A Generative Movement
October 2–February 5, 2022

bitforms gallery

A Generative Movement
on view at bitforms gallery SF

Minnesota Street Project
1275 Minnesota St
San Francisco, CA 94107

Opening reception: October 2, 2–7 PM. Masks required.
Rafael Lozano-Hemmer will be present from 5–7 PM to discuss his work and exhibition at SFMoMA.

Exhibition dates: October 2–February 5, 2022
Gallery hours: Tuesday–Saturday: 11 AM–6 PM

On the occasion of bitforms gallery's 20th anniversary, we are pleased to present *A Generative Movement* at bitforms gallery SF. Join us for the opening on October 2, from 2–7 PM. The exhibition, showcasing generative artwork from Refik Anadol, Daniel Canogar, LIA, Rafael Lozano-Hemmer, Manfred Mohr, Casey Reas, Siebren Versteeg, and Marina Zurkow, celebrates artistic vision through computational innovation with works spanning from 1971–2021. Although algorithmic in part, exhibited works are a human exploration of process—each piece is guided by unique parameters to construct a desired outcome. *A Generative Movement* manifests generative software's ability to act as an artistic tool with evolving outputs.

bitforms gallery has long celebrated software-based artworks. Previous exhibitions have contextualized generative work as a performative extension of conceptual art—a set of rules encoded in software that unfold in real-time. A range of forms including plotter paper drawings, morphing natural landscapes, and stacking geometric compositions demonstrate how this premise invites a series of chance outcomes that are impossible to predetermine. Generative art has recently found a new audience through the prominence and success of NFTs on the immensely popular Art Blocks platform. Art Blocks specializes in on-demand generative content stored immutably on the Ethereum blockchain. Within their marketplace, collectors are able to purchase a work that is randomly generated by an algorithm—every output is different. The resulting piece can vary from a static image to a 3D model or interactive experience. Over the course of this exhibition, many of the exhibit's artists will release projects on Art Blocks, with select iterations on display at the gallery.

The gallery would like to thank StandardVision for their contribution of the Luma Canvas to present Rafael Lozano-Hemmer's *Saturation Sampler.* We are pleased to exhibit this work in tandem with the artist's solo exhibition, *Unstable Presence*, on view at SFMoMA through March 6, 2022.

*

Refik Anadol is a media artist and director working with data in the fields of site-specific public art. Imagining nature as a totality that fills the gaps in our otherwise narrow perception of the cosmos lies at the heart of Anadol's *Machine Hallucinations, Nature Dreams*—a series of synaesthetic reality experiments based on GAN algorithms developed by artificial intelligence. Applying machine learning to 46,474,696 million images and creating a dataset that transforms into a collective latent cinematic experience, the piece commemorates the beauty of this land we share. The final artwork incorporates pigments, shapes, and patterns that we associate with our sensory experiences with nature while paying homage to its unbound poetic sublimity.

bitforms gallery

Daniel Canogar is a multidisciplinary artist who works in photography, video, sculpture, and installation. The evolution of the artistic object towards a digital, block-chain certified possession has radically changed the definition of material culture and archiving. *Shred* takes this cultural shift as its source, employing a generative animation that uses NFTs as raw material. The algorithm that activates the dynamic content of the screen has been custom designed by Canogar's studio to capture in real time the thousands of NFTs that are being uploaded to e-commerce platforms. Once captured, the work shreds the images into rows of pixels and weaves them together into new configurations. This incessant activity evokes the indefatigable fever of digital collecting.

LIA is considered one of the pioneers of software and net art and has been producing works since 1995. Her practice spans across video, performance, software, installations, sculpture, projections and digital applications. The artist's primary working material is code, which consists of LIA translating a concept into a formal written structure that then can be used to create a "machine" that generates real-time multimedia outputs. Since her concept is fluid – opposed to the formality of the written code that requires engineered precision – the translation process between machine and artist can be viewed like a conversation. The process is repeated until LIA is satisfied with the machine's interpretation; at which point the generative framework, in which the artwork can develop, is considered finished. *little boxes on the hillsides, mother* is an animated abstract suburban cityscape powered by a program of LIA's own design and development. Taking inspiration from the song *Little Boxes* by Malvina Reynolds, this work is a contemplation of houses and cities. The cyclical relationship between the construction of homes, the lands and environments they have replaced, and the ecosystems that will eventually replace them is echoed through an infinite production of geometric compositions. The installation of this work invites user interaction, allowing visitors to reset parameters or pause the application and view the artwork in stillness, much like a print or painting

Rafael Lozano-Hemmer is known for creating large-scale interactive installations in public spaces throughout Europe, Asia, and North America. Using robotics, custom software, projections, internet links, cell phones, sensors, LEDs, cameras, tracking systems, and often employing vanguard technologies, his works challenge traditional notions of site-specificity, focusing instead on the idea of creating relationship-specific work through connective interfaces. Since his emergence in the 1990s, Lozano-Hemmer has mixed the disparate fields of digital media, robotics, medical science, performance art, and lived experience into interactive artworks. *Saturation Sampler* uses AI computer vision to track onlookers and extract the most saturated color palettes from their bodies and clothes. Colors are analyzed and classified in real time, creating a gridded composition from the footage, where viewers catch glimpses of their reflections in the pixelated field.

Manfred Mohr is a pioneer within the field of software-based art. Co-founder of the Art et Informatique seminar in 1968 at Vincennes University in Paris, he discovered Professor Max Bense's writing on information aesthetics in the early 1960s. These texts radically changed Mohr's artistic thinking, and within a few years, his art transformed from abstract expressionism to computer-generated algorithmic geometry. Mohr's work is an important bridge between handmade manipulations and machine-calculated structures in art. His demonstrated interest in process, language and line texture are revealed in early abstract painted works, prior to his discovery of the computer as a tool for art. Mohr's early algorithmic work phase emphasized a "formalism" of the software medium: logical and automatic construction of pictures. In this work phase, compositions are influenced by Mohr's observation of the way a computer-controlled drawing machine (the Benson plotter) drags ink across the paper, as if it were written in a script. Typical of his early algorithmic work, this piece links line to language, process and conceptual systems. Mohr calculated the image using a program that he authored in the FORTRAN language. With a choice of different line characteristics, an alphabet of randomly generated elements is created.

Casey Reas writes software to explore conditional systems as art. Through defining emergent networks and layered instructions, he has defined a unique area of visual experience that builds upon concrete art,
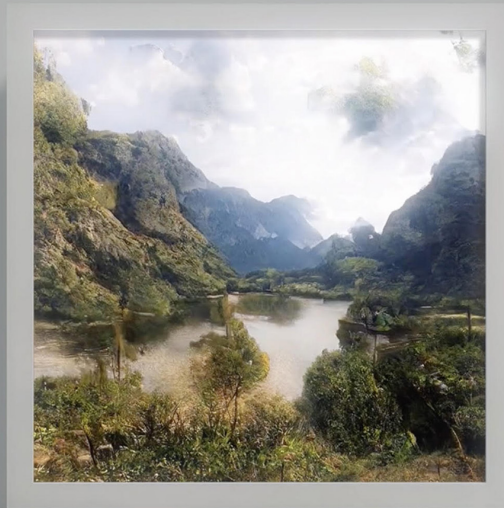
conceptual art, experimental animation, and drawing. While dynamic, generative software remains his core medium, work in variable media including prints, objects, installations, and performances materialize from his visual systems. Exhibited works *There's No Distance 1.2* and *HSB-119-006-090-1366-618 / HSB-135-006-090-1232-687* continue the artist's practice of creating a system that performs the work. They specifically engage Reas' interest in the space between the subjective experience of being in the world versus the objective, analytical way the world is measured, divided, and defined.

Siebren Versteeg works with algorithmic code to create a collision of choice and chance. His work reveals ongoing perspectives about the world we inhabit and collectively document through participation in digital culture. Exhibited pieces contend with painterly abstraction through the grossly distanciated means afforded by digital technology. The compositions are the generated results of a continuously evolving set of algorithmic computer code that he interacts with as a central aspect of his studio time. In his attempts to mime painterly phenomena through programming, Versteeg is drawn to observe the notion of an image as a constructed circumstance replete with infinite variables. Sometimes culling the Internet for random images and collaging them into idiosyncratic narratives and sometimes approaching near monochromatic negation, the code he writes works tirelessly, exporting dozens of images per day, all having one commonality: absolute flatness. Versteeg is then forced to contend with the sheer velocity of this self imposed dustbin of possibilities.

Marina Zurkow is a media artist focused on near-impossible nature and culture intersections. She uses life science, materials, and technologies – including food, software, animation, clay and other biomaterials – to foster intimate connections between people and non-human agents. *Oceans Like Us: Love Me* presents software-driven animation works that explore the ocean and its inhabitants as a fractal and unstill repository of reflections and projections. The series offers an ocean poetics to produce new affections for the ocean at large—a cosmopolitan sea inclusive of graceful, filthy, tangled, and fantastic realities and imaginary churns. Custom software allows for an infinite recombination of textures and characters within this repeating structure. Oceans Like Us: Love Me is the imperative commanded by humans insistent that sea return their affection. This seductive, sensual, and fetishistic view of the ocean is expressed through the appearance of sinewy painterly kelp, dancing otters, jewel-like coral, sparkling mermaids and mermen, nervous squiggles and flurries of plankton, whales, dolphins, mantas, octopuses, fish, and llicking tongues. The nine-minute movements of this work are expressed as: Kelp, Plankton, and Coral.
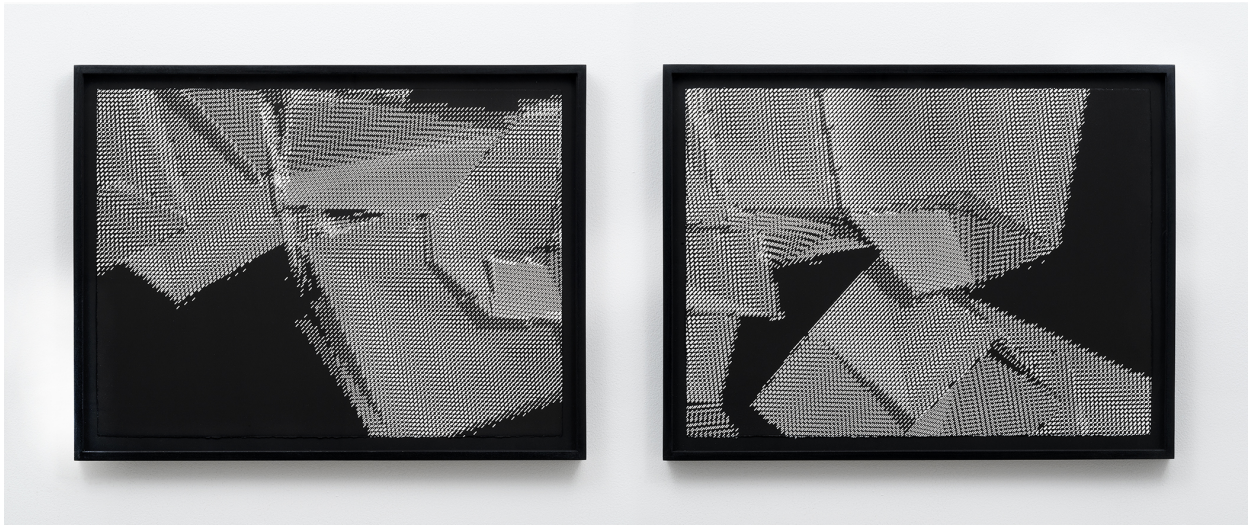
Refik Anadol
Machine Hallucinations Nature Dreams Study I, 2020
Video (color, silent), computer, screen, custom frame
22 x 21.75 x 5.5 in / 55.9 x 55.2 x 14 cm, framed
30 min, loop
Edition of 5, 2AP

Video documentation: https://vimeo.com/451641542

Imagining nature as a totality that fills the gaps in our otherwise narrow perception of the cosmos lies at the heart of Anadol's *Nature Dreams*—a series of synaesthetic reality experiments based on GAN algorithms developed by artificial intelligence. Applying machine learning to 46,474,696 million images and creating a dataset that transforms into a collective latent cinematic experience, the piece commemorates the beauty of this land we share. The final artwork incorporates pigments, shapes, and patterns that we associate with our sensory experiences with nature while paying homage to its unbound poetic sublimity.

Casey Reas
HSB-119-006-090-1366-618 / HSB-135-006-090-1232-687, 2015
Relief print on paper
24.75 x 32.25 in / 62.9 x 81.9 cm, framed
Edition of 6, 1 AP

HSB-119-006-090-1366-618 / HSB-135-006-090-1232-687 simulates a "still life": a composition deconstructing a Platonic solid, which is composed of and presented as information. Dimensional space is flattened so that multiple planes of the same solid occupy the visual field simultaneously. There is no reference to the natural world within this work, as the subject matter derives from pure geometry.

This diptych serves as the origin for Reas' *Still Life*, a series of software works for each Platonic solid (tetrahedron, cube, octahedron, dodecahedron, icosahedron). The body of work is presented in two configurations, RGB and HSB. HSB (hue, saturation, brightness) is an alternative color space to RGB. The series continues the artist's practice of creating a system that performs the work. It specifically engages Reas' interest in the space between the subjective experience of being in the world versus the objective, analytical way the world is measured, divided, and defined.

Starting in 2021, *There's No Distance* was introduced as a sequence of videos created from modified versions of the *Still Life* software. Each work is a two-minute-long video that focuses on a single Platonic solid.
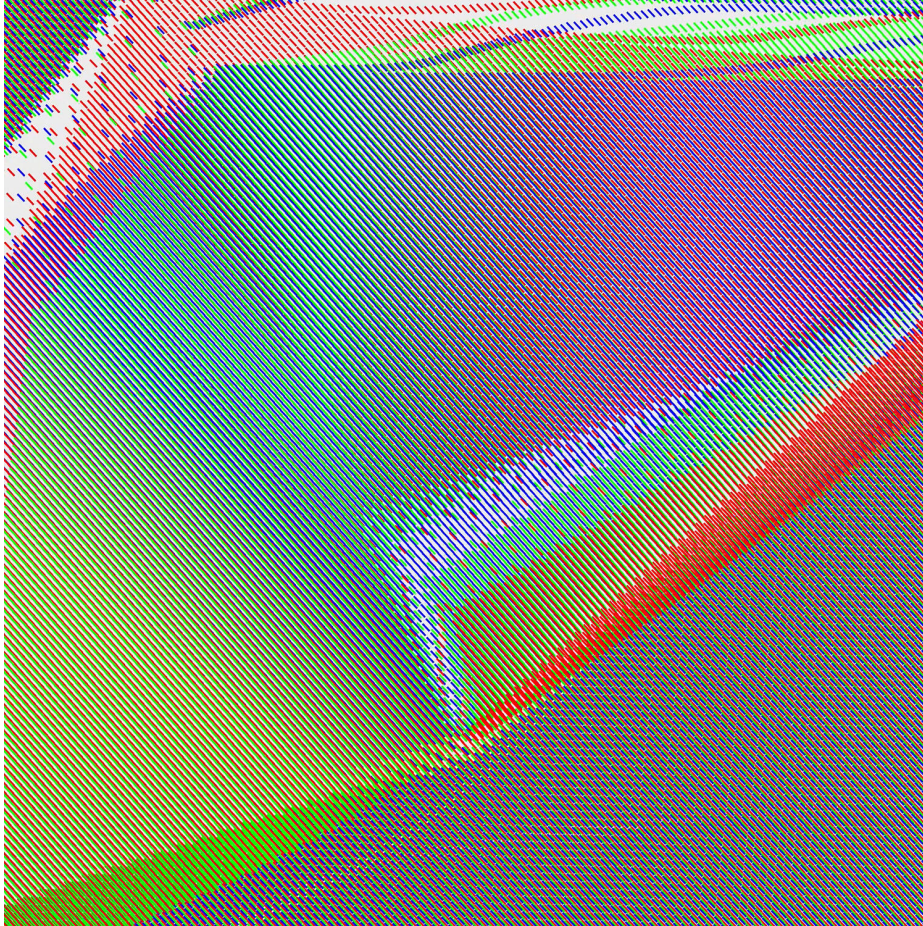
Casey Reas
There's No Distance 1.2, 2021
Video (color, silent), with NFT .mp4 file
2160 x 2160 pixels
2 min, loop

Video documentation: https://vimeo.com/611777747/8257c2e915

There's No Distance 1.2 is a direct evolution of Casey Reas' *Still Life* series which emerged from code sketches made over the prior fifteen years. The video, minted as an NFT on the occasion of this exhibition, is created frame by frame with custom code created by the artist. This artwork is a medium for thinking about simulation and the history of visual representation.

HSB-119-006-090-1366-618 / HSB-135-006-090-1232-687, also shown in this exhibition serves as the origin for Reas' *Still Life*. Starting in 2021, *There's No Distance* was introduced as a sequence of videos created from modified versions of the *Still Life* software.

Daniel Canogar
Shred, 2021
Custom software (color, silent), computer, screen
Dimensions variable, portrait and landscape orientation
Edition 6 of 7, 1 AP

Video documentation: https://vimeo.com/581323788

The evolution of the artistic object towards a digital, block-chain certified possession has radically changed the definition of material culture and archiving. *Shred* takes this cultural shift as its source, employing a generative animation that uses NFTs as raw material. The algorithm that activates the dynamic content of the screen has been custom designed by Canogar's studio to capture in real time the thousands of NFTs that are being uploaded to e-commerce platforms. Once captured, the work shreds the images into rows of pixels and weaves them together into new configurations. This incessant activity evokes the indefatigable fever of digital collecting.
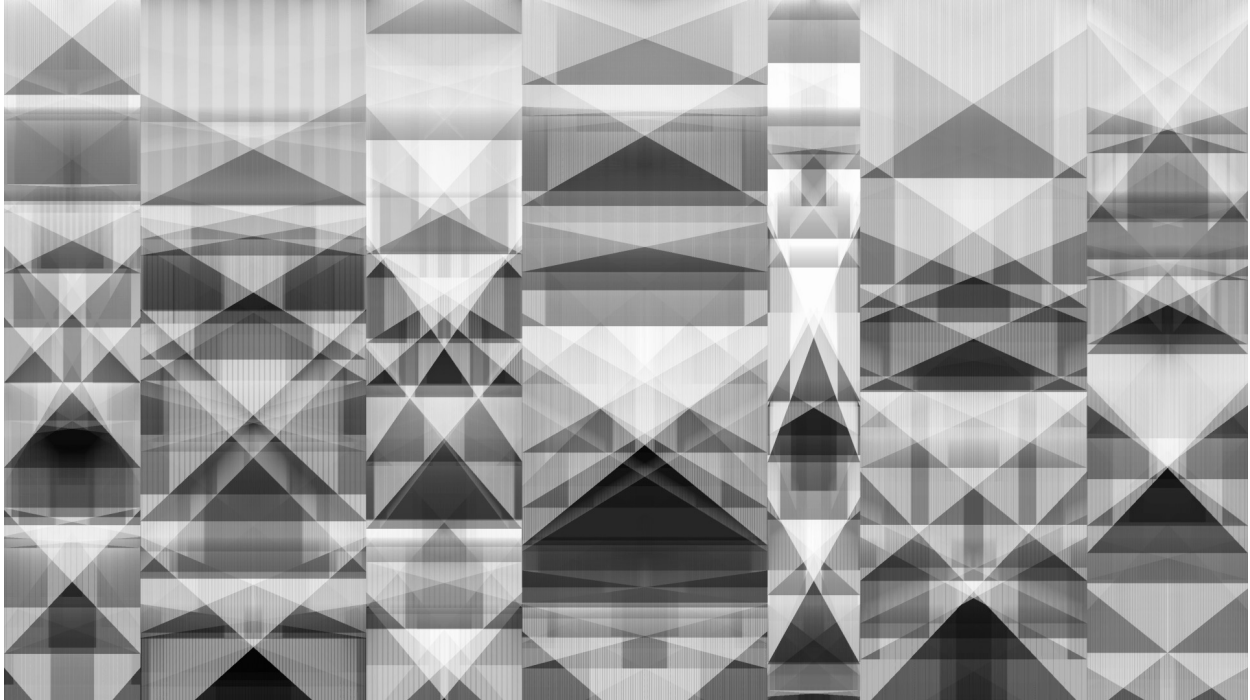
LIA
little boxes on the hillsides, mother, 2021
Custom software (black and white, silent), computer, screen
Dimensions variable, landscape orientation
Edition of 1, 1 AP

Video documentation: https://vimeo.com/610911073/fb9fff243d

little boxes on the hillsides, mother is an animated abstract suburban cityscape powered by a program of LIA's own design and development. Over the 25 years of her artistic career, LIA's working process has typically involved as much intuition as it does engineering skill, and this piece is no exception. Growing from an initial Processing sketch by way of the artist's careful selection of angles, transparencies, and line weights, alongside deliberate retention of accidents and bugs, a virtually infinite sequence of house-like forms appears and disappears, sliding over each other in hypnotic rhythms as they make their way slowly down the screen.

Taking inspiration from the song *Little Boxes* by Malvina Reynolds, *little boxes on the hillsides, mother* is a contemplation of houses and cities. The cyclical relationship between the construction of homes, the lands and environments they have replaced, and the ecosystems that will eventually replace them is echoed through an infinite production of geometric compositions. The installation of this work invites user interaction, allowing visitors to reset parameters or pause the application and view the artwork in stillness, much like a print or painting.

LIA is partnering with Art Blocks to present little boxes on the hillsides, child as a series of NFTs minted on the Art Blocks website, produced with a more recent version of the program: colourful children of this animated piece. Available works will be offered as still images produced by the output of the artwork's generative process.
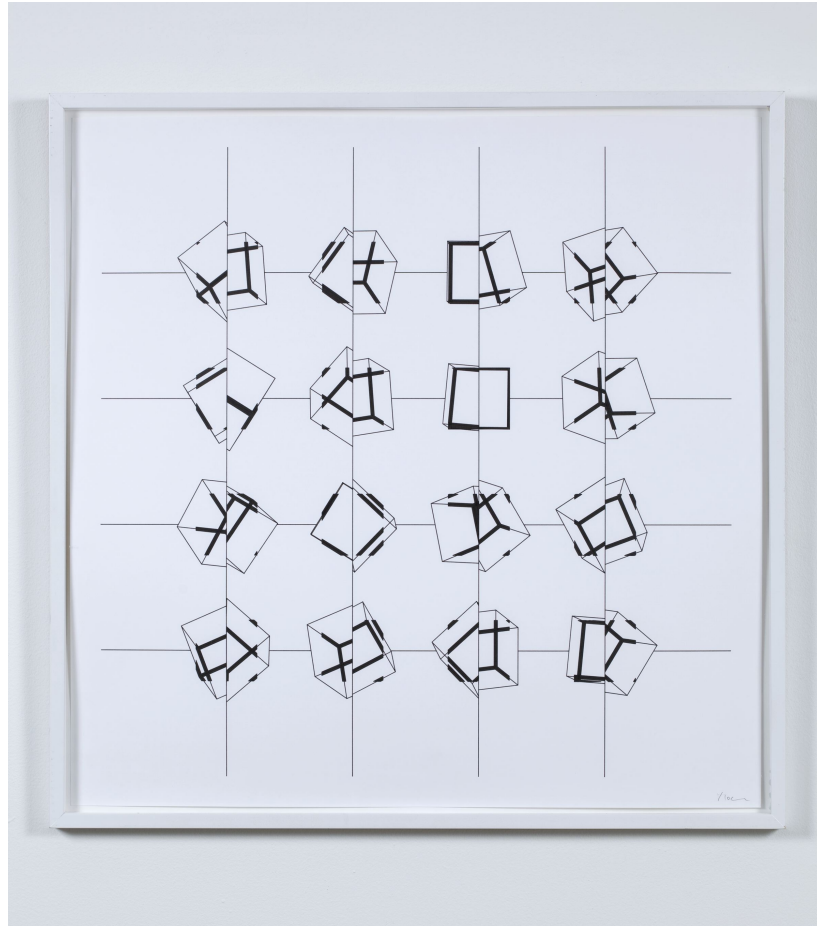
Manfred Mohr
P-073-D, 1971
Plotter drawing on paper
19.5 x 21.5 in / 49.5 x 54.6 cm, framed

A logical and automatic construction of pictures is introduced in Mohr's *Early Algorithms* work phase (1969-1973). It is during this period that the artist first used algorithms to produce images. Mohr's consequent thinking is rendered visible through self-authored computer programs. The corresponding elements of the *P-018* are horizontal and vertical 45 degree lines, square waves, and zig-zags, with varying line widths and lengths. With a choice of different line characteristics, an alphabet of arbitrary generated elements is created. The algorithms are built from imposed as well as random selection principles that Mohr calls "aesthetical-filters".

Manfred Mohr
P-197pz, 1977-1987
Plotter drawing ink on paper
31 x 31 in / 78.7 x 78.7 cm, framed

In the *Cubic Limit* work series, Manfred Mohr introduced the cube into his work as a fixed system with which signs are generated. In the second part of this work phase (1976-78), cubes are divided into two parts by one of the Cartesian planes. For each image the two partitions contain independent rotations of a cube. They are projected into two dimensions and clipped by a square window (the projection of a cube at 0,0,0 degrees). By rotating both parts of these cubes in small but different increments, long sequences of images are developed.

Manfred Mohr
P-202-A, 1977
Plotter drawing on paper
16.2 x 47.7 in / 41.1 x 121.2 cm, framed

During Mohr's *Cubic Limit* phases, he introduced the cube as a fixed system with which signs are generated. In the first part of this phase (1972-1976), an alphabet of signs is created from the twelve lines of a cube. In some works, statistics and rotation are used in the algorithm to generate signs. In others, combinatorial, logical, and additive operators generate the global and local structures of the images.

P-202-A (1977) is from the second phase of *Cubic Limit* (1976-1978), during which Mohr divided the cube into two parts by one of the Cartesian planes, or along a specific point on the coordinate plane. For each image the two partitions contain independent rotations of a cube. They are projected into two dimensions and clipped by a square window (the projection of a cube at 0,0,0 degrees). By rotating both parts of these cubes in small but different increments, long sequences of images are developed.

Manfred Mohr
P-454-D, 1992
Plotter drawing on mounted paper
18 x 15.5 in / 45.7 x 39.4 cm, framed

Laserglyphs (1990-93) are based on the six-dimensional hypercube. This geometrically defined structure has 32 diagonals and 720 different diagonal-paths. *P-454-D* and *P-454-E* are combinatorial drawings that show the diagonal-paths between two diagonally opposite points in the six-dimensional structure.
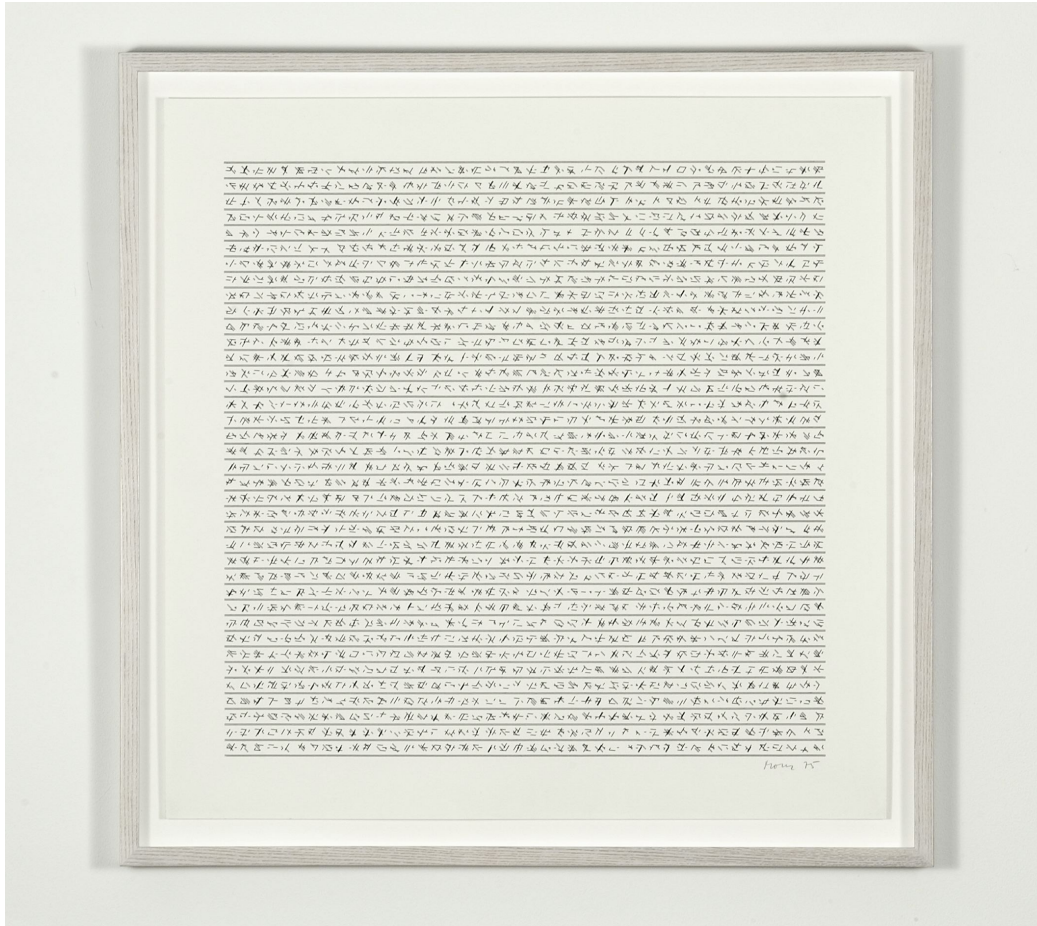
Manfred Mohr
P-454-E, 1992
Plotter drawing on mounted paper
18 x 15.5 in / 45.7 x 39.4 cm, framed

Laserglyphs (1990-93) are based on the six-dimensional hypercube. This geometrically defined structure has 32 diagonals and 720 different diagonal-paths. *P-454-D* and *P-454-E* are combinatorial drawings that show the diagonal-paths between two diagonally opposite points in the six-dimensional structure.

Manfred Mohr
P1-176/f801, 1975
Plotter drawing ink on paper
29 x 29 in / 73.7 x 73.7 cm, framed

In the *Cubic Limit* series, Manfred Mohr introduced the cube into his work as a fixed system for generating signs. In the first part of this work phase (1972-76), an alphabet of signs is created from the twelve lines of a cube. In some works, statistics and rotation are used in the algorithm to generate signs. In others, combinatorial, logical and additive operators generate the global and local structures of the images.

Rafael Lozano-Hemmer
Hormonium, 2022
Custom software (black and white, silent), computer
Dimensions variable, landscape orientation
Edition of 6, 1 AP

Video documentation: https://vimeo.com/670810461

Hormonium is a generative artwork that presents sequences of ocean waves crashing and releasing airborne text particles. The text corresponds to acronyms for many hormones within the body. *Hormonium* calls on chronobiology, or the study of biological rhythms, to release groupings of hormones in accordance with human time-cycles, exhibiting circadian, ultradian, and infradian rhythms. For example, the morning brings an influx of cortisol, progesterone and testosterone that splash across the screen in a wave of acronyms. The work ages over an 80 year cycle that is demonstrated by a decreased concentration of hormones like aldosterone and calcitonin while levels of norepinephrine and parathyroid increase towards the end of the sequence.
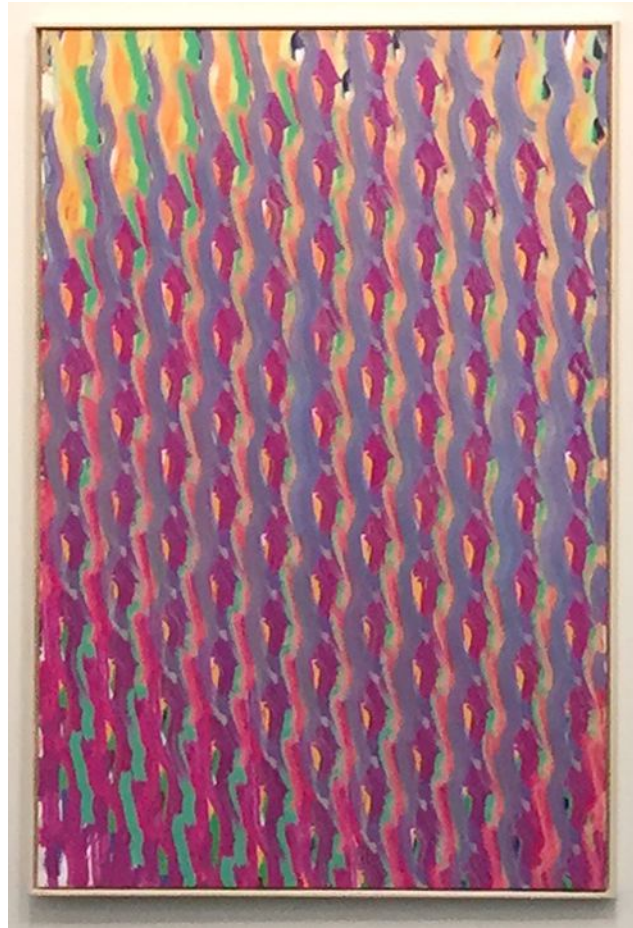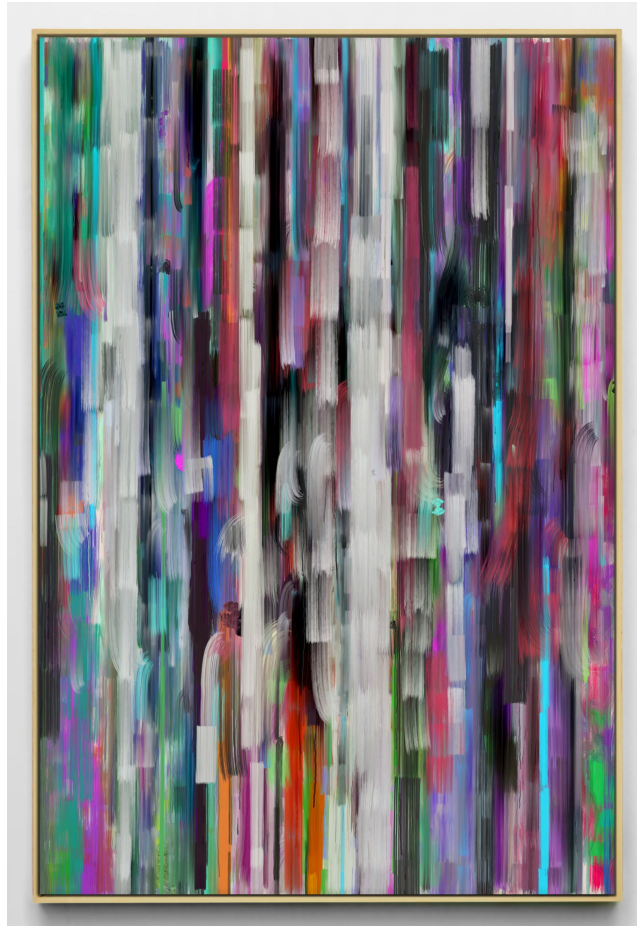
Siebren Versteeg
_drone_6800x10000_00039, 2015
Algorithmically generated image printed on canvas
48 x 32 in / 121.9 x 81.3 cm, framed

Versteeg's work contends with painterly abstraction through the grossly distanciated means afforded by digital technology (think the long stick Matisse used to loosen and ensure the fluidity of his gestures). The compositions are the generated results of a continuously evolving set of algorithmic computer code that he interacts with as a central aspect of his studio time. In his attempts to mime painterly phenomena through programming, Versteeg is drawn to observe the notion of an image as a constructed circumstance replete with infinite variables. Sometimes culling the Internet for random images and collaging them into idiosyncratic narratives and sometimes approaching near monochromatic negation, the code he writes works tirelessly, exporting dozens of images per day, all having one commonality: absolute flatness. Versteeg is then forced to contend with the sheer velocity of this self imposed dustbin of possibilities.

bitforms gallery

Siebren Versteeg
Index, 2015
Algorithmically generated image printed on canvas
48 x 32 in / 121.9 x 81.3 cm, framed

Versteeg's work contends with painterly abstraction through the grossly distanciated means afforded by digital technology (think the long stick Matisse used to loosen and ensure the fluidity of his gestures). The compositions are the generated results of a continuously evolving set of algorithmic computer code that he interacts with as a central aspect of his studio time. In his attempts to mime painterly phenomena through programming, Versteeg is drawn to observe the notion of an image as a constructed circumstance replete with infinite variables. Sometimes culling the Internet for random images and collaging them into idiosyncratic narratives and sometimes approaching near monochromatic negation, the code he writes works tirelessly, exporting dozens of images per day, all having one commonality: absolute flatness. Versteeg is then forced to contend with the sheer velocity of this self imposed dustbin of possibilities.

Marina Zurkow
Oceans Like Us: Love Me, 2020
Custom software (color, sound), computer, screen or projector
Dimensions variable, portrait orientation
Edition of 3, 1 AP

Video documentation: https://vimeo.com/388349678

Oceans Like Us presents software-driven animation works that explore the ocean and its inhabitants as a fractal and unstill repository of reflections and projections. The series offers an ocean poetics to produce new affections for the ocean at large—a cosmopolitan sea inclusive of graceful, filthy, tangled, and fantastic realities and imaginary churns. Custom software allows for an infinite recombination of textures and characters within this repeating structure. *Oceans Like Us: Love Me* is the imperative commanded by humans insistent that sea return their affection. This seductive, sensual, and fetishistic view of the ocean is expressed through the appearance of sinewy painterly kelp, dancing otters, jewel-like coral, sparkling mermaids and mermen, nervous squiggles and flurries of plankton, whales, dolphins, mantas, octopuses, fish, and… licking tongues. The nine-minute movements of this work are expressed as: Kelp, Plankton, and Coral.

This series is inspired by Blue Humanities scholarship (see complete bibliography listed on press release). Sound design by Scott Reitherman. Software by Sam Brenner. Animation by Marina Zurkow and Ewan Creed.