

## EXHIBITION

**Botto: the extraordinary artistic experiment** 28/09/22 to 29/10/22  Etopia, Zaragoza (Spain)  FZC General public, artists and creative professionals.

Art and technology

DAO

NFT

- Improve the public's understanding of the interconnections between art and technology, their possibilities, and the issues they raise in society.
- Generate debate and reflection on who and what an artist is, on the collaboration between humans and machines, and on group co-creation and augmented creativity.

Botto is an "artist-algorithm" of the DAO (Decentralized Autonomous Organization) type, capable of creating hundreds of creative proposals or fragments per week, confronting its own originality as an artist and submitting its work to the public's choice. Botto is powered by Artificial Intelligence (AI) and governed by a decentralized community. Like all Artificial Intelligence, Botto needs to be trained with a large data bank: its algorithm has been exposed to more images than any human in its lifetime. Botto also makes use of blockchain technology, as each week its community decides which fragment will end up becoming a digital artwork coined as NFT (Non Fungible Token).

Launched in October 2021, Botto is gestated thanks to a whitepaper signed by the German artist Mario Klingemann, an international reference in the creation with artificial intelligence. Is then launched through the artist's collaboration with an international team led by ElevenYellow and Carbone. The set of algorithms implemented by Botto connects two artistic approaches, generative art and decentralised art, both with historical roots.

## PUBLIC PRESENTATION

**Cafe etopia with Carlos Monleón Gendall** 03/03/2023  Etopia, Zaragoza (Spain)  FZC Artists and creative professionals, researchers, technologists.

DAO

Blockchain

Natural ecosystems

- Share knowledge and generate debate on the possibilities offered by blockchain technology in terms of ecological transition and decentralised ecosystem management.

The artist Carlos Monleón gave a public presentation of his project wetcoin.eth, which explores the intersection of art, science and technology by researching methods of water remediation and care within DAO frameworks. The project aims to bridge the physical and digital realms to foster new models of ecological transition, while also generating social capital related to water stewardship through blockchain and Web3 technologies and principles. University researchers, programmers and artists joined us for this inaugural exploration of DAOs and blockchain technology for ecosystem remediation.



## PUBLIC LECTURE

**Special visit of Energeia exhibition with Alicia Valero** 17/06/2023 (1.5h)  Etopia, Zaragoza (Spain)  FZC General public, artists and creative professionals (8 participants).

Technology

Sustainability

Raw materials

- Share knowledge and stimulate discussion on the implications of blockchain technology development in terms of ecological footprint, particularly regarding raw material extraction.

“Energeia” is an exhibition of art and new media about energy, its uses, and the construction of possible alternatives focused on people’s needs (March 2 – June 17, 2023). Energeia sought to create knowledge promoting a more sustainable usage of technology in the creative sectors, including NFTs and blockchain. The final visit of the exhibition featured a special guest: Dr. Alicia Valero, professor at the University of Zaragoza, international specialist in critical raw materials. The lecturer addressed a series of questions that arose throughout the months of the exhibition. She invited the attendees to reflect on the use of raw material related to technological development, its ecological footprint, and the role of Science and arts in enhancing people’s awareness of this issue.

## PUBLIC PRESENTATION, IMMERSIVE EXPERIENCE

**“Humanverse” by Martin Romeo** 04/11/2023 (3h)  Etopia, Zaragoza (Spain)  FZC Artists and creative professionals, researchers, technologists (20 participants).

DAO

Blockchain

Natural ecosystems

- Share knowledge and generate debate on the possibilities offered by blockchain technology in terms of ecological transition and decentralised ecosystem management.

The artist Carlos Monleón gave a public presentation of his project wetcoin.eth, which explores the intersection of art, science and technology by researching methods of water remediation and care within DAO frameworks. The project aims to bridge the physical and digital realms to foster new models of ecological transition, while also generating social capital related to water stewardship through blockchain and Web3 technologies and principles. University researchers, programmers and artists joined us for this inaugural exploration of DAOs and blockchain technology for ecosystem remediation.

## WORKSHOP

## Implementing smart contracts (Juan Ignacio Pérez Sacristán)

 07/11/2023 (1.5h)  Etopia, Zaragoza (Spain)  FZC

 ARTeCHO fellows and etopia residents (18 participants).

Smart Contracts

Technical

- Learn about the economic ecosystem of blockchain, exploring its implications and consequences.
- Additionally implementing smart contracts and work on other related topics.


At the outset of the activity, the resident artists expressed some skepticism because the speaker's approach was more aligned with the commercial framework of this technology rather than the critical or alternative aspects that artists often explore in their projects. However, as Pérez Sacristán broke down the fundamentals of the economic blockchain ecosystem, the presentation garnered more interest and sparked debate, stemming from the contrast between the different possible approaches to this technology. Highlights of the debate included discussions on the implementation of smart contracts and their potential to revolutionize the creation and trading of digital art. The workshop became more practical when the creation of a prototype capable of storing a wide range of actions, logics, and final artifacts was discussed. Ultimately, the implementation of smart contracts was presented as an innovative and necessary step. Through practical examples and case studies, Pérez Sacristán demonstrated how these contracts could be applied in the real-world practice of digital art.



PUBLIC LECTURE

**Inspirational session of the ARTeCHÓ Fellowship Program**  
**"Cryptoart & Blockchain 101" (Marc Anders).**

 20/04/2023 (1.5h)  Online  FSBC, Baltan, SERN, FZC

 General public, ARTeCHO fellows, artists or designers working with decentralized technologies, crypto assets, or NFTs, or who have the ambition to do so, innovators looking to get involved with decentralized technologies, crypto assets, or NFTs, researchers and entrepreneurs wanting to gain insight into blockchain technology, other groups of people with an interest in decentralized technologies and crypto assets (65 participants)

NFT

Cryptoart

- Foster knowledge around decentralized technologies
- Explain intersection of art and new technologies such as Cryptoart, blockchain, and NFT marketplaces.

Marc Anders, a Research Associate at the Frankfurt School Blockchain Center (FSBC), gave a public lecture about Cryptoart and Blockchain as part of the inspirational sessions of the ARTeCHÓ project.

The emergence of blockchain technology has created new opportunities for artists, creators, and collectors. Non-fungible tokens (NFTs) have revolutionized the way we think about ownership and provenance in the digital world, allowing for the creation and trade of unique digital assets that are verifiably scarce and authentic.

The main content of this event was a informative presentation about the technological layers of blockchains, smart contract platforms, and how Cryptoart & NFTs evolved. The presentation was followed by an engaging Q&A session with the audience.

WORKSHOP

**Generation Blockchain Learning Week - Workshop**  
**"How to teach blockchain technology to students"**  
**(Marc Anders).**

 14/06/2023 (0.5h)  Frankfurt, Germany  FSBC

 Educators and Lecturers from European universities which are part of the Generation Blockchain project. Other interested researchers from the Frankfurt School of Finance & Management (21 participants)

Education

Blockchain

- Introduce the ARTeCHÓ fellowship program
- Give other lecturers an overview about Cryptoart & NFTs and how to teach blockchain technology
- The main goal was to motivate other lecturers to teach blockchain technology (including NFTs and Cryptoart) at their institutions

Marc Anders, a Research Associate at the Frankfurt School Blockchain Center (FSBC), gave a Workshop on "How to teach Blockchain technology to students" during the Generation Blockchain learning week at the Frankfurt School of Finance & Management.

The workshop started with an overview of Cryptoart and NFTs and then focused on the education of blockchain knowledge at the example of the ARTeCHÓ fellowship program. The focus was to show the approach of lectures, workshops, and guided creation of an artwork that fosters the knowledge of decentralized technologies in the European region.

The other lecturers were highly interested in the fellowship program's hybrid and innovative approach to fostering knowledge of blockchain technology.



PUBLIC LECTURE

Blockchain Meetup: Blockchain Meets Business (Marc Anders)

12/07/2023 (1.5h) Frankfurt, Germany FSBC

General public, people working in business and technology field (42 participants).

NFT

Tokenization

- Foster knowledge around decentralized technologies
- Provide an overview of Cryptoart & Blockchain technology
- Motivate people working in business to research about decentralized technologies and potentially integrate them into their business

The German company Check24 and the consulting company brainbot hosted an event with several speakers with the title “Blockchain Meets Business”.

This event aimed to showcase real-life business use cases of blockchain technology that are either in development or already in use. The event sought to move beyond theoretical discussions, address practical implementations, and explore the challenges hindering other projects from advancing.

Marc Anders, a Research Associate at the Frankfurt School Blockchain Center (FSBC), gave a speech during this event about Cryptoart & Blockchain technology.

The speech started with a presentation of the ARTeCHÓ project including the fellowship program and then gave an overview of Blockchain, Tokens, and Cryptoart.

PANEL DISCUSSION

Panel Discussion: ARTeCHÓ - The Potential of Blockchains, NFTs, and Metaverse for the creative industry (Marcel Grimm).

23/08/2023 (45m) Frankfurt, Germany FSBC

Creatives working with decentralized technologies, crypto assets, or NFTs, or who have the ambition to do so  
Innovators looking to get involved with decentralized technologies, crypto assets, or NFTs  
Startup founders and startup enthusiasts interested in blockchain technology (52 participants)  
Researchers and entrepreneurs wanting to gain insight into blockchain technology  
Other groups of people with an interest in decentralized technologies and crypto assets

NFT

Metaverse

- Foster knowledge around decentralized technologies
- Explain intersection of art and new technologies such as Blockchain, Cryptoart & NFTs and the metaverse

The Frankfurt School Blockchain Center invited for an online panel discussion with the title “ARTeCHÓ - The Potential of Blockchains, NFTs, and Metaverse for the creative industry”. The discussion on the Potential of Blockchains, NFTs, and Metaverse for the creative industry, moderated by Marcel Grimm is available on YouTube, and features expert insights from Anna Graf, Dr. Annette Doms, Kerstin Gold, and Florian Adolph. They explored how creators benefit from the use of Blockchains, NFTs, and Metaverse including the challenges such as monetization, royalty fees, ownership, and IP rights.

Key-take-aways from the panel:

- Blockchain serves as a base layer for digital assets including tokenized physical assets
- Metaverse as an additional layer for visualization, interaction, and connection
- Initially, NFTs were a shock for the traditional artworld but they brought Tech, Art, and Brands together to develop projects together
- Serious digital art can be separated from NFT collectibles and often follows perceptions from traditional art in terms of value creation
- Creatives can monetize digital art and get a direct connection to their audience
- It is difficult to force the payment of royalties when artworks are sold again but artists can choose their curators and marketplaces wisely
- Intellectual Property (IP) rights are still being discussed and metadata standards for IP rights are challenging but important



PUBLIC LECTURE

How to Teach and Learn Blockchain Technology & Crypto Assets  
(Marc Anders)

14/11/2023 (30m) Frankfurt, Germany FSBC

Anyone interested in learning more about teaching and learning blockchain technology Thought leaders and didactics interested in hybrid and learning environments as well as self-guided and inverted learning approaches, students that aim to further their knowledge of blockchain technology, consultants with a focus on digital assets researchers and scholars wanting to gain insight into teaching skills of the 21st century and innovative forms of teaching and learning Thought leaders and didactics interested in hybrid and learning environments as well as self-guided and inverted learning approaches, students that aim to further their knowledge of blockchain technology, consultants with a focus on digital assets, researchers and scholars wanting to gain insight into teaching skills of the 21st century and innovative forms of teaching and learning (25 participants + 50 online).

Education

Blockchain

- What is blockchain technology and why is it important?
- Introduce the ARTeCHÓ fellowship program
- Overview about Cryptoart & NFTs and how to teach blockchain technology

The Frankfurt School Blockchain Center hosted a hybrid conference titled “How to Teach and Learn Blockchain Technology & Crypto Assets” supported by ARTeCHÓ.

During this conference, Marc Anders, a Research Associate at the Frankfurt School Blockchain Center (FSBC), gave a lecture on “ARTeCHÓ - Cryptoart & NFTs”. The workshop started with a short overview of Cryptoart and NFTs and then focused on the education of blockchain knowledge at the example of the ARTeCHÓ fellowship program. The focus was to show the approach of lectures, workshops, and guided creation of an artwork that fosters the knowledge of decentralized technologies in the European region. The ARTeCHÓ fellows and their artworks were also briefly presented as an outcome of the project.

PUBLIC LECTURE

Guest Lecture at Collegio Carlo Alberto, Torino, Italy (during the module of Assistant Professor Lorenzo Schoenleber)

29/02/2024 (1h) Online FSBC

Students of Collegio Carlo Alberto, Torino, Italy (27 participants).

NFT

Cryptoart

- Foster knowledge around decentralized technologies
- Explain intersection of art and new technologies such as Blockchain, Cryptoart & NFTs and the metaverse
- Introduce the ARTeCHÓ project to universities

Marc Anders, a Research Associate at the Frankfurt School Blockchain Center (FSBC), gave a lecture about Blockchain, Cryptoart & NFTs at Collegio Carlo Alberto.

The main content was an informative presentation about the technological layers of blockchains, smart contract platforms, and how Cryptoart & NFTs evolved.

During this university lecture the basics of DLT & Blockchain were explained, followed by smart contract platforms and tokens. This basic knowledge was necessary to continue with the introduction of Cryptoart & NFTs. The ARTeCHÓ project was briefly presented before diving deeper into the topic of NFTs. The presentation followed an engaging Q&A session.



PUBLIC LECTURE

## **Guest Lecture at University of Turin (Unito), Torino, Italy (during the module of Assistant Professor Lorenzo Schoenleber)**

 12/04/2024 (1h)  Online  FSBC

 Students of the University of Turin (Unito), Torino, Italy (30 participants).

NFT

Cryptoart

- Foster knowledge around decentralized technologies
- Explain intersection of art and new technologies such as Blockchain, Cryptoart & NFTs and the metaverse
- Introduce the ARTeCHÓ project to universities

Marc Anders, a Research Associate at the Frankfurt School Blockchain Center (FSBC), gave a lecture about Blockchain, Cryptoart & NFTs at the University of Turin.

The main content was an informative presentation about the technological layers of blockchains, smart contract platforms, and how Cryptoart & NFTs evolved.

During this university lecture the basics of DLT & Blockchain were explained, followed by smart contract platforms and tokens. This basic knowledge was necessary to continue with the introduction of Cryptoart & NFTs. The ARTeCHÓ project was briefly presented before diving deeper into the topic of NFTs. The presentation followed an engaging Q&A session.



## PUBLIC LECTURE

**Blockchain Critical Art Practices (Luisa Marchionni)**

 12/06/2023 (1.5h)  Brussels (Belgium)  SERN

-  General Public, ARTeCHO Fellows, Artists/Designers: Working with or interested in decentralized technologies, crypto assets, or NFTs. Innovators: Interested in decentralized technologies, crypto assets, or NFTs. Researchers/Entrepreneurs: Seeking insight into blockchain technology.  
Others: Interested in decentralized technologies and crypto assets. (12 participants)

**Blockchain**

1. Uncover hidden narratives of blockchain.
2. Examine interactions among platforms, corporations, and individuals.
3. Discuss blockchain's limitations and contradictions.
4. Explore Cypherpunk philosophy and "blockchain colonialism."
5. Investigate conflicts in blockchain's promises.
6. Evaluate blockchain's potential to create inequalities.

To decipher the hidden discourses behind blockchain we need to go beyond cryptocurrency investments, NFTs and metaverses. We need to investigate the relationships between platforms, infrastructures, devices, corporations, governments and individuals. This talk will focus on the limitations and contradictions of this technology, from the Cypherpunk ideology to the so-called "blockchain colonialism," by exploring the tensions between blockchain's promises of transparency, disintermediation and immutability, as well as, its potential to create inequalities.

## PUBLIC LECTURE

**Chimerical Intelligence Lab (Luisa Marchionni)**

 13/06/2023 (1.5h)  Brussels (Belgium)  SERN

-  General Public, ARTeCHO Fellows, Artists/Designers: Working with or interested in decentralized technologies, crypto assets, or NFTs. Innovators: Interested in decentralized technologies, crypto assets, or NFTs. Researchers/Entrepreneurs: Seeking insight into blockchain technology.  
Others: Interested in decentralized technologies and crypto assets (12 participants).

**Research****New Technologies**

1. Define new artistic working methods beyond museum spaces.
2. Investigate intelligence rooted in matter and relations.
3. Map the entanglements of ecology, finance, and governance.
4. Explore ecological philosophy and future technology.
5. Spark dialogue on a postcapitalist future with vitalist and panpsychist perspectives.
6. Discuss blockchain technology's potential to expand financial imagination.

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## PRESENTATION

### ARTeCHÓ: Unveiling the Crypto Art (Luisa Marchionni)

 14/06/2023 (30m)  Brussels (Belgium)  SERN

-  **General Public, ARTeCHÓ Fellows, Artists/Designers:** Working with or interested in decentralized technologies, crypto assets, or NFTs. **Innovators:** Interested in decentralized technologies, crypto assets, or NFTs. **Researchers/Entrepreneurs:** Seeking insight into blockchain technology. **Others:** Interested in decentralized technologies and crypto assets (12 participants).

Art

NFT

Blockchain

Project Management

- Present the ARTeCHÓ project
- Publish the project's results
- Encourage connections among industry stakeholders


The main goal of ARTeCHÓ Project was to create a peer-to-peer learning community for artists to learn more about the technical side of the art-making process and its intersection with new technologies, Crypto Art, blockchain, and NFT marketplaces.



## PUBLIC LECTURE

## **After the NFT Craze: Utopica, Speculation and Then What?** **(Domenico Quaranta)**

 06/04/2023 (1.5h)  Online  BALTAN

 General audience active within the digital art field and interested in the intersection between art and digital technologies + ARTeCHO fellows (28 participants)

Art

NFT

Giving an overview of the NFT hype within the arts and speculating about the role of art and artists in the development of decentralised digital technologies.

Domenico Quaranta's critically examined the aftermath of the NFT craze, exploring the speculative nature intrinsic to the NFT environment. The lecture delved into the possibilities of using blockchains for authentication and creative experimentation with smart contracts without succumbing to crypto-related speculation. Quaranta questioned the future of NFTs beyond financial speculation and pondered the role of art and artists in reshaping the Web3 scenario.

## PUBLIC LECTURE

## **The Longue Durée of Economic Media: A Prehistory of Crypto (Max Grünberg)**

 04/05/2023 (1.5h)  Online  BALTAN

 General audience active within the digital art field and interested in the intersection between art and digital technologies + ARTeCHO fellows (19 participants)

Crypto

Economy

Giving insights into the historical development of cryptocurrencies.


Max Grünberg explored the historical roots of cryptocurrencies, grounding their emergence in the history of money and accounting technologies. The session aimed to uncover the disruptive potential embedded in economic media, examining its historical context and connections to statehood. Grünberg contrasted past visions of denationalizing money with the then-current crypto landscape, questioning which proposals might prevail.



PUBLIC LECTURE

## The Real Crypto Movement (Denis "Jaromil" Roio)

 22/06/2023 (1.5h)  Online  BALTAN

 General audience active within the digital art field and interested in the intersection between art and digital technologies + ARTeCHO fellows (21 participants)

Blockchain

Crypto


Giving insights into the development of the Blockchain and cryptocurrencies, focussing on the activistic nature in which these technologies were developed.

Denis 'Jaromil' Roio also known as Jaromil, addressed the ongoing transformation of jurisdictions and disciplinary realms due to planetary-scale computation. Focusing on the web3/crypto sphere, he proposed practical and strategic solutions for developing a space for "digital commons" to counter privatization and centralized control. The talk emphasized the importance of creating deterministic conditions for replicable computation and transparent algorithms.

PUBLIC LECTURE

## Artworld DAOs for Care and Translocal Belonging (Ruth Catlow)

 06/07/2023 (1.5h)  Online  BALTAN

 General audience active within the digital art field and interested in the intersection between art and digital technologies + ARTeCHO fellows (17 participants)

Art


DAO

Giving an overview of the NFT hype within the arts and speculating about the role of art and artists in the development of decentralised digital technologies.

Domenico Quaranta's critically examined the aftermath of the NFT craze, exploring the speculative nature intrinsic to the NFT environment. The lecture delved into the possibilities of using blockchains for authentication and creative experimentation with smart contracts without succumbing to crypto-related speculation. Quaranta questioned the future of NFTs beyond financial speculation and pondered the role of art and artists in reshaping the Web3 scenario.



## PUBLIC LECTURE

**New(ish) technologies, timeless questions (Michelle Kasprzak)** 21/09/2023 (1.5h)  Online  BALTAN General audience active within the digital art field and interested in the intersection between art and digital technologies + ARTeCHO fellows (16 participants)


Ethical Engagement

NFT

Contextualising blockchain technologies, art and nfts, art on the blockchain within media theory, showing that these technologies spark similar questions within the artfield.

Michelle Kasprzak reflected on the ethical dispositions towards blockchain technologies, emphasizing that despite their new language and possibilities, they address timeless human needs for connection, mutual aid, and creative expression. The talk explored ethical considerations and the value of integrating blockchain technologies into creative endeavors, drawing parallels with older models and methods to derive lessons from past technological revolutions.

## WORKSHOP

**Open Hardware (Silvia Binda Heiserova)** 18/05/2023 (3.5h)  Eindhoven (The Netherlands)  BALTAN General audience with an interest to learn how to solder, wire and programme with little to no previous experience. The workshop requires no previous experience or knowledge about electronics. (12 participants)

Tech

DIY

To teach participants how to solder, wire and programming: Participants will build their own technological device with a screen and speaker. They will learn to solder, wire and programme the device and take it home with them.

Join the Open Hardware workshop and learn to make your own functional technological objects from scratch. You will learn to use, solder, wire, assemble and code for open-source 3D prints of various colours and shapes, microcontrollers, sensors, displays, modules, and other components.

After a brief overview of practical electronics and basic components, we will solder pins to a microcontroller and wire it to the chosen elements. Once all parts are assembled, we will write a code to control the behaviour of our hardware (what is showing on the screen, what sound comes out of the speakers?) and upload it to the microcontroller. At the end of the workshop, you have created your own functional artistic hardware artefact to take home with you.

Participants will gain an understanding of some of the most used electronic components and their functionalities. Furthermore, the workshop aims to empower participants in their technological creativity and insight, fostering a proactive attitude towards the hardware devices they interact with daily.



WORKSHOP

## How to Build a Battery (Azahara Cerezo)

 28/06/2023 (3.5h)  Eindhoven (The Netherlands)  BALTAN

 General audience with an interest in gaining experience in electronics (specifically batteries) + people interested in or active within the artscience, art-technology field

Tech

DIY

To enable participants to develop a closer and more open relationship with batteries and how they are made.

Join visual artist Azahara Cerezo in a workshop that focuses on making your own small low-voltage batteries using materials such as plants or cement. The purpose of this practical session is not to build the fastest or most efficient battery, but to enable a closer and more open relationships with a fundamental element of the devices and electric vehicles we use.



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