBen and Refik Anadol take the notion of “dia-logos” (through-word, through speech) embedded in the etymological roots of the word “dialogue”, more understood as an informational thread processed through an iterative feedback loop between perception, and expression, and push it to a level of transactional complexity activating the potential difference between virtuality and visuality. In this way, we aim to create a unique, site-specific language between each of both works we are presenting as living entities and their unknown public, and also, between our works that are initially alien to each other – a language of unexpected and indefinable machine expressions that adapt themselves to the constant flow of data representing real-time environmental, societal, and human actions.



Refik Anadol (b. 1985, Istanbul, Turkey) is a media artist, director, and pioneer in the aesthetics of machine intelligence. He currently resides in Los Angeles, California, where he owns and operates Refik Anadol Studio and RAS LAB, the Studio's research practice centered around discovering and developing trailblazing approaches to data narratives and artificial intelligence. Anadol is also a lecturer for UCLA's Department of Design Media Arts from which he obtained his second Master of Fine Arts.

Website: refikanadol.com

Maurice Benayoun (aka MoBen or 莫奔) (born 29 March 1957 in Mascara, Algeria) is a French pioneer, contemporary new-media artist, curator and theorist based in Paris and Hong Kong. His work employs various media, including (and often combining) video, computer graphics, immersive virtual reality, the Internet, performance, EEG, 3D Printing, large-scale urban media art installations and interactive exhibitions. Often conceptual, Maurice Benayoun's work constitutes a critical investigation of the mutations in the contemporary society induced by the emerging or recently adopted technologies.

Website: benayoun.com

Patrick Tresset

RNE Project

Keywords: Robotic, Alien, Drawing, Performance

What if a portrait drawing robot observed us with a different perceptual system? What will it learn from us? Would it affect our experience during to sketching session? How will it draw? extraordinary complexities.

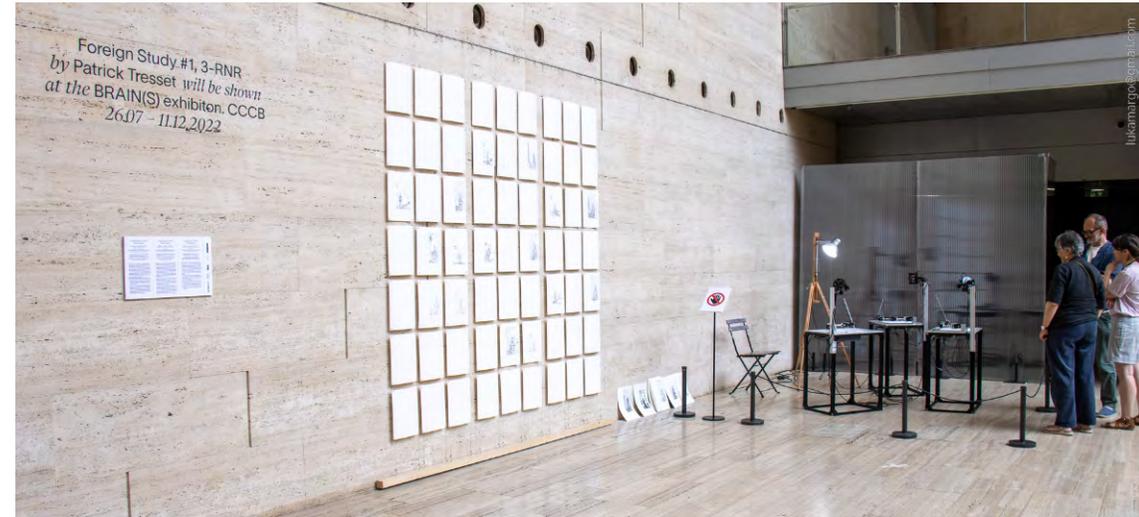
In the award-winning Human Study #1 series of performative installations, a human is drawn live by several robots during a 20-minute session. Both audiences and participants often mention the robot's attention as a striking element. It is conceived as such, a camera mounted on the pan and tilt system enables the robot to observe the sitter with tiny saccades, occasionally comparing with the drawing, and most of the time following the pen's movements. Although these movements are theatrical, they effectively convey a character and give the impression of the system paying attention to the human in an animal mammal-like way. Furthermore, the robot's eye following the pen's movement gives the impression that it is looking at what it is doing.

I have been researching a forthcoming series of installations for the past three years, including developing a new robot (RNR). Instead of being strongly influenced by human behaviour that is perceived as familiar like the human study #1 robots, I am exploring ways to make it [RNR] perceived as alien, unfamiliar, and foreign.

The RNR is an intermediary work, where I will specifically explore how having a robot looking at us with a different unfamiliar perceptual system affects our perception of it. As an animal, if attention is directed toward us, it needs to be evaluated instantly: can we eat it? Is it going to eat us? As humans, the way we are observed triggers a wealth of emotions. What if we can't decode the intention of the observer? And what will the robot draw if it sees differently?

The aim for the final installation would be for the emotions in the human being drawn during ten-minute performances to progressively move from unsettled to intrigued, reassured, captivated, and charmed.

This project has been awarded with the ISEA2022 Barcelona Grant by .Beep Collection and NewArtFoundation



Patrick Tresset is a Brussels-based artist who, in his work, explores human traits and the aspects of human experience. He is best known for his performative installations using robotic agents as stylized actors that make marks and for his exploration of the drawing practice using computational systems and robots.

After working as a painter for 15 years, he attended Goldsmiths College, London, for a master's degree and then an MPhil in arts and computational technologies. Aside from his artistic practice, in 2013, he was a senior visiting research fellow at Konstanz University and is currently an adjunct assistant professor at the University of Canberra.

Since 2011, his work has been exhibited in solo and group shows, including in association with major museums such as; The Pompidou Center (Paris), Prada Foundation (Milan), Tate Modern (London), V&A, MMCA (Seoul), The Grand Palais (Paris), BOZAR (Brussels), TAM (Beijing), Mcam (Shanghai), Mori Museum (Tokyo).

Website: patricktresset.com

Krista Caballero and Frank Ekeberg

Birding the Future

Keywords: Birds, Imaginery, Poetry, Data, installation

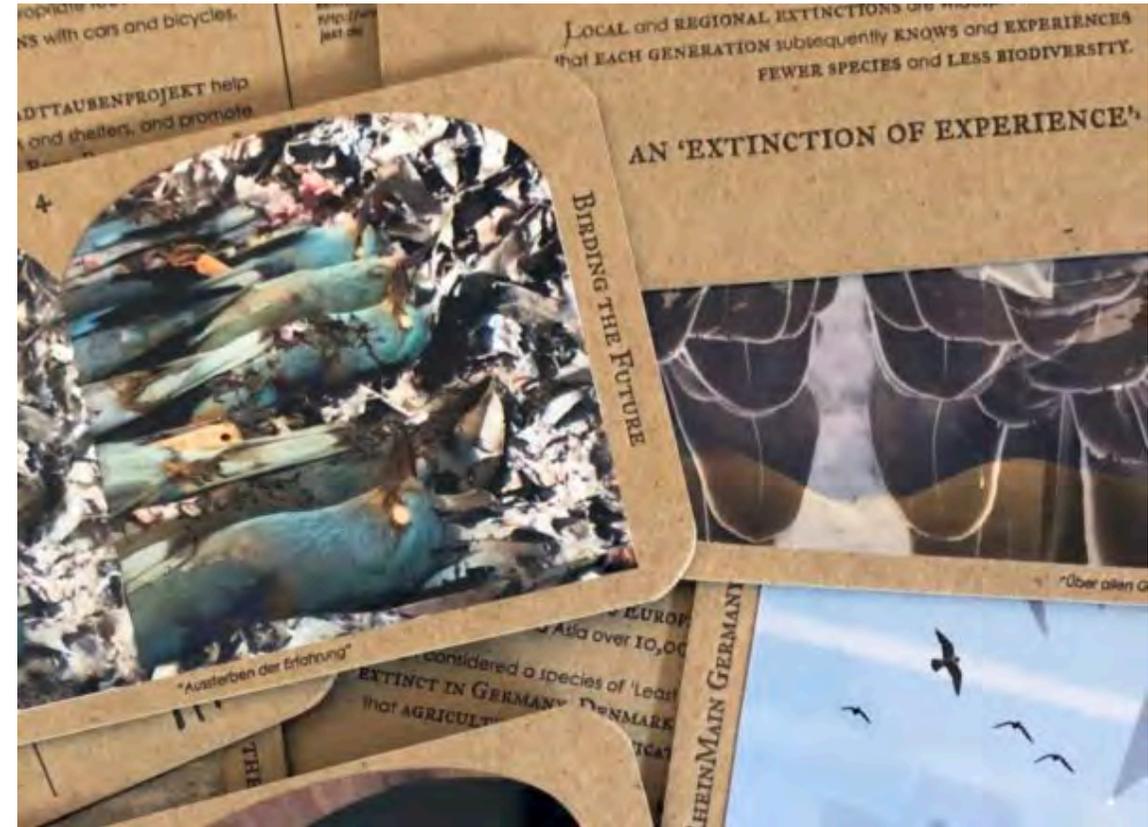
Humans once perceived oceans as boundless, and thus impossible to pollute—until we created the Great Pacific Garbage Patch. The same pattern is now repeating in outer space. VastWaste is a data-driven, Virtual Reality and projection art installation that illuminates the parallels and interplay between marine pollution and space debris.

Birds provide a unique window into the cultural and ecological entanglements of our time. Unrestricted by human-imposed borders, approximately five billion birds migrate yearly, linking cultures, countries, and ecologies, and revealing issues collectively shared. Declining bird populations in practically all habitat types signal profound changes over our entire planet. Birding the Future poses three questions in response to this crisis: What does it mean that we can only see and hear extinct species through technology? What might happen as the messages of birds are increasingly being silenced? How might we bridge knowledge systems using traditional and emerging technologies to develop a cross-cultural praxis for ecological futures rooted in kinship with the world?

Birding the Future is an ongoing artwork that explores current extinction rates by focusing on the warning abilities of birds as bioindicators of environmental change. The installation invites visitors to listen to endangered and extinct bird calls and view visionary avian landscapes through stereographs and video.

Calls of endangered birds are extracted to create Morse code messages based upon tales, stories, and poetry in which birds speak to humans. These are combined with calls of extinct birds, which act as a memory of the past and underscore technological reproduction as the only means to hear certain species. A real-time algorithm scales the extinction rate to the duration of the exhibition — the longer you stay the fewer birds you hear. The soundscape is paired with a series of stereographs, which explore the landscape of human-bird encounters via imagery, poetry, data and research. Video footage from the Goller Lab explores the ethics and technological impact of research conducted in a more-than-human world.

To date there are five region-specific iterations of the project: Queensland Australia, Arabian Peninsula, Norway, Mid-Atlantic USA, RheinMain Germany and a series focused on laboratory birds.



Krista Caballero and **Frank Ekeberg** started collaborating on Birding the Future in 2013 wanting to explore the implications of species extinction and environmental change and ways in which technology mediates interspecies encounters. The project has been presented internationally in exhibitions, festivals and conferences such as the International Symposium on Electronic Art (ISEA) in Dubai; Balance-Unbalance International Conference in Australia; the North American Ornithological Conference; RAY2018 in Germany; Foggy Bottom Outdoor Sculpture Biennial in Washington D.C.; and Futurescapes Symposium in Norway.

Website: birdingthefuture.org

Özge Samancı

VastWaste

Keywords: Virtual Reality, Art installation

Humans once perceived oceans as boundless, and thus impossible to pollute—until we created the Great Pacific Garbage Patch. The same pattern is now repeating in outer space. VastWaste is a data-driven, Virtual Reality and projection art installation that illuminates the parallels and interplay between marine pollution and space debris.

Human activities have scattered millions of objects into Earth's orbit. Since there is no friction, debris travel at 18,000mph. Even tiny paint flecks can create explosive crashes.

Approximately 4,000 operational satellites are currently in Earth's orbit and the amount of space debris is already at a critical point. US and European Space Agencies track space debris and maneuver spacecraft to avoid collisions.

SpaceX's Starlink plans to add 40,000 satellites in the next decade. There is no known solution for mitigating the space debris.

If the amount of space debris passes a critical mass, each collision will lead to more collisions in a chain reaction, known as the Kessler Effect. Ultimately,

future spacecraft launches from Earth may become impossible.

VastWaste generates an everchanging Kessler Effect in conjunction with a data-driven soundtrack.

In this installation, satellites spin based on the speed of marine debris. This is calculated by using ocean currents and ocean winds.

The number of fragments falling into the ocean is tied to human use of satellites, symbolized by number of tweets per second.

Generative music varies in each play based on collisions, number of fragments, their contact with the surface of the ocean and their descent into the ocean.

Humans observe marine pollution with satellites, and we bury dead satellites into our oceans. The future of two vast spaces is entangled. From unsettled to intrigued, reassured, captivated, and charmed.

Creative Lead: Özge Samancı

Computer Programming Leads:

Jenni Hutson

Jonathan David

Wren Gottschalk

Jack Burkhardt

Data Research: Rachel Kantor

Sound Design: Stephan Moore

3D Modeling: Liza Salvi

Documentation Video: Ian Bertorelli



Özge Samancı, media artist and graphic novelist, is an associate professor in Northwestern University's School of Communication. Her interactive installations have been exhibited internationally, including Siggraph Art Gallery, FILE festival, Currents New Media, The Tech Museum of Innovation, WRO Media Art Biennial, Athens International Festival of Digital Arts and New Media, Píksel Electronic Arts Festival, ISEA among others. Her autobiographical graphic novel *Dare to Disappoint* (Farrar Straus Giroux, 2015) received international press attention and was positively reviewed in *The New York Times*, *The Guardian*, *Slate* along with many other media outlets. *Dare to Disappoint* has been translated into five languages. Her drawings appeared in *The New Yorker*, *The Wall Street Journal*, *Slate Magazine*, *The Huffington Post*, *Airmail*, *Guernica*, *The Rumpus*. In 2017, she received the Berlin Prize and she was the Holtzbrinck Visual Arts Fellow at the American Academy in Berlin.

Website: ozgesamanci.com

Alba G. Corral

L'artesanía numèrica de Casa Navàs

Keywords: Mapping, Sound, Light, Public art, Generative art

Casa Navàs is a building designed by the architect Lluís Domènech i Montaner and located in Plaça Mercadal in Reus. Integrating herself as one of the artisans who worked on the construction of this unique building, the artist has given a new digital skin to the façade, intimately telling its story.

Casa Navàs is the great modernist jewel of Reus. Modernism is a transversal movement that integrates all kinds of creators and trades in order to make their proposals a reality. In the 21st century, technological art reflects transversality by uniting artists, scientists and technologists in proposals

where the algorithm is the basis of the ecosystem. Focusing on this idea, the artist Alba G. Corral created a mapping, adding a new skin on the facade of this building, joining the best artisans of the time who together created this emblematic construction of the city of Reus.

Artistic Direction: Alba Corral
2D Visual Design: Alba Corral
3D Visual Design: Carlos Padial & Alba Corral
Technical Direction: Carlos Padial
Machine learning transfer style: Martin Nadal
Composition and sound production: Alba Corral
Sound mastering: Clara Brea

Alba G. Corral Madrid 1977, is a visual artist musician, and creative coder. With a background in computer engineering, she has been creating generative art using software and coding. Her practice spans across live performance, video, digital media and installation, exploring abstract narratives and expressing sensitivity and taste for colour. By combining generative systems with improvised drawing techniques, her digital language becomes organic, creating mesmerising digital landscapes. She is known for her stunning live audio-visual performances where she integrates real-time coding and drawing with music

Website: blog.albagcorral.com



Performances



Karla Brunet

Tortuous Drift

Keywords: Mediterranean Sea, Art & Science, Environment, Data, Drift

Tortuous Drift is a live cinema about the experience of sensing the Mediterranean Sea. It's a mix of videos, sounds, animations, and data visualization, an outcome of months collecting data and stories in different parts of the Mediterranean. Some protagonists of this narrative are environmental police, fishermen, divers, rowers, water workers, lifeguards, and swimmers.

Moving images and sounds recorded in selected locations of the Mediterranean as Ceuta, Gibraltar, Valencia, Ebro's Delta, Formentera, Ibiza, Malta, Sardinia, Sicilia, and Cyprus create *Tortuous Drift*. Each place has a particularity, whether geographical, subjective, social, or environmental. For example, Ceuta and Gibraltar are the entrance gate to the Sea as they are a very regulated frontier between Europe and Africa. Islands on the central Mediterranean are the entrance gate to the majority of the attempts to arrive in Europe and it states the greater number of deaths by drowning. Western Mediterranean has the saltiest sea and Ebro's Delta is one of the areas at great risk of being flooded with global warming.

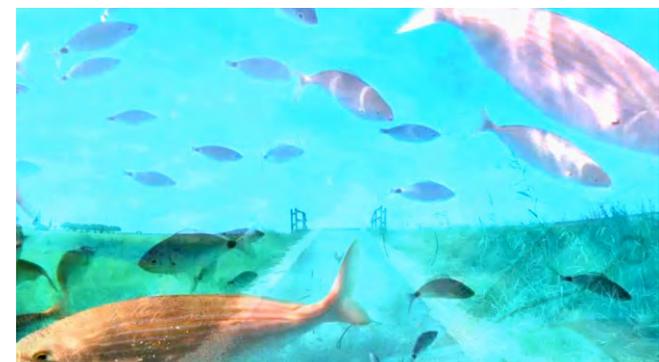
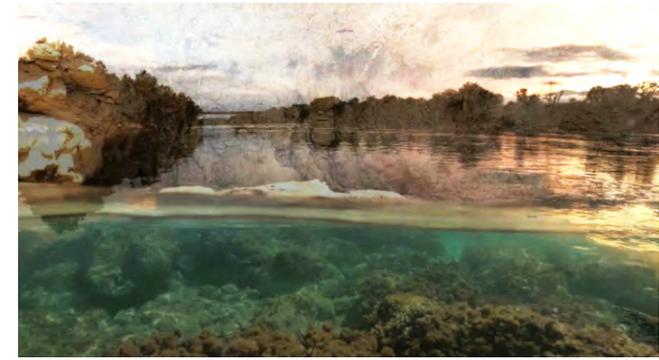
Data visualizations of salinity, conductivity, temperature, and pH of the water collected during the field trips are mixed in the performance as animated graphs, molecules and numbers. These visualizations raise questions of acidification of the sea and global warming. Another data used in the performance is the statistics of drowned persons trying to cross the sea in search of a better life. These data – social and environmental - are played together with images and sounds collected in the field trips.

In this performance, layers of materials entangle together to construct a narrative with visuals and sounds. The live cinema performance is ephemeral; a time-based event that recreates the experience of sensing the Mediterranean Sea. *Tortuous Drift* creates a statement of this journey. It's not a drift in a straightforward way, it's complex, sinuous, and tangled like the feelings and stories lived in the sea.

Direction/Live Performance by Karla Brunet
Videos and audio by Karla Brunet
Sound design by Rodrigo Ramos
Animations by Flora Benedito, Thaianne Cerqueira, Brisa Brasileiro
Data visualization by Flora Benedito, Thaianne Cerqueira, Karla Brunet
Molecules by Dr. Sabrina T. Martinez

Karla Brunet is an artist and researcher, holds a Ph.D. in Audiovisual Communication (UPF, Spain - CAPES Scholarship) and a MFA (Academy of Art University, USA - CAPES Scholarship). In 2009-2011, Karla coordinated the Labdebug, a laboratory focused on women and free technologies. In 2012 she was curator of FACMIL/LabMAM, a media art lab at MAM Bahia. In 2014, Karla carried out postdoctoral research at UDK, Berlin. Currently, she is a visiting researcher at UPV, Spain. Karla is a professor at IHAC/UFBA and coordinates Ecoarte, an interdisciplinary group on art, technology, and the environment. Her artistic practices involve photography, video art, data visualization, sensory environment, hybrid art, audiovisual performance, web art, artistic mapping, and game, always focusing on experiences in nature.

Website: karlabru.net



Joana Chicau and Jonathan Reus

Anatomies of Intelligence

Keywords: Performance, Live coding, Knowledge systems, Machine learning, AI

Anatomies of Intelligence (AoI) is an artistic research project between Joana Chicau and Jonathan Reus, who together work to make connections between the formats and collections of anatomical knowledge and investigations into the “anatomy” of computational learning and prediction processes, datasets and machine learning models.

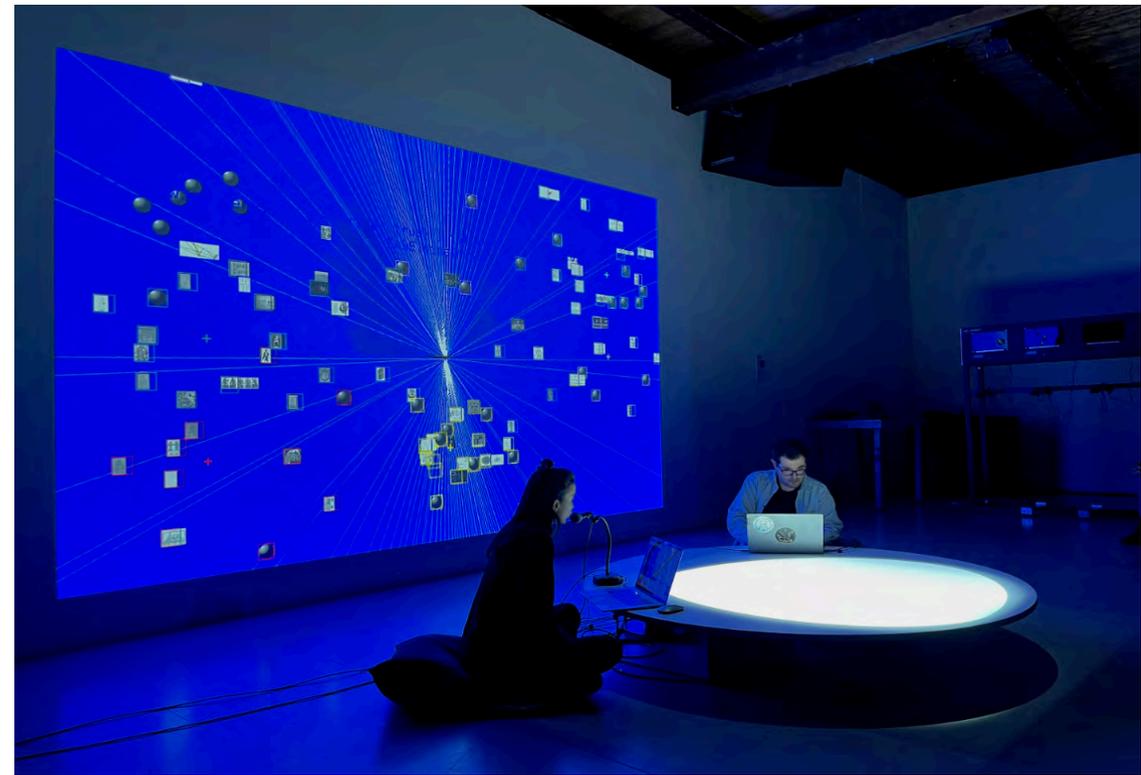
In the *Anatomies of Intelligence* performance we create an intricate and intimate experience that centers around a demonstration/dissection of a single unsupervised learning algorithm, "K-means". Inspired by the anatomical theatre of the early-Enlightenment, the performance unfolds in a unique setting whereby the two artists sit around a circular table with their laptops, sending javascript commands to a server which relays those commands to a bespoke audio-visual performance “theatre” based in the web browser that is accessible to a global audience during the performance.

Simultaneously, in-person the same distributed platform is used as the core audio-visual material to create an

immersive experience for the audience on site where each step of the algorithm is slowed down, made visible, audible and felt.

Amongst our focus points are those that relate to tacit knowledge and a reliance on the senses when accumulating knowledge about bodies and body-like structures. The concept of “aesthesis” has been especially useful in shaping our work; aesthesis is a somewhat obscure term occurring in eighteenth-century European medical and philosophical dictionaries describing “the faculty or power of sensation” (1) in scientific practice. Our concept of aesthesis shapes a methodology for this project that looks at the “sensory power” displayed by machine learning algorithms, their representations and sets of training data.

Our research has been feeding a growing dataset and online repository (2) which gathers terminologies and techniques for a critical examination of the “anatomy” of learning and prediction processes and models of machine learning algorithms. The same platform is used to explore, through a performance practice combining live-coding, voice and meditative reflection, how such a collection and an artisanal algorithmic toolkit can confront the idealized bodies of artificial intelligence — its representational structures and sense-making processes.



(1) Hendriksen, M.M.A., 2012, Doctoral Thesis, Leiden University.
(2) Link: <https://anatomiesofintelligence.github.io/catalogue.html>
Website and social media links: anatomiesofintelligence.github.io

Joana Chicau [PT/UK] is a designer and researcher — with a background in dance. In her practice she researches the intersection of the body with the constructed, designed, programmed environment, aiming at widening the ways in which digital sciences is presented and made accessible to the public. She has been actively participating and organizing events with performances involving multi-location collaborative coding, algorithmic improvisation, open discussions on gender equality and activism.

Website: joanachicau.com

Jonathan Chaim Reus [US/NL] is a musician and artist who explores expanded forms of music-making and improvisational performance through a critical, embodied engagement with technological artefacts. His practice is cross-disciplinary and research-based, involving open and iterative processes of collaboration with practitioners from across the arts, sciences and humanities. Increasingly his artistic work has used performance to probe the representational qualities of computing systems, algorithms, and infrastructures.

Website: jonathanreus.com

Sasha Kleinplatz, Navid Navab,
Odessa Dobbie and Angie Cheng

We Move Together or Not at All

Keywords: Consent, Care, Choreography, Multi-species

We Move Together or Not At All is a choreographic installation that places consent, multi-sensory performance archive, and species inter-dependency in conversation.

Pulling inspiration from Donna Haraway's writing on multi-species care, José Esteban Muñoz's theory of the "minor trace", and Natasha Myer's provocations on engagement with excitable matters of process within the Planthropocene. The form of the work is an excitable plant-filled greenhouse with a dancer moving in its centre. Choreographer, dancer, and interdisciplinary artists work collaboratively to build performance scores meant to raise the temperature, moisture, scent, and bacteria in the greenhouse and co-orchestrate states of sensory access to the participants gestures, human or none. Through this

practice the sweat of the dancer becomes a source of heat and humidity that supports the plant life. We frame this sweat and heat, and the plant life that they support as the barely visible, archival trace of performance, as emergent formations traversing condensation, movement, sound, and affect. The performers are augmented with sensors that respond to torque, horizontality, verticality, and percussivity. A responsive scenography transcodes qualitative variables of the performance into sound, vibration and condensation, as multimodal gestures towards a non-linear understanding of how the plants may experience the events within space. Questions at the forefront of this research are: How the plants can consent to being part of the work? How we can become sensors, expansively attuned to other temporalities and to better engage with plants, and anticipate their needs? What might consent feel or look like between different beings?



Sasha Kleinplatz is a dance artist in Tiohtià:ke, commonly known as Montréal, Canada. She is the co-founder (along with partner Andrew Tay) of Wants&Needs danse-a collective focused on creating non-traditional contexts for choreographers to make work, and for audiences to engage with a plurality of contemporary performance practices. Sasha's masters research at the School for Interactive Arts and Technology at Simon Fraser University was supported by the Social Sciences and Humanities Research Council. Her thesis focused on consent in dance pedagogy, and practicing interspecies care through modes of scored, collaborative, performance. She is about to begin a PhD at Concordia University focused on writing a pluralistic, choreographic toolbox for students at the undergraduate level. Sasha's new works *Miracle'ing*, and *We Move Together or Not at All* will premiere at Montreal, arts intercultural in Fall 2022.

Website: wantsandneeds.ca

Jocelyn Ho, Margaret Schedel, Robert Cosgrove, Omkar Bhatt and Matthew Blessing

Women's Labor

Keywords: Feminist, NIME, Musical instrument, Machine learning, Spectroscopy

A feminist-activist project, Women's Labor repurposes domestic tools to become new musical instruments. Using spectroscopy, LIDAR, Ultrasonic technology, and machine learning, the first instrument Embedded Iron 'sees' the color of any fabric to play different timbres. Traditionally relegated to the private sphere, we interrogate domesticity through interactive installation and performance.

Winner of the 2021 International Alliance of Women in Music Ruth Anderson Prize, *Women's Labor* is a feminist-activist project that repurposes domestic tools to become new musical instruments. Using embedded technologies, these household-devices-turned instruments are explored in interactive installations, commissioned compositions, and performances. Traditionally relegated to the private sphere, we interrogate domesticity through public engagement and performative spectacle.

The new instruments are based on laundering tools that highlight gender performativity through clothing. The first instrument featured in installation/performance is Embedded Iron,

based on an early-20th century wooden ironing board and antique iron. Both the public and musicians can "iron" fabrics, including their own pieces of clothing, to make music. Using spectroscopy, the Embedded Iron has a color-sensing ability—"seeing" the color of the fabric to play different timbres. Using machine learning Wekinator, the Iron can interpolate unique sounds for any given fabric. The iron's placement on the XY-axis of the ironing board determines pitch using LIDAR and ultrasonic technology.

The Iron plays sounds of resistance, combining two sound modules in Pure Data: physical modeling of a violin—an instrument on which women were discouraged to be played in the nineteenth-century—and electric guitar-pedal like audio FX. Both of these modules evoke sounds that are historically associated with male musicians—put on an iron to subvert these very associations. Two texts chosen from an oppressive 19th-century marriage manual are mapped to a special "white apron" for ironing on the left and right side of the board, using granular synthesis. While the text may seem ludicrously outdated, the intentions behind the text are, ironically, still eerily prevalent today.



Jocelyn Ho, creative director of Women's Labor, directs, composes, and performs in interdisciplinary performance projects involving collaborators from vastly different fields. She is a Steinway artist and an Assistant Professor of Performance Studies at UCLA.

Facebook: [piano.jocelynhho](#)

Margaret Schedel has a diverse creative output with works spanning interactive multimedia operas, virtual-reality experiences, sound art, video games, and composition. She is a Professor of Music and Chair of Art at Stony Brook University.

Website: [chedel.net](#)

Robert Cosgrove is a percussionist, composer, and technologist, currently Artist-In-Residence at Practice Gallery and Technical Director for Yarn/Wire and Ensemble Decipher. He has a Doctorate of Musical Arts from Stony Brook University.

Website: [robsgrove.com](#)

Omkar Bhatt is a computer scientist focusing on machine learning, data science, visualization and HCI. Bhatt holds a Master degree in Computer Science at Stony Brook University.

Matthew Blessing is music technologist and composer with a PhD in Experimental Music and Digital Media from Louisiana State University.

Patricia Cadavid Hinojosa

Tawa (Live Sound Performance)

Keywords: Sound performance, Decolonial aesthetics, khipu, Ancestral andean technologies, Sound tangible interfaces.

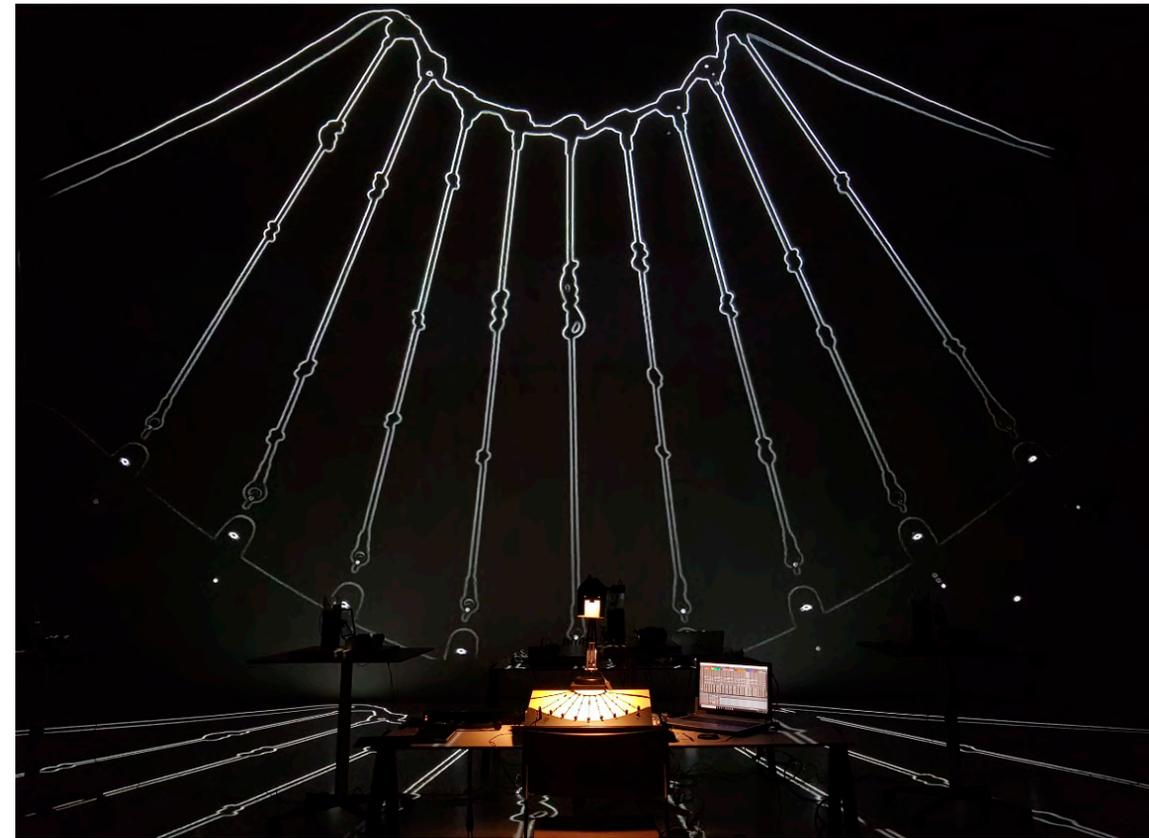
The sound performance Tawa_ is an homage to the pre-colonial Andean technologies. In a different experience of tangible live coding and computer music with the Electronic_Khipu_, a sound instrument inspired by Andean Khipus (first textile computers), the interrupted legacy of ancestral practices taken away by colonization is being continued.

"walking toward the future always with the past ahead."*

In the Andean cosmogony, "Tawa" (four in Quechua) symbolizes two opposite balances that complement each other and reach harmony. Dichotomy and contradiction, stillness, and chaos, that in the year that summed up four (2020) knotted acceptance among uncertainty. The Andean Khipu is an information processing and transmission technology used since pre-colonial times. This tangible interface is one of the first textile computers known, consisting of a central wool or cotton cord to which other strings are attached with knots of different shapes, colors, and sizes, encrypting different information. The system was widely used until the Spanish colonization,

which banned and destroyed many of these devices. In the performance is played the Electronic_Khipu_ an instrument inspired by the traditional Khipus made for the interaction and generation of live experimental sound by weaving knots with conductive rubber cords. Their sounds are embraced with textures reminiscing about the Andes from a prepared charango and immersive rhythms that bring back the present moment. From a decolonial perspective, *Tawa_* is an homage to the Andean technologies, continuing the interrupted legacy of this ancestral practice in a different experience of tangible live coding and computer music. The artist takes the place of a contemporary *khipukamayuc* (Khipu knoter), weaving four sound Abstractions that knot the past with the present, creating the balance to face the future. *Tawa_* is the live performance of the eponymous album released in January 2021 by Vienna-based netlabel Smallforms.

*The Quip Nayra (future - past) notion comes from an Aymara aphorism divulged by the Taller de Historia Oral Andina (THOA) referring to the re-actualization of the past as future through the present actions.
Rivera, S. (2015). Sociología de la imagen Miradas ch'ixi desde la historia andina. Tinta Limón.



Patricia Cadavid is an immigrant, artist, and researcher born in Colombia. Her work looks at the relationships and effects of coloniality in new media from the migratory experience and decolonial & anti-colonial thinking.

She works on the vindication of the memory contained in the ancestral interfaces of the Andes taken away by colonization and their connections with art, science, and technology, reusing them in new artistic processes related to sound, NIMES, tangible live coding, and multimedia performance.

Student at the Interface Culture Lab (Kunstuniversität Linz), she received her BFA from the Universidad de Castilla-La Mancha and her MA from the Universitat Politècnica de València, multimedia & Visual arts program. Her work has been exhibited in different festivals such as Ars Electronica (Austria), ADAF (Greece), the NIME and SEAMUS conferences, and several spaces in Chile, Mexico, Spain, Germany, and Colombia.

Website: patriciacadavid.net

Michael Century and Shawn Lawson

Liveware

Keywords: Liveware, Live coding, Machine learning, Performance

Liveware is an audiovisual duo combining live-coded animation (Lawson) with musical performance (Century). “Liveness” for each modality is understood as a fluid interplay between pre-composed and improvised processes. Liveware extends the traditions of synaesthetic syntax with expanded performance practices drawing on machine learning and cross-modal improvisation.

Liveware is an audio-visual duo combining live-coded animation and musical performance. “Liveness” for each modality is understood as a fluid interplay between pre-composed and improvised dynamic processes. Similarly, the correspondence between image and sound exhibits changing levels of control and indeterminacy. Taken together as matters of degree not kind, these dimensions generate a constellation of changing processual intensities. Liveware extends the traditions of synaesthetic syntax going back to early experimental film with recent advances in artificial intelligence to generate real time animation using algorithms trained

with machine learning (ML). “Latent Cartographies” (2021) uses a ML algorithm trained on images from 100,000 historical maps. [1]. Extended techniques on acoustic piano are processed to correspond with the images [2] An image noise generator navigates through the latent space of the neural net, modulated by sound intensities from the music. The title of “The Isle is Full of Noises” (2019) evokes a passage from Shakespeare’s play *The Tempest*. An 8-channel soundscape uses texts from characters Miranda and Caliban overlaid with phonemic particles of human speech, animal and nature sounds. The images are generated using an auto-visual system built with a ML trained on contrasting feature films: *Videodrome* and *Planet of the Apes*. During the performance the ML utilizes its hyper-dimensional space of learnt imagery to create real-time animation from audio spectra and audio feature data. Post-colonial and feminist critics have posed the question why Caliban and Miranda, both victims of imperialist oppression, nonetheless are unable to truly “see” one another. Here, their encounter is re-staged and spatialized through sonic means.

1 Topi Tjukanov, *Mapdreamer* (2020) pre-trained network – CC0 1.0 Universal – <https://archive.org/details/mapdreamer>
2 The Expanded Instrument System, designed by Pauline Oliveros, is used with special permission of the Pauline Oliveros Trust and Ministry of Maat.



Shawn Lawson is an artist and researcher creating the computational sublime. Performing as Obi-Wan Codenobi he live-codes real-time computer graphics with his open-source software. Shawn has performed, exhibited, or screened in museums, galleries, festivals, and public spaces on five continents. Lawson studied at Carnegie Mellon University, École Nationale Supérieure des Beaux-Arts, and The School of the Art Institute of Chicago. He is an Associate Professor and Animation Program Director at Arizona State University.

Michael Century, composer and cultural theorist, is Professor of New Media and Music in the Arts Department at Rensselaer Polytechnic Institute. Century has worked as an academic university teacher, new media researcher, inter-arts producer, and arts policy maker (Banff Centre for the Arts (1979-93), McGill University (1998-2002), Government of Canada (1993-98)). His book *Northern Sparks: Innovation, Technology Policy and the Arts in Canada from Expo 67 to the Internet Age* appeared in 2022 with The MIT Press.

Website: shawnlawson.com

João Dias and Igor C. Silva

Zone #1, Installation

Keywords: Liveware, Live coding, Machine learning, Performance

Zone#1 is an installation with performance where the performer is in charge of controlling all audiovisual aspects, creating a link between musical discourse and video elements. The main topic are the collaborative practice behind and how it increases out the development of the outputs and both composing and performance practices.

Collaboration is a common practice in different artistic fields during the creative process of the work, and a several artistic formats could emerge from a collaboration. There are several examples that we can find and mention in the history of art, and the existing reports of the collaborative processes have in common the exposure of the mutual contributions, not only for the creation of the proposed work, but for the advancement of the art itself, and the each one involved in the process. The composer's creativity can be amplified by a dialogue and interaction with the performer, which had impact in the creative process, the interpretation of the

work, and even in the sound result represented in the perception of the work by the audience. A process of close collaboration between performer and composer in creation allows constantly triggering different paths of knowledge and discovery, transcending limits in the way of playing and composing, mutually enriching the two positions involved.

The starting point of the compositional process of *Zone#1* was the idea that this piece/ installation should enable the performer to have absolute real-time control of whole musical and visual discourse, musical timing and elements, thus creating a composed-improvisation environment in which the audiovisual content is defined by the composer (both on score, sound design and Max programming), but the timing and narrative choices are taken by the performer. To achieve this level of controlled freedom, a detailed electronic setup was created to serve an ideal improvisation situation, where the audiovisual material is pre-organized and programmed into a hybrid acoustic/digital setup, that provides a user-friendly system to react and interact to the artistic choices of the performer, within a set of rules defined by the score.



This work was driven through a close process of collaborative work by composer and performer.

João Dias. Percussionist, graduated by ESMAE (BA & MA) with Miquel Bernat, Manuel Campos and Nuno Aroso as tutors. Currently, he is attending a Phd Program in Musical Arts at FCSH/UN of Lisbon. He is a researcher at the Research Group on Contemporary Music at CESEM, where he is particularly interested in mediation between composer and performer in the creation of new music for percussion. He won a PhD grant from Foundation for Science and Technology (FCT). He has been developing his work as a performer mainly in the field of contemporary repertoire, from ensemble to solo works. Artistic Director and Member of Supernova Ensemble, member of Drumming Percussion Group and Sond'Ar-te Electric Ensemble, and collaborates regularly with Sonoscopia Associação, Remix Ensemble, Orquestra Sinfónica do Porto and Coro / Casa da Música, Gulbenkian Orchestra, among others. He is a professor at the University of Aveiro.

Igor C. Silva. Born in Porto and currently living in Amsterdam, Igor C Silva is a composer devoted to electronics and new media music, creating projects where performers, computers and many noisy and psychedelic things happen on stage, creating a multi-sensorial experience. Silva works regularly with ensembles, performers and orchestras, receiving several commissions from ensembles and festivals, and publishing recordings of his music. Igor C Silva also collaborates regularly with soloists, ensembles and jazz groups, devoting part of his musical and composing activity to improvisation and interactive performances with electronics and multimedia tools. On upcoming projects stands out a 33 hours installation multimedia-installation for Lucillin United Instruments and many other concerts and premieres in Netherlands, Belgium, Spain, USA, Portugal, Germany, Luxembourg, France, Japan, UK, Finland, Argentina, etc.. Igor C Silva is currently a PhD candidate at VUB (Brussels) and Koninklijk Conservatorium Brussel, where he also teaches at the Live Electronics Course.

Website: igorcsilva.com

Alexandre Saunier
and Marc-André Cossette

Fragments: The Shape of Things

Keywords: Machine agency, Live performance,
Photogrammetry, Generative music, Video-game engine

Fragments: The Shape of Things is an audiovisual performance in which 2 human performers act live on Artificial Intelligence and Artificial Life algorithms to generate and modulate a poetic immersive experience.

The 35 minutes performance is divided into acts that form an immersive journey from silence and darkness to an explosion of light, sound, and frenetic images. The piece uses the concept of fragments, small elements that are transformed and reconfigured, to explore technologically mediated human connections, perceptions, and memories. These fragments consist of sounds, videos, and photogrammetric objects that are scavenged from the news,

created by the artists, or generated by algorithms. During the performance, those fragments are analyzed and modulated live by a set of Markov chains, Spiking Neural Networks, Machine Learning, optical flow, and other AI & A-Life techniques. In front of the audience, the artists orchestrate the action of those algorithms and guide the public into a journey that moves from darkness and absence into a growing torrent of sonic and visual stimuli. The work explores the aesthetic experience emerging from the “human/ non-human” collaboration and how complex systems algorithms can generate new improvisational triggers for human performers. Furthermore, *Fragments: The Shape of Things* intends to explore how artificial intelligence technology transforms human experience by recombining and reconfiguring real-world data such as photos and videos into virtual telematic experiences.



ALMA (Alexandre Saunier & Marc-André Cossette) mixes together cutting-edge AI & A-Life algorithms with drum machines, analog and virtual synthesizers, photogrammetry, procedural graphics, and video-game engines to invoke memories of inaccessible places, the sensations of the material world, and the feeling of being together.

Alexandre Saunier is a multimedia artist and PhD Candidate at Concordia University. His research addresses the intersection between artistic creation with light, autonomous systems, and sensory perception. His artistic work is regularly presented in international festival such as Mutek, Bcn_Llum, Impakt, and Festival de la Imagen.

Marc-André Cossette is a transdisciplinary artist and PhD Candidate at Concordia University working on the relation between technology and performing arts using sound, visual, interaction design and Artificial. His work has been presented both in Canada and internationally, notably at Tangente Danse (Canada), Ars Electronica Festival (Austria), El Matadero (Spain) and CMMAS (Mexico).

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fortheloveofsound.ca

Afroditi Psarra and Tingyi Jiang

Ventriloquist Ontology

Keywords: Performance, Machine Learning, Natural Language Processing, Robotics, Wearables

Ventriloquist Ontology is a media performance that explores the control and hybridization between human and machine through the relationship of a performer and a wearable entity. This entity articulates text generated using the GPT-2 language model, and manifests itself by producing involuntary movement through a series of linear actuators.

Ventriloquist Ontology is a media performance that conceptually stems out of philosophical ideas that are rooted in the realms of Posthumanism, Actor Network Theory and Object-Oriented Ontology. Inspired by Alejandro Jodorowsky's dystopian theatrical play The School of Ventriloquists, it encompasses the creation of a modular wearable, trained using Natural Language Processing to create its own language that manifests in the form of speech and movement actuation. It explores the idea of soft control and points of hybridization between human and machine through the relationship of a performer and a wearable entity. This soft modular entity

speaks through text generated using the GPT-2 language model, trained on a dataset of texts around biopolitics, algo-governance, the surveilled body, and queer theory. The softness aspect of its control refers to the plasticity of the interface, the malleability of its hardware connections, the suggestive nature that the GPT-2 generated text pertains to, and the indicative nature of the movement of the actuators. Sequentially, it brings forth the soft data of the body inextricably linked to ideas of care and intimacy, as well as to the pliability of the different levels of interpretation between the human and the machine. The aspect of control is tied to the cybernetic idea of steering the body to its optimal movement through a feedback loop between machinic language, and human assimilation. It also deals with the hardness of the linear actuators and the microcontroller that manipulates them, to the domination of these mechanical components over the softness and vulnerability of the human flesh. Ultimately, the idea of ventriloquism is used to give agency to an ontological entity comprised of subtle suggestive wearable modules, human flesh and cognitive motor abilities, born-digital, able to produce novel language, but also conditioned to reproduce the biases of its algorithmic parts.



Afroditi Psarra is a transdisciplinary artist and an Associate Professor of Digital Arts and Experimental Media (DXARTS) at the University of Washington. She holds a PhD in Image, Technology, and Design from the Complutense University of Madrid. Her research focuses on the art and science interaction with a critical discourse in the creation of artifacts. Her practice builds on and extends the work of Cyber and Techno-Feminism(s) and the idea of female (and feminized) bodies as matrices of information. Her work has been presented at international media art festivals such as Ars Electronica, Transmediale and CTM, Eyeo, Píksel, and WRO Biennale between others, venues like Bozar, Onassis Stegi, EMST (Greek Museum of Contemporary Art), Walker Art Center, and published at conferences like Siggraph, ISWC (International Symposium of Wearable Computers), DIS (Designing Interactive Systems), C&C (Creativity and Cognition), and EVA (Electronic Visualization and the Arts).

Website: afroditipsarra.com

Tingyi Jiang is a visual artist and performer based in The Hague. She composes different media, material, space and herself to create certain situations, self-directing environments, which trigger audience's actions. She challenges the art-and-spectator relationships by creating a viewing-in-action experience that explores the dynamic between the individual, its environment, its collective and its social system.

Website: ingyijiang.com

Fractal Listening

Keywords: Fractal, Ambient, Music, Electronic, Performance

Named "Fractal" by the Polish scientist Mandelbrot in 1975, these elements of nature can be digitally recreated from mathematical functions. For Argentine artists Sebastián Seifert and Santiago Bartolomé, the Fractal universe is the conceptual trigger for a collaborative live/AV multimedia performance project from which a music album also emerges.

There is in nature, a mysterious and complex mathematical system that repeats itself over and over again, an underlying geometric pattern in forms as disparate as clouds, mountains, trees or our own circulatory system. Its distinctive feature is self-similarity, the same configuration that is repeated at different scales, branching out infinitely. There are those who believe that it is "God's fingerprint", "the absolute truth of the universe".

In *Fractal Listening*, any attempt at stylistic corseting is diluted in the hybridization of artistic languages. Thus, the fractal images dialogue with acoustic and electronic sounds in an interweaving of infinite kinesthetic notes. In this way, abstract

figures in strident colors outline mandalas and enigmatic portals, piercing the virtual canvas with three-dimensional shapes that evoke sacred geometry. This incessant algorithmic repetition generated by pre-established codes, sometimes follows a visual choreography and other times -altered by the frequencies of live sound- it improvises an organic dance, introducing variations to the original pattern. Simultaneously, the sound dimension is embodied in layers and loops, intertwining the electronic bases of IDM, ambient and experimental with the live chords of a guitar. Intervening the work, a trumpet interprets vibrant and moving jazz melodies with harmonics that generate sensations of body and spirit, closing the virtuous circle with a sensory, immersive and enveloping atmosphere. In 2019, Microfeel & Santiago Bartolomé began their collaborative work with the aim of furthering their respective creative pursuits. This path of experimentation materialized in different artistic proposals. In 2021 they created the live show *AV Fractal Listening*, the work combines digital art, electronic music and the guitar of the multimedia artist Microfeel (Sebastián Seifert) with the trumpet and processes of the musician and composer Santiago Bartolomé.



Sebastián Seifert is a multimedia artist, designer and music producer. He has lived and worked in Barcelona since 2002. His career has developed at interdisciplinary points of convergence, maintaining digital electronic poetics as the support, concept and format of his productions. He has an International Master's Degree in Media and Interactive Systems at the Autonomous University of Barcelona and ESDI (2002) and the Design, Image and Sound Career at the University of Buenos Aires (UBA).

In the field of media art, he has developed net-art projects, interactive installations and multimedia performances, serving as curator of these languages at the «la Caixa» Foundation (Barcelona) from 2003 to 2011. With the audiovisual project "Microfeel", the artist highlights his transdisciplinary vocation, creating worlds that combine visuals and sound. He has taken his audiovisual concert to festivals like MUTEK (ES/AR/MX), SONAR, SZIGET, CTM, FILE and AMURAL, among others.

Website: sebastianseifert.net

Santiago Bartolomé is a producer, curator, composer and trumpeter musician from Córdoba, Argentina. From this scaffolding he approaches his artistic explorations to build, in his own language, a sound cartography in which acoustic vibration and electronics coexist. His trumpet is the instrument to experience different atmospheres by erasing border lines, a tool that he considers essential as an agent of transformation of reality. His work, irreverent and enigmatic, is affirmed in "the search for sound" as a constant, versatile and possible future. Since 2001, he has been a member of the Córdoba Symphony Orchestra and Band (Argentina). Likewise, he is collaborating with different projects, favoring his interest in the intersection between artistic languages: Leonardo Prakash (Mexico, World Music), Eduardo Castillo (Mexico, electronic music) and with the audiovisual collective "Reality Soup" (Mexico, Augmented Reality and VR). Since 2021 he has been co-director and artistic director of the "Córdoba Music Biennial

Website: [santiagobartolome](http://santiagobartolome.com)

Erin Gee

We as Waves

Keywords: Biofeedback art, Feminism, Affective computing, ASMR, Electroacoustic

Performance for voice, electroacoustic music, and sonified physiological markers of affect (heartbeat, skin conductance, and respiration). Using techniques like guided meditation, hypnosis, and Autonomous Sensory Meridian Response (ASMR), Gee uses her voice to trigger physiological response in ten performers wearing her DIY biofeedback hardware, thus, structuring music through affective engagement.

A two-part performance for voice, electroacoustic music, and sonified physiological markers of affect (heartbeat, skin conductance, and respiration). Using guided meditation, hypnosis, and Autonomous Sensory Meridian Response (ASMR), Gee triggers physiological response in listeners wearing DIY biofeedback hardware, transforming physiological signals into synthesized sound. Through psychosomatic contexts of group listening, Gee composes music to enact phenomenological positions that are post-subjective, leaky, and affective, drawing upon feminist epistemologies to emphasize the transductive and non-reductive qualities of sound. The goal: to connect our bodies and minds to perspectives normally beyond human representation, being both witness to

measurement, and being within the measurement.

Using second person to speak “directly” to the audience, Gee composes affective experience as grounds for composing biofeedback music, speaking directly to the unconscious mind of the listener while speculating a non-humanist intimacy on grounds of experimental physics. In part one, Gee worked with queer playwright Jena McLean to translate Tara Rodgers’ feminist epistemology of sound to induce transductive thought, drawing associations between sound waves, oceanic waves, and femininity. Through Rodgers’ work she references logics of non-linear time, contingency, and alternative relations to noise and sound, eventually hinting at a departure from the human in the last line by invoking Catherine Keller’s queer theology: “We are drops of an oceanic impersonality. We arch like waves: Like porpoises.”

In part two, Gee invites audience members to don wearable, non-invasive biosensors, to become sensitive and sensible to their affective physiologies as waves of sound. Using clicks and synthesized tones, the respiration, heartbeats and skin conductance of the audience are sonified in real time, offering a window into the emotional engagement of listeners. This second section is inspired by the way that information is shared (and created) in quantum systems, and is created in collaboration with cyberpunk author Andrew Wenaus.



Erin Gee is an artist and composer based in TIO'TIA:KE – MONTREAL. Through her work, Gee hybridizes new media, art-science and performance practice, using feminist epistemologies to foreground unconscious and affect-driven experience. Inspired by the human voice as a conceptual object, she likens the vibration of vocal folds to electricity and data across systems, or vibrations across matter. She is a DIY expert in affective biofeedback, using sensors to implicate the body of the listener as part of her cybernetic systems in place. Her vocal compositions, networked performance, ASMR, VR, AI and robotics have been shown internationally. Erin Gee is currently a doctoral student in the music department of the Université de Montréal, studying with Dr Nicolas Bernier and Dr Jonathan Sterne (McGill University) on the topic of feminist frameworks for biofeedback music. Gee’s research is generously supported by the Social Sciences and Humanities Research Council of Canada.

Website: eringee.net

Luca Forcucci and Bruno Herbelin

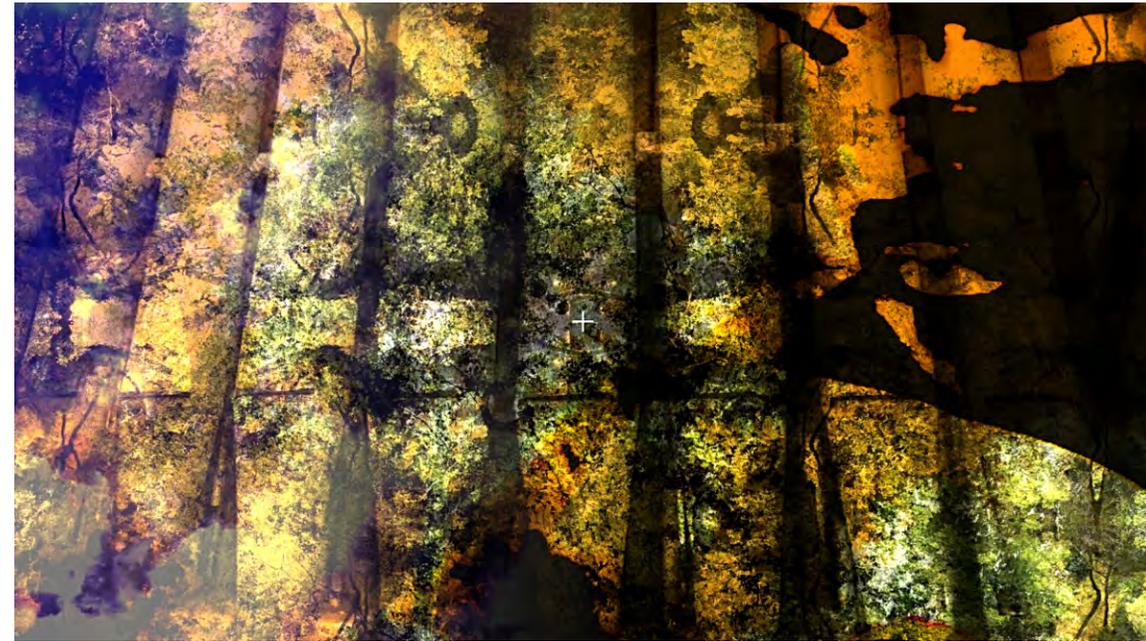
The Room Above

Keywords: Electroacoustic music, Organ, Resonances, Neuroscience experiment, Hallucination

The organ of the Helvetic Circle' church in Genoa was recorded, sampled and reworked with its resonances in the architectural space and leading to a sonic moiré, a polyphony of spaces. Also, an experimental laboratory work in cognitive sciences is combined with the concert in the performance space.

The Room Above is an electroacoustic piece developed during an art residency in Genoa in the second pandemic lockdown. The central element of the composition is an organ situated in the church above the residence. The work was conceived in the moment without a written score, and after long walks in the surrounding nature. The church contains an intrinsic architectural sonic spatial identity. The recordings of the organ and its reverberations in the architectural space were then sampled and reworked. The addition of the sonic spaces, those initially recorded, those of the future concert venues, and those present in the mental imagery of the listener during the

concert, shall lead to a sonic moiré, a polyphony of spaces. The conceptual idea of the sonic moiré is an auditory perception of several layers of space and comparable to that which emerges visually from Marcel Duchamp's rotoreliefs. Such perception exists between the work and the spectator, and here between the work and the listener. The sonic moiré changes according to the typologies of each concert venue, and its ultimate goal is to produce an illusion of cinematic experience for the mind of the listener. The artistic research process combines our experience in the sonic arts and our scientific expertise in the cognitive neuroscience of perception to explore the mutual interactions between visual and auditory stimulations for the mental elaboration of illusory or hallucinatory precepts. The objective is to accompany the audience to reach a state of dedicated listening, leading to a focused attention to the experienced sensations and perceptions, in order to magnify mental imageries. To leave room for such 'auralization', visuals should thus not entirely capture the attention of the audience. We explore ways to merge or alternate the stimuli and specifically address the role of rituals for this goal.



Luca Forcucci, artist, scholar and guest professor, observes perceptive properties of the first person experience through large scale installations, compositions, video, photography and writing. The research investigates mental imagery of sonic architectures. The works were held at Ars Electronica Linz, Biennale del Mediterraneo Palermo, Museo Reina Sofia Madrid, Centro Hélio Oitica Rio de Janeiro, The Lab San Francisco, Rockbund Museum Shanghai, MAXXI Rome, or Akademie der Künste Berlin. His platform UBOTLAB.ORG develops art and science encounters.

Website: linktr.ee/Lucaforcucci

Bruno Herbelin is senior researcher in virtual reality and cognitive neuroscience in the laboratory of Prof. O. Blanke at École Polytechnique Fédérale de Lausanne (EPFL), Switzerland. He was deputy director of the EPFL Center for Neuroprosthetics (2012-2019), and Assistant Professor at the Medialogy Department of Aalborg University, Denmark (2005-2009). He obtained his PhD at EPFL School of Computer and Communications in 2005 for his research work on virtual reality exposure therapy.

Website: brunoherbelin.github.io/vimix/

Ken Steen, Gene Gort and Megumi Masaki

Ice is Water is Ice is

Keywords: Piano, Multimedia, Interactiva, Climate, Migration

Ice is Water is Ice is is a multimedia performance for piano, multi-channel sound, and interactive video. It is inspired by the emigration of Nordic peoples to Canada in the 1880s due to economic depression and war, and the current impact on climate change

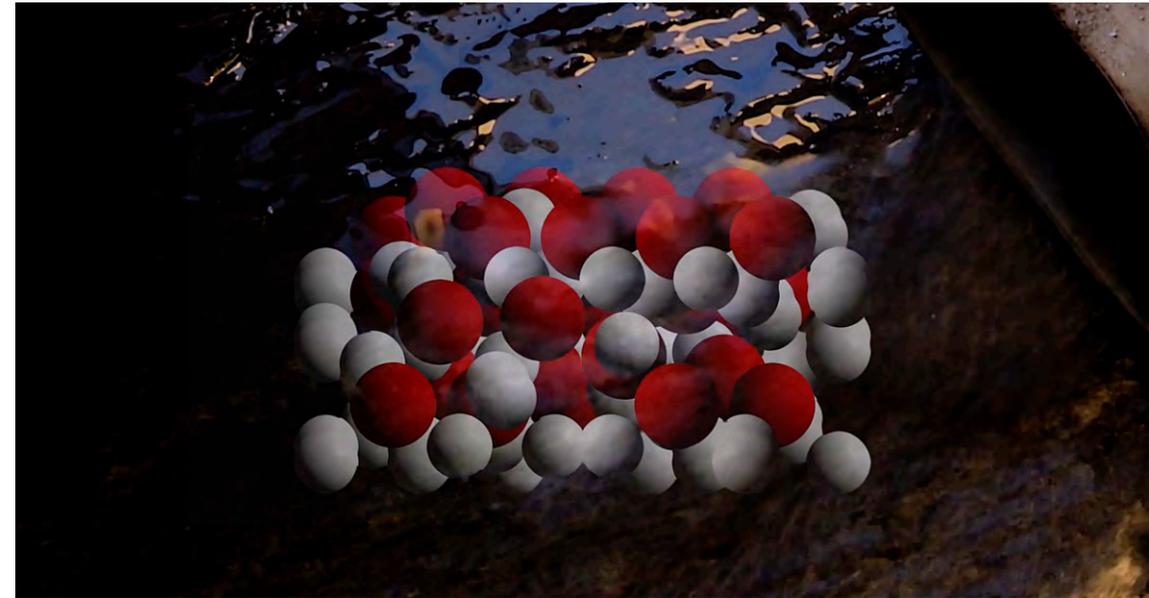
In considering various questions embodying the possible, we find resonance. “How to fight climate crisis and global warming?” Performance of this work serves as a time-based contemplation. It provides a space to consider how to slow, stabilize, or even reverse the effects of human behavior on climate conditions and the consequences. As the work represents shifting states of water and the language we use to name natural phenomena, we are asked to consider the interdependence of our actions to the conditions of nature as nature ourselves.

How might we relate with nature in order to transform our world so as to support continuance of its inhabitability? In relation to the witnessed realities of climate change, foregrounding “the possible unfinished real in front of us” as distinct

from fostering ingrained doubt or disbelief, the work encourages the perception of current environmental challenges through rigorously focused consciousness, awareness, and iconography. Put more directly: if we don’t change we will perish; if we don’t pay attention, we’re doomed!

Considering our current circumstances, the possible offers an opportunity to cultivate an understanding of data-driven scientific approaches only if we sensitize ourselves to the consequences. Forced human migration, plant and animal displacement, extinction, and cultural collapse are realities we face. Data and persuasive writing may inspire intellectual engagement and artistic production, or else, at the other end of the spectrum, bring into question what many (most?) witness and experience to be normative.

The creation and performance of this work foregrounds both aesthetic and lived observation with an openness to experiential understanding. It attempts to untether us from strictly data-driven arguments, from stubborn political and contrarian opining, from self-defeating impossibility thinking, to a positive possible we can embrace.



Ken Steen’s music and sound art are recognized internationally for their authentic vitality, remarkable range, and distinctive personal vision. Whether acoustic, electronic or some multimedia combination, Steen’s multifarious works feature sumptuous textures of gradual yet unpredictable evolution.

Website: vimeo.com/kensteen

Gene Gort is a visual artist, video producer, and media programmer. Primarily working in moving image media, he incorporates video, digital imaging, and sound in installations, fixed media and new media performances.

Website: genegort.com

Megumi Masaki has been active as a pianist, multimedia artist, educator, conductor and curator. Her innovative performances have earned her a reputation as a leading interpreter of new music and multimedia works. Megumi specializes in exploring how sound, image, text and movement can be integrated and interactive in multimedia works.

Together, they create and perform as multimedia chamber ensemble: Slingshot Trio, with featured performances in such diverse locations as Reykjavík, Iceland; Brandon, Manitoba, Canada; Belfast, Northern Ireland; and NYC, USA.

Website: megumimasaki.com

Screenings

Session 1

Session 1 of the screening's program includes video experimental artworks that deal sharply with a variety of topics relevant to the main topic of ISEA2022 Barcelona in terms of future possibilities regarding gender, environment, human rights and machines.

Deep Reckonings (14min 22s)

Stephanie Lepp

Swarm Raid: an interspecies dance and music film (4min 25s)

Anna Lindemann

Unforgotten, a poetic 3D animation about the violation of women's human rights in a time of war (8min 31s)

Sujin Kim

Glacier's Lament (2min 49s)

Jiabao Li

Experimental Microscopic Media Art: Inner Essence (4min 30s)

Emily Kim

Code_red (1min 49s)

Lian Loke

Lavoro Macchinine (3min 29s)

Alexis Grey Hildreth, Ora Cogan

DanceCubesII, human-non-human Co-Creation artwork (2min 15s)

Joseph Ayerle

Walking on Sol (7min 01s)

Nima Bahrehmand

13 Eyes (2min 43s)

Jean-Philippe Côté

Future Memories of Deep Water (2min 32s)

Indiara Di Benedetto

Untitled (A New Landscape) (2min 12s)

Michelle L. Herman

A New Dawn (3min 09s)

Max Schleser

The Erection of Phygital Graveyard (5min 26s)

Inmi Lee, Yunmi Her

Session 2

Session 2 includes pieces that use a documentary approach either to explore concepts related to humans, technologies and environment or to show relevant initiatives that deal with these topics, including demonstrations of applied projects in this field.

Microplot: genomic technologies as a potential tool of revelation for deliberate terraforming (15min 41s)

Alla Semenovskaya

Ener-geyser (8min 21s)

Tara Karpinski

Cybersyn 1973 / 2023 (15min 31s)

Grupo Synco

The Blue Dot (19min 09s)

Juan Pablo Pacheco Bejarano

Green before "Green" (10min 35s)

Paul Echeverria

Session 3

Session 3 includes pieces that thoroughly reflect on the relations of humans and nature using different techniques and visual poetics.

Models for Environmental Literacy (36min 52s)

Tivon Rice

The Unreal (13min 47s)

Gloria López Cleries

Stephanie Lepp

Deep Reckonings

Keywords: Deepfake, Syntheticmedia, Artificial intelligence, Machine learning, Truth

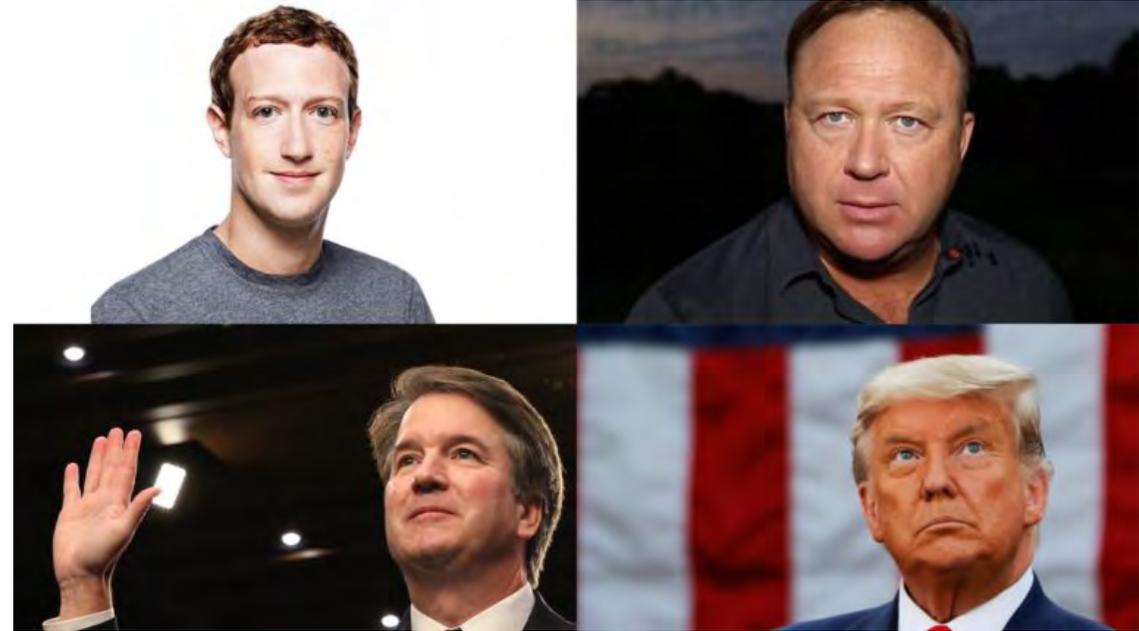
Deep Reckonings is a series of explicitly-marked deepfake videos that imagine morally courageous versions of our public figures. For example, if Mark Zuckerberg had a reckoning, what would he say? The project seeks not to deceive nor demean, but to imagine and inspire. In this spirit, Deep Reckonings asks: how might we use our synthetic selves to elicit our better angels?

Deep Reckonings is a series of explicitly-marked deepfake videos that imagine morally courageous versions of our public figures. We see Mark Zuckerberg confront the disastrous consequences of his techno-utopianism. We watch Alex Jones grapple with his spread of deceitful conspiracies. An imaginary Brett Kavanaugh wrestles with the

divisive way he responded to the sexual allegations against him, and a fake Donald Trump concedes his lies about the 2020 election. The project is an exercise in steel-manning where we often straw-man.

Deep Reckonings explores the ethical and epistemological implications of synthetic media. It also interrogates how we might use synthetic media in ethical and even benevolent ways. The project seeks not to deceive nor demean, but to imagine and inspire. In this spirit, Deep Reckonings explores the question: how might we use our synthetic selves to elicit our better angels? Or more simply: how might we deepfake it 'til we make it?

Deep Reckonings won two Webby Awards in 2021. The project seeks to become an ongoing series, in dialogue with the news cycle as it evolves.



Stephanie Lepp is a producer whose work strives to hold up a mirror — inviting us to grow from what we see.

Stephanie is the Executive Producer at the Center for Humane Technology — the organization at the heart of the Netflix documentary *The Social Dilemma*. She leads the production of the podcast *Your Undivided Attention*, a member of the TED Audio Collective which has garnered almost 12 million downloads.

Stephanie is also an independent producer and futurist. Her latest work is *Deep Reckonings*, a series of explicitly-marked deepfake videos that imagine morally courageous versions of our public figures. *Deep Reckonings* won two Webby Awards in 2021.

Stephanie is a member of the Guild of Future Architects. Her work has been covered by outlets such as NPR and the MIT Technology Review, and supported by institutions including the Mozilla Foundation and the Sundance Institute.

Twitter: @stephlepp

Sujin Kim

Unforgotten

Keywords: Human Rights, Comfort Women, World War II, Women, Historical Testimony, 3D Animation

An experimental 3D animation that weaves together the testimonies of four late Korean women who suffered from sexual slavery at so called Comfort Stations for the Japanese Imperial military during the World War II.

The animation *Unforgotten* tells a traumatic historical event that happened to the most vulnerable group of women during a wartime and had been forgotten for a half-century. The animation shines a light on the victims' voices and their willingness to give testimonies that deliver the historical truth rejected and denied by mainstream history. The women who give the testimonies in the

animation spent the last moments of their lives fighting for women's human rights so that women will never be sexually sacrificed again during wartime.

Unforgotten tells the atrocious wartime sexual violence through fairy-like visuals that are metaphorical and poetic so as not to perpetuate violent imagery and retraumatize the victims. This approach is for changing how we conceive victims of wartime sexual violence, who were commonly considered filthy women by their community and retraumatized in media by repeatedly reproducing sexual sensations. The animation ultimately intends to change the way we conceive our past and historical trauma and, most importantly, pursue our future to embrace the history of marginalized people.



Sujin Kim is an animation artist, filmmaker, and assistant professor of 3D Animation in the School of Art at Herberger Institute for Design and the Arts at Arizona State University. She studied Fine Arts at Ewha Womans University in South Korea and received her MFA in Experimental Animation at California Institute of the Arts in the US with a concentration in CGI. Kim implements a broad range of visual language ranging from 2D traditional to CG techniques for animated filmmaking. Her films have been selected and screened at many film festivals worldwide including the Annecy International Animated Film Festival.

Kim's MFA thesis received the Gold Medal at the 48th Student Academy Awards in the Animation category. She is a recipient of the ASIFA-Hollywood Animation Educator's Forum Scholarship for 2019-2020, Experimental Animation Named Award: Jules Engel Scholarship, Lillian Disney Scholarship, Vision Ewha Artist Award, and Adobe Prize at the 2019 Ewha Media

Website: sujinart.com

Anna Lindemann, Ryan Glista and
Emma Komlos-Hrobsky

Swarm Raid

Keywords: Video, Opera, Generative music, BioArt, Ants

The music and dance film Swarm Raid is a surreal trip to the grocery store inspired by army ant swarm raids. The film draws connections between the ways that humans and army ants find food and reflects on collective behavior and social hierarchy in both ants and humans.

Swarm Raid acts as an interspecies meditation on social life. In this music and dance film, two of the most social creatures on earth—ants and humans—converge in a surreal trip to the grocery store inspired by the highly coordinated food gathering missions of the army ant species *Eciton burchellii*. The central character in the film experiences a kind of fever dream borne of social anxiety in which she witnesses crowds of humans becoming ant-like workers bringing offerings of food to their “ant queen,” performed by a virtuosic soprano. The ant queen invokes the refined choreography of the army ants as she sings “Pheromones, show the way! Coordinate the corps, of our *Eciton*

ballet.” Meanwhile, humans dance in and around shopping carts and circle islands of produce in Busby Berkeley-inspired formations. Ultimately, distortions in the speed of the film reveal a manic, ant-like quality to the humans’ search for food. In all, the film draws connections between the ways that humans and ants communicate and find food, and, more importantly, reflects on collective behavior and social hierarchy in ants and humans.

Swarm Raid was inspired by the Carl and Marian Rettenmeyer Army Ant Guest Collection housed at the University of Connecticut, a world-class natural history collection of more than 2 million specimens. The music for “Swarm Raid” is scored for soprano and custom digital instruments and combines traditional through-composed music with musical textures developed using a generative approach to music composition modeled on biological processes.

The film is directed by Anna Lindemann and Ryan Glista. Music by Lindemann; lyrics by Emma Komlos-Hrobsky; performance by soprano Lucy Fitz Gibbon, Lindemann, and fifty swarming members of the community.



Anna Lindemann (co-director, composer, performer) calls herself an Evo Devo artist. Her work combines animation, music, video, and performance to explore the emerging field of Evolutionary Developmental Biology (Evo Devo). Her Evo Devo Art, including the animated short *Beetle Bluffs* and the art-science performances *Theory of Flight* and *The Colony*, has been featured internationally at black box theaters, planetariums, galleries, concert halls, biology conferences, film festivals, digital art conferences, and natural history museums. Anna graduated from Yale with a BS in Biology before receiving an MFA in Integrated Electronic Arts from Rensselaer Polytechnic Institute. She is an Assistant Professor in the Digital Media & Design department at the University of Connecticut where she has pioneered courses integrating art and science.

Website: annalindemann.com

Ryan Glista (co-director, editor) is a filmmaker and digital producer with a Film BA and Digital Media and Design MFA from the University of Connecticut. His award-winning short films have screened nationally and internationally. He is a skilled director, photographer, music producer and multi-disciplinary digital artist, working at the intersection of performing arts and new media. Ryan currently works at The Bushnell Center for Performing Arts, directing immersive video installations.

Website: ryanglista.com

Emma Komlos-Hrobsky (librettist) is a writer, illustrator, and editor who tells stories at the intersection of the human and the fantastic. Her writing has appeared in *Guernica*, *Hunger Mountain*, *Conjunctions*, *Bookforum*, *Tin House*, *Hobart*, and the *Story Collider*. Emma received her BA from Wesleyan and her MFA in fiction writing from The New School, where she later taught as a professor in the Riggio Honors Program: Writing and Democracy. Previously Emma served as an editor at *Tin House* magazine and *Tin House Books*; she is currently senior editor at *Poets & Writers Magazine*. She also volunteers as a mentor for *Creature Conserve*, a nonprofit organization which fosters arts-science collaborations to tell urgent stories about conservation. With the support of a fellowship from the Elizabeth George Foundation, she is at work on a novel about particle physics, family, and the Alps.

Website: emmakomloshrobsky.com

Jiabao Li

Glacier's Lament

Keywords: Climate change, Glacier, Data sonification, Data art, Performance Women, Historical Testimony, 3D Animation

Glaciers are sentinels of climate change. They are the most visible evidence of global warming today. This series of works embodies the stunning beauty, rapid change, fragility, destructive power, and magnificence of glaciers. At the same time, they challenge the audience with the dramatic, irreversible ecological damages from climate change.

In *Glacier's Lament*, we used data from glacier melting in the past 60 years to compose music and dance with local musicians who have witnessed the recession of the Mendenhall glacier over their lifetimes in Juneau, Alaska. Each note is one season in a year. In the

winter, the glacier is frozen, so the pitch is low. In the summer, the melting rate rises, so the pitch is high. Towards the end, the melting overflows into spring and autumn, and the melting in the summer becomes faster. We filmed the artists performing the piece on the glacier, collaborating with the glacier's own sounds.

There are four color cards in PANTONE for glacier blue. However, in real glaciers, this blue color is variable and dynamic. As glaciers are disappearing, this unique blue is also disappearing. We sampled and blended the blue color from glaciers in Alaska and hung them in recycled glass vials. When one glacier calving happened, one color vial fell down. At the end of the exhibition, all 60 vials fell down, forming a painting on the canvas beneath.



Jiabao Li creates works addressing climate change, interspecies world sharing, humane technology, and a just, sustainable future. In Jiabao's TED Talk, she uncovered how technology mediates the way we perceive reality. At Apple, she invents and explores new technologies for future products. Jiabao holds multiple patents and awards including Falling Walls, iF, AACYF 30 Under 30, FastCo, Core77, A' Design. Her work has been exhibited internationally, at Ars Electronica, SIGGRAPH, Milan and Dubai Design Week, McaM, ISEA, Anchorage Museum, OCAT, CHI, Donghu Shan Art Museum, MOOD Museum of Design, Alaska State Museum. Her work has been featured on Yahoo, TechCrunch, Domus, Yanko Design, Fast Company, Harvard Political Review, The National, Business Insider, Bloomberg, and Leonardo. Currently, Jiabao is an Assistant Professor at UT Austin and a member of NEW INC at the New Museum. She holds a Master of Design Technology with Distinction at Harvard GSD.

Website: jiabaoli.org/glacier

Emily Kim

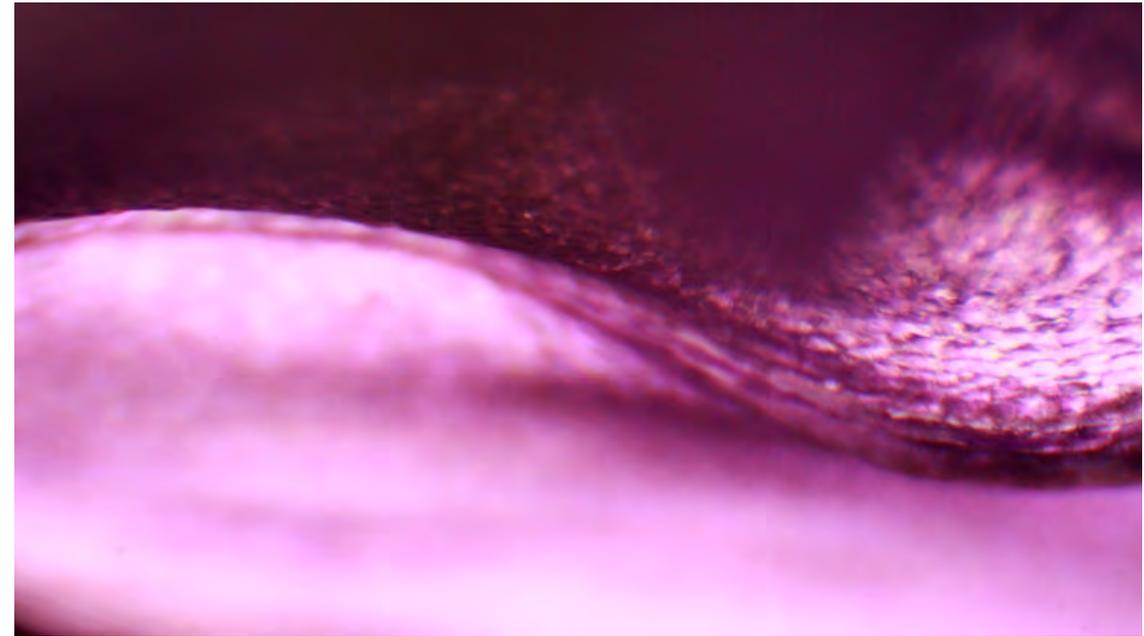
Experimental Microscopic Media Art: Inner Essence

Keywords: Art and science, Video art, BioArt, Experimental design

The Inner Essence is an experimental video that depicts the essence of nature through various microscopic structures, ultimately illustrating the totality of

My body of work presents the essence of nature from various microscopic structures, illustrating the substance of the world. A digital microscope was used to capture these complex forms of various plants and objects revealing the natural state of an organic system and visual movements that could not be seen

with the naked eye. *The Inner Essence* is an experimental video that depicts the essence of nature through various microscopic structures, ultimately illustrating the totality of nature's beauty beyond the surface. This exploration highlights the juxtaposition between the outsider's perspective upon nature and the essence of nature itself through the lens of a microscope. I was fascinated by the manipulation of optic focuses and the ability to travel through what appears to be the underlying true worlds. This experimentation allows me to observe in contemplation and speculation of nature's mysteriousness.



Emily Kim is a Professor of Graphic Design in the Department of Art at Sam Houston State University in Texas. She is a digital media artist and experimental designer, explores art, science, and technology. During the past years, Kim has exhibited her work nationally and internationally. Her works were exhibited in the Art Gallery at SIGGRAPH, Graphic Design USA, SMart Multimedia Art Festival, Florida International, Long Beach Island Foundation of the Arts and Sciences, 108 contemporary, West Virginia Mountaineer Short Film Festival, Farmington Museum, and Alexandria Museum of Art in USA. Also, Kim's works were included intentionally in the 10th Seoul International New Media Festival in Seoul and GwangJu International Exhibition at Asia Culture Center in Gwangju, South Korea, LED Media Façade in Selangor, Malaysia, 9th International Conference Computer Graphics in Hsinchu, Taiwan, and 3rd International Festival of Nano Art in Iasi, Romania.

Video: vimeo

Lian Loke and Dagmar Reinhardt

Code_red

Keywords: Human-robot interaction, Disruptive feminine, Lipstick, Trust

The ritual of a woman wearing lipstick is an individual act of identity, yet common across cultures. What does it mean for a robot to replace the human hand in such an act? Agency and trust are reconfigured in the intimate zone of close contact between human and machine.

We apply a feminist approach to investigating how robots can collaborate with humans in personal grooming and bodily care towards a future where robots are ubiquitous in daily life. Our work addresses ethical issues of identity, agency, vulnerability and trust in human-robot relations. We explore these issues through cinematic film-making as provocations and speculative narratives.

Code_red is a video artwork that portrays a solitary female figure awaiting the painting of her lips in red by a robot. In what seems like a simple, perfunctory action sequence by the robot, through a series of images that are deliberately intense and ambiguous, we aim to unsettle the viewer and call into question the integration of a robot in cultural rituals of feminine grooming and presentation.

Introducing a robot into this highly personal ritual invites a critique of how biological and machine bodies could be reconfigured in the intimate zone of close contact. Deploying an industrial robotic arm is a defamiliarising tactic, intended to disrupt and open up thinking on how we weave robots into our daily lives and private, intimate acts. It is also part of our arsenal of creative practice of the disruptive feminine, a questioning of the construction of the universal female, with its culturally entrenched feminine modes of presentation.



reinhardtloke are **Lian Loke** and **Dagmar Reinhardt**: we develop projects at the intersection of art, design, architecture, choreography and human-machine interaction since 2012. Loke is an artist, dancer and interaction design researcher. Her practice questions the role of the body in contemporary society, and how our notions of self are open to transformation through inter-cultural, inter-species and inter-media relations and rituals. Reinhardt is an architect, designer and researcher and extends design research for architectural performance at the intersection of architecture, acoustics, structure, robotics, fabrication, material and construction constraints into multi-disciplinary collaborations. Our work is a critical speculation on the future of human versus machine agency, combined with a creative experimental approach to materiality through digital fabrication, software programming and robotics. We explore new modes of non/human performativity and human experience through prototypes, installation, exhibition and performance.

Instagram: @reinhardtloke

Alexis Grey Hildreth and Ora Cogan

Lavoro Macchinine

Keywords: Cinema typography, Kinetic typography, Experimental animation, Video collage, Sound collage

Lavoro Macchinine is a collaborative moving image and sound work that deconstructs the opening credits and reimagines the musical overture in the title sequence from the Italian period drama *Il Gattopardo* (1963).

Lavoro Macchinine is a collaboration between Alexis Grey Hildreth (moving image) and Ora Cogan (sound) that deconstructs the opening credits and reimagines the musical overture in the title sequence from the Italian period drama *Il Gattopardo* (1963).

Lavoro Macchinine occults the film's original static text with a mercurial, kinetic typography, built from the very glyphs it is at pains to obfuscate. Through gestation, approximation,

replication, and assimilation; *Lavoro Macchinine* discovers its own alien properties of form and behaviour, while simultaneously exploring the boundaries of its cinematic environment.

The living word produced by *Lavoro Macchinine* is propelled and propagated by a hunger for and the digestion of, *Il Gattopardo's* diegetic space. It longs to hide within it; to become part of it. The building blocks of language are hijacked: letterforms bifurcate in an imitation of manor gates, logographs elongate into fragile towers, conveyor belts composed of graphemes disseminate across the laneway, ligatures roll out of ideograms to scrutinize Roman busts, alien marginalia breach the balustrade, cedilla scrupulously scale the villa walls, extraterrestrial dingbats lodge themselves into the ruins of a world that no longer exists, ogonek laden emissaries probe the cinemascape in order to become it; to become us.



Alexis Grey Hildreth is a multi-disciplinary artist based on the West Coast of Canada. In 2014 he received a BFA from Emily Carr University of Art and Design and in 2017 completed an MFA at the University of Waterloo. Alexis' work revolves around boundaries, barriers, and thresholds. He is invested in the relationship between internal and external geography, the balance of terror and awe, and in tracking the movement of consciousness through cultural artifacts. Alexis has held a plethora of jobs; from innkeeper to nightwatchmen, from shepherd to security guard, from grocer to gardener, from plowman to picture framer. He is curious about the ways in which the creative imagination is both enlightened and impoverished by popular culture.

Ora Cogan is a multi-disciplinary artist and singer-songwriter based on the West Coast of Canada. She is known for her singular voice and cinematic compositions. Cogan has released seven albums to date while collaborating with a multitude of artists and touring extensively throughout Europe and North America. She has performed at Le Guess Who Festival in the Netherlands, Pickathon Festival in Portland, Oregon and has shared the stage with the likes of Grouper, Mazzy Star and Lido Pimienta. Her new album *Bells in the Ruins* was released July 13, 2020 on Prism Tongue Records.

Website: gozertoast.com

Joseph Ayerle

DanceCubesII

Keywords: Glitch, Ornella Muti, Random, Non-human co-creation

DanceCubesII consists of algorithm-based images of 80's filmstar Ornella Muti, made with the self-coded co-creation tool code9. The rhythm of the video is dominated by a superimposed dance performance of the Italian actress, an artifact of an old Spanish B movie. The result is radical, and an unseen kind of visual art.

In September 2018 Katerina Cizek invited me to a MIT conference in Cambridge about Co-creation: This was the first time I noticed that there is a theoretic discourse about co-creation. The usage of non-human creation is not new. Analog random-based processes, such as Gerhard Richter's colour-coat-scratching ("Rakeltechnik") or Jackson Pollock's "drip technique" created iconic landmarks. Harold Cohen used fix algorithms to create art, Vera Molnar used fix algorithms as a tool to explore art.

In 2022 I made *DanceCubesII*. The visual part of *DanceCubesII* consists of algorithm-based images of 80's filmstar Ornella Muti, created by an uncontrolled process without human influence. For this process I used the self-coded software Code9 as non-human co-creation tool. But the artworks rhythm is dominated by a half visible superimposed dance performance of the young Italian actress: an artifact of a Spanish B movie, published in 1974, two years before the end of fascism in Spain. The result of both image streams consists of an unseen visual language.

While the main idea was a human creation and the mix of the visual elements was done by me, the radical colors and the unusual aesthetics came from the uncontrolled non-human co-creation process.

All this is very technical: As an artist, my feeling was that I had to create something which is less representational art than my past works. My feeling was that the blur between abstract and representational art will conduct into something more intense. My ship to navigate there was non-human co-creation.



Joseph Ayerle is an artist of Europe's digital generation and explores art in the fields of photography, artificial intelligence, videoart, NFTs. A study conducted at Massachusetts Institute of Technology called Joseph a "new generation artist and photographer", the Royal Photographic Society (UK) described Joseph as an "experimental contemporary artist". Joseph's thematic cycles and moving image projects seem to reject any kind of classification and defy often conventional colour schema. Using digital artifacts of advertising and films in addition to his own photography, Joseph distorts in his oeuvre the coordinates of time, space and conventions.

Joseph is regularly invited by universities and Art-Meets-Tech festivals to events such as "ROMBAK" of the Multimedia University of Malaysia, "Audiovisual Frontiers" of the University of California, Riverside or the "Reboot Fest" of the Universities of Porto and Lisbon (NOVA). Joseph was finalist of the exhibition Concorso Nazionale di Arte Attuale e Biennale per le Accademie di Belle Arti di Firenze e Carrara" in Florence, 2017.

Website: joseph-ayerle.com

Nima Bahrehmand

Walking on Sol

Keywords: Myth, Memory, Immersive, Repressed, Desert

By using digital transportation and reconstruction, the video is an apocalyptic vision of the world seen through the Persian myth of an ancient fortress and a giant gluttonous worm. According to the myth of Haftvād and Ardešir, the destruction of the worm is believed to have sealed a permanent curse on the city by causing drought and desertification. Eventually, the city would

In the central core of the ancient city of Kerman is a fortress belonging to the Persian empire that, over time, has worn out and turned into a giant dune. In *Walking on Sol*, I use digital tools to create an aesthetic form to investigate and interweave the possible impact of the fortress's history and myth on the region and the world.

The current view of the fortress does not relate much to the glorious Persian empire. Now it is a pile of dust. By looking at the fortress's current

condition, the product of erosion and human disregard, this project asks: To what extent does the fortress's history, and the myths and legends surrounding it, foreshadow contemporary human impact—development and devastation—on the future of the world?

In contrast to the belief of many young residents of the region, who consider the fortress a giant dune, the elders and great grandparents believe that it is the grave of a worm-like monster whose hatred has caused the city's current situation of drought and scarcity. Through a digitalized speculative aesthetic—as an alternative narrative—*Walking on Sol* asks: what happens when disregarded beliefs and repressed regions are recalled and thought of in different ways? Can these forgotten remnants of the past be whisperings of the future? And by simulating an abstract 3D environment through digital software, the work asks: what aspects of the future can be imagined and constructed by technology? By juxtaposing the digital and physical structure of the region, *Walking on Sol* intertwines an aesthetic form for the future of the Past with the imagined Future.



Nima Bahrehmand is an artist who creates video installations, performances, and technological outcomes. His art practice deals with the humanized world's aftermath. Nima investigates the capital desertifying operation that generates the repressions that will erupt in the future and impact the creation of the new. His artworks have been included in exhibitions and venues including Digital Native as part of Tbilisi Oxygen Biennial, Tbilisi; xCoAx, Graz; Aaran Gallery, Tehran; Kunstraum Potsdam, Berlin; Marres, Maastricht; Kiosk, Ghent; VAC, Austin and AG Gallery, Tehran; among others. Nima received his BFA from the University of Kerman, Iran; MA from School of Art, Ghent, Belgium; and MFA in studio art, transmedia from the University of Texas at Austin. Nima is currently a Ph.D. candidate at the Department of Critical Media Practices at the University of Colorado Boulder.

Website: joseph-ayerle.com/button

13 Eyes

Keywords: Self-representation, Obsolescence, Alterity, Mediation, Technology

13 Eyes is a sculptural interactive artwork built around 13 obsolete, yet fully working, iPhones. By assembling fragments of visitors' faces into monumental portraits, it conjures up imaginary beings at the intersection of familiarity and alterity. The installation invites a reflection about the mediation of self-representation by technology and society and by our own vanity and fear.

13 Eyes is an interactive installation that dynamically assembles monumental portraits of visitors by fusing together fragments of their respective faces. The resulting triptych conjures up imaginary beings at the intersection of familiarity and alterity. By sharing the microsocial space of the installation, (v)users' self-representations blur with others in an uncanny fashion. Thus, the installation is an invitation to discuss the mediation of our self-image by technology and society and by our own vanity and fear.

The installation itself is a sculptural assembly of 13 obsolete, but fully working, iPhones. The devices are

controlled by a hidden master charged with surreptitiously taking pictures, remotely manipulating them, and displaying the results. By invoking the ubiquity and cultural significance of the iPhone, the installation questions our relation to status and obsolescence, but also to surveillance and self-representation.

This artwork creates dynamic composite visuals that are neither fully generative nor entirely representative. Instead, the dynamic hybrid portraits inhabit a liminal space between familiarity and alterity. Visitors can recognize portions of their own corporality forcibly being merged with that of others. This creates a malaise that invites them to consider the human beings around them and the ways by which they are being collectively (mis)represented.

Who is it that I am sharing a face with? This performative quality of the installation extends the actual artwork beyond the interactive device to include the whole physical space and, more to the point, the visitors inside it. This creates a forum for the interactors to consider the ways through which technology mediates both the representation of self and of others.



By using a cultural icon such as the iPhone, I hope to kickstart a necessary discussion about technology, about how it surreptitiously permeates and overtakes our human interactions and about how we hastily dispose of it when fashionably obsolete. In other words, this artwork's strength not only lies in its aesthetic qualities but perhaps even more in its ability to bring about a shared discursive space.

Jean-Philippe Côté creates interactive art from technological trash. His installations have been built from obsolete ATM screens, antiquated pen plotters, discarded laptops, archaic security cameras and outmoded iPhones. By de-scripting technical artifacts, his work imagines alternate futures for the e-waste our societies leave behind. Despite this dramatic undertone, his installations are interacted with in a playful and poetic way. A recurring theme in his work is the mirroring of the visitor's body. By exhibiting distorted, hybrid, blended and liminal representations of the self, his artworks are underlining the dislocation between who we are and the ways in which we present ourselves in a world heavily mediated by technology.

While he is a hardware tinkerer, it is through software that he transmutes old devices into art. He is a respected contributor of the open source community, especially in the fields of creative coding, networked music and physical computing. In short, his artistic approach allows him to reshape reality through a combination of technical appropriation, software remediation and algorithmic serendipity.

Website: djip.co

Indiara Di Benedetto

Future Memories of Deep Water

Keywords: Speculative archaeology, Plastic pollution, Underwater ecosystem, Future heritage predictions

Future Memories of Deep Water researches the possibilities of the algorithm for predicting new entanglements between underwater artifacts and the environment where they are discovered. Consisting of generated images by the algorithm and a physical object, it questions how underwater heritage could look like in the future, facing human activities affecting the environment.

What are the changing conditions for Archaeology in underwater ecosystems? Can challenges be predicted and solutions imagined using Machine Learning?

With the passage of time, underwater artifacts are encrusted with coral, algae or other marine organisms. How do

human activities and pollutions undermine these natural environments? What will our underwater heritage be like in the future? The project: *Future Memories of Deep Water* explores how algorithms can be used for predicting new entanglements between underwater artifacts and the changing environment where they are discovered. We reflect on current problems and dangers for marine environments, such as “plasticrust” and plastic pollution.

Built upon experimental speculation, *Future Memories of Deep Water* calls for the protection of threatened marine ecosystems and aims to create awareness and encourage preservation of cultural heritage.

Credits:

concept, research, visual design: Indiara Di Benedetto

sculpture production: Giulia Berrettoni

project mentorship 2021: Alexia Achilleos



Indiara Di Benedetto (*1994, IT) is an experimental media artist with a background in video art, digital photography and visual design.

Through entanglements between art, organic matter and observations of archaeology, her recent artistic research investigates the storytelling possibilities of technology about contemporary narratives and future imaginaries focused on human – object – social and environmental context connections.

Her artworks have been exhibited in several venues: Ars Electronica Festival (AT), Ars Electronica Center and Deep Space 8K AEC (AT), Castello d’Albertis Museo delle Culture del Mondo (IT), CYENS Centre of Excellence Nicosia (CY), Speculum Artium (SI) and more.

Website: indiaradibenedetto.com

Michelle L. Herman

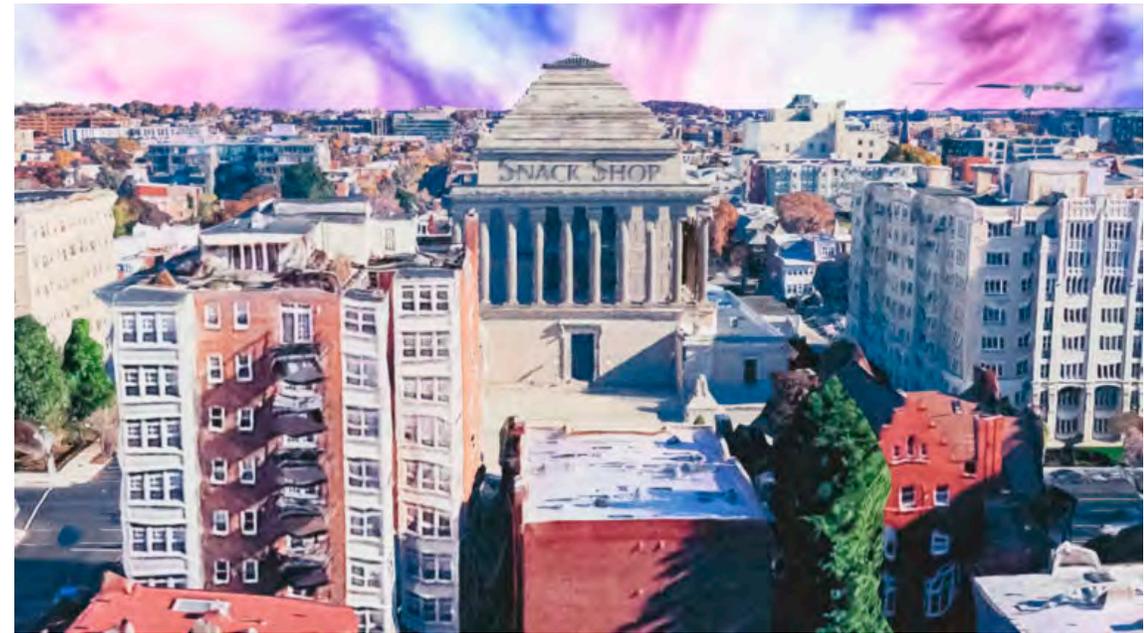
Untitled (A New Landscape)

Keywords: Speculative future, Meaning, Consumerism, Reality

Untitled (A New Landscape) explores a possible speculative future of the quick-stop convenience of Capitalism

The work is inspired by an actual neoclassical building in Washington, DC which outlived its former purpose and

was transformed into a gas station snack shop. In some ways, the transformation of this grand building into something so mundane is a metaphor for the post-capitalist society in which we are living. Set to “the most famous hold music in the world” (Cisco’s “Opus #1” by Tim Carleton and Darrick Deel), the piece provides a pause for contemplation.



Michelle L. Herman is a multidisciplinary artist who creates sculpture, video, and installations to initiate conversations about agency within invisible systems of power. Drawing from theoretical and philosophical research, feminist and disability politics, comedy, and conceptualism, Herman explores themes such as the performativity of everyday life in technologically mediated society, value production, and how agency navigates larger systems of power.

Herman has exhibited internationally in solo and group exhibitions at Gallerie La Box (Bourges, France, 2022); HFK University of the Arts (Bremen, Germany, 2022); The Corcoran Museum of Art (Washington, DC, 2010); The Smithsonian Institution (Washington, DC, 2019, 2017, 2010, 2009); The Kennedy Center (Washington, DC, 2008), The Washington Project for the Arts (Washington, DC, 2015); Arlington Art Center (Arlington, VA, 2017); Hillyer Art Space (Washington, DC, 2016); and Visarts (Rockville, MD, 2021, 2018).

Herman's work has been written about and featured in Hyperallergic, New American Paintings, The Washington Post, NPR, and East City Arts. Herman holds both an MFA and BFA from The Maryland Institute College of Art (MFA 2020; BFA 2008).

Website: michellesherman.com

Max Schleser

A New Dawn

Keywords: Moving-image Arts, Experimental screen production, Memory-scape, Nature

The moving-image artwork is an exploration of a former German industrial coal and steel production site, which transformed into a public park in 1994. The ironworks are not only a symbol of 'Wertewandel', the change of values, but also symbolises our addiction to artificial energy and its transformation into wealth.

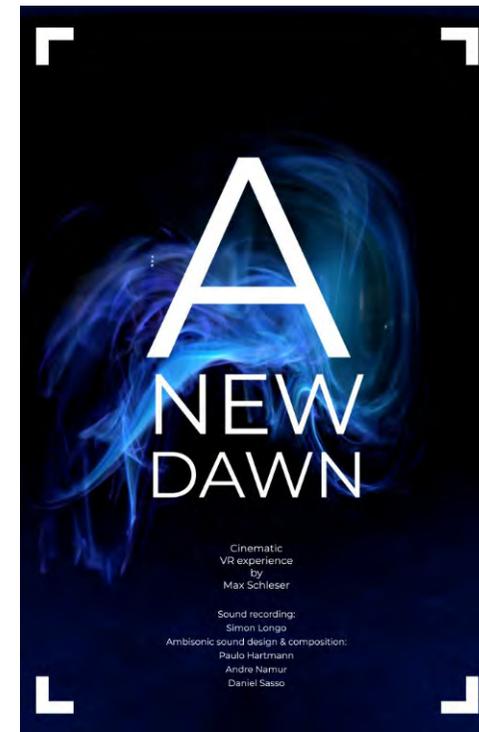
A *New Dawn* is a memoryscape, which takes a critical approach and uses the Aurora Borealis as an audio-visual representation of life out of balance. Imagine the magnetic fields have shifted through climate change and the collision of electronically charged particles would happen in our proximity. The Aurora's symbolise a geomagnetic storm caused by nature's exclamation of the ecological crises.

The last shift was worked on the 4 April 1985 and the former 'Wirtschaftswunder' turned into an industrial wasteland. The ironworks are not only a symbol of 'Wertewandel', the

change of values, but also symbolises our addiction to artificial energy and its transformation into wealth. As a side product of the last century's heavy industry, we are now faced with a climate crisis.

Simultaneously the interpretation of Aurora's in dreams signifies a positive outlook. A dream with an Aurora means important things will happen and 'magnetic' outcomes are about to appear on the horizon. While climate change appears to be a nightmare of the industrial past, this experience hopes to recalibrate our outlook. In Greek mythology Aurora refers to dawn, combining past and present this memory-scape takes a position to make an argument about an innovative planet and that we must act now in a holistic manner on the climate crises.

The affordances and aesthetic of this experimental screen production are utilised through the viewers presence in a hybrid space; partly dream object and partly architectural requiem. The visuals are interacting with an original soundscape. The moving-image artwork conceptualised spatialised storytelling based on a combination of soundscape and abstract filmmaking. This original method is



supported by experimentation with motionscapes. On location an accelerometer microphone was utilized to record the sound of the fabric. Using intellectual montage, the factory was personified and 'reactivated' through the placement of visual and audio effects in the filmic space to demonstrate how nature reclaims this architectural requiem.

Field recording: Simon Longo.
Soundtrack: Paulo Hartmann,
Andre Namur and Daniel Sasso.

Max Schleser is an award-winning filmmaker with expertise in Immersive Media and Creative Arts 4.0. He is Associate Professor in Film and Television and Researcher in the Centre for Transformative Media Technologies (CTMT) at Swinburne University of Technology (Melbourne, Australia). His experimental films, moving-image arts and cinematic VR projects are screened at film festivals, in galleries and museums including FLEFF Film Festival (USA), Festival de La Imagen (Columbia), Museu da Imagem e do Som – Museum of Moving Image (Brazil), London Gallery West, South London Gallery (both UK), Ngā Taonga Sound & Vision – New Zealand Film Archive, Te Papa Tongarewa – Museum of New Zealand (both Aotearoa/New Zealand), Pocket Film Festival and Videoscope (both France). His mobile feature film *Max with a Keitai* (2007) is included in the public film archive in the Forum des Images in Paris (France) and the smartphone documentary feature *Frankenstorm* (2014) broadcasted on CTV, Canterbury Television (Aotearoa/New Zealand).

Website: schleser.nz

Inmi Lee and Yunmi Her

The Erection of Phygital Graveyard

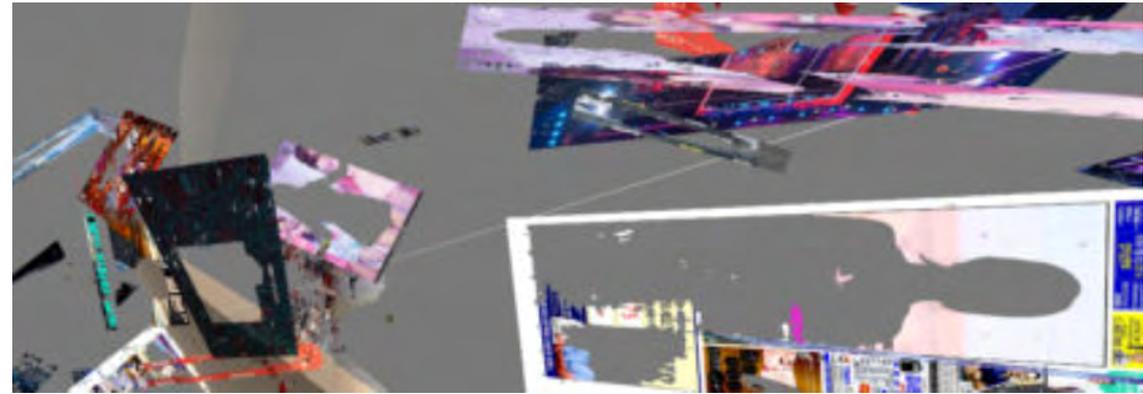
Keywords: Auto generated real-time animation, Phygital heritage, Online relics, Machine learning

The Erection of Phygital Graveyard is an auto-generated real-time animation which speculates the heritage of the phygital environment where the online world and the physical world are intertwined and questions the assessment system which we use to determine value for the future heritage .

Updated every hour, the system searches for the most popular keywords online, algorithmically downloads and removes part of the downloaded image which conveys the narrative, leaving only the color information and the rectangular frame. The system automatically arranges the residue of the images creating the digiscape of our collective thoughts of the past and the present.

The space created in *The Erection of Phygital Graveyard* has no similar world to compare as it prevails for one hour and what seems like an accidental creation is only edited by an algorithm. Created by data which was once edited through removal, the phygital world turns into a cosmic dust.

Instead of it being a mimicry of the physical world, *The Erection of Phygital Graveyard* reveals the workings of the machines dealing with data and in the process displays how the digital culture is created through the means of re-arranging the visual information. Within this digital ecosystem and culture, where the machine generalizes, classifies and makes decisions, and as we all take part in training a dataset to train the machine, *The Erection of Phygital Graveyard* speculates the possible heritage and the culture of the digital.



Inmi Lee and Yunmi Her are a collective duo of digital media artists. They have been working together as a collective since July 2021.

Inmi Lee investigates the potency of art and technology to explore cultural and social conflicts and create a framework for research and analysis for socio-political realities. Her work takes the form of kinetic sculpture, digital performance, interactive installation, and video. She has exhibited at London FutureFest, Digital Art Biennale, SIGGRAPH, ISEA, Anren Biennale, Boston Cyberarts Festival, and the International Performance Art Festival.

Yunmi Her is a multimedia artist working with VR/AR, video installation, and sculpture. Her interest lies in the paradoxical relationship between individuals and society, which is portrayed as spatial installations in her work. Yunmi's works have been exhibited in Korea and the United States, including at the SOMA Drawing Center, Seoul Art Center, and San Diego Art Institute.

Website: inmilee.com

Alla Semenovskaya, Eva Lindsay
and Dhruv Shah aka Lodaya

Microplot: genomic technologies as a potential tool of revelation for deliberate terraforming

Keywords: Genomic technologies, Tool, Deliberate Terraforming

Plot is a story of the revelation and a 'site' of design. The more we zoom in, the more the micro is interconnected with macro, so the strict distinguishing of scales of design and its effects becomes less important. Facing human-engineered ecological disaster will require a more curated and informed response. This demands major environmental interventions through reframed and more granular actions of design and decision making.

The project is a call to recalibrate the approach to design by recognizing the microbiome as an additional parameter and overlooked agent of terraforming. The technological mediation of the continuous, interchangeable and

entangled relationships between microbiomes, environments and ourselves allows for higher resolutions of perception in the way we compose synthetic landscapes. When germ theory originally framed microbes as pathogens, design was driven by "sterilization" and aimed at the "extermination" of microbial life and the production of highly tempered and sealed environments, propelling a culture of cleanliness. With the potential advancement and accessibility of metagenomic sequencing, we may be at the cusp of refining our understanding of these microbial systems, and reframing our design practices from the reactory to the nuanced, adaptive, and proactive. Manifesting alternative, more precise compositions across various sites and scales of intervention, the project narrates how sequencing could become a potential design tool to inform deliberate terraforming.



Alla Semenovskaya is a researcher and strategist based in UAE. Her recent work has specialised in research projects and site specific collaborative practices, exploring emerging technologies, environmental policies, climate interventions, and implications of how human/non-human interconnections inform our perception of assembled ecosystems.

Eva Lindsay is an architect and set designer. Since graduating from the Glasgow School of Art she has worked in various design studios in Rotterdam, Paris, Brussels and Berlin. Her work has specialised in projects ranging from problematising planning systems to futureproofing infrastructure space. The work has been displayed in various formats including exhibitions, films and publications.

Dhruv Shah is an Architect and Architectural Historian residing in Vadodara, India. He was also a fellow of the «The Terraforming» program at Strelka Institute for Media, Architecture and Design. He is involved in academia, research, and curatorial architectural practice, working with the medium of Text and Image in the intersection space of projected power, politics, and placemaking.

Website: [video](#)

Tara Karpinski

Ener-geyser

Keywords: Urban Commons, Situated Design, Research through making, Design probe, DLT's

Ener-geyser is an algorithmic wellspring that visualises in realtime energy usage from a local energy-commons. The film follows the installation of the data-fountain, and reactions from the community from which the data is being sourced. Using Situated Design methodology, the Ener-geyser teases out some underlying values of this resource-sharing community.

The site-specific installation is a research tool to learn more about how members of resource communities share, view and interpret their data – and in turn make choices that affect the community as a whole. The installation was created as a design probe for the research project Design Thinking for the Circular Economy, and explores how Situated Design methods can contribute to articulating value transparency in the design of local platforms for the circular economy.

The *Ener-geyser* was originally realised in the neighbourhood Schoonschip (Amsterdam), the most sustainable floating community in Europe; and the

only one utilising a blockchain driven local smart-grid to distribute self-produced energy. The geyser is designed to assist community members in making decisions about when it is optimal to turn on/off appliances, in order to achieve their agreed shared sustainability goals. By looking out the window, residents can observe the current (energy) situation. When the fountain sprays high, there is an abundance of energy, so it is optimal to turn on appliances. A medium to low spray indicates caution, as demand is headed toward a peak. When the fountain is less than a meter high, there is a peak – thus it is not optimal to use energy.

The fountain examines how members of the resource-community make choices about when to tap from the shared system, and reveals aligned tensions like the individual vs collective good, and privacy vs transparency. *Ener-geyser* experiments with new ways of interpreting complex data – that extend beyond traditional dashboard interfaces. The fountain's main purpose is to catalyse discussion. These kinds of discussions form the basis for making complex decisions, that can define how emerging energy-resource communities define and execute their common goals.



Tara Karpinski is a designer and researcher. Her projects are characterised by site-specific research and site-specific making, and realised in cooperation with diverse communities. Tara is one of the founders of design-collective Pink Pony Express – pioneers in research through making. The collective works at the intersection of research, design and society. Their projects are realised on locations where there is palpable friction between citizens and government; where their work uses public space to sets-out other perspectives on complex social questions.

Parallel on her design practice, Tara regularly lectures at universities and art academies, and has worked as an embedded researcher-designer for institutions including the Universiteit van Amsterdam and Leuphana University. She is currently a researcher at the Centre of Expertise for Art, Design and Technology (Breda) for the group Situated Art & Design. She teaches research through design at the University of Applied Sciences in 's-Hertogenbosch, NL.

Website: circulateproject.nl

Cybersyn 1973 / 2023

Keywords: Cybernetics, Post-Scarcity, Financialization, Repurposing

Cybersyn - a 1970s socialist networked economy experiment in Chile - is revisited in this new CGI video work which engages the question: How can we reimagine the artefactual Cybersyn for our hyper-financialized times?

Project Cybersyn was an experiment in instituting a socialist networked economy embraced by the short-lived Salvador Allende government of Chile (1970 – 1973) and developed together with the British cybernetician Stafford Beer. For the past decade, Project Cybersyn has been a recurrent reference – a best practice from the past – in discussions around the repurposing of hegemonic technological infrastructures and their redirection towards more equitable economic and social practices. The iconic image of Project Cybersyn's

control room – with its sci-fi appearance – represents a technical and aesthetic object that alludes to negotiation, democratic decision making, and social welfare. The allure of this image is the starting point for the video which proposes that desires for post-scarcity and postcapitalist economics must grapple with the shifts in the political, economic, and technological conditions of possibility that have transpired since Project Cybersyn. To this end the control room image itself becomes a platform for alien mutations, philosophical speculations, and social commitments. What would it take to reimagine the artefactual Cybersyn for our hyper-financialized day and age? For this work, curator and researcher Bassam El Baroni and transdisciplinary architect Constantinos Miltiadis collaborated with multidisciplinary artist and animator Georgios Cherouvim, and composer and sound artist Gerriet K. Sharma to bring this question to life.



Grupo Synco is a collaboration between curator and researcher **Bassam El Baroni** (Aalto University, Finland) transdisciplinary architect **Constantinos Miltiadis** (Aalto University, Finland), multidisciplinary artist and animator **Georgios Cherouvim** (New York), and composer and sound artist **Gerriet K. Sharma** (Berlin). The group's first co-creation is the CGI video work *Cybersyn 1973/2023*.

Twitter: @GrupoSynco

Juan Pablo Pacheco Bejarano

The Blue Dot

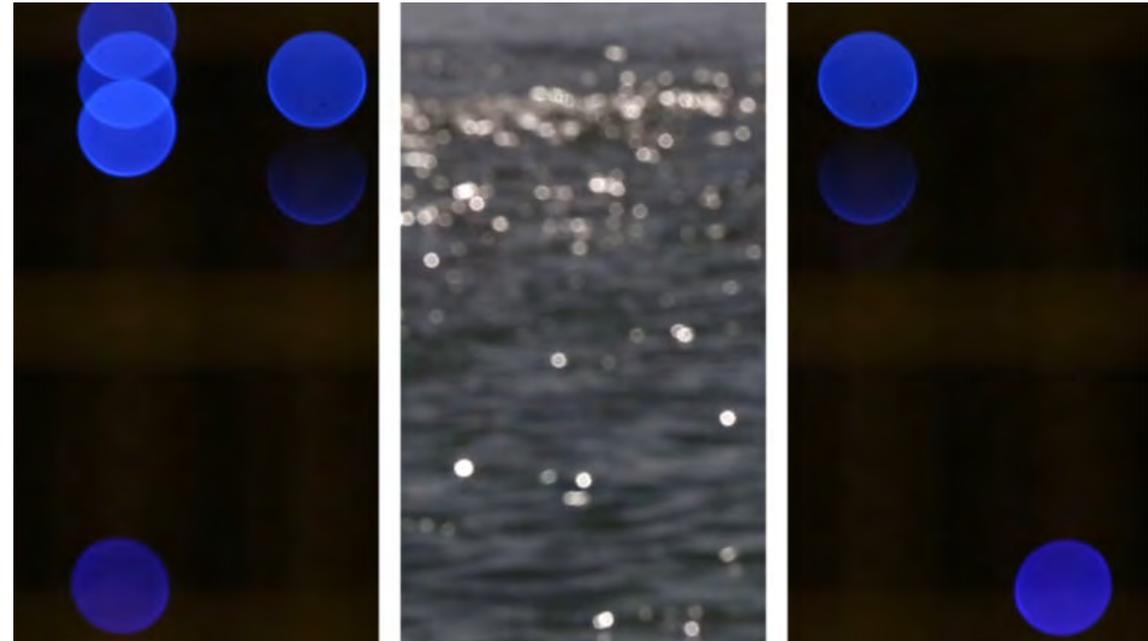
Keywords: Video essay, Infrastructures, Water, Internet, Archive

The Blue Dot is a video essay that weaves a critical and non-linear story between the internet archive, the ocean, silicon valley, the library of Alexandria, and astrological imagery in order to address the poetic and material entanglement between technology, water cycles, and the production of knowledge as planetary networks.

The altar of a temple built by the Church of Christ Scientist in San Francisco, incessantly buzzes with the sound of data flow. As you enter the building and go up the staircase, the humming becomes hypnotic. The trance leads you to the altar, where you find yourself surrounded by huge windows that stain the entire room with an intense yellow light. The temple houses six towers of digital servers arranged at the two sides of the main altar. The sea of data flowing through these hard drives—and others not visible to the public—comprises the Internet Archive (IA), the largest digital library in the world.

In most genesis stories life originates in water. Just like our origin stories, our digital cosmology is bound up in the language of fluidity. Our world, the Blue Marble, is a vast ocean of data, where each droplet of water is a bit of potential information. As data flows from cloud to cloud, back into electrical currents in vast oceans of data, water is revealed to us as the initial stage of being, each particle containing the possibility of knowing ourselves—of sensing our individual and collective consciousness.

The evaporation of information from the ocean, with its swirling cables, is forming unprecedented clouds. All climate predictions today suggest that the poles are rapidly melting, sea levels are quickly rising, and large dark clouds are forming over our global networks. Some even think that the depth of these dark digital clouds is larger than the depth of our cosmos. We live in the eye of this hurricane, every time we swipe our phone or turn our screens on. The storm of data pushed by the winds of capital and surveillance seems almost unstoppable. If all predictions are correct, what will this storm of data look like when the clouds finally break?



Juan Pablo Pacheco Bejarano (Bogotá, 1991) is a visual artist and writer whose research investigates the historical and material intersections between technology and the biosphere. Through texts, videos, and web projects, his research explores the territorial dimensions of the technosphere and the material and poetic relationships between water and the internet. He has also produced transdisciplinary and collaborative laboratories, which seek to foster the critical appropriation of diverse technologies. He is a professor in the Department of Visual Arts at the Universidad Javeriana (Colombia), and has been a programming coordinator at Plataforma Bogotá, laboratory for art, science and technology, and at Espacio Odeón, a contemporary art space. His texts and works have been disseminated and developed in Colombia, the United States, Spain, Denmark, Germany, the Netherlands, Belgium, Russia, China, Senegal, Mexico and Uruguay.

Website: circulateproject.nl

Paul Echeverria

Green before “Green”

Keywords: Photography, Memory, Parenthood, Child, Vision

Green Before “Green” explores the relationship between language and human vision. The project examines the process of acculturation that is imposed upon the untutored eye. Prior to the acquisition of language, do humans have an affinity for optical perception? If so, at what point do linguistic concepts alter the boundaries of our visual freedom?

I have several memorable images from early childhood. On the day of my 8th birthday, I received a polaroid camera as a gift. I was overjoyed to be able to capture a permanent collection of memories and visual images. However, by the time I turned eight, I had already developed a clear sense of communication and language. The prospect of recording a pre-language form of vision had already dissolved. In *Metaphors on Vision*, filmmaker Stan Brakhage states, “How many colors are there in a field of grass to the crawling

baby unaware of “Green”? How many rainbows can light create for the untutored eye?”. Looking back on my childhood, it seems impossible to access a comprehensive realization of “the untutored eye”.

In contrast, my son, Atticus, was born in 2018. At the age of one, he developed a recognizable curiosity for the mobile phone. His linguistic skills had not yet developed, yet he had a noticeable capacity for capturing photos and videos. Over the course of several months, he composed a large collection of still and motion images. Upon reviewing the visuals, the notion of an “untutored eye” began to emerge. Within these photographs, it became evident that Atticus had not yet conformed to the accepted laws of perspective or logic. In short, he was immersed in an adventure of perception. *Green before “Green”* considers the relationship between technology and memory. It is an inquiry into the existence of childhood vision. Namely, to what extent does technology allow for the reconstruction of childhood memory? Furthermore, does photography provide insight into the evolution of pre-language vision?



Paul Echeverria is a filmmaker, digital artist and educator. His research and creative practice examine the formative dynamics between childhood, parenthood and the family structure. In addition, he produces work that contemplates the inevitable collision between humans and technology. Echeverria works with multiple forms of media, including film, video, augmented/virtual reality, performance, social media, data manipulation, podcasting and e-literature. Echeverria is an Assistant Professor of Digital and Emerging Media Production at Wayne State University in Detroit, Michigan. His films and digital works have been exhibited at multiple venues, including the Museum of Modern Art (MoMA), Media City Film Festival, Other Cinema, the FRACTO Experimental Film Encounter, VASTLAB Experimental Festival, the Dallas Medianale, Festival Ecrã, the Festival Internacional de Videoarte de Camagüey, Experiments in Cinema, the NY Media Center by IFP, The Wrong Biennale, the Bronx Museum of the Arts, Anthology Film Archives and the Angelika Film Center.

Website: circulateproject.nl

Tivon Rice

Models for Environmental Literacy

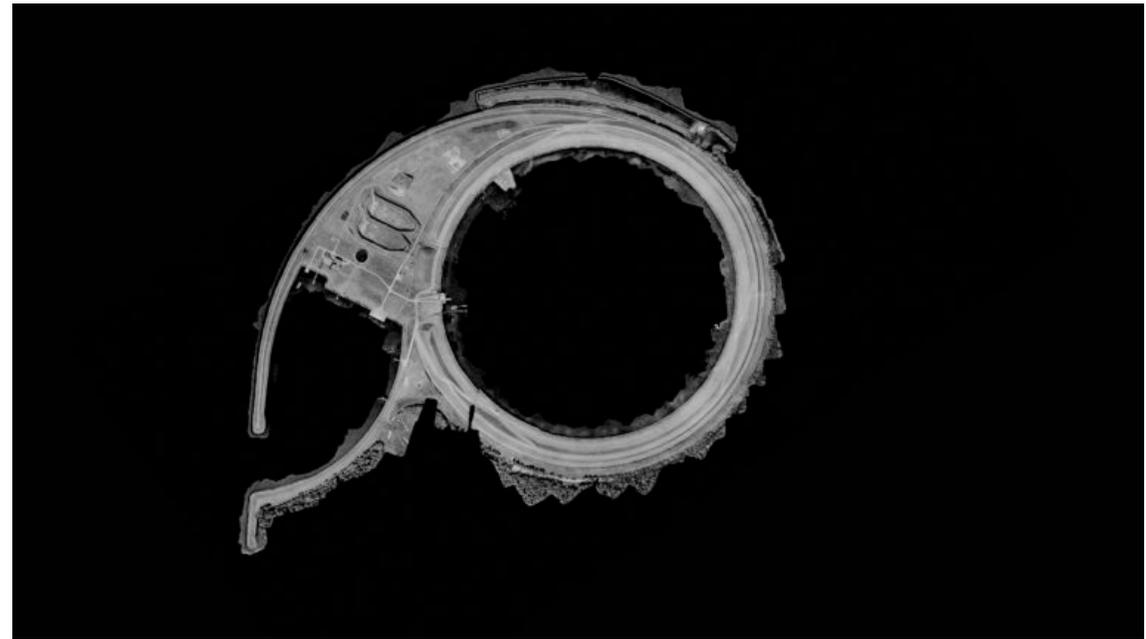
Keywords: Artificial Intelligence, Eco-Science, Eco-Philosophy, Eco-Fiction, Worldbuilding

Models for Environmental Literacy creatively and critically explores the challenges of describing a landscape, an ecosystem, or the specter of environmental collapse through human language. How do we see, feel, imagine, and talk about the environment in this post-digital era, when non-human/machine agents have been trained to perceive “natural” spaces?

The experimental video *Models for Environmental Literacy* invites us to rethink the nature and application of artificial intelligence in the context of the environment. As three A.I. voices guide us through a series of landscapes at the intersections of nature and human intervention, we follow a dialogue somewhere within the spectrum of human and non-human language. How does our reading of this computer-generated language point back to our own personal subjectivities and our own environmental literacy? And equally so, how can encounters with non-human language act as a kind of dress rehearsal for future relationships with the Other? In the face of climate change, large-scale

computer-controlled systems are being deployed to understand terrestrial systems. Artificial intelligence is used on a planetary scale to detect, analyze, and manage landscapes. In the West, there is a great belief in ‘intelligent’ technology as a lifesaver. However, practice shows that the dominant AI systems lack the fundamental insights to act in an inclusive manner towards the complexity of ecological, social, and environmental issues. This, while the imaginative and artistic possibilities for the creation of non-human perspectives are often overlooked.

With the long-term research project and experimental films *Models for Environmental Literacy*, the artist Tivon Rice explores in a speculative manner how A.I.s could have alternative perceptions of an environment. Three distinct A.I.s were trained for the screenplay: the Scientist, the Philosopher, and the Author. The A.I.s each have their own personalities and are trained in literary work – from science fiction and eco-philosophy, to current intergovernmental reports on climate change. Rice brings them together for a series of conversations while they inhabit scenes from scanned natural environments. These virtual landscapes have been captured on several field trips that Rice undertook over the past two years with FIBER (Amsterdam) and BioArt Society (Helsinki).



Tivon Rice is an artist and educator working across visual culture and technology. Based in Seattle (US), his work critically explores representation and communication in the context of digital culture and asks: how do we see, inhabit, feel, and talk about these new forms of exchange? How do we approach creativity within the digital? What are the poetics, narratives, and visual languages inherent in new information technologies? And what are the social and environmental impacts of these systems? Rice holds a PhD in Digital Art and Experimental Media from the University of Washington, where he is currently an Assistant Professor of Data-Driven Arts Practice. He was a Fulbright scholar (Korea 2012), one of the first individuals to collaborate with Google Artists + Machine Intelligence, and served as an Artistic Researcher at the Delft University of Technology.

Instagram: @tivonrice

Gloria López Cleries and
Sive Hamilton Helle

The Unreal

Keywords: Video-game, Colonialism, Meditation, Landscape

The Unreal is a machinima film set in a utopian-mining landscape. Ambient music and a soft voice-over create a soothing atmosphere and entices the viewer to meditate while also being exposed to the mineral origins of technology and its dynamics of extractivism.

The Unreal is a machinima film (videogame recorded in real-time) set in a utopian landscape. The viewer is led in a first-person point of view across the shiny surface of this unexploited mine. Ambient music, accompanied by a soft voice-over, creates a soothing atmosphere and entices the viewer to meditate while also being exposed to the mineral origins of technology and its dynamics of extractivism. The project, as a non-located, atemporal, ahistorical landscape, addresses the emerging questions of the contradictions of media materiality and

its disengagement with the landscape. In a grounded practice-based approach, *The Unreal* presents an artificial world constructed by video game software, built to play with the appropriation of the visual and narrative codes of techno-colonialism.

The Unreal is a virtual promised land surrounded by an infinite coastline and a transcendental pink sunset. We can draw lines to settler colonialism in what looks like an expedition into the sublime. In this sense, *The Unreal* has been created as a hyperbolic representation of the techno-romantic discourses that permeate everything related to technological development and solutionism. The dematerialization and deterritorialization of the digital have been defined by natural metaphors (the cloud, space and the sea) and are part of the rhetoric of digital emancipation and the cultural hegemony of Silicon Valley. Under the illusory slogans of freedom, innovation, progress and infinity, we have willfully forgotten and rejected the physical, material and residual condition of technology



Gloria López Cleries (València, 1988) is a visual artist, educator and independent researcher. She holds a Master in Contemporary Art History and Visual Culture, Museo Nacional Centro de Arte Reina Sofía (UCM, Spain) and a Master in Fine Arts, HDK-Valand, (Gothenburg University, Sweden). Her artistic research focuses on questions about neoliberal rhetoric concerning emotional capitalism and new online models of productivity, affection and collectivity. Sive Hamilton Helle (b. 1989 Oslo) is a filmmaker and visual artist based between Gothenburg and Oslo. She holds an MFA in Film from HDK-Valand and a BA in Film from London College of Communication. Hamilton Helle's work deals with landscapes that are marked by colonialism and (hidden) industrial activity. She has screened and exhibited her work internationally and at online platforms.

Website: glorialopezcleries.com

2nd Summit on New Media Art Archiving exhibition

The Second Summit on New Media Art Archiving aimed to facilitate critical discourse and collaboration amongst archivists, curators, artists, researchers, and other parties interested in the preservation and online archiving of new media art. This summit served as an incubator of innovative ideas, production techniques, and infrastructure development as well as assist in connecting like-minded individuals in an effort to create a unified approach to solving the complex problem of

preserving the history of new media art. The Summit was organised by ISEA2022 Barcelona, the ISEA Symposium Archives, and SIGGRAPH History Archive, in cooperation with the Barcelona Museum of Contemporary Art (MACBA), FILE Festival archive, ADA Archive of Digital Art and Ars Electronica archive.

Organizing Committee:

Bonnie Mitchell
Jan Searleman
Terry Wong
Wim van der Plas



Artworks

Visualizing the Illkun (Anger)
Marcela Antipan Olate

i:M:mobile
Lawrence Bird

Archiving New Media Art Archives
Byeongwon Ha

'Data Whiskers' and 'Ecophagy'
Martijn Hage

Gendernaut. Queering the Future
Diego Marchante

Anatomy of a Fatberg
Andrea Palašti, Sanja Anđelković,
Stefana Janičijević, Jovana Pešić

Spiral of Words
Predrag S. Šidanin, Luka Z. Tilinger,
Maja S Budžarov, Nina B Zvezdin

**Visually Reading the Pandemic:
Translating an Open Access Archive
into an Immersive Interactive
Artwork**
Dario Rodrighiero, Elian Carsenat,
Eveline Wandl-Vogt, Jules Döring,
Michaela Fagner, Stepha Farkahaszy,
Oliver Elias

Marcela Antipan Olate

Visualizing the Illkun (Anger)

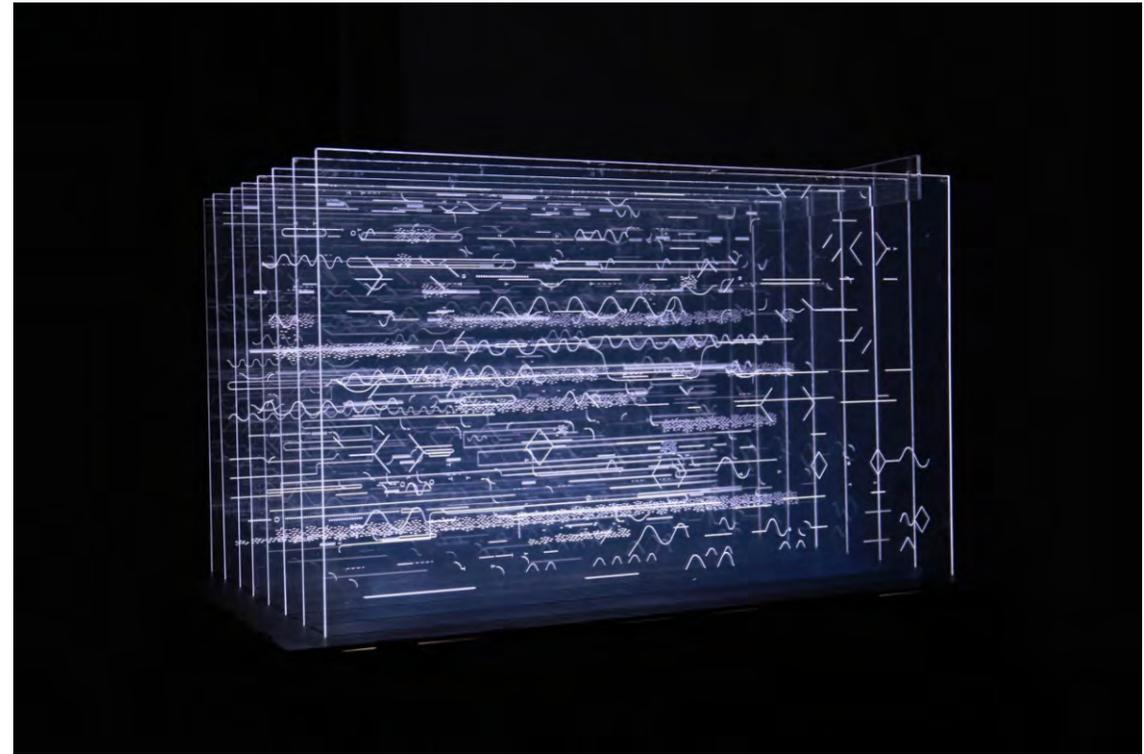
Keywords: Screen, Memories of dissidence, Installation, Apparatus, Data interpretation

Visualize the Illkun (Anger) is an interactive installation that seeks to reflect on the screen concept in its symbolic, philosophic and technical dimensions. It's inspired by a reflection on technological objects and the experimentation on subjective ways of visualizing data.

Visualize the Illkun (Anger) is an interactive screen installation for the interpretative visualisation of anger in the province of Malleco, Chile. The installations seeks to reflect and discuss the concept of screen by relating it to the memories of dissidence. Thus, it takes as a case study the book Las Razones del Illkun/Rabia (The Reasons of the Anger), trying to visualise through images-diagrams the subjectivities arising from the feelings of dispossession in the Mapuche conflict in the Malleco region. In this way, the images-diagrams and the designed device seek to mediate spaces and territories of memory that conflict the notion of history in Chile. A problematic

narrative that dates back to the times when Chile was a Spanish colony and later, as a republic, using openly repressive state policies and territorial usurpation. Situation that unleashed the wrath of one of the first indigenous peoples of the aforementioned territory; the Mapuche.

The process of study and creative development of this project was divided into four stages: first, a study of the concept of the screen, which was analysed to understand the technical and conceptual characteristics that relate it to a memory apparatus. Secondly, a defined the theme of representation and the type of data to systematise, in this case, a historical book. Third, a way of representing anger by the abuses described in the aforementioned book; that is, through a subjectivist paradigm through the interpretation of the written archive. This decision is based on an interpretative view of a complex subject and totally opposed to a scientific naturalist paradigm; non-objective information goes from being delivered to uncertainties that are captured and interpreted; first by myself as the creator of a system of visual codes and then, by the individual facing the interface.



Marcela Antipan Olate is an artist and designer living in Germany. She is currently studying a master's degree in Digital Media at the University of the Arts Bremen. She is a graphic designer and originally from Chile. Her creative practice moves within the blurred mix between art and science. Within that framework, one of her main interests is the critical reflection on technological objects of daily use and their symbolic and technical connections in relation to politics, economies, ecologies, and cultures. Through associations, she seeks to create physical or digital objects that concretise these interests. In the past, her work as a designer involved the development of ideas and concepts linked to scientific communication for research institutes, as well as teaching in the area of design. Currently, her work takes different forms such as installations, physical objects, software, research, visual pieces and poetry.

Website: <https://www.youtube.com/embed/tCwrE0BB9Wc>

Lawrence Bird

i:M:mobile

Keywords: Media decay, Materiality, Film, Architecture, Half-life

A mis-rendering of eight sequences from Fritz Lang's "M" (1931), recorded on a malfunctioning computer monitor, i:M:mobile concerns the decay of media and the difficult relationship of our architectures to the forms of life they are intended to protect - or to imprison?

Digital archiving strives to compensate for the rapid decay or obsolescence of digital platforms, material substrates, and displays on which these works depend. Digital materials seem to have a shorter half-life than even the unstable materials used in the early eras of film-making. This condition raises key ontological and epistemological questions: What is the essence of a work? What is permanence? What is solid? How must we rethink these notions when our works are inherently fluid — when they even melt into air?

This project engages with these problems by replaying an early work of cinema on a broken contemporary device. The project consists of eight sequences from Fritz

Lang's 1931 film "M". The series begins with "Index", a sequence shot in Berlin's police archives, where a fingerprint provides the first clue in the hunt for a killer. Through subsequent sequences "The Hand", "The Hunt", "The Cell", "Protokoll", "The Stairs", "Before the Judge", and "Cower", the film offers a meditation on the tension between our attempts to capture, protect, preserve and place before the law on the one hand — and on the other, to escape, to elude logos.

These sequences were filmed from a malfunctioning computer monitor; the malfunction superimposed successive frames of the footage, blurring or dissolving anything which moves. The malfunctioning screen thus renders two distinct architectures: that of the moving body, fluid; and that of its spatial and material frame, super-solid.

"M", like most of Lang's films, is known for its use of architecture. The project translates Lang's use of architecture, which intentionally located that medium in relation to the medium of film, into a new dissolving or reworking of architectures provoked by contemporary conditions of media, existing somewhere between digital and analogue materialities.



Lawrence Bird practices in media art and architecture. His artwork focuses on imaging technologies and their intersection with space, in particular its political and social dimensions. His work includes video exploration of urban sites, projection mapping and installation, and short films; he led Winnipeg's contribution to the cityoneminutes project. Since 2012 he has been developing a body of videos and projections focused on anomalies in popular imaging and mapping programs; the work intends to expose the failures of western mapping projects. Lawrence's artwork has been installed in Winnipeg, Halifax, Toronto, London, Greenwich, Brussels, and Manizales (Colombia) with funding from Manitoba Arts Council, Winnipeg Arts Council, and the Canada Council for the Arts. He also writes, having contributed to Critical Planning, Mechademia, Chora, Leonardo, furtherfield.org, and elsewhere. He works with Sputnik Architecture, Winnipeg, a practise focusing on cultural and social projects, including the international public art competition Warming Huts.

Website: <https://www.youtube.com/embed/ivtCDWVJdQ0>

Byeongwon Ha

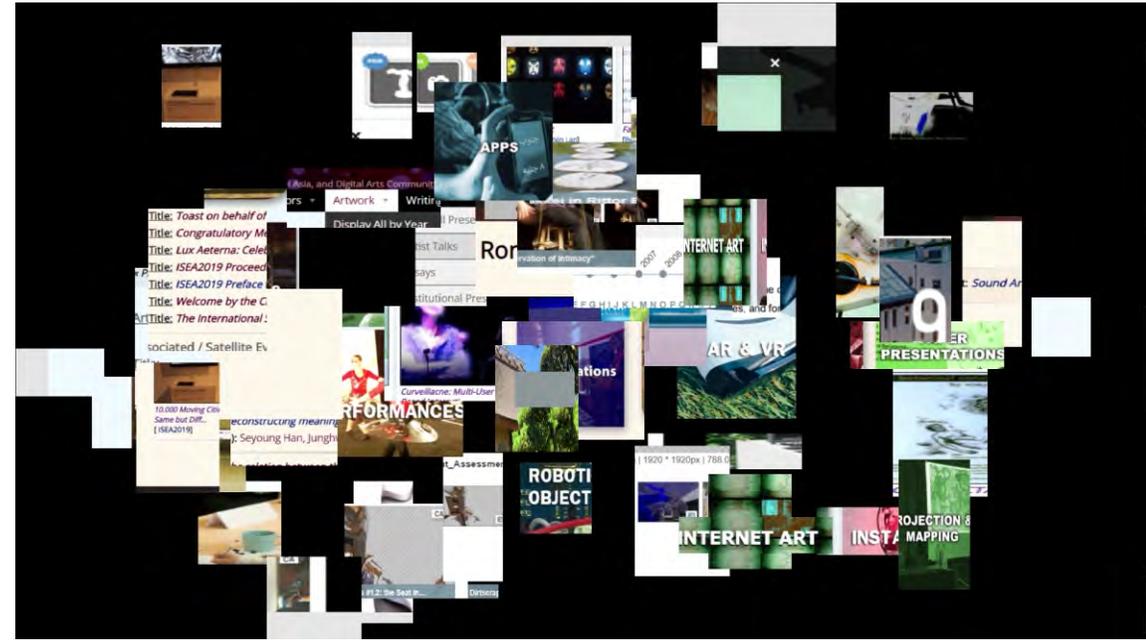
Archiving New Media Art Archives

Keywords: Archive, Max8, Ars Electronica, ISEA, SIGGRAPH, Social media

Archiving New Media Art Archives is in between .net Art, glitch art, and new media art archives. Visitors' online history on new media art archive websites is archived as an art project.

The average time to stay on a web page is about 15 seconds. In the Tik-Tok generation, how do users utilize new media art online archives? Without any browser menus including the address bar, Archiving New Media Art Archives only allows visitors in a gallery to use the mouse to navigate online archives with hypertexts and hyper-images. Whenever users click the mouse button, the computer takes a picture of a small portion around the mouse cursor and places it on another screen, which is invisible to users. This project visualizes how online users access new media art resources in a collage way. When they click five times to

surf the online archive, the computer automatically turns to the next archive website. Users visit Prix-Ars Electronica Archiv first, then ACM SIGGRAPH Art Show Archives and ISEA Symposium Archives in order. In the end, this project generates a collage image based on the users' search activities on those three archive websites. After each exhibition day, this project posts the final collage image on social media. In non-real time, as a spatial collage image, this project documents how users consume those archive resources and how users can reach different resources. This project is based not on scientific research about users' online activities, but on an artistic method to visualize users' history of access to online archive resources and examine users' surfing consumption patterns on archive websites. As a delayed interactive art project, *Archiving New Media Art Archives* provides viewers with a certain time to appreciate the original purpose and function of digital art archives. This will contribute to not only showing how online new media art archives work, but also making creative spatial collage images with time-based online activities during the Second Summit on New Media Art Archiving at ISEA2022.



Byeongwon Ha is an assistant professor in the School of Visual Art and Design at the University of South Carolina. He is an art historian and an artist in the field of new media art. As an artist and a researcher, he took part in diverse international art conferences and festivals such as ISEA, SIGGRAPH Asia, IRCAM Forum, ARTECH, and the Summit on New Media Art Archiving. In 2019, he published two articles: “Nam June Paik’s Unpublished Korean Article and His Interactive Musique Concrète Projects” as an author in *Leonardo Music Journal* (MIT Press) and “Survey and Analysis of Interactive Art Documentation, 1979–2017” as a coauthor in *Leonardo* (MIT Press).

Website: <https://www.youtube.com/embed/XNhT0NgKIV8>

Martijn Hage

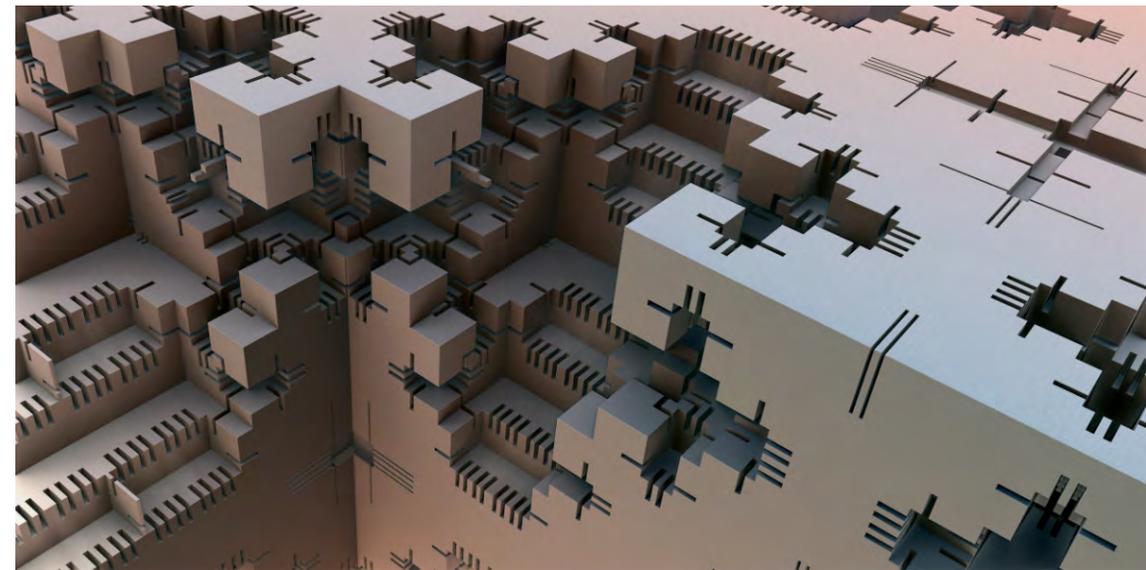
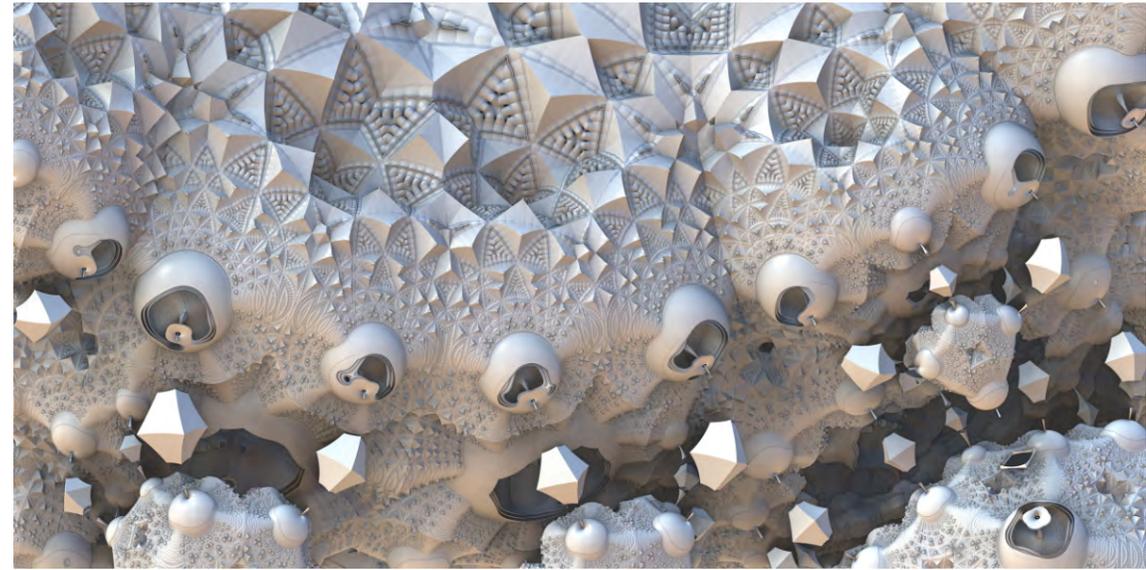
'Data Whiskers' and 'Ecophagy'

Keywords: Digital, Artwork, Artist, Gallery, Data

Will our data still be around tomorrow? Digital data cannot be preserved forever because of bit rot and data decay. I am fascinated by what data degradation will look like, what if you translate and visualize the unintelligible? Data Whiskers and Ecophagy show my artistic interpretation of the transience of data. To avoid the data storage doom scenario, I opted also for high resolution art prints.

Martijn Hage is a digital artist based in Rotterdam, The Netherlands. He studied Graphic Design and Computer Graphics at the Academy of Arts Minerva in Groningen. His early digital artwork was exhibited at SISEA, Second International Symposium on Electronic Art in 1990. Driven by the quest to find the origin of life, he creates his own semantic building blocks to express himself in a self-named morphographic language. You could use the term 'organic abstraction', compositions of organic and geometrical elements. His artwork evolves like artificial selection, using self-made generative algorithms. He uses a digital exploration process, iteration by iteration, always in control of randomness and order in shape, color and composition. Each artwork is created in 3-dimensions and rendered in high resolution. He finds inspiration in nature, technology, archeology and fossils. It all comes together in the real world via digital techniques like 3D Printing, CNC-milling, AR and VR.

Website: <http://www.martijnhage.com>



Diego Marchante

Gendernaut. Queering the Future

Keywords: Archive, Future, Performance, Queer, Time travel

Gendernaut is a trans-temporal and trans-spatial traveler who invites us to travel through an LGBTBI and feminist genealogy. It shows us the archive through a transmedia and performative experience to reveal how the future has been represented from a transfeminist and queer perspective.

Gendernaut is an English term that we could translate as “navigator of gender”, and that invokes Jason's argonauts. The term appears for the first time in the documentary *Gendernauts: A Journey through shifting identities* (1999), directed by Monika Treut, to refer to people who travel through shifting gender identities.

This artistic research project questions, in a first phase entitled "Queering the software", the forms of construction of the hegemonic archive through the design of a plugin that allows the collective creation of archives through an online interactive multimedia experience and, in a second phase entitled "Queering the archive", proposes new ways of visualizing narratives based on transfeminist and

queer genealogies through transmedia and performative experiences that conceive the archive as a living interactive space, free of heteropatriarchal codes, inhabited by multiple bodies and subjectivities that relate past, present and future to come. The series articulates an extensive historical investigation through a diversity of thematic threads that the feminist, queer and trans movements have been weaving during the last four decades in our political and artistic context. These genealogies link a whole series of historical, artistic, collective events, actions, campaigns, exhibitions, interviews, fanzines, performances, etc. forming a complex amalgam of relationships between art, politics, memory and activism.

Gendernaut is a trans-temporal and trans-spatial traveler that will invite us to travel through time through a genealogy of key events in the memory of the feminist movement and the LGBTBI movement in our context. During this journey, he will show us the archive through a transmedia and performative experience to understand how the representation of the future in history has been imagined from a transfeminist and queer perspective. Queering the future...



Diego Marchante is a transfeminist activist, transmedia artist and lecturer. Doctor of Fine Arts from the University of Barcelona, since 2008 he works as a professor of Audiovisuals and Gender Studies at the Faculty of Fine Arts of the University of Barcelona. In 2011 he published "Archive T. A transfeminist and queer archive", an archive of social movements and artistic practices that have addressed gender issues in the Spanish context from a queer and transfeminist perspective. His work has been exhibited at Can Felipa, Caixaforum, Fabra i Coats, Sala d'Art Jove, Centre de Cultura Contemporànea de Barcelona, Museu d'Art Contemporani de Barcelona and Museo Nacional Centro de Arte Reina Sofia. In 2020-21 his project, "Gendernaut. Queering the 90's", was selected in the call for research stays at the MNCARS, in the context of the project Our Many Europes – Europe's critical 90s and The Constituent Museum.

Website: <http://gendernaut.net>

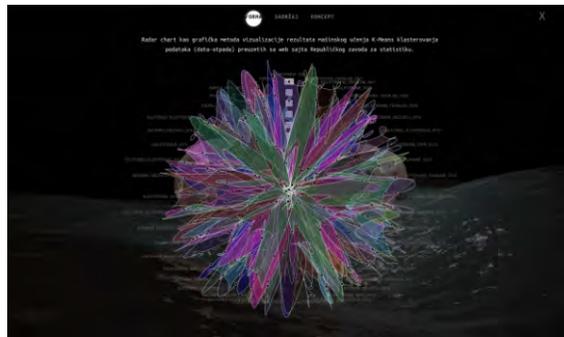
Andrea Palašti, Sanja Anđelković, Stefana Janićijević, Jovana Pešić

Anatomy of a Fatberg

Keywords: Fatberg, Data visualisation, Data garbage

Taking the Fatberg as a metaphor for artificially created intelligence, the work represents an instant game of chance. By clicking the “flush” button, the Fatberg is fed by wastewater quality data and a vast number of analytical data taken over from the Statistical Office of the Republic of Serbia.

It is a collection of our own heterogeneous by-products collected for over 20 years, from data on microbes to astrophysical measurements, toxins in the Danube, but also data on employment, bank accounts, calls within the telecommunications network, data on newborns, divorces and drug addicts in our country, amount of food consumption, on the value of dinar, on housing, on migration and tourists, on city traffic etc. Everything that makes life around us and everything that leaves garbage and floats further, refining new data and making possible for the Fatberg to (re)form.



Andrea Palašti is a visual artist based in Novi Sad, Serbia. She works across artistic, curatorial and pedagogical boundaries by investigating (picture) archives and its potential to unveil a nuanced understanding of the world, focusing on issues of cultural geography, the responsibilities of history and its impact on the present. She's a lecturer at the Academy of Art in Novi Sad, blending her artistic research with educational strategies.

Sanja Anđelković is an audio-visual and textual research artist based in Novi Sad, Serbia. Her research is focused within the field of docu-fiction practice where she is questioning its position inside the system of gender, political, social roles or traumatic moments of personal biography/ history and how the idea of Home changes within the historical, geographical, social, but also environmental context.

Stefana Janićijević, Doctor of Applied Mathematics, is currently employed at Singidunum University in Belgrade as a professor, and at Comtrade System Integration as a data scientist. Her research work is in the field of metaheuristics, optimization, machine learning and data science, while she's also artistically exploring a range of approaches such as data visualisation, neurosciences and the philosophy of data.

Jovana Pešić is a Junior Researcher at the Department of Chemistry, Biochemistry and Environmental Protection - Faculty of Sciences, University of Novi Sad, Serbia. Her research is focused on new materials based on graphene oxide for the removal of heavy metals from the aquatic environment. She is actively involved in promoting science through various programs combining science and art and interdisciplinary research. She is a member of the Serbian Chemical Society and a holder of the Certificate of Chemical Advisor.

Website: <https://anatomijafatberga.info/>

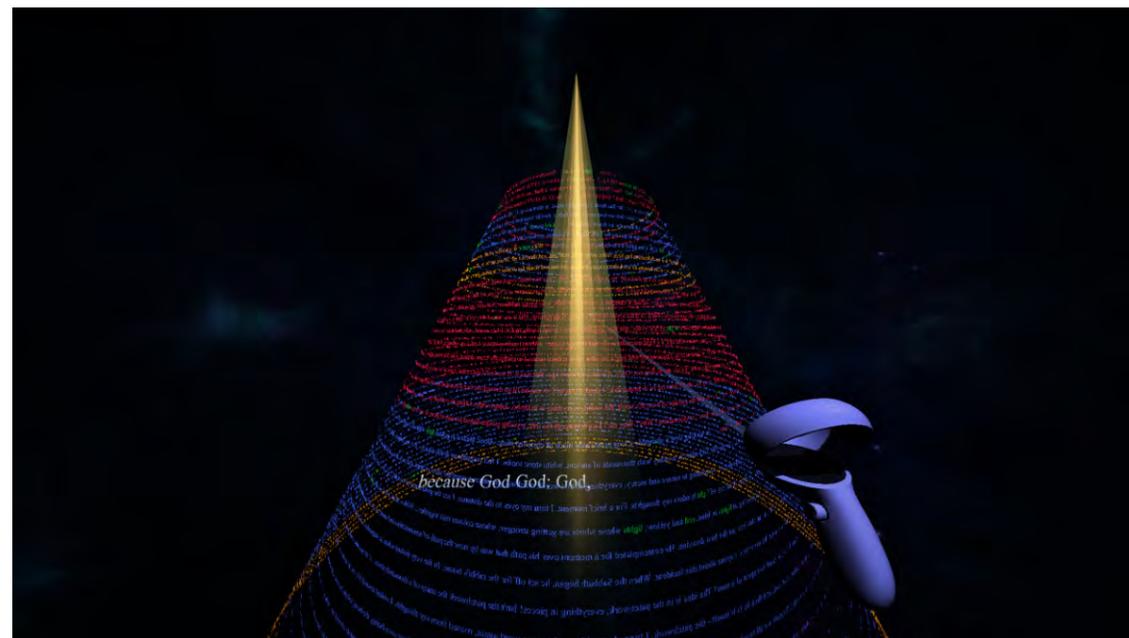
Predrag S. Šiđanin, Luka Z. Tilinger,
Maja S Budžarov, Nina B Zvezdin

Spiral of Words

Keywords: Creative writing, Virtual reality,
Narrative, Performance

Spiral of Words is a platform for creative writing in VR, based on an idea realized in 1998. Three authors from three locations (London, UK; The Hague, the Netherlands and Novi Sad, Serbia) sent texts at defined time intervals, starting from words to sentences over paragraphs to short stories, all this took place via e-mail/the internet, creating a common narrative in a defined location that built a spiral of words in a fictional space.

The VR project *Spiral of Words* is a kind of ‘artistic recycling’ as well as an archive of the idea of a realized textual narrative performance. The narratives in *Spiral of Words* have been partially modified, they symbolize the original idea in different colors. The project is refreshed, enriched, and different in relation to the original performance, it is actually a reinterpretation of a creative collaborative idea, in a way that VR media allows. And that is the direct interaction of the users, where they freely communicate with the given words, choosing them, moving them, and creating their own meta-text, in any form they desire. Certain words in the spiral, when selected, activate short audio and visual effects that are symbolic to them. All selected words of the newly created narrative can be changed, rearranged, or rejected. *Spiral of Words* is currently an unrepeatable experience, in which user’s meta-text only lasts for the duration of the session.



Predrag S. Šiđanin, Ph.D. – multimedia artist, founder of //VirtualUnit creative laboratory for virtual reality. Dean and full professor at the Faculty of Digital Production, EDUCONS University, Sremska Kamenica Serbia.

Luka Z. Tilinger, MA – illustrator and programmer, co-founder of //VirtualUnit creative laboratory for virtual reality. Assistant professor at EDUCONS University, Sremska Kamenica Serbia.

Maja S Budžarov, MA – ceramic and multimedia artist, co-founder of //VirtualUnit creative laboratory for virtual reality. Associate professor at EDUCONS University, Sremska Kamenica Serbia.

Nina B Zvezdin, MEA – architect, multimedia artist and musician, member of //VirtualUnit creative laboratory for virtual reality. Currently residing in Pisa, Italy on internship.
Website: <https://virtualunit.org>

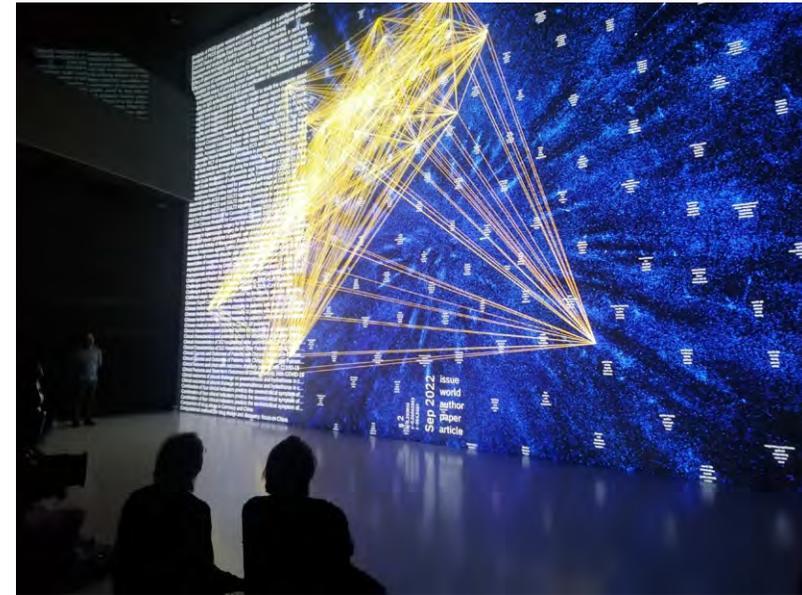
Dario Rodrighiero, Elian Carsenat, Eveline Wandl-Vogt, Jules Döring, Michaela Fragner, Stepha Farkahasz, Oliver Elias

Visually Reading the Pandemic: Translating an Open Access Archive into an Immersive Interactive Artwork

Keywords: COVID19, Visualization, Immersive Artwork,
3D Installation, Deep space

The authors developed two pre-conceptioptions of 2D visual artworks based upon open data of a COVID19-related open access archive, namely the "COVID19 cartography" on the one hand, and the "Chinese Sea" on the other. This resulted in an immersive, 3D production launched at *Deep Space* at Ars Electronica in 2021.

The presented artwork is a cross-organisational, cross-sectoral, transatlantic collaboration between the art:scientists Dario Rordrighiero and Eveline Wandl-Vogt, the social entrepreneur Elian Carsenat and Ars Electronica Solutions as well as Garmantis. During the first year of the pandemic, the authors developed two pre-conceptioptions of 2D visual artworks based upon open data of a COVID19 related open access archive, namely the "COVID19 cartography" on the one hand, and the "Chinese Sea" on the other. During 2021 and funded by DARIAH.EU, the team scaled up and created an immersive, 3D production for Deep Space at Ars Electronica, launched at Ars Electronica Festival 2021. The artwork is not just a unique piece of art, it invites the participant to experience knowledge created at the moments of exploration in a playful approach. In their presentation the authors will refer as well to the guiding questions related to the innovation and implementation process, workflows, funding, scaling up and how the applied methods and technologies may be meaningful and applicable for other archives.



Eveline Wandl-Vogt is a thinker and maker, knowledge designer, creative experimentalist and innovator. Against a background of Art Driven Innovation, Humanity Centered Design and Open Innovation, she is facilitating Social Innovation for the purpose of good, contributing to invent inclusive, sustainable. responsible futures. Eveline is foundress and orchestra of exploration space (at) ÖAW and foundress and Director of Ars Electronica Research Institute "knowledge for humanity". She is affiliated to metaLab (at) Harvard, and is ambassador for "knowledge for humanity" of the Republic of Uzupis. Eveline is part of the scientific committee of uncopied.art.

Elia Carsenat is a computer scientist trained at ENSIIE/INRIA, started his career at JP Morgan in Paris in 1997. He later worked as consultant and managed business & IT projects in London, Paris, Moscow and Shanghai. In 2012, Elia created NamSor, a piece of sociolinguistics software to mine the 'Big Data' and better understand international flows of money, ideas and people. NamSor helps answer the perennial question all countries ask about their diasporas – who are they, where are they and what are they doing. In 2020, NamSor is building new APIs to estimate risk for gender, racial or ethnic biases in applying machine learning or other artificial intelligence to decision making that affects People's lives. Elia is founder and CEO of unopied.art.

Dario Rodighiero works at Harvard University. He is affiliated at the Berkman Klein Center for Internet & Society and a postdoc of the Metalab. His capacity at the intersection of visual studies, data science, and digital humanities makes him comfortable in multiple disciplines. With Metis Press, he published in 2021 Mapping Affinities.

Website: <https://ars.electronica.art/solutions/en/3d-cartography-of-covid-19-research/>

Founded in the Netherlands in 1990, ISEA International (formerly Inter-Society for the Electronic Arts) is an international non-profit organization fostering interdisciplinary academic discourse and exchange among culturally diverse organizations and individuals working with art, science and technology

ISEA International is responsible for the ISEA annual symposium, one of the most important international events at the intersection of art and science..



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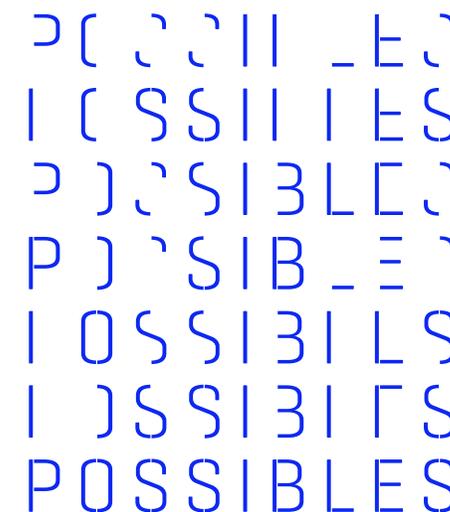
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