

# PERFECT & PRICELESS

VALUE SYSTEMS ON THE BLOCKCHAIN

An exhibition curated by Georg Bak at Kate Vass Galerie

16 November 2018 - 11 January 2019



KATE VASS  
GALERIE

## **“Rather than money issued by a nation and administered by central banks, art is a networked, decentralized, widespread system of value.” (Hito Steyerl)**

In January 2014, at the same time Jamie Dimon, CEO of JP Morgan bank famously stated that Bitcoin was a terrible store of value, the cryptocurrency - anonymously founded by Satoshi Nakamoto - was passing the 1000 US\$ mark for the first time. This was followed by a crash - caused by the bankruptcy of the exchanger Mount Gox - until it recovered again and reached a record price at almost 20'000 USD in December of 2017. Within a short time, it was possible for brave investors to become millionaires, including the Winklevoss brothers who are now Bitcoin Billionaires. Since this moment, mainstream media has been reporting daily on crypto-currencies and the emerging revolution of blockchain technology.

The crypto-hype also left its traces in the art world. When people were willing to pay a five-digit amount for a virtual currency why wouldn't they be willing to pay the same sum for a cartoon kitten? It didn't take long for the smiling crypto kitties to conquer the hearts of speculators and blockchain enthusiasts, with some characters reaching five to six-digit price tags.

For the first time in Switzerland, Kate Vass Galerie in Zürich is presenting a comprehensive and unique exhibition on blockchain art, showcasing the most important protagonists of this movement. This art exhibition is curated by Georg Bak.

The blockchain art pioneer Rob Myers from Vancouver is visualizing crypto currency transactions in his continuing series Blockchain Aesthetics while referencing concept art from the 1970s. In order to transmit crypto from one wallet to another wallet (peer to peer), a hashrate is being generated and compressed through a mathematical encryption method. The hashrates are always the same length independently from the size of information they contain. The artist renders Bitcoin transactions as rows of coloured squares or circles. Each byte of the 32-byte transaction is rendered as a square or a circle of a 256-colour palette. The transactions are being displayed on a monitor as colourful abstract moving images with a narrative context. Although the imagery reminds us of 4096 Colours by Gerhard Richter or the spot paintings by Damien Hirst, they have a different connotation.

For the creation of Bitcoins and their transactions, “miners”, who provide computing power in order to calculate hashrates, are required. Artists César Escudero Andaluz & Martin Nadal have created Bittercoin which is an old calculator machine hacked to be used as a miner validating the pending bitcoin transactions in the blockchain. Bittercoin combines Internet of Things (IoT), media archeology and economics. It works as the most basic computer, increasing the time necessary to produce bitcoins to almost an eternity. The operations are displayed on the calculator screen and printed afterwards.

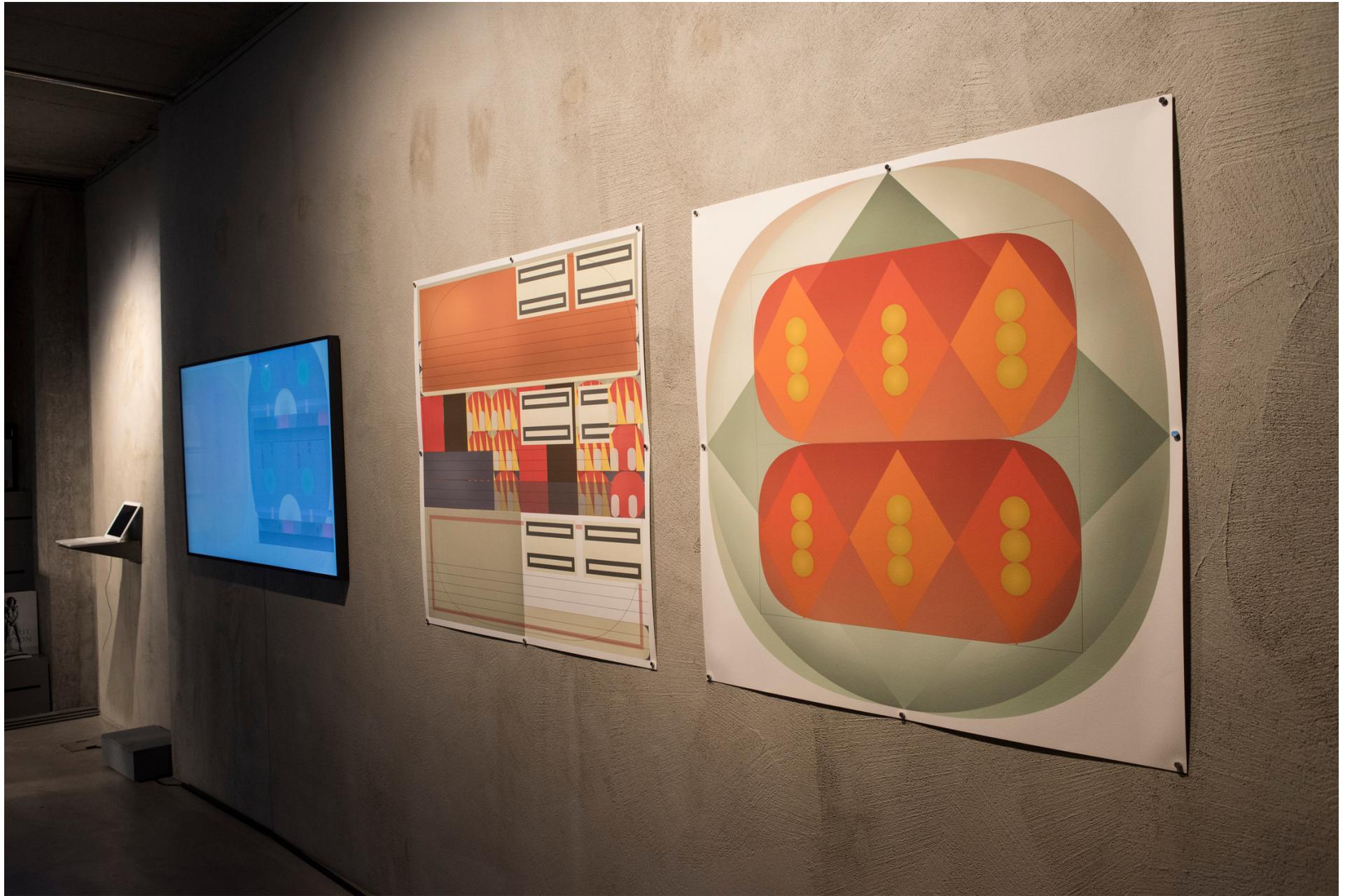
For the duration of the exhibition period, it seeks to produce money insistently and using an economic system that is wholly different from the traditional art market. Paper accumulates around the machine making visible the amount of calculation required, as well as the natural resources expended in the process. Bittercoin is a fully functional miner that connects to the blockchain. In the event of successfully mining a block, although very unlikely, the nonce would be sent back to the server and entered into the corresponding bitcoins of the rewarded bitcoin wallet.

With the emergence of ICO's (Initial Coin Offerings), a new crowd funding model was launched that enables companies to raise funds publicly from investors in a more efficient and less cost-intensive way as through an IPO (Initial Public Offering). An artist's studio often functions in the same way as a small company. For example, Ed Fornieles Studio has developed the Certificate Program as an attempt to re-imagine the economy of finance and funding in the art world by applying a model that is open, accessible, and transparent. A hybrid between a financial product and an art print, the certificate distills and formalizes the commerce of art with the relatively affordable price of 550 USD. The certificates are an easy way to participate in an artist economy that rewards belief in an artist's practice with a share of future profits. This is made possible by the use of an Ethereum contract or “smart contract” – a self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code. The key to which is hidden under a scratch panel on the certificate itself. At any point, the collector can scratch the panel, damaging the art object but retrieving the key that will give them access to their percentage of a fund generated from sales of artworks and certificates. The Certificate is an investment in the artists' future work: all proceeds from the program are funneled into the development and production of new projects. This artistic approach reminds us of the Dadaist artist Marcel Duchamp who also created certificates in the 1920s in order to let investors participate in his earnings at the casino. Nowadays these Monte Carlo Bonds are being traded at auction above one million US dollars and, for the holders, it proved to be an excellent investment.

A common appetite for an art investment among millennial art collectors and new principles in token economics have inspired by Irish artist Kevin Abosch to turn himself into crypto currency. “We come into the world like newly minted coins - perfect and priceless. Yet we are constantly being ascribed a value.” Abosch explains. He created 100 physical artworks and a limited edition of 10 million virtual artworks entitled IAMA Coin. The virtual works are standard ERC-20 tokens and token owners are free to share these artworks and even divide them into smaller pieces before sharing.

In a recent collaboration, Kevin Abosch and Ai Weiwei joined forces in order to tokenize priceless shared moments such as “Sharing Tea”. Each priceless moment is represented by a unique blockchain address which is “inoculated” by a small amount of a virtual artwork (crypto-token) called PRICELESS (symbol: PRCLS). Only two ERC20 tokens were created for the project, but they are divisible up to 18 decimal places. One of the two PRICELESS tokens will be unavailable at any price. The remaining token is divided into one million fractions of one token and available to collectors and institutions. Furthermore a very limited series of physical prints - signed by both artists - were made. The wallet addresses are virtually worthless as the required private keys have been thrown away by the artists.

With the emergence of countless virtual crypto currencies, these recurring questions exist: How can consensus and a monetary union be built? Which currencies will effectively be suitable and accepted as a payment token or as a sustainable storage of value? How can a market mechanism develop with constant supply and demand while the stakeholders are concurrently protected by law?



Installation view: Harm Van Den Dorpel's Nested Exchange Series



Installation view: John Watkinson's Cryptopunks



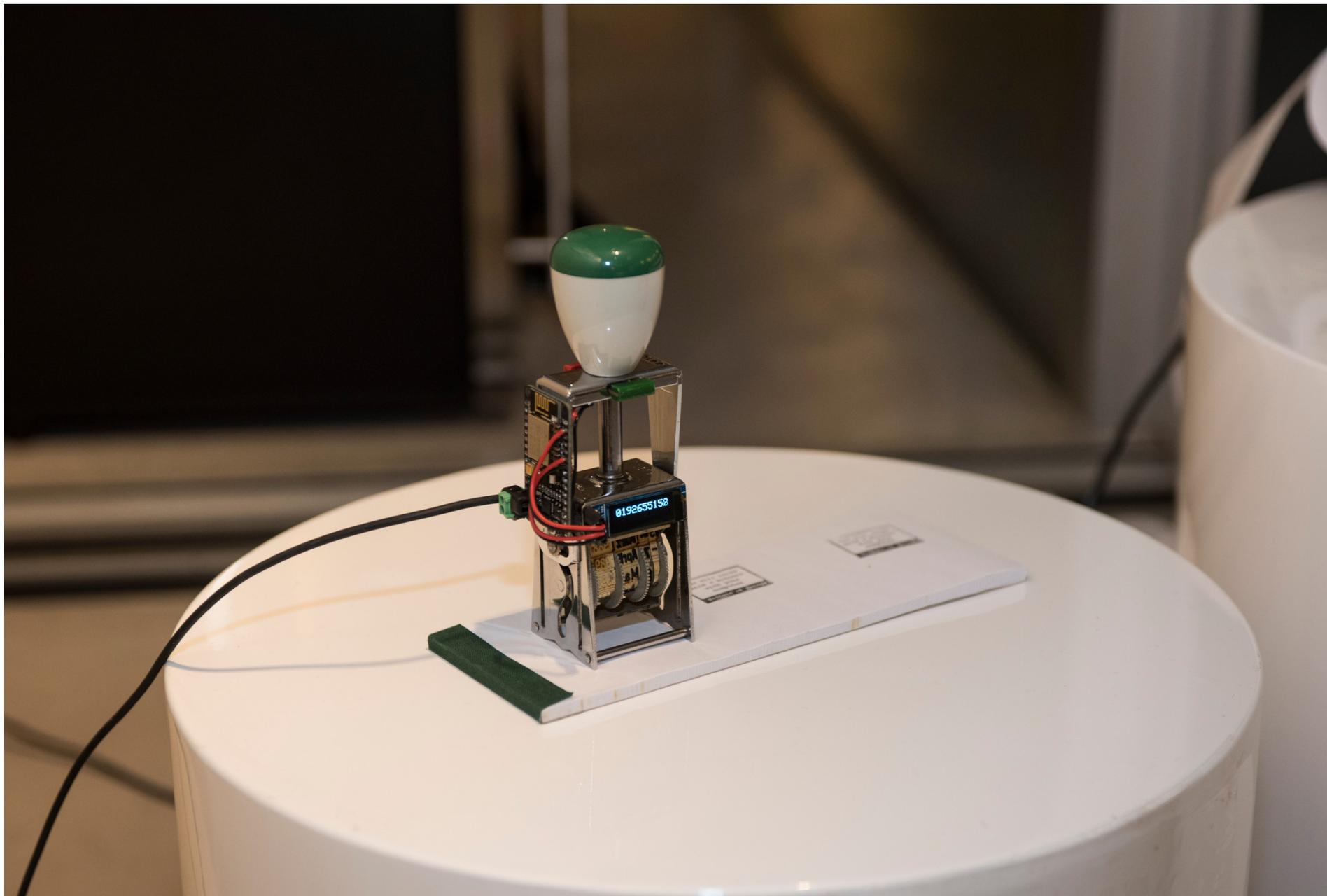
Installation view: Ed Fornieles' Certificate Program



Installation view: Rob Myers' Blockchain Aesthetics



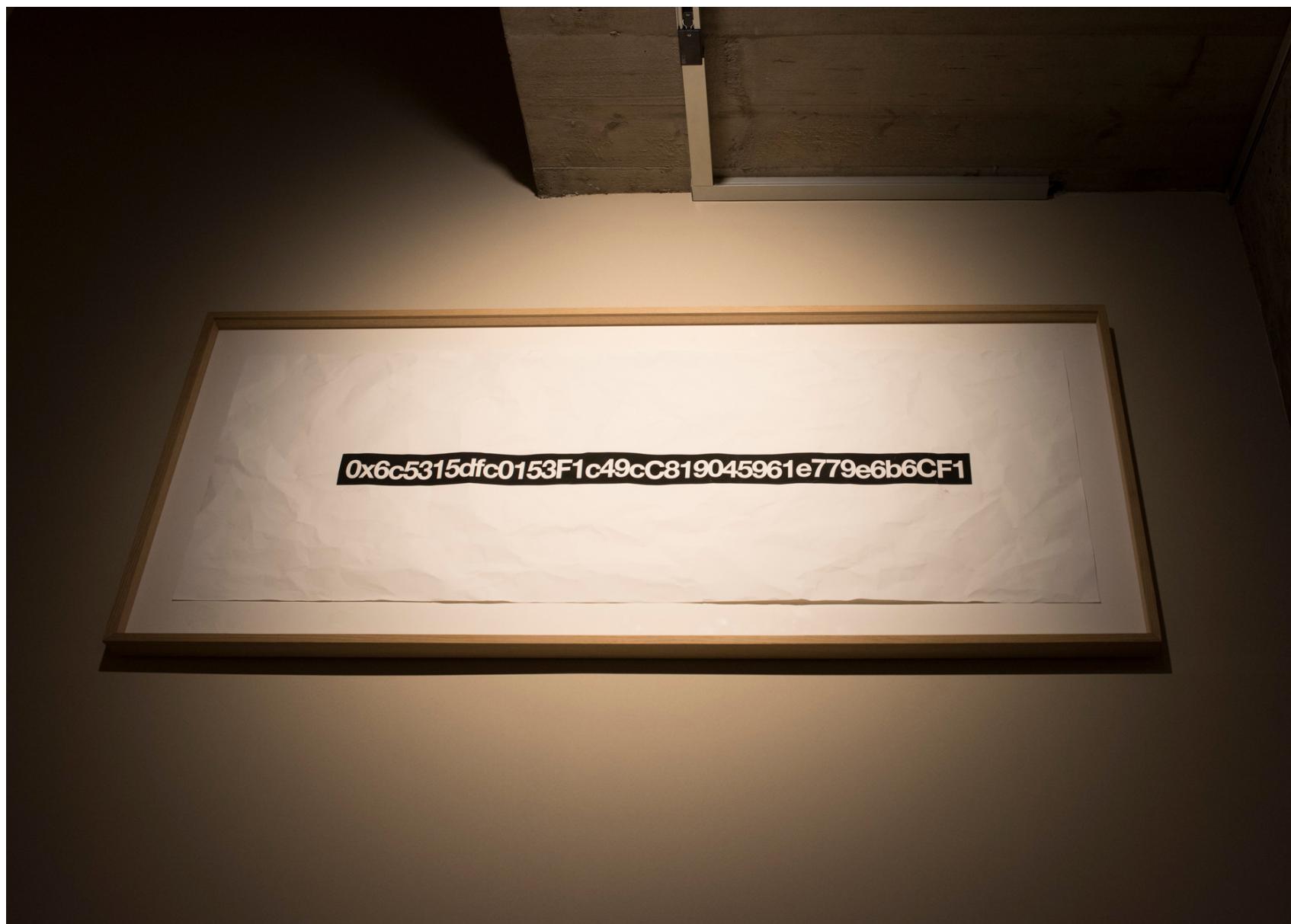
Installation view: Andaluz and Nadal's Bittercoin



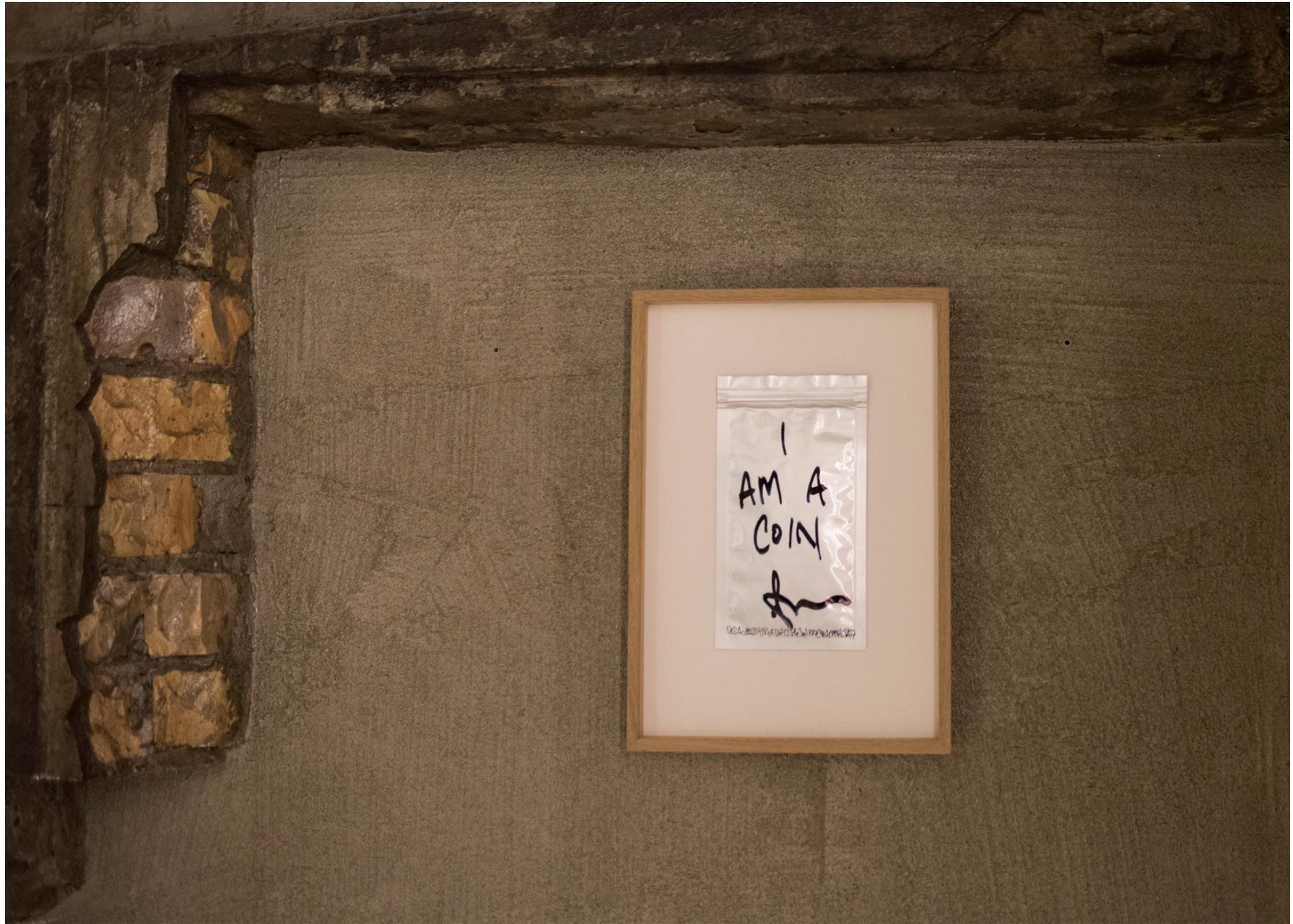
Installation view: Andaluz and Nadal's Bitcoin of Things



Installation view: terra0's flowertoken 100



Installation view: Abosch & Weiwei's PRICELESS



Installation view: Abosch's I AM A COIN

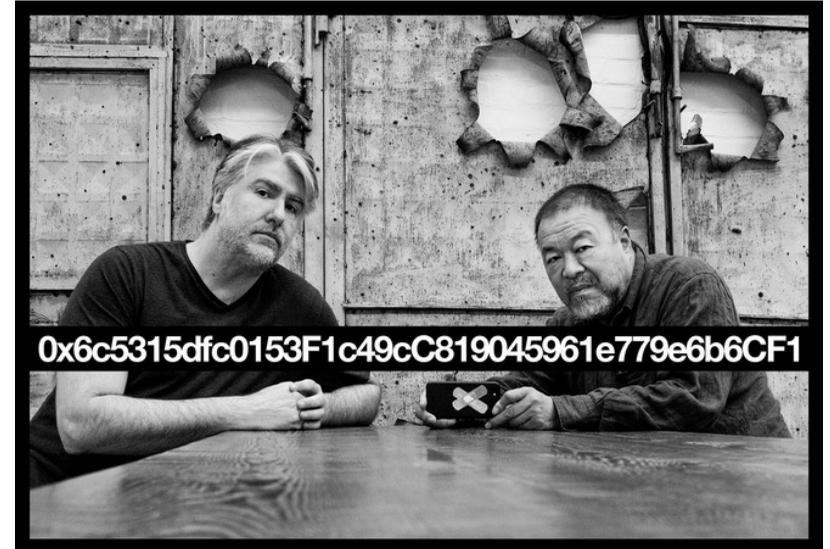
# KEVIN ABOSCH & AI WEIWEI | WHAT IS PRICELESS?

## Tokenizing priceless, fleeting moments and experiences

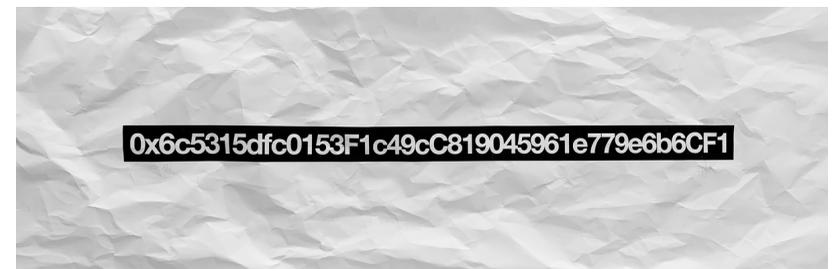
Abosch has been using blockchain addresses as proxies to distill emotional value for some time now, and with Weiwei has “tokenized” their priceless shared moments together such as “sharing tea” or “talking about the art market” are the building blocks of human experience. *All moments in life are priceless.* Each priceless moment is represented by a unique blockchain address which is “inoculated” by a small amount of a virtual artwork (crypto-token) we created called “PRICELESS” (symbol: PRCLS). Only 2 ERC20 tokens were created for the project, but as they are divisible to 18 decimal places, these works of virtual art could potentially be distributed to billions of people. Furthermore, a very limited series of physical prints were made.

The digital works, the PRICELESS token (symbol: PRCLS) is an ERC20 token on the Ethereum Blockchain. Only 2 tokens were created for the project, but as they are divisible to 18 decimal places, these works of virtual art could potentially be distributed to billions of people.

The physical works feature blockchain contract address alphanumeric. Each wallet is filled with a nominal amount of PRCLS token, validating the wallet and symbolically inoculating the moment. An ethereum wallet is used for sending and receiving the Ether currency. Each wallet has a long address, similar to a bank account number. The difference between a contract address and a personal wallet address is that contract addresses can also receive data.



Kevin Abosch & Ai Weiwei - Berlin 2018



PRICELESS (2018)

Kevin Abosch & Ai Weiwei

Archival pigment on paper 1 of 3 unique pieces

17 in x 50 in

# ABOUT THE ARTISTS

## KEVIN ABOSCH & AI WEIWEI

AI WEI WEI is a Chinese contemporary artist involved in art, design, sculpture, architecture, curating, photography, writing, film, and social, political, and cultural criticism. His activities are mainly focused on freedom of expression and ways to support human rights and social justice. Weiwei is among the world's most celebrated contemporary artists and one of China's most formidable critics. His sculptures, photographs, installations, and public artworks often repurpose recognizable Chinese forms and materials to address today's most pressing social concerns. Despite his political arrest, he has continued to extend his practice across multiple disciplines, using exhibitions, documentary films, and social media to communicate with a global public.

KEVIN ABOSCH is an Irish conceptual artist based in Paris, who began in portrait photography, and counts many of the world's most distinguished political and cultural figures among his sitters. Abosch also works with sculpture, installation, film, and most recently blockchain-technology. Abosch's work addresses the nature of identity, value and human currency.

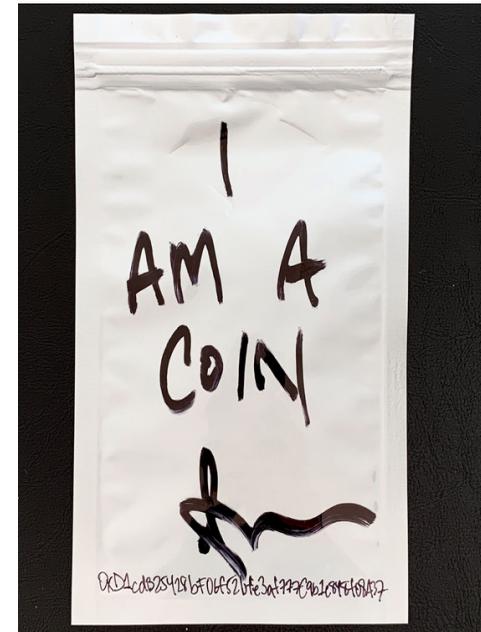
# KEVIN ABOSCH | I AM A COIN

## Commodification of Self

In the aftermath of the sale of photograph “Potato #345” in 2015 for €1 million conceptual artist Kevin Abosch found the attention migrating from the artistic value of his work to the monetary value. In response to feeling like he was being treated like a commodity, Abosch decided to tokenize himself on the Ethereum blockchain, effectively creating 10 million virtual artworks entitled IAMACOIN. He also made 100 physical works on paper stamped using the artist's own blood, with the IAMACOIN contract address comprised of 42 alphanumeric characters, corresponding to the creation of the the 10 million virtual works.

The virtual works are standard ERC-20 tokens and token owners are free to share these artworks and even divide them into smaller pieces before sharing. Indeed, they are divisible to 18 decimal places.

Abosch says, “While the virtual work could exist without the creation of the physical work, the physical artworks could not have a meaningful existence were it not for the creation of the virtual artworks. In this sense, the work mirrors the unidirectional mechanism of a cryptographic algorithm – With a private key you can deduce the wallet address, but with the wallet address you cannot deduce the private key.”



I AM A COIN (2018)

Kevin Abosch

Mylar foil pouch, marker, artist's blood, cotton cloth

4 3/4 in x 8 1/2 in

In 2018, The State Hermitage Museum, St Petersburg, Russia showed Abosch's installation “Personal Effects”, five canvas sacs imprinted with blockchain wallet addresses, each containing a quantity of IAMA Coins but because the private keys to these wallets have not been saved, they are virtually dead. Abosch sees these virtual artworks as pieces of himself and therefore exist as relics or personal effects.

In “Perfect & Priceless” Abosch presents a Mylar-foil pouch containing a piece of cotton cloth impregnated with the artist's own blood. The declaration “I AM A COIN” is written on the front of the pouch along with the blockchain contract address for IAMACOIN.

# CÉSAR ESCUDERO ANDALUZ & MARTIN NADAL | BITTERCOIN

## "The worst miner ever"

The Bitcoin was originally conceived as an electronic decentralized system for capital transactions. Each node (user) has the same opportunities to get a reward when validating a transaction. This system has triggered a competitive struggle in which computing power is the most important variable for earning bitcoins. This involves the use of large computer farms spending physical and environmental resources, creating a struggle that benefits only the owner of the most powerful and efficient technology.

The only way to generate bitcoins is through a process called mining. Mining is a calculation process to confirm transactions realized by bitcoin users and used to secure the transactions and to control the creation of new coins, writing them into a public ledger of past transaction called the blockchain.

Bittercoin is an old calculator machine hacked to be used as a miner validating the pending bitcoin transactions in the blockchain. Embedded inside the calculator is a bluetooth microcontroller which allows the calculator keys to be controlled remotely via a mobile phone. The phone has three functional purposes; to connect the calculator to the blockchain, get the blockheader, and send it to the calculator. Once a blockheader is received, the calculator randomizes a nonce and begins the verification process.



Bittercoin, image courtesy of escuderoandaluz.com

The verification uses an algorithm that is displayed on the screen of the calculator as it processes and prints the immediate steps of its calculation. The connection by phone has been chosen for two reasons; to show visual output of the calculation process and to be able to exhibit the piece using a 3G Wi-Fi connection. If a nonce that produces a hash smaller than the hash of the blockchain target, then a new block has successfully been mined.

Bittercoin combines Internet of Things (IoT), media archeology, and economics. It works as the most basic computer, increasing the time needed to produce bitcoins to almost an eternity. The operations are displayed on the calculator screen and printed afterwards.

## ABOUT THE ARTISTS

### CÉSAR ESCUDERO ANDALUZ & MARTIN NADAL

CÉSAR ESCUDERO ANDALUZ (LIC, MA, MA, MA) is an artist and researcher focused of Human-Computer Interaction, interface criticism, digital culture and its social and political effects. His work spans image-making, sculpture, videogame, installation, networked culture, IoT, robotics, interfaces appropriations, media archaeology. Since 2011 he is researching at the Kunstuniversität Linz in Interface Culture LAB.

MARTIN NADAL (BSc) is an artist/creative coder based in Linz and studying the Interface Cultures program at KunstUni. In the past years he has collaborated in a variety of projects and taught some workshops related to art and technology. He is also interested in illustration and cinematography. His works have been shown at Visualizar 11 (Medialab Prado), Ars Electronica, AMRO Festival y Settimana della Scienza (Genova), IAMAS (jp), ZKM (de).

# DISNOVATION.ORG | PREDICTIVE ART BOT

An algorithm that turns the latest media headlines into artistic concepts

In the age of hyperconnectivity, the perverse implications of media echo chambers are becoming more and more obvious. Groups of similar behaviors are being partitioned in filter bubbles, while the few massively reposted topics tend to monopolize most of the available attention. Such insular echo chambers strongly affect ways of thinking, resulting in increasingly homogeneous imaginaries within groups of like-minded people.

Predictive Art Bot caricatures the predictability of media influenced artistic concepts, by automating and skirting the human creative process. But beyond mere automation, it aims to stimulate unbridled, counter-intuitive and even disconcerting associations of ideas. To do so, it continually monitors emerging trends among the most influential news sources in fields as heterogeneous as politics, environment, innovation, culture, activism, or health... On this basis, it identifies and combines keywords to generate concepts of artworks in a fully automated way, ranging from unreasonable to prophetic through absurd. Each prediction becomes a thought experiment waiting to be incubated, misused or appropriated by a human host.



# ABOUT THE ARTISTS

## DISNOVATION.ORG

NICOLAS MAIGRET exposes the internal workings of media, through an exploration of their dysfunctions, limitations or failure thresholds which he develops into immersive, ambiguous and critical artworks. He initiated DISNOVATION.ORG, a working group which aims to disrupt, pervert, and complexify the accounts on technological innovation. The group develops situations of disturbance, speculation, and debate, challenging the ideology of innovation and stimulating the dissemination of alternative narratives. He teaches at Parsons Paris and develops a research on “Black Boxes” with V2\_ Rotterdam and UCL Louvain. With Maria Roszkowska he co-edited THE PIRATE BOOK, an anthology on media piracy.

His work has been presented in numerous exhibitions and festivals around the world including Transmediale (Berlin), Museum of Art and Design (New York), Chaos Communication Congress (Hamburg), ISEA (Hong Kong), Palais de Tokyo (Paris), Centre Pompidou (Paris), Elektra (Montréal), China Museum of Digital Arts (Beijing), HEK (Basel), Polytechnic Museum (Moscow), File (Sao Paulo), Northwest Film Forum (Seattle), School of the Art Institute (Chicago), The Pirate Bay (Stockholm), Eastern Bloc (Montreal)... His work has been featured in Forbes, Wired, Vice, Motherboard, Libération, Die Zeit, Arte TV, Next Nature, Hyperallergic, Le Temps, Neural.it, Digidigit, Gizmodo, Seattle Weekly, torrentfreak.com, and Filmmaker Magazine among others.

MARIA ROSZKOWSKA is a Polish graphic designer based in Paris. She has been associate researcher at EnsadLab Paris. Between 2010 and 2014 she joined Intégral Ruedi Baur, a cultural graphic design studio in France. In 2013, she designed and coordinated Don't Brand My Public Space! for Lars Müller Publishers, a 3 years research on the issue of cities applying branding strategies. She's the editor of a second book about the copy culture The Pirate Book.

# DISTRIBUTED GALLERY | THE CHAOS MACHINE

The Chaos Machine is the second blockchain-based artwork of the Distributed Gallery deepening the links between art and money. One year after the poker-like joke of the Ready-Made Token (appropriated Richard Prince scam), the Distributed Gallery engaged in a more physical artwork.

In one word, the Chaos Machine allows anyone to insert a banknote inside; once inserted, this note falls into the window space and is deposited on a heating resistor. In exchange? The machine will randomly play music and offer the user, via a smart contract, the possibility to integrate a song to the playlist. At the moment, this machine exists in two copies. One is on display at Schinkel Pavillon in Berlin and the other in the Perfect and Priceless exhibition. As soon as a ticket burns on one of these Chaos Machines, music is played on each one. So, if one hears music coming out of the Chaos Machine but no bills are burning, then it means that someone else is burning bills on the other Chaos Machine.

Is it a crypto-jukebox? Or a sophisticated toaster? In the special edition of the Chaos Machine, published on summer 2018 by R.U.S.T editions, Bernard Aspe, a french philosopher call it the Exterminating Angel, maybe because the Chaos Machine shows in a spectacular way, either the passage from a fiducial currency to a cryptographic currency, or even the emptiness inherent in any monetary abstraction.

Unlike the Ready-Made Token, the Chaos Machine is a physical artwork, designed to be reproducible. In order to become a virus-like machine, the Distributed Gallery left the plans and the code available for anyone to build their own Chaos Machine.



The Chaos Machine, image courtesy of Distributed Gallery

# ABOUT THE ARTISTS

## DISTRIBUTED GALLERY

Implanted in Blockchain's ecosystem, this open-ended collective is gonna keep tinkering with its machinations, a mixture of technological sophistications and cheerful provocations. The Distributed Gallery is not only a group of creation and reflection, but also a host and a nodal point to think about the mutations of any blockchain-based art.

Disturbed by the overinterpretation of artistic intentions, the Distributed Gallery defends a more sensitive and authentic approach of the so-called contemporary art. Moreover, it wishes to replace in the center of the game the collective anonymous work in which the figure of the artist evaporates. The Distributed Gallery was inaugurated under the double sign of Dada and Blockchain through its first art work: the Ready-Made Token. Its second artwork, the Chaos Machine.

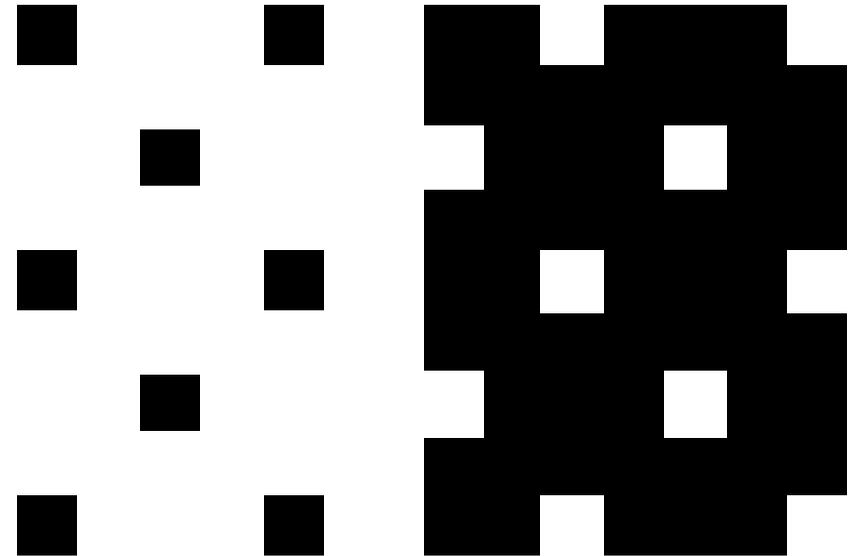
# GRAYSON EARLE | BAIL BLOC

## A cryptocurrency scheme against bail

Bail Bloc is a distributed cryptocurrency mining project that uses the money generated to pay bail for low income people. When you download the Bail Bloc app, a small part of your computer's unused processing power is redirected toward mining a popular cryptocurrency called Monero, which is secure, private, and untraceable. At the end of every month, they exchange the Monero for US dollars and donate the earnings to the Bronx Freedom Fund.

A New York Times op-ed states that 90% of people who cannot afford bail will take a plea deal, which is a guilty plea without a day in court. Furthermore, the conviction rate for people who can afford to make bail is 50% while people who spend time in pre-trial detention face a 92% conviction rate. Put simply, these people are found guilty of being poor. This affects communities of color in particular, and one can conceptualize of the prison system as a form of currency mining on marginalized people.

Bail Bloc opens up the possibility of tipping the scales and letting the courts collapse under their own weight. The project is more valuable than the sum of its hashrate, however, and seeks to open up a dialogue about the need to end the cash bail system.



With enough downloads over time, the compounding revenue generated from Bail Bloc has the potential to help secure the release of tens of thousands of low-income people from pre-trial incarceration, which would diminish the widespread function of cash bail to coerce guilty pleas, restoring the presumption of innocence and allowing people to wait for their day in court at liberty.

# ABOUT THE ARTIST

## GRAYSON EARLE

Grayson Earle's diverse technological practice is unified by a political approach to media making. Employing video games, video projection, algorithmic audiovisual generation, biological organisms, and robotics, his work tends to intervene on physical spaces and entrenched ideas. His creative practice articulates a re-positioning of resistance to power that invites participation from reluctant citizens.

Earle (b. 1987) lives and works in Brooklyn, NY. For the 2018-2019 academic year, he is a Visiting Assistant Professor at Oberlin College in the Studio Art department. He previously taught at Hunter College, split between the Computer Science, Film and Media, Integrated Media Arts, and Studio Art MFA programs, and at New York City College of Technology in the Entertainment Technology department. This interdisciplinary posture is emblematic to his work as an artist, and is an approach he proselytizes in his courses on game programming, electronics, and generative art.

Recent displays of his work include SeoulArts in South Korea; Eastern Bloc and Centre Phi in Montreal; the Brooklyn Museum, Macy Gallery, and Babycastles in New York City; and the Media Arts Festival in Tokyo. He has published essays on the socioeconomic implications of the Cold War on abstract expressionism in the United States and Russia, as well as new methods for rhetorical approaches in video games.

# ED FORNIELES | THE CERTIFICATE PROGRAM

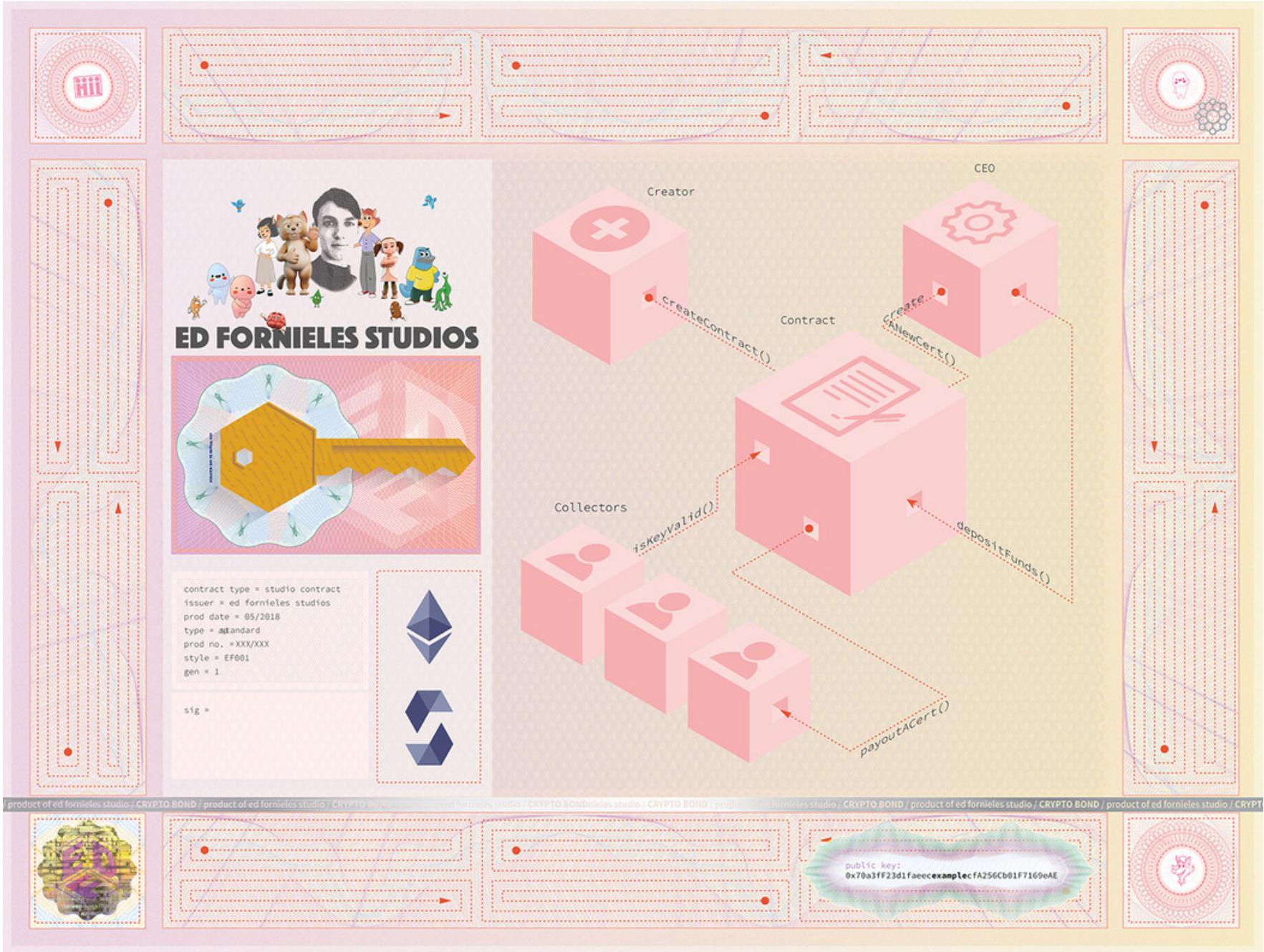
The Certificate Program has been created as a means to raise funds for the development and production of artwork. As an accessible model with a transparent structure, it allows for open participation in the studio ecosystem, rewarding investment in production with a share of future profits.

While the traditional financial model for artwork production relies on a small, centralized network of high-risk investors, the Certificate Program diffuses risk across a wider, de-centralized network of support. In doing so, it removes the pressure of artists and galleries to raise funds for production costs and allows them to develop artwork independently of market pressures. This leads to greater experimentation on the part of the artist and redirects the flow of capital towards the production, development and growth of future artworks.

The Certificate Program combines financial tools of the art world with the creativity of the financial sector. The Certificate Program employs ethereum blockchain technology to store and distribute value.

Each certificate contains a key embedded under a scratch panel, which entitles the holder to a percentage of an ethereum fund generated through the sale of certificates and artworks. As more sales occur, the ethereum fund grows. To gain access to the key and cash out on an investment, the holder must scratch the panel and damage the certificate.

A combination of an artist print and a financial product, the certificate contains twofold value: that of an art object and that of a crypto fund. The holder must decide between conserving the value of the certificate as an artwork and damaging it to access the funds it contains. The structure of the Certificate Program has been designed to encourage gradual growth and stability. As each new generation is produced, the certificates increase in size and market value. These features reward early supporters with a low buy-in point for a fixed percentage of the studio fund and allow them to benefit from the higher contributions of later investors. At the same time, new investors are attracted by the value of more substantial art objects.



STUDIO CERTIFICATE, JULY/18, GEN: 1.0, 31 x 41 CM

# ABOUT THE ARTIST

## ED FORNIELES

A post-internet artist using Facebook, Twitter, Tumblr, and Instagram as raw materials, Fornieles collapses the distinction between the online and the offline worlds by translating web-based art into sculpture and performance. A former data analyst, Fornieles uses real-time information from news feeds and social media to explore contemporary power structures, all with an underlying satire and excess. His so-called “Facebook sitcom,” Dorm Daze, created Facebook profiles for three fictional characters who interacted based on general instructions from the artist, resulting in an organic, engagement-based, content-generating performance. The artist called Dorm Daze an act of “social media terrorism” for the way his fictional profiles ever-so-slightly corrupted Facebook’s analytics and data. Similarly, Fornieles’s “Modern Family” series questions aspirational home decor and contemporary notions of domestic bliss, using interior objects to reflect, represent, and refresh familial stereotypes and the American Dream.

# SARAH FRIEND | CLICKMINE

## A blockchain based clicker game

Clickmine is a hyperinflationary ERC-20 token that is minted by a clicking game. Clicking games, like cookie clicker and cow clicker, are the reductio ad absurdum of a 'game' (brutalist with a sense of humour). Clickmine moves similar mechanics onto the blockchain, in a hypercapitalist frenzy that makes the generation of useless wealth via clicking more literal than ever before.

The cryptocurrency ecosystem, (particularly the Ethereum network), has been overrun by the phenomena of token sales or ICOs (Initial Coin Offerings). The fervor to purchase ERC-20 tokens (a meta currency that exists on top of Ethereum itself) has reached such an intensity that it stalls the processing time of the network. This has already prompted the creation of satirical coins UselessToken and Ponzicoins.

Clickmine was proposed by Friend in response to The CryptoDetectorist – hoards, coins and trades call for proposals from Furtherfield and NEoN Digital Arts Festival. While archaeology has often understood cultures through excavations of hoards and coins, we asked, what will today's digital currencies tell future archaeologists about the way we live and trade?



# ABOUT THE ARTIST

## SARAH FRIEND

Friend is an artist and software engineer focused on the development of games, interactive experiences, and open source tools. Her work to-date has been concerned with the polar concerns of privacy and transparency, how to design ethical interfaces, and the political and environmental implications of technical systems.

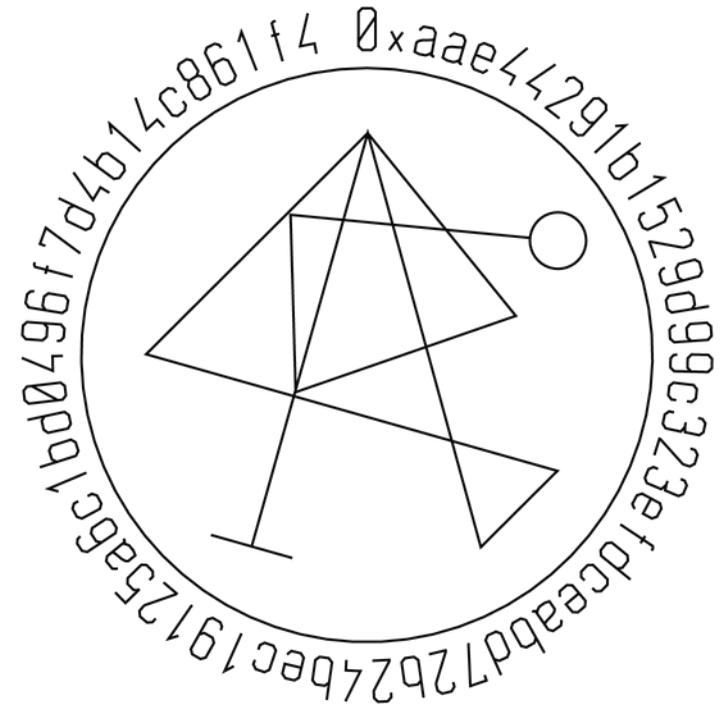
She is currently working at a blockchain development studio on tools for accounting and analytics, while maintaining an art and game-making practice. Her work has recently been part of exhibitions at the British Public Library, The Center for Contemporary Art Tel Aviv, and Radical Networks, a conference in Brooklyn. She is a judge for Wordplay: the Festival of Writerly Games, exhibiting at Damage Camp, a games conference in Toronto, and presenting on the technical challenges of blockchain games at the Montreal International Games Showcase. Community organizations she is involved with: Toronto Mesh, The Reported (a database of police-involved deaths in Canada), The Toronto Tool Library, and Dames Making Games.

# CULLEN MILLER & GABRIEL DUNNE | CLAVES ANGELICÆ

An installation and procedural system that enables a participant to inscribe a magical Word onto the Ethereum network

Claves Angelicæ is a seven-step process to guide one through the process of securely constructing a Word with an 'Alphabet of Desire.' This Alphabet of Desire is a mediation with one's own libidinal framework. Magic has many aspects, but it primarily acts as a dramatized system of psychology. It is the science and art of causing change to occur in conformity with one's Will. A magical spell is quite literally the spelling out of a Word. Once the Word is constructed within oneself it is set in motion by bringing it forth into grammar and sound. When completed one must seal it and cast it out into the Ethereum network.

The seven-step process is designed to collect and transmute the participants' input data into an encrypted message. For the participant to cast their Word they must transmit Ether to a preselected set of charities. Once the spell has been cast and verified by the consensus pool, the transaction signature's hash is returned, parsed, and passed into a sigil generating algorithm. The participant receives an inked paper talisman authored by a mechanical plotter drawing machine as a tokenized sigil of their spell.



Claves Angelicæ  
Gabriel Dunne, Cullen Miller  
ink pen, bristol  
2018

# ABOUT THE ARTISTS

## GABRIEL DUNNE & CULLEN MILLER

GABRIEL DUNNE's work represents his continuous investigations of visual, audible, and physical frequencies of natural and technological perceptual and imperceptible realities. His process is based on sound, space, still and moving visual image, architecture, installation, sculpture, and utilizes custom software and hardware systems and performance tools. He has show and performed at galleries and museums across the world, including NYMoMA, SIGGRAPH, Barcelona Festival Sonar, Interferenze Italia, and numerous publications. He is a San Francisco native.

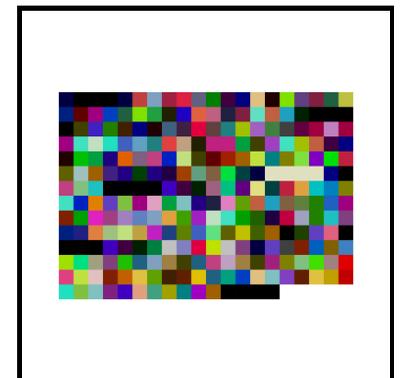
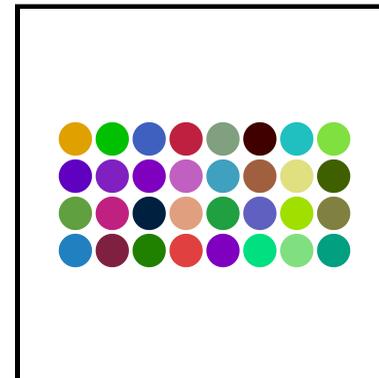
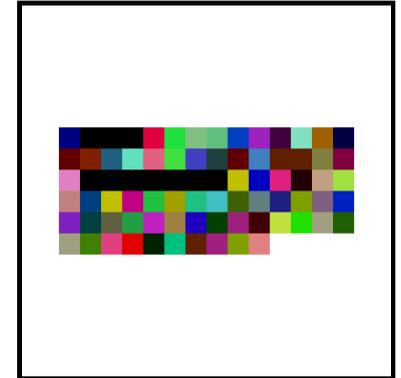
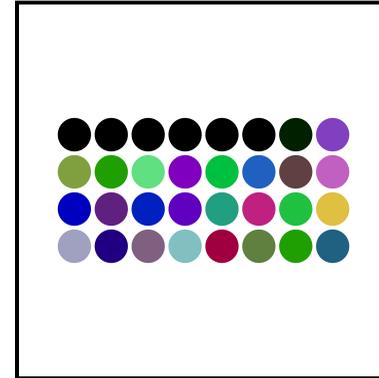
CULLEN MILLER is a sound-system artist, spatial-media designer, and organizer. His projects vary in nature but typically fall within the spectrum of sound design, installation, composition, and systems design. Reared in Detroit, he relocated to San Francisco pursuing curatorial work with Gray Area Foundation, SFCMP, and to teach digital signal processing at San Francisco State University. He currently spends his days designing and constructing technical systems at Obscura. He has released recordings under numerous aliases and organizes the concert series, FINITE. His performances and installations have been exhibited internationally in museums, galleries, and clubs.

# ROB MYERS | BLOCKCHAIN AESTHETICS

## Visualizing Bitcoin blockchain transactions

“Blockchain Aesthetics” transforms the data of the Bitcoin blockchain into the visual language of modernist abstraction and its critical postmodern appropriation. This makes the unseen structure of a technology born of contemporary libertarian utopianism visible using the aesthetics of historical political utopianism. The resulting live images and prints make strange forms of landscape or history painting out of the ongoing activity of the Bitcoin ledger.

The unfamiliar form of Bitcoin transaction hashes - the mix of 64 numbers and letters produced each time a transaction is broadcast to the Bitcoin network - is rendered in familiar forms in rational grids that cannot quite impose order on the resulting flood of shape and colour. This creative mis-reading decrypts encoded flows of value into something more perceptible, making their rhythms, complexity and volume available to contemplation on these matters and others.



Unique Giclee Prints by Myers

Top:

(left) **First Halvening** (*Bitcoin Block Hash, 8 Bit Palette, Spots*), 40"x40", 2018

(right) **First Halvening** (*Bitcoin Block Header, 8 Bit Palette, Squares*), 40"x40", 2018

Bottom:

(left) **First Transaction** (*Bitcoin Transaction Hash, 8 Bit Palette, Spots*), 40"x40", 2018

(right) **First Transaction** (*Bitcoin Raw Transaction, 8 Bit Palette, Squares*), 40"x40", 2018

# ABOUT THE ARTIST

## ROB MYERS

Rob Myers is an artist, writer and hacker from the UK now based in Vancouver, BC. An early creative and critical adopter of the blockchain, his work centers on the intersection of changing technological, aesthetic and social form. Rob's blockchain art projects include "Facecoin" (2014), "Blockchain Aesthetics" (2015) and "Artworld Ethereum" (2014 – ongoing). His writing on the subject includes "(Conceptual) Art, Cryptocurrency and Beyond" (2014), "Blockchain Geometries" (2018) and the story "Bad Shibe" (2017).

# TERRA 0 | FLOWERTOKENS

## An experimental test-case on tokenization and verification of natural assets

Flowertokens is an experimental project centered around the tokenization and verification of natural commodities, and a first attempt at creating a combined crypto-collectible physical asset. The physical installation consists of a grow rack, 100 Dahlias and a web interface which provides the current condition of the tokenized flowers. Every plant is represented by and tied to an individual ERC721-standard flowertoken held on the Ethereum mainnet. The setup is monitored 24/7 by a camera system which will provide images for the website, as well as data for a computer vision program which will update the tokens' states once a day according to their respective flower's condition. Users can interact with the project via the website. As well as acting as a portal to the physical installation, the website doubles as a marketplace where users and visitors can sell or buy tokenized plants, as well as look at the plants' ownership status, current value, species, age, size, and health.

Three hours after the start of the project in July, all flowertokens were bought. The Project generated till now around 450 Transactions on the Mainnet with over 100 anonymous individuals buying and selling. For this exhibition, terra0 generated an artefact from the installation: The dried and arranged Flower Number 100 on a printed sheet including trade and valorisation statistics.

Flowertokens further marks the beginning of a series of projects oriented around these themes from terra0 – a group of artists, developers and researchers involved in the planning and creation of hybrid ecosystems.



terra0, token100, flowertokens series, 2018  
Photo© terra0

# ABOUT THE ARTISTS

## TERRA 0

PAUL KOLLING is a media artist and designer living in Berlin, Germany. After some time spent working as a carpenter, he moved to Berlin to study visual communication at the University of the Arts. Since 2014 he has been a student of the new media class of Prof. Joachim Sauter and Jussi Ängeslevä. He works at the intersection of media art, design research and industrial design, and strives to explore the interaction between (new) materials, objects and new technologies.

PAUL SEIDLER is an artist/interaction designer living and working in Berlin. Since 2013, he studies at the University of the Arts in the digital media class by Prof. Joachim Sauter. While studying he worked at a range of research facilities including the Design Research Lab and the Hybrid Plattform. His projects and papers have been presented at Leap Berlin, CTM, Dutch Design Week and transmediale.

MAX HAMPSHIRE is a researcher living and working in Amsterdam. He holds an MA in Philosophy from the University of Amsterdam and is currently researching and working at the Institute of Network Cultures. His research involves unraveling the emergent politics of cryptographically-enabled platforms, as well as how autonomous technologies inform the structure of contemporary capitalism. He is a sound artist (MFAAH, OSC~, Chimera Ensemble), and is the co-initiator of Noiserr, a nomadic audio-visual research group centered around noise. His publications can be found on the Institute of Network Cultures MoneyLab blog, and in the forthcoming MoneyLab Reader.

# HARM VAN DEN DORPEL | NESTED EXCHANGE SERIES

These specimen find their form by a process of exchanging information with each other. Two works are taken from a determined population and communicate - gossip if you will - by flipping a node of their nested structure. The direction in this process is geared towards the greatest diversity: each specimen wants to be as different from all the other as possible. As the total amount of information shared among all specimen in the population does not increase over time but is merely recombined towards an optimal diverse distribution, the linear history of state changes (snapshots) can be compared to a blockchain ledger. The chromosomes of the specimen are stored as nested recursive "tree" structures, similar to those used in language analysis or linguistics.

Available for pre-order are **Wildcard Tokens**, each token represents one (future) work. One wildcard token allows you to select and own one work from the current and future populations. Even though prices of the works increase over time, your older token remains valid for you to purchase a new, more expensive, future work. This mechanism allows for speculation and supports the development of new works and species.



Unique Prints by Harm Van Den Dorpel

**C. C. Rashes**, 2018, Ultrachrome HD digital print on Hahnemühle paper, 115 x 115 cm

**W. D. Sensualist**, 2018, Ultrachrome HD digital print on Hahnemühle paper, 115 x 115 cm

# ABOUT THE ARTIST

## HARM VAN DEN DORPEL

Harm van den Dorpel's broad practice includes sculpture, installation, works on paper, computer generated graphics and software. Rooted in the conceptual heritage of net.art, Van den Dorpel's works often simulate neural networks. The role of technology in his works is a means to an end: a tool to increase the understanding of our experience. "I seek to produce works that explore not only the technological hardware we use in our daily lives, but how we use it, the modalities of interface that are created, enabled, facilitated and restricted by the advance of technology."

Van den Dorpel's recent work has built on cognitive concerns and sense of possibility, increasingly placing language at the centre –both as a means of communication as well as a technology in its own right. His ongoing project Death Imitates Language explores the ways in which the production of objects by algorithmic methodologies could be both generative and personalized. The series comprises a growing population of images, each with virtual chromosomes, parents, and relatives. The generative software autobreeds new images, based on the micro-feedback, or 'likes' of the artist. Van den Dorpel then decides which works are fit to be materialized.

# JOHN WATKINSON | CRYPTOPUNKS

## The original blockchain collectibles

The Cryptopunks are 24x24 pixel portraits, generated algorithmically. Ten thousand of them were created and made available (originally for free) on the Ethereum Blockchain in June 2017. It was the first project to tokenize art on the Ethereum blockchain, which in turn inspired projects such as CryptoKitties and Dada.NYC, and formed the basis of the ERC-721 standard that is now used for nearly all tokenized art projects.

All of the Cryptopunks were quickly claimed back in June 2017 and are now actively traded on the secondary market. For the first time, physical prints of punks are being issued by co-creators John Watkinson (pixel artist) and Matt Hall (Ethereum developer). The selected Cryptopunks belonged to Hall and Watkinson, but their ownership has been transferred to paper Ethereum wallets, which are enclosed in sealed envelopes. Each print comes with a corresponding envelope which can simply be left closed, or opened when the owner would like to transact the digital entity on the Ethereum blockchain.



**Cryptopunk #207**  
John Watkinson, 2018  
40 x 40 cm, edition 1/1  
Signed and dated in pencil by the artist on front

# **ABOUT THE ARTIST**

## **JOHN WATKINSON**

JOHN WATKINSON is a Canadian computer scientist, software developer and artist. He holds a PhD in Electrical Engineering from Columbia University. He founded Larva Labs with Matt Hall in 2005 to pursue creative technology projects. They were early mobile developers, writing games and apps for some early smartphone platforms that pre-dated iPhone and Android. Lately their attention has turned to blockchain, and the promise it holds for digital scarcity and permanence. His primary artistic interests include pixel art, generative art and new mechanisms for experiencing and transacting works. He resides in Brooklyn, NY.

Many thanks to our generous sponsors for supporting this exhibition

