

NFTs

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NFTs

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NFTs

HOW-TO AND INNOVATION



Alex Duque

Professor, Visual effects artist / 3D artist.

Overview

- ▶ INTRO
- ▶ PROVENANCE
- ▶ WHAT IS AN NFT
- ▶ A LITTLE BACK STORY
- ▶ HOW TO SETUP AN ACCOUNT
- ▶ MINTING AN NFT
- ▶ FUTURE CONSIDERATIONS



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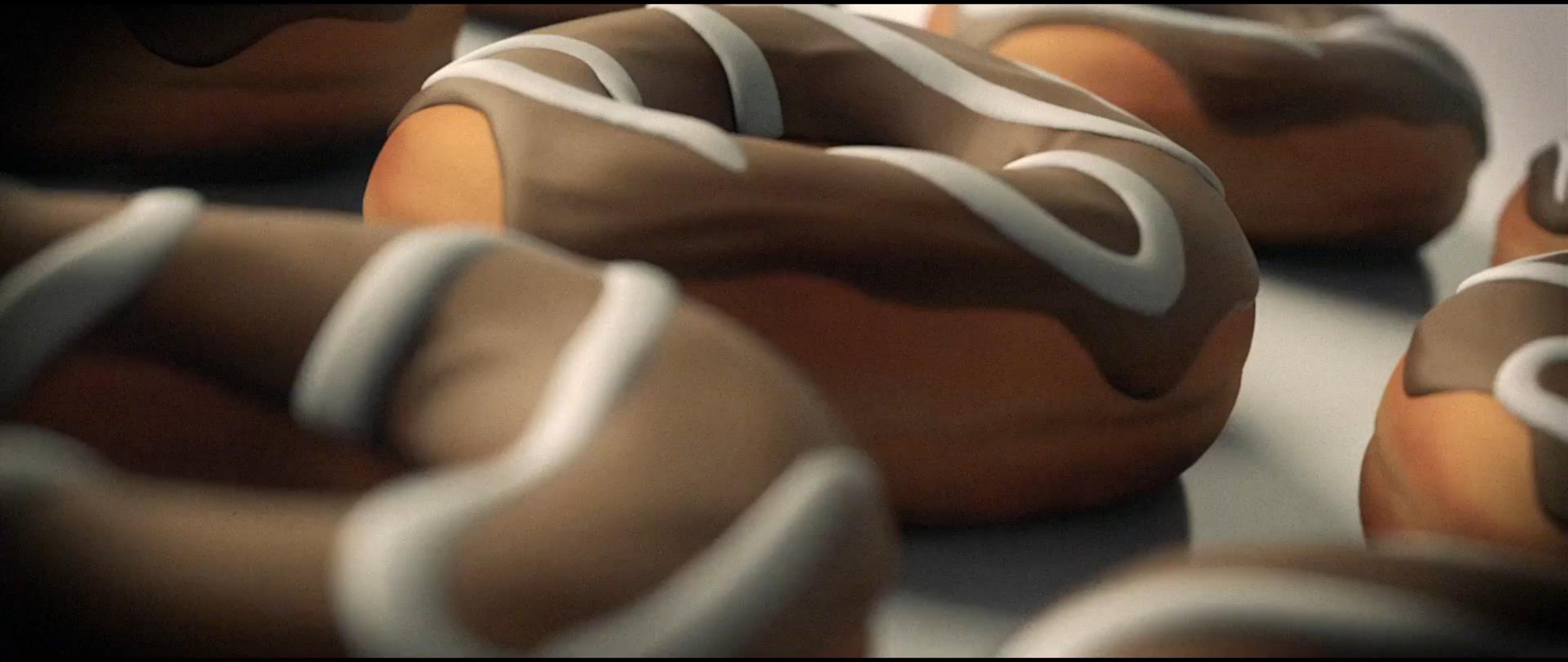




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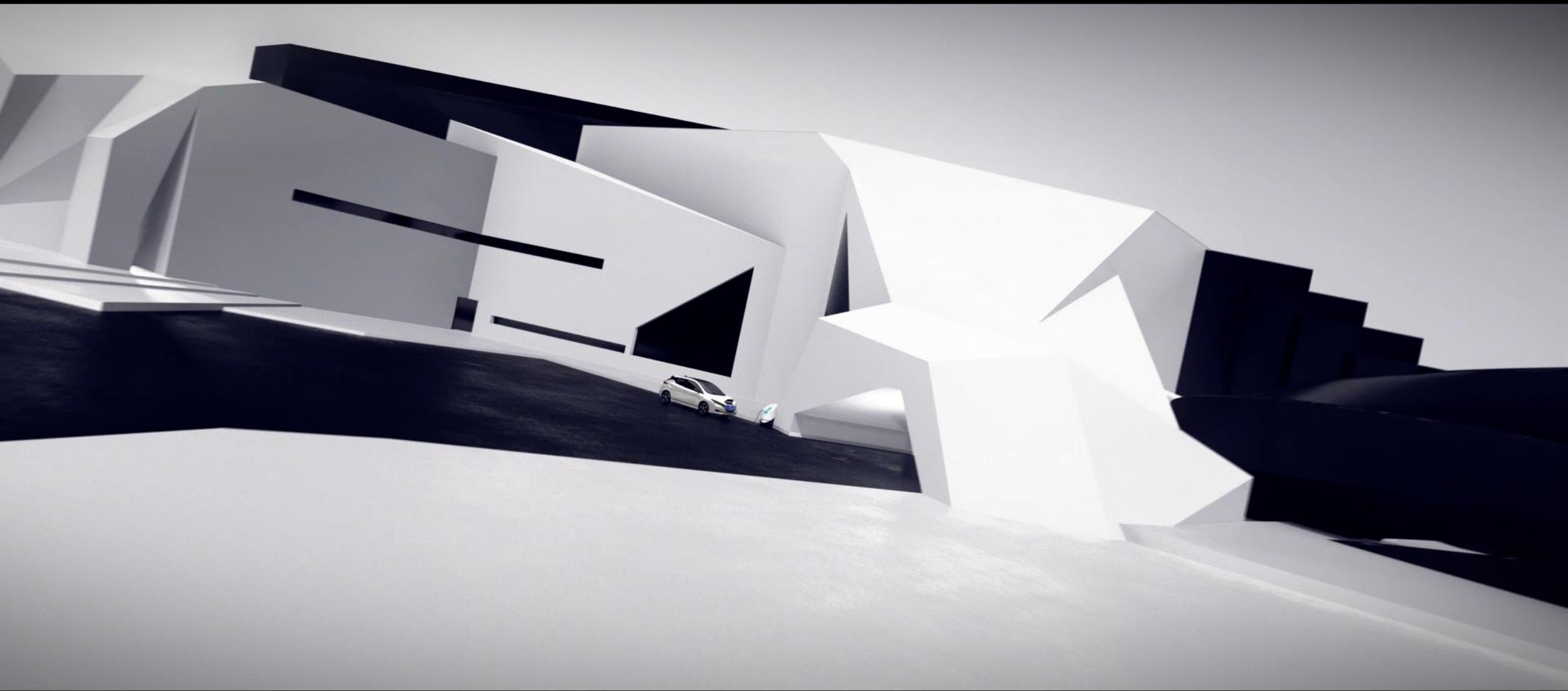








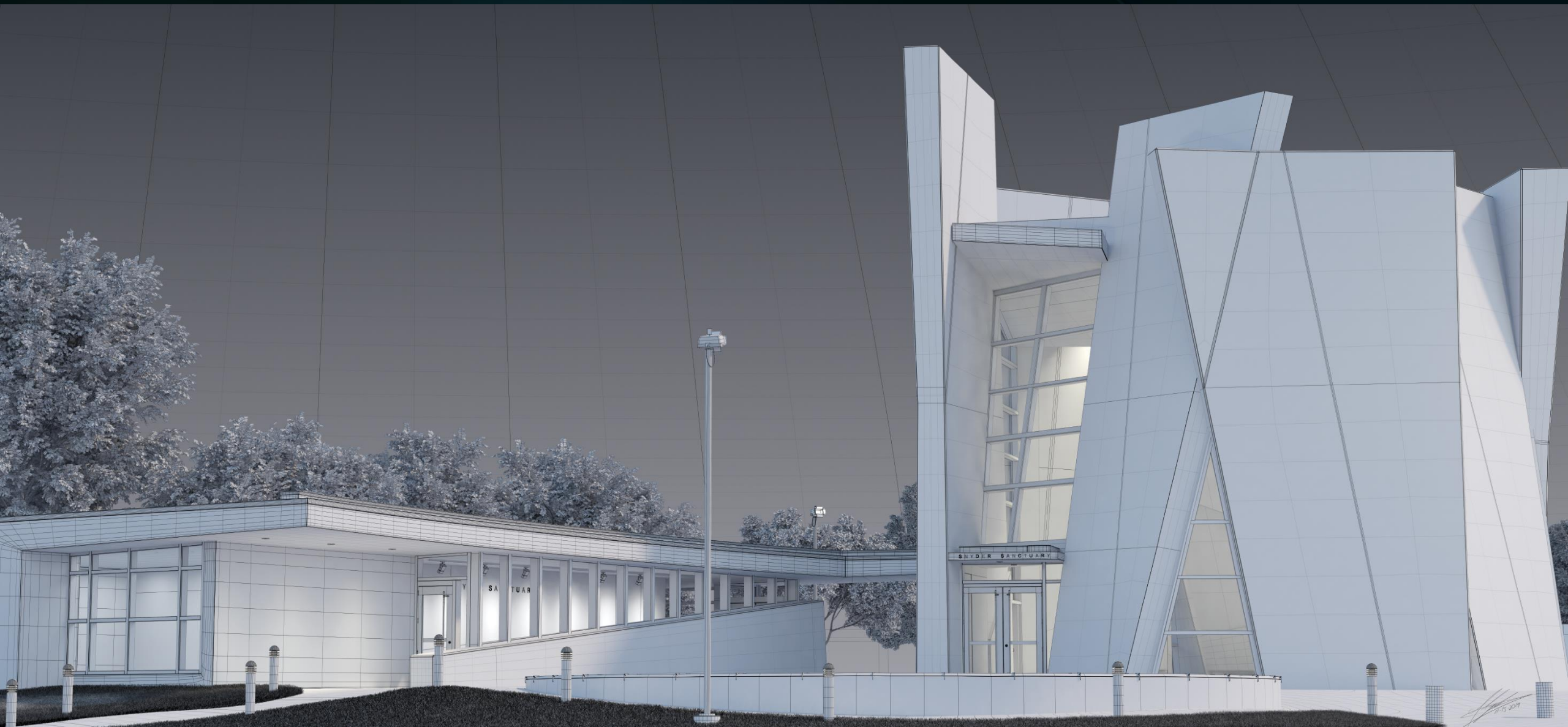














Alex Duque

Professor, 3D artist.



▶ www.artstation.com/alx



▶ www.linkedin.com/in/alex-duque



▶ www.instagram.com/a_coffee_stain

NFTs

PROVENANCE?

- ▶ Visual effects/Cg artists generally produce “fine art” for a company
- ▶ Traditionally Cg work has been provided as a service or a product
- ▶ Our personal work is usually shared freely via social media
- ▶ To turn our digital work to “fine art” we usually have to turn our digital work to physical.
- ▶ By doing so, provenance can be established.

Provenance

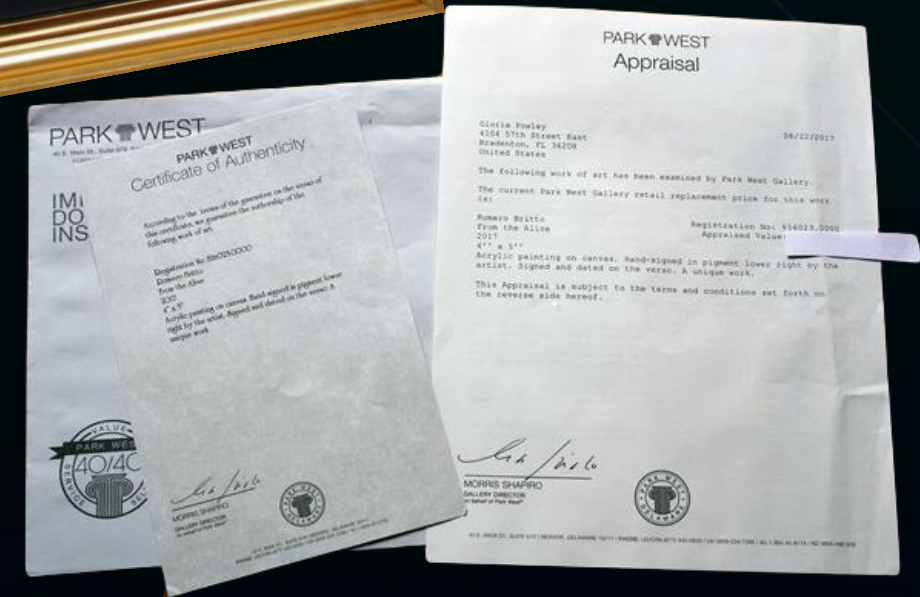
“The history of ownership of a valued object or work of art or literature”

PHYSICAL ART

- ▶ Verified Proof of ownership
- ▶ COA (Certificate of Authenticity)
- ▶ Ledger (record of sale)
- ▶ Can be traced back to origin.



Romero Britto
Acrylic on Canvas
13.75" x 14.75"
\$3,195.00



Romero Britto – Superb Framed Original Acrylic Drawing, With COA.

<http://www.meierandsons.com/store/products/britto-romero-superb-framed-original-acrylic-drawing-with-coa>

DIGITAL ART

Provenance

- ▶ Posted on social media, shared and re-shared.
- ▶ Hard to verify Proof ownership
- ▶ No digital Certificate of Authenticity (COA)
- ▶ No traceable ledger



DIGITAL ART

Provenance

- ▶ If turned into a physical version
 - ▶ Can be curated by art gallery
 - ▶ Can have a Certificate of Authenticity (COA)
 - ▶ If sold or auctioned. It becomes part of a “Ledger” that can be traced back.



CRYPTO-ART NFT

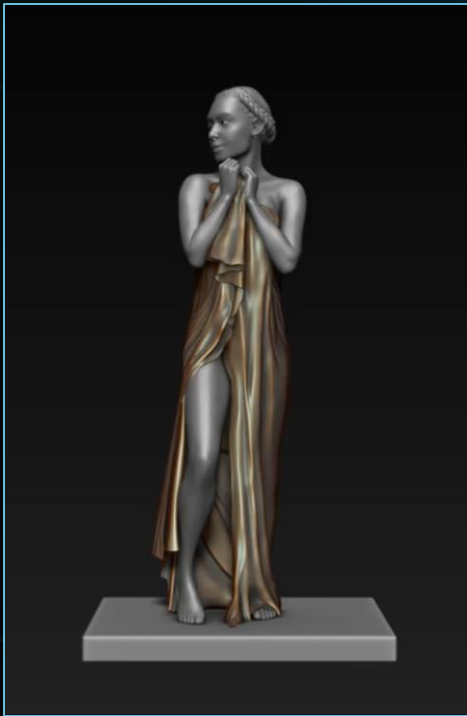
Provenance

- ▶ If turned into Crypto-art
 - ▶ Unique digital contract
Certificate of authenticity (COA)
 - ▶ Can be traced back to the artist.
provenance
 - ▶ Can be one-of-a-kind or part of a series
scarcity
 - ▶ Can be sold or auctioned
value
 - ▶ Can include Royalties back to the artist
desirable
 - ▶ Includes a verifiable trackable ledger record of
sale/transfer
provenance



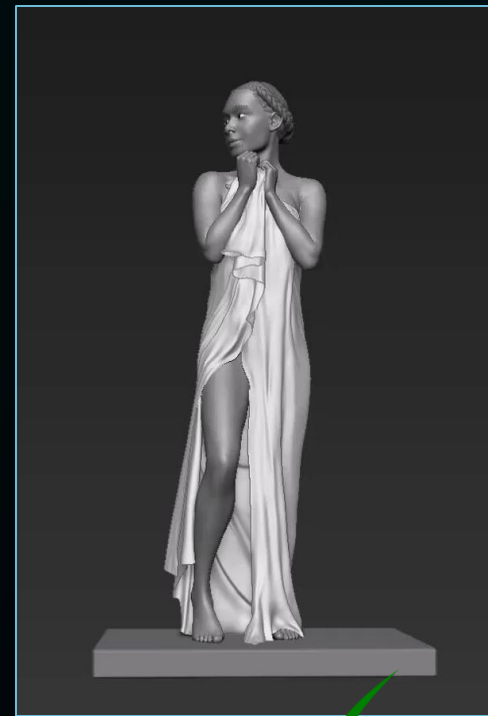
IN SHORT

Digital Art



No (COA) **X**

Crypto-Art



Yes (COA) **✓**

So...
What is an NFT???



NFT?

What is an NFT?

► Non Fungible token

► Fungibility

Something Fungible is something that can be replaced with something else of the same.



What is an NFT?

► Non Fungible token

► Fungibility

Something NON FUNGIBLE is something unique, one-of-a-kind, no two like it.



What is an NFT?

- ▶ What makes an NFT Unique?
 - ▶ Smart contract
 - ▶ Unique ID
 - ▶ Only one in the world
 - ▶ No two IDs alike
 - ▶ Its like a digital signature of authenticity

What is an NFT?

THE ARTWORK BECOMES PART OF THE ID

AND

THE ID BECOMES PART OF THE ARTWORK

“THEY ARE ONE IN THE SAME”



How do you get that unique ID?

- ▶ Through the Blockchain!

Cryptocurrency

:any form of currency that only exists digitally, that usually has no central issuing or regulating authority but instead uses a decentralized system to record transactions and manage the issuance of new units, and that relies on cryptography to prevent counterfeiting and fraudulent transactions.

How do you get that unique ID?

► Through the **Blockchain!**

FIAT



Dollars
USD



Pounds
GBP



Euros
EUR

Printed
(Printing money)

CRYPTO



Bitcoin
BTC



Ethereum
ETH



Litecoin
LTC

Mined
(Solving an algorithm)

How do you get that unique ID?

► Block-chain!

Tons of transactions everyday



Each transaction has a unique ID

0x495f947276749Ce646f68AC8c248420045cb7b5e


Each transaction is verified to be unique, and once verified. It becomes part of a “public ledger”

[illegible]

How do you get that unique ID?

► **Block-chain!** Public Ledger Aka Spread sheet

<https://etherscan.io/txs>



All Filters
Search by Address / Txn Hash / Block / Token / Ens

ETH: \$2,017.68 (-3.97%)
110 Gwei

Home
Blockchain
Tokens
Resources
More
Sign In

Transactions

Featured: Looking out for new airdrops of your favorite tokens? Check out our [Airdrops page!](#)

More than > 1,078,177,877 transactions found
(Showing the last 500 records)

First
Page 1 of 1000
Last

Txn Hash	Block	Age	From	To	Value	Txn Fee
0x4e1bf9c24c6d50e4fd59ab1810...	12197321	54 secs ago	0x3ef51d0f960be2d75ad38f1622...	0x52bf69913ae9fba8dbc1550d55...	0.06715375 Ether	0.002268
0x7e6b4a29ef8a15e0adda21764...	12197321	54 secs ago	0x3ef51d0f960be2d75ad38f1622...	0xbae885deddoebaf26c9bad82e...	0.7839328 Ether	0.002268
0xe749aad8ed039ad6568f73bc...	12197321	54 secs ago	0x3ef51d0f960be2d75ad38f1622...	0xb0f1e670564f0ed286056fe564...	0.77574728 Ether	0.00205695
0xe1597b81f34329ad4e8c7339e...	12197321	54 secs ago	0x5c7c90bb3d5852c23894ce010...	0x747e64107fdeb7319d48ed0a5...	0.240216015953129 Ether	0.002058
0xc04373e76a37336084625c047cb...	12197321	54 secs ago	0xa527f986d3a9ecd817e0b760b...	0xb11ee5a2eeda84b0a94ba9099...	0.01 Ether	0.002058
0x8b100d6ef37cb4d262e267fcb2...	12197321	54 secs ago	0xf0e8cc9dd50eeffb8f43d07b8a8c...	0x37236cd05b34cc79d3715af238...	0 Ether	0.00510619
0x429276caa2f900d871f3f30a5...	12197321	54 secs ago	0x1955fb8a66abf772ae91a62215...	0xf4985070ce32b6b1994329df78...	0 Ether	0.00725317
0xc95b9690f936376aac72368d5...	12197321	54 secs ago	0x2b017af511e0dd01d7e9939d8...	0xf411903cbc70a74d22900a5de6...	0 Ether	0.00498232
0xb30740c1027372082e89f572d...	12197321	54 secs ago	0x903c75718d070b041a802f58f1...	0x65d5985f39083f196f19300838...	0.454 Ether	0.002058
0xc768dd2ae6a04a343e12593c7...	12197321	54 secs ago	0xc9c17c25d0c8875625c3fd7218...	Wrapped BTC: WBTC Token	0 Ether	0.0037533
0x8bf6b97aae4cd08bc230a10b3e...	12197321	54 secs ago	0xdb992a85954316427e4728bee...	0x65d5985f39083f196f19300838...	0.1 Ether	0.002058
0x35bd13a6b43abc98270151c5a...	12197321	54 secs ago	0x9b83be18693a69acd8cd33f3...	0xf1e3af9152ad1f93be2ab2f766...	0.05 Ether	0.0152753
0x01eda7929bed612294ad166f4...	12197321	54 secs ago	0x0440f1177f49e63b86ff94921ab...	0xcce2aa9f9a270c1d28e68a8ed8...	0.015 Ether	0.002058
0x9063d9510718e54db1089e03c...	12197321	54 secs ago	0xd79b71d17f5bcaab4698b0ed2...	0xc0438fb8ae6eba5d95bf7d53ae5...	0 Ether	0.01660913
0x9434a90dd08193640ac4e2327...	12197321	54 secs ago	0xc04a8694fd5e496841272e71e...	0x65d5985f39083f196f19300838...	0.1 Ether	0.002058
0xba9eedd591e6b01cd0cdd1f95...	12197321	54 secs ago	0xc8774ee7c21704448e38976d1...	Tether: USDT Stablecoin	0 Ether	0.0055422
0x36b0ab0d9f747973570440ba5...	12197321	54 secs ago	0xd267940d1897b150ac9601ef0...	Uniswap V2: Router 2	0.25 Ether	0.01327941
0x55982d1fd6bc3d052e07e8444...	12197321	54 secs ago	0xf8f9f094d66cd43234135230...	0xaa1ff1192547cd0f1ec8b9019d9f...	0.00635795 Ether	0.00207629
0x7e5ecd2d8c72287a9cd57795...	12197321	54 secs ago	0xd0c90ac3506bb32d8f777e9e5...	0x8b1507c852809eb99e2e47404...	0.007921 Ether	0.002079
0xd0f90586338a830abec9dd1152...	12197321	54 secs ago	WiBX: Blockchain Handler	WiBX: WBX Token	0 Ether	0.00647361

How do you get that unique ID?

► **Block-chain!** - How its made

World-Wide Crypto Transactions



Chain

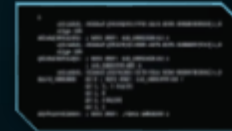
Etherscan

Transactions

More than 1,578,177/877 transactions found (Showing 10 of 103 items)

Txn Hash	Block	Age	From	To	Value	Txn Fee
0x6a10b2c14d5f5e448b1810...	12197321	54 sec ago	0x3d5148990b207f5e4818022...	0x3d5148990b207f5e4818022...	0.00710375 Ether	0.00000
0x70b4422b7a15d5a0a21754...	12197321	54 sec ago	0x3d5148990b207f5e4818022...	0x3d5148990b207f5e4818022...	0.7839328 Ether	0.00000
0xe749eac8e033a0a090072b...	12197321	54 sec ago	0x3d5148990b207f5e4818022...	0x071e070040e28000e004...	0.77074728 Ether	0.00000
0x1597b104325a4e4c233e...	12197321	54 sec ago	0x627886a0e0a017e0b70b...	0x747e41070d673194e4da5...	0.24218015953129 Ether	0.00000
0x6373e70a3733084025a7b...	12197321	54 sec ago	0x627886a0e0a017e0b70b...	0x671e070040e28000e009...	0.01 Ether	0.00000
0x01080e0571d43202070b2...	12197321	54 sec ago	0x627886a0e0a017e0b70b...	0x07220e05034e070d71e238...	0 Ether	0.001019
0x4320770ac290048710330a5...	12197321	54 sec ago	0x13058a0a0a0772a01e2218...	0x49803070ac320b1934230f78...	0 Ether	0.007017
0x05040000305378ac72308a5...	12197321	54 sec ago	0x2b0171d511e0d81e7a093048...	0x411363030a70474d2200e4d8...	0 Ether	0.00000
0x0367401027372802080672d...	12197321	54 sec ago	0x003a571840b041a0200811...	0x050508050001001930083b...	0.454 Ether	0.00000
0x0786a02a0e4a4043a12093c7...	12197321	54 sec ago	0x0c710294e0170520c087218...	0x000000000000000000000000...	0 Ether	0.007003
0x0505073a040e230e10c3e...	12197321	54 sec ago	0x0505073a040e230e10c3e...	0x0505073a040e230e10c3e...	0.1 Ether	0.00000
0x05013a0e43a0e270151d5a...	12197321	54 sec ago	0x05013a0e43a0e270151d5a...	0x05013a0e43a0e270151d5a...	0.05 Ether	0.00000
0xd1e4a7020a01229a010004...	12197321	54 sec ago	0x040011770b0a000909021e...	0x0a2a00000000000000000000...	0.015 Ether	0.00000
0x00040010718a4b100a003e...	12197321	54 sec ago	0x0779711d170b0a000909021e...	0x04300a000a000a000a000a...	0 Ether	0.00000
0x043a0a0a0193040a0e2327...	12197321	54 sec ago	0x043a0a0a0193040a0e2327...	0x043a0a0a0193040a0e2327...	0.1 Ether	0.00000
0x0e00000000000000000000...	12197321	54 sec ago	0x077a07021704440387051...	0x000000000000000000000000...	0 Ether	0.00000
0x0b0a0a0a0747073707040a5...	12197321	54 sec ago	0x0b0a0a0a0747073707040a5...	0x0b0a0a0a0747073707040a5...	0.25 Ether	0.00000
0x0000000000000000000000...	12197321	54 sec ago	0x0b0a0a0a0747073707040a5...	0x0b0a0a0a0747073707040a5...	0.00000000 Ether	0.00000
0x7a0e0a0a072287a0a007706...	12197321	54 sec ago	0x0b0a0a0a0747073707040a5...	0x0b0a0a0a0747073707040a5...	0.007021 Ether	0.00000
0x0000000000000000000000...	12197321	54 sec ago	0x0b0a0a0a0747073707040a5...	0x0b0a0a0a0747073707040a5...	0 Ether	0.00000

Block



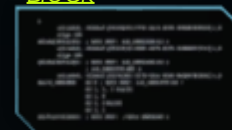
Block



Block



Block



0x495f947276749Ce

0xa049d2664a0a082

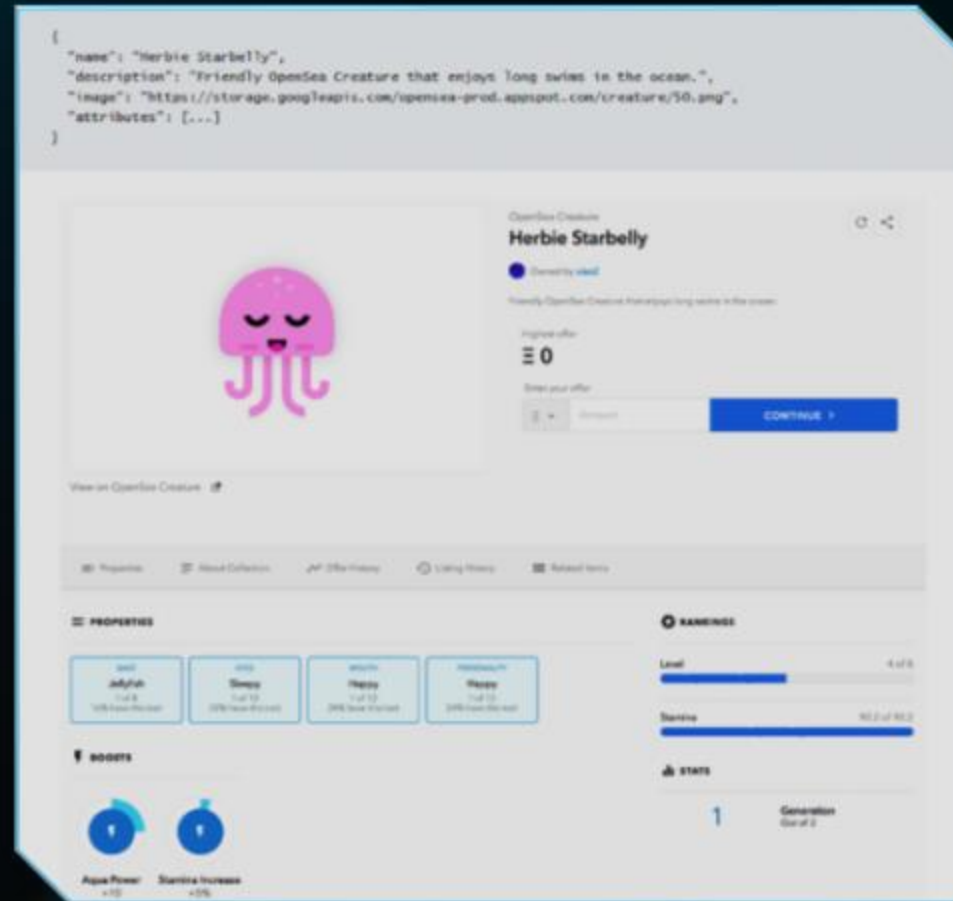
0x5a0b54d5dc17e0a

0x2dc4ec0031a359c



NFTs are created through Etherium Block-Chain

- ▶ **Ethereum's** non-fungible token standard **ERC721**
 - ▶ Helps add additional information to the smart contract "ID":
 - ▶ Title
 - ▶ Description
 - ▶ Etc.



NFTs are created through Etherium Block-Chain

▶ Crypto-Art!

- ▶ By creating an NFT through the ETH block-chain, it gets a Unique, Traceable ID, that is linked to the artwork. (C.O.A.)
 - ▶ Unique ID
 - ▶ Only one in the world
 - ▶ No two IDs alike
 - ▶ Its like a digital Certificate Of Authenticity (C.O.A.)

NFTs are created through Etherium Block-Chain

▶ Crypto-Art gets a unique ID thanks to the block chain

THE ARTWORK BECOMES PART OF THE ID

AND

THE ID BECOMES PART OF THE ARTWORK

“THEY ARE ONE IN THE SAME”



Ok cool so it gets a unique ID.. so what?

▶ Extra perks!

- ▶ Verifiable proof of ownership → Can be traced back through the ID
- ▶ Uniqueness and scarcity (Only one in the world) → Makes it valuable
- ▶ Linked to a Crypto Currency → Can get a monetary value attached to it
- ▶ Can be sold or auctioned
- ▶ Can give you royalties back
- ▶ Can be anything digital → Or digital (+)

Important!

- ▶ Downloading the “image”, “gif”, “wav”, “pdf”, etc...
Is not the same as downloading the NFT.



Evolution

And some examples.

Bitcoin

- ▶ Colored Coins *circa* 2013.

- ▶ Each coin could represent the cost of a physical Asset

- ▶ House
 - ▶ Car
 - ▶ Air miles
 - ▶ Shares of a company

} Through smartphone app

- ▶ Those assets “Colored coins” could be transferred /redeemed through the bitcoin blockchain

- ▶ **Example:** I go to a electronics smart vending machine, scan Qr with my smartphone, vending machine sees I have a colored coin that represents the cost of a pair of Beats headphones. Vending machine dispenses headphones.

Ethereum

- ▶ Smart contract functionality *circa* 2015.
 - ▶ CryptoKitties *circa* 2017
 - ▶ Explore concept of digital scarcity
 - ▶ Programmable information inside the smart contract
 - ▶ Breeding (cattributes)
 - ▶ Associated value (\$) with each Kitty
 - ▶ Introduced concept of auctioning a digital contract
 - ▶ Basically an advanced Tamagotchi
 - ▶ Example: www.cryptokitties.co/kitten-class/breeding/introduction
 - ▶ Because your Kitty lives in the Blockchain, it has a value (\$) associated with it depending on the cost of ETH at the time.

For example, 1ETH was worth \$301 USD on Oct 1, 2017
1ETH was worth \$2.075 USD on Apr 9, 2020

Examples

- ▶ Practical Examples of NFTs

- ▶ CryptoKitties by DapperLabs

- ▶ [Special edition](#)

- ▶ CryptoPunks by LarvaLabs

- ▶ [List of punks](#)

- ▶ [Punk 7804](#)

- ▶ NBA TopShot by LarvaLabs

- ▶ [Trading cards through ETH](#)

Examples

- ▶ Practical Examples of NFTs

- ▶ MyCryptoHeroes by double jump.tokyo

- ▶ Blockchain RPG

- ▶ Cryptovoxels by Nolan consulted Limited

- ▶ Vr NFT gallery

- ▶ Vr NFT gallery1

- ▶ Decentraland

- ▶ Vr Metaverse (Like Secondlife)

Examples

► Practical Examples of NFTs

► Laina	(Overly attached Girlfriend)	200 ETH	\$414.000
►	foundation.app/laina		
► Chris Torres	(NyanCat)	300 ETH	\$621.000
►	foundation.app/NyanCat		
► Beeple	(Everydays: The First 5000 Days)	33.300 ETH	\$69'000.000
►	niftygateway.com/profile/beeple		
►	Christies Auction data		
►	Beeple's Opensea wallet address		

Examples

▶ Practical Examples of NFTs

▶ Gavin Shapiro (Flamingos)

- ▶ niftygateway.com/collections/gavinshapiro2
- ▶ [Flamingos](#)

▶ Filip Hodas (Dead Memes)

- ▶ niftygateway.com/collections/hoodass
- ▶ [collection](#)

▶ Rafael Grasseti (GodOfWar)

- ▶ foundation.app/grasseti
- ▶ [Collection](#)

Other possibilities

- ▶ Music
- ▶ Documents
- ▶ Social media profiles / tweets
- ▶ Video game stuff (accessories/drops/loot/character builds/etc)
- ▶ Executables/programs/apps
- ▶ Anything digital really...

Account setup

Setting yourself up to be able to collect or create NFTs

NFT Galleries

Requires a digital wallet

▶ [Opensea.io](https://opensea.io)

▶ [SuperRare.co](https://superrare.co)

▶ [Mintable.app](https://mintable.app)

▶ [Foundation.app](https://foundation.app)

▶ [Niftygateway.com](https://niftygateway.com)

▶ cryptovoxels.com

Digital Wallet

1. Chrome / Firefox / Edge / iOS / Android
2. Metamask To store Crypto ETH aka "Digital wallet"
 1. (Chrome / Firefox) extension
<https://metamask.io/>
3. Wyre / Coinbase To transfer from fiat to crypto (Gas fees)
<https://www.sendwyre.com>
<https://www.coinbase.com>

Metamask.io

<https://metamask.io/>

<https://youtu.be/YVgfHZMFFFQ>



Metamask.io

Account setup how-to



Minting

Minting is the process of turning your artwork into an NFT, it requires a digital wallet.
(Metamask)

▶ [Opensea.io](https://opensea.io)

▶ [SuperRare.co](https://superrare.co)

▶ [Mintable.app](https://mintable.app)

▶ [Foundation.app](https://foundation.app)

▶ [Niftygateway.com](https://niftygateway.com)

▶ cryptovoxels.com

[iPulse NFT gallery](https://opensea.io/collection/ipulse)

<https://opensea.io/collection/ipulse>

Future considerations/ discussions.

1. Ethical / Legal implications.

1. Taking someone else's work and calling it yours and monetizing from it.
2. Taking someone else's work A and work B and putting it together and calling it yours. Is it really yours?
For example when electronic music “mixing” came along, same concept.

2. Environmental “Climate” implications

1. Minting NFT's take processing power and therefore energy consumption. So there is that. However, one can also say that those computers would other wise be processing something else.

Thank you!

Go create some digital Art!. Have a cup of Joe, some good music and “happy little trees”

Questions

Raise your hand and I'll send you a request to unmute yourself.
Or use the chat to type.