

## Blockchain, NFTs, and Universities: How to Navigate and Monetize

Charles R. Macedo, Partner

**AMSTER  
ROTHSTEIN  
& EBENSTEIN LLP**  
*Intellectual Property Law*



Mon. Feb. 21, 2022, 10:45 a.m.-12:15 p.m. CST

**Mike Cohen,**  
Director, Innovation Ecosystem Development  
UC Berkeley



**Patrick McLaren, COO**

**Nifty Gateway**

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## AGENDA

- NFTs and the Blockchain (and the Metaverse)
- Where can I monetize my NFT
- UC Berkeley's experience with NFTs
- Questions?



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# NFTs and Blockchain Technology



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## What is a NFT?

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### Cryptopedia®

Your trusted source for all things  
crypto.

#### Summary

*A non-fungible token (NFT) is a cryptocurrency token that is indivisible and unique. One NFT cannot be interchanged with another NFT, and the whole cannot be broken down into smaller parts and used. NFTs offer a myriad of options for creating and trading digital assets — such as original artwork and blockchain-integrated collectible games like CryptoKitties. NFTs are useful for proving the scarcity and provenance of rare assets, both digital and in the real-world. Non-fungible tokens are mainly built on Ethereum using the ERC-721 token standard.*

SOURCE: <https://www.gemini.com/cryptopedia/nft-non-fungible-token-crypto-collectibles#section-fungible-and-non-fungible-characteristics-of-crypto-tokens>  
(quoted with permission)



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# NFT – Non-fungible Token



ethereum

[This Photo](#) by Unknown Author is licensed under CC BY-NC-ND

The screenshot shows the Etherscan interface for the 'Token CryptoCities'. It includes a search bar at the top, navigation links (Home, Blockchain, Tokens, Resources, More), and a 'Sign In' button. The main content area displays 'Token CryptoCities' with a 'Details' dropdown menu showing 'MFT' and 'Collection'. A featured banner reads 'Looking for farms to harvest on? Check out Yield Farm!'. Below this, there are two summary boxes: 'Overview (2142-103)' and 'Profile Summary (202)'. The Overview box lists: 'Max Total Supply: 2,008,308 CK', 'Holders: 108,023 (0.00%)', and 'Transfers: 5,913,880'. The Profile Summary box lists: 'Contract: 0x8012041f78e0504e237099878672090', 'Official Site: https://www.cryptocities.com', and 'Social Profiles'. Below these are logos for 'LitiCapital LISTED ON HitBTC'. At the bottom, there are tabs for 'Transfers', 'Holders', 'Inventory', 'Info', 'DEX Trades', 'Contract', and 'Comments'. The 'Contract' tab is active, showing a 'Read Contract' section with a list of 10 contract information items, each with a dropdown arrow.



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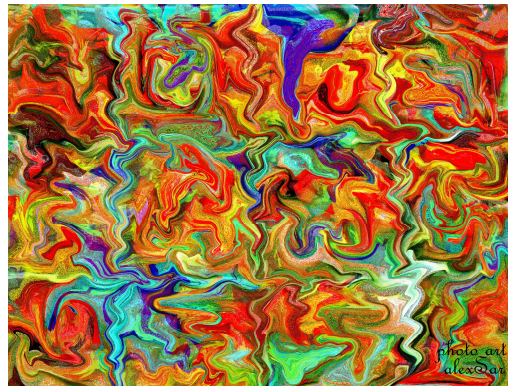
# Fungible v. Non-Fungible

Fungible



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Non-Fungible



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## Divisible v. Indivisible

### Divisible



### Indivisible



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## Collectible

### Trading Cards



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### Figurines



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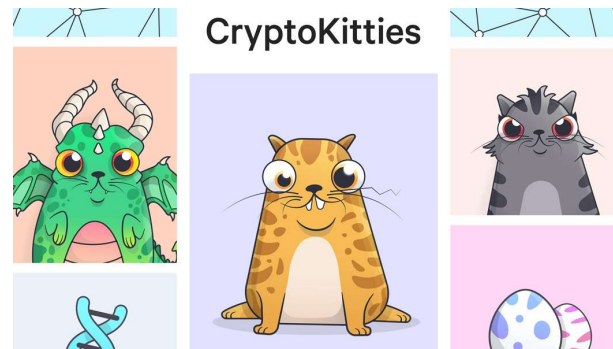
## Blockchain Examples

Fungible



[This Photo](#) by Unknown Author is licensed under CC BY

Non-fungible



CryptoKitties

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## What are benefits/risks of using NFTs?

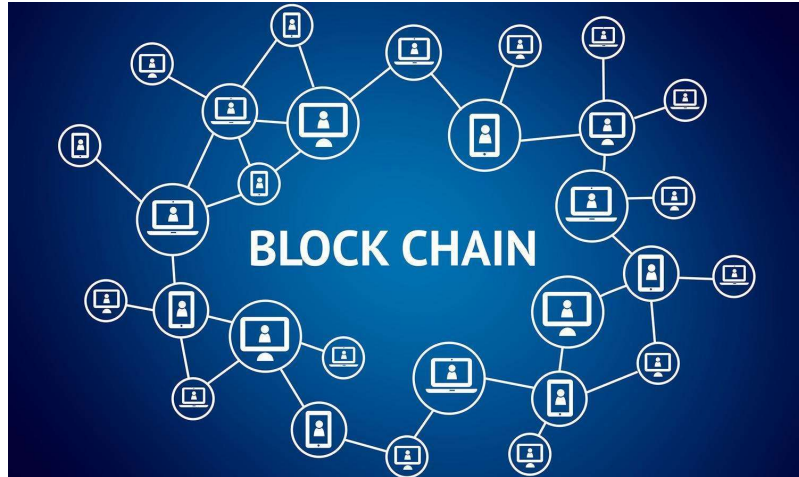


[This Photo](#) by Unknown Author is licensed under CC BY-SA-NC



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## Benefits: Secure



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## Benefits: Easy to verify ownership

Txn Hash	Method	Age	From	To	TokenID
0x4e6d5e44500a30421...	Atomic Match...	3 mins ago	0x75452f33af5b05d...	0x75452f33af5b05d...	1380128
0x050e03694817141e9...	buy	4 mins ago	Cryptokitties: Sales Aut...	0x5529 eth	29
0x65931c8a26b6b042b...	Deposit Kitties...	7 mins ago	0x05662784c7e1b703a...	wrapped-vgin-gen-d-cry...	834710
0x659e2f03030a01e4...	Atomic Match...	7 mins ago	0x75452f33af5b05d...	0x7c79598c770d4425...	1916778
0x659e2f03030a01e4...	Create Sale Aut...	8 mins ago	0x8914054340016d5e...	Cryptokitties: Sales Aut...	1975412
0x186e32220a7788e...	Deposit Kitties...	9 mins ago	0x05662784c7e1b703a...	wrapped-vgin-gen-d-cry...	82005
0x659e2f03030a01e4...	Create Sale Aut...	12 mins ago	0x8914054340016d5e...	Cryptokitties: Sales Aut...	29



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# Benefits: Hard to destroy

The screenshot shows the Etherscan interface for the CryptoKitties token. At the top, there's a search bar and navigation links. The main content area is divided into several sections:
 

- Overview:** Displays key statistics: Max Total Supply (2,008,358 CK), Holders (106,023), and Transfers (5,513,680).
- Profile Summary:** Shows the contract address (0x06012db857777777777777777777777777777777) and the official site (https://www.cryptokitties.co/).
- Contract Information:** A list of 10 points to read, including supportInterface, ethAddress, tokenMetadata, and various parameters like GEN1\_STARTING\_PRICE and snipgramKitties.

 Promotional banners for LitiCapital, HitBTC, and LISTED ON are also visible.



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# Benefits: Can make interesting new items

The screenshot displays the search results on the Cryptokitties website. It features a search bar at the top and several filter options:
 

- Kitty type:** Normal, Fancy, Exclusive, Special Edition, Story Fancy.
- Generation:** All.
- Cool-down:** Fast, Earth, Snappy, Risk, Phishing, Slow.

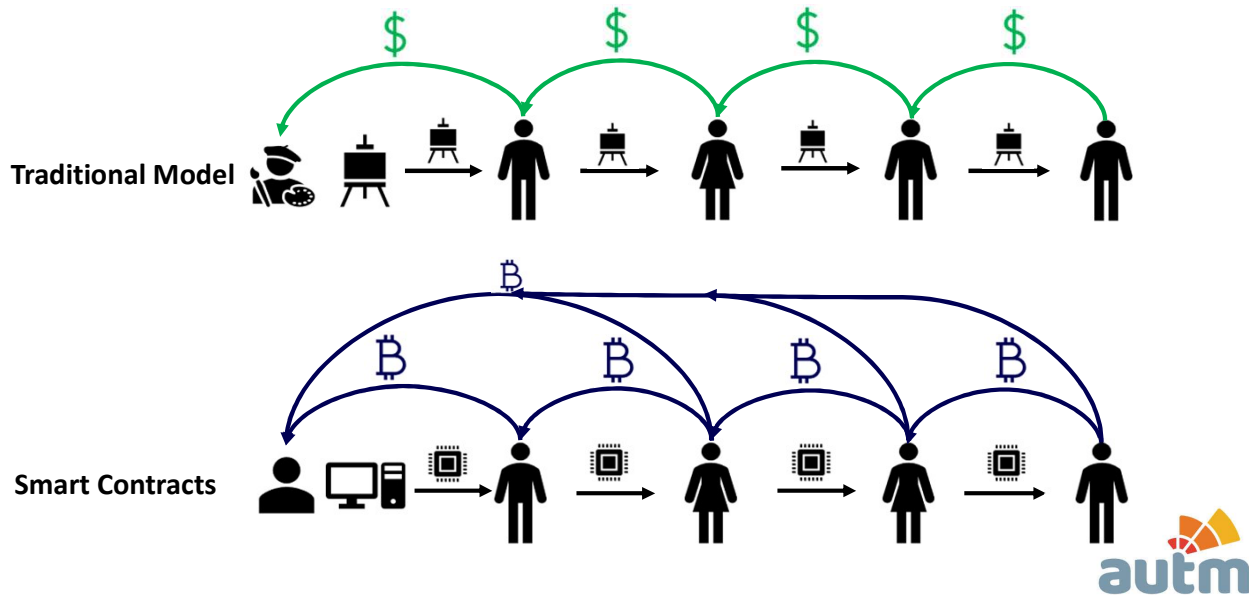
 Below the filters, there's a message: "The Spring marketplace is under construction. Siling listings are unavailable at this moment." A grid of eight colorful cartoon cat avatars is shown, each with a unique design and a "Buy Price" label. Below each avatar, there's a unique ID and generation information (e.g., # 1432322, Gen 0 Snappy (Dm)).

Source: <https://www.cryptokitties.co/search?include=sire>



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## Benefits: Smart Contracts Can Be Used to Develop New & Innovative Monetization Strategies



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## Benefits: Ready and Existing Market and Marketplaces

The screenshot shows the Nifty Gateway Marketplace interface. At the top, there is a navigation bar with a search icon, 'Drops', 'Marketplace', 'Activity', 'Log In', and 'Sign Up'. Below the navigation bar, the 'Marketplace' section is displayed with a search bar. Underneath, there are 'Recent Collections' featuring several digital art pieces, including 'Portraits by John Van Hamersveld', 'I THANK YOU by Billieje', 'The Biosphere Burn by Alexis Christodoulou', and 'The Biosphere by Alexis Christodoulou'. Below the recent collections, there is a 'Browse' section with a grid of digital art pieces. Each piece includes an image, the artist's name, the title, the number of editions, and the price. The pieces shown are: 'Future' by Raf Grassetti (13 Editions, \$7,777,777.77), 'Polyblock - Cube' by Joana Lemercier (6 Editions, \$4,000,000.00), 'No Justice No Peace' by Alex Martique (1 Editions, \$100,000,000.00), and 'CRYPTO IS BULLSHIT' by Breple (1 Editions, \$100,000,000.00). The **autm** logo is visible in the bottom right corner.

Source: [https://niftygateway.com/marketplace?filters\[onSale\]=true&sortBy=highest](https://niftygateway.com/marketplace?filters[onSale]=true&sortBy=highest) (shared with permission)

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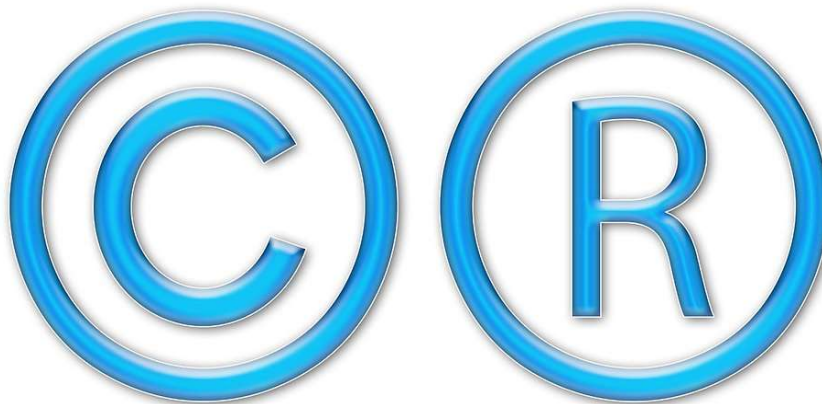


## Risks: No restriction on viewing



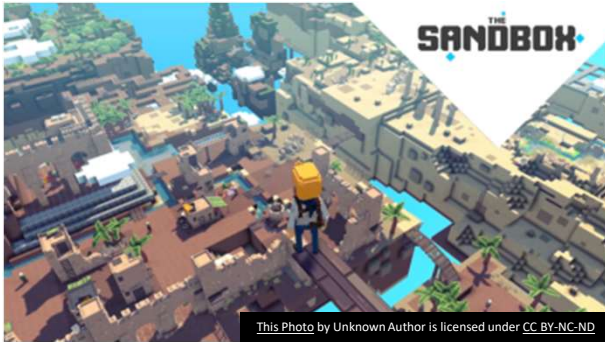
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## Risks: Copyright and Trademark Clearance



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## How are NFT's Used?



In the metaverse, NFTs will be used to create unique:

- Avatars
- Buildings
- Objects
- Fashion accessories
- And more ....



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## Where can I monetize my NFTs?



**SuperRare**

**Nifty Gateway is owned by Gemini**

This means you can count on their world leading security technology to keep your nifties safe.



**OpenSea**



**Rarible**

...



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# How can I monetize my NFTs

Patrick McLaren, COO



**Nifty  
Gateway**

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## Agenda

1. Buyer Motivations
2. Seller Motivations
3. Venues
4. Market Outlook
5. Thinking Forward



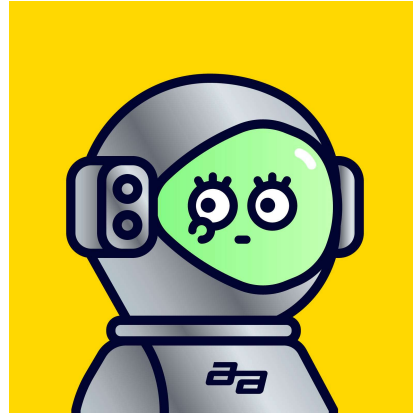
Parrot Island by Roger  
Dean



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## Why buy an NFT?

- Utility
- Patronage
- Collection
- Provenance and Authenticity
- Access
- Visual Enjoyment
- Social Value
- Community



Awkward Astronaut #9259



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## Why is art valuable?

- Social Value
- Cultural Significance
- Physical Inputs  $\neq$  \$ outputs
  - Not based on the value of the material used to make the art
  - Concrete, plastic sculptures, paint on paper, paper trading cards
- Artificial Scarcity
- Does exclusive use provide tangible value?



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## Hype Driven Markets

- Streetwear
- Art
- Collectibles
- Sustainability of these markets?
- Overvalued? Up to you....

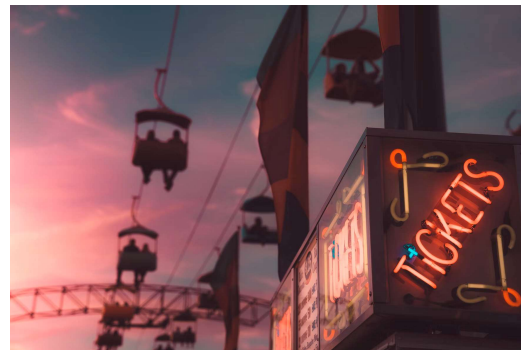
"INSERT SUPREME LOGO HERE"



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## Utility

- Digital Identity
- Access
  - Ticketing
  - PoaPs
- Games/online spaces
- Events
- Display
- Financial Collateral



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## Authenticity and Provenance

- Distributed Authenticity
- Image verification - IPFS
- Blockchain native image storage



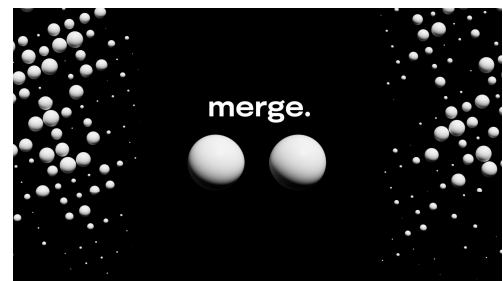
PoA by x0r



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## Dynamics

- NFTs can change based on external variables
  - Merge
- Gamification
- Self/network generated traits
- Smart contract based dependencies



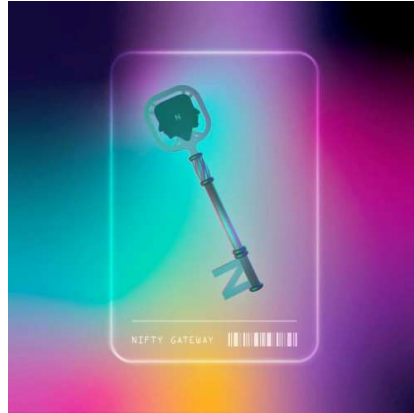
Merge by Pak



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## Investment

- Investment as art
  - Indexes and basketed NFTs
- Financial instruments/profit shares/DAOs
- Physical backed goods



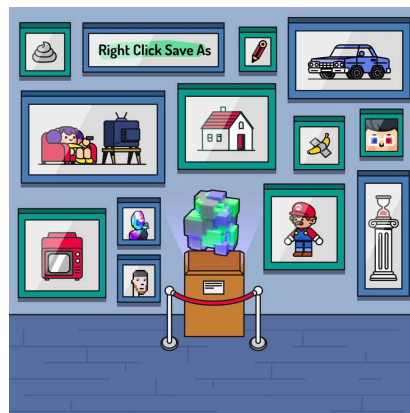
Key to Life Returns by Nifty Gateway



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## Why Sell an NFT?

- IP Monetization
- Digitally Native Content
- Brand/Social Engagement
- Novelty
- Transferability
- Ease of Access
- Cross Border value transfer



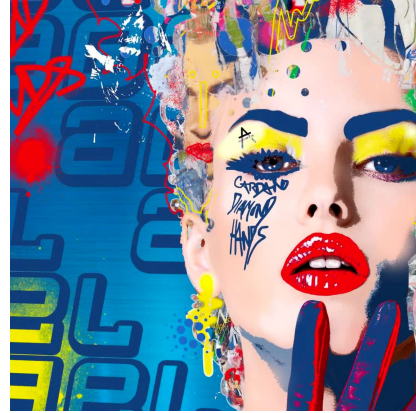
Right Click Savers by Deekay



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## How to sell?

- Conceptualize
- Choose Blockchain and protocol
- Choose marketplace
- Create Smart Contract
- Marketplace sale or on demand mint



ADA Angel by Miss AI  
Simpson



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## Technical Variables

- Blockchain
  - Ethereum
  - Sidechains/L2s
  - Solana
  - Tezos
- Protocol
  - ERC-721
  - ERC-1155
  - EIP-2981



The Switch by Pak



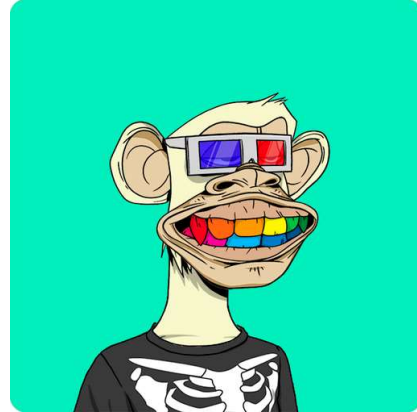
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## Successful Projects

What has made these projects work so well?

- Bored Apes Yacht Club
- Axie Infinity
- Merge
- NFTGuild
- Decentraland
- UC Berkeley Nobel NFT



BAYC courtesy Tommy Kimmelman



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## Market Outlook

- Estimated \$25-30Bn in 2021
  - Projected \$50Bn 2022
- Traditional Art Market: 30-50Bn
- JPMorgan Predicts \$1 Trillion Metaverse market by 2050



Green Gateway by Robbie Trevino



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## How much can I make?

- Digital Artist Pak grossed ~\$340MM
- BAYC \$1Bn in trading volume
- Mean price on Nifty Gateway - \$600
- Mode price (market) - \$0
- And everything in between...



Up, Up and Away by Lucho Poletti



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## Where to sell?

- Nifty Gateway
- OpenSea
- Direct Sale
- Custom Marketplace

**Nifty  
Gateway**



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## Marketplace Differentiators

- Level of “Centralization”
- Ease of Use
  - Consumer
  - Creator
- Verification
- Blockchain Compatibility



Balance, Pressure, and Tension by Paul Milinski



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## All about the money?

- Not all NFTs are designed to be monetized
- Use cases for non-monetized NFTs
- Viability and Cost?
- NFTs as a secondary utility



Laughing Stock by Alotta Money



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## Long Term Outlook

- Just the beginning for utility, usability, and user experience
- Massive spikes in adoption, research, and businesses in NFT space
- Increased digital interaction and digital purchases
- Value for current NFT projects?



Fading Forward 3 by Greg Mike



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## Innovations and Future Opportunities

- Blockchain Network Efficiencies
  - Staking
  - Decreased energy usage
  - Higher Transaction Throughput
  - Lower Cost
- Sidechains and semi centralized solutions
- EIP/blockchain functionality innovations
- Web3 ecosystem development



This Is Future Art by Future Art



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# UC Berkeley's Nobel NFT

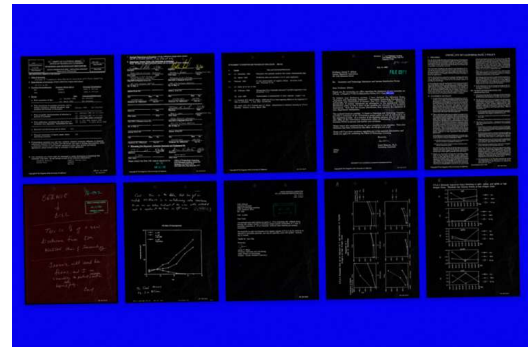
Mike Cohen,  
Director, Innovation Ecosystem Development  
UC Berkeley



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## Agenda

1. What's an NFT ?
2. What's Berkeley's Nobel NFT ?
3. Why Berkeley Auctioned an NFT ?
4. Should Other Universities Auction NFTs ?
5. Q & A: Team, Design, Legal, Finance, Marketing



Berkeley News Research People Campus & comm

CAMPUS & COMMUNITY, CAMPUS NEWS

**First-ever auction of NFT based on Nobel Prize nets UC Berkeley \$50,000**

By Robert Sanders, Media relations | JAN 6, 2022



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# What's an NFT ? (1 of 3): *Start from First Principles*

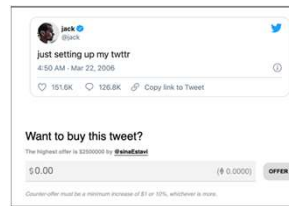
1. **Ledgers** are lists (or database) of transactions recorded in chronological order
2. **Online ledgers** can be distributed, decentralized, shared, synched
3. **Blockchains** can be used as type of **online ledger** with interesting attributes (e.g. immutable, provenance)
4. Bitcoin & **Ethereum** are two types of **blockchains**

**Ledger**

Account	Coll at Bal.	1	Account Number	1,000
2001	2001	2001	2001	2001
2002	2002	2002	2002	2002
2003	2003	2003	2003	2003
2004	2004	2004	2004	2004
2005	2005	2005	2005	2005
2006	2006	2006	2006	2006
2007	2007	2007	2007	2007
2008	2008	2008	2008	2008
2009	2009	2009	2009	2009
2010	2010	2010	2010	2010
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2013	2013	2013	2013	2013
2014	2014	2014	2014	2014
2015	2015	2015	2015	2015
2016	2016	2016	2016	2016
2017	2017	2017	2017	2017
2018	2018	2018	2018	2018
2019	2019	2019	2019	2019
2020	2020	2020	2020	2020
2021	2021	2021	2021	2021



Beeple NFT  
*Everydays: The First 5000 Days*  
purchased for \$69M  
on March 11  
in Christie's auction



Jack Dorsey's NFT  
*First Tweet*  
purchased by Sina Estavi  
on March 22 auction  
for ~\$2.9M  
to charity



# What's an NFT ? (2 of 3): *Ethereum Tokens*

1. Entries in a blockchain can be referred to as **tokens**
2. **Ethereum tokens** (not Bitcoin tokens) can be programable or simple
3. **Ethereum tokens** are either **fungible** or **non-fungible**
4. Each **Fungible tokens** is indistinguishable & interchangeable
5. Ether (ETH) is a type of cryptocurrency based on **Ethereum fungible tokens**



Edward Snowden's NFT  
*Stay Free*  
purchased by @PleasrDAO  
on April 16  
on Foundation.app auction  
for ~\$5.4M  
to charity

*The New York Times* x NFT  
(Kevin Roose, journalist)  
purchased by @3FMusic  
on March 25  
in Foundation.app auction  
for \$0.5M  
to charity



## What's an NFT ? (3 of 3): *Non-Fungible Tokens & Online Art*

1. Each **Ethereum non-fungible token (NFT)** is unique & distinguishable
2. Each **Ethereum NFT** can record & transfer its ownership via e-wallets
3. **Ethereum NFTs** can link / point to **online digital content**
4. **Digital content** can be art
5. **Digital art** can be based online documents, messages, articles, photos, etc
6. Sales of **digital art NFTs** have been attracting attention & collectors

**Sir Tim Berners-Lee's web source code NFT sells for \$5.4 million**

You can't buy the web, but someone bought this

By Richard Lawler | @rjz | Jun 30, 2021, 4:15pm EDT



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## What's Berkeley's Nobel NFT (1 of 3): *Invention Disclosure*

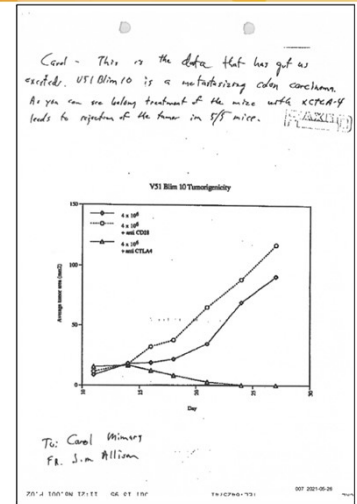
- When university researchers develop an invention then they submit an invention disclosure to their university IP office documenting information about the invention
- In 2006 Berkeley researchers invented cancer immunotherapy & submitted a corresponding invention disclosure
- In 2018 The Berkeley cancer immunotherapy inventor (James Allison) won the Nobel Prize in medicine
- The inventor described cancer immunotherapy as the new 4<sup>th</sup> pillar against cancer (after surgery, chemo, radiation)



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## What's Berkeley's Nobel NFT (2 of 3): *Digital Art*

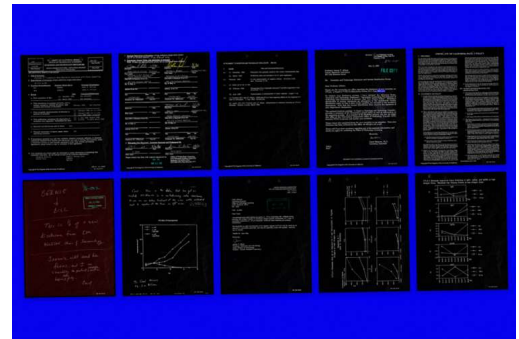
- Berkeley created an online digital art image named **TheFourthPillar.png** based on historic documents from the cancer immunotherapy invention disclosure
- On May 26, Berkeley created a crypto e-wallet account (via MetaMask.com) & deposited ~\$100 worth of ETH (via Coinbase.com)
- On May 27, Berkeley created (minted) an NFT on the Ethereum blockchain via an NFT art website (Foundation.app)
- Berkeley named that NFT *The Fourth Pillar* then connected it to the Berkeley e-wallet & **TheFourthPillar.png** stored on the Interplanetary File System (IPFS)
- Dispel myth: Ownership of *The Fourth Pillar* NFT is not ownership of the cancer immunotherapy invention IP or disclosure documents. It is only ownership of the copyright of TheFourthPillar.png image.



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## What's Berkeley's Nobel NFT (3 of 3): *NFT Auction*

- On June 7, Berkeley listed *The Fourth Pillar* NFT for sale via an auction starting at 4 ETH (~\$12K)
- During the following 24 hours + 30 minutes, The Fourth Pillar received 6 bids
- On June 8, Berkeley sold *The Fourth Pillar* NFT for ~\$50K (& transferred wallet ownership to the new owner)
- The Fourth Pillar* NFT is programmed as follows:  
First sale: 85% to UC Berkeley, 15% to Foundation.app  
Other sales **forever**: 10% to Berkeley, 5% to Foundation
- Distributed autonomous organization (DAO) named *FiatLuxDAO* purchased *The Fourth Pillar* NFT



TheFourthPillar.png

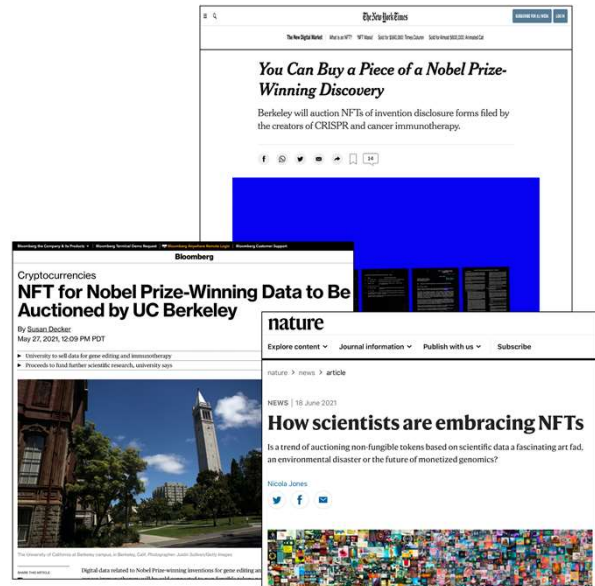


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## UC Berkeley's Nobel NFT: Objectives

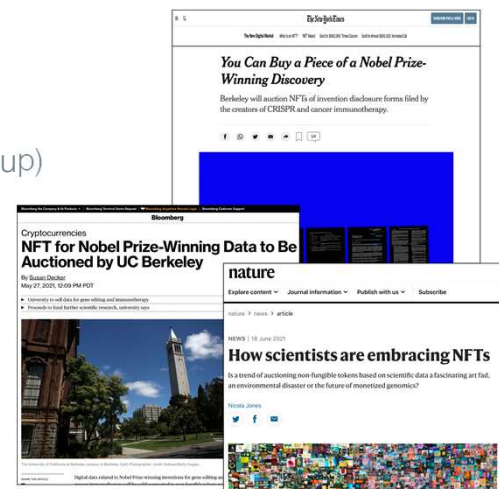
- **1st Objective:**  
Increase awareness of Berkeley as a community of innovators, and campus for changemakers
- **Distant 2<sup>nd</sup> Objective:**  
Fund research & education  
(but not likely to be material to \$1B budget)
- **Additional Requirement:**  
Be first in a new NFT category of digital art base on historic scientific docs



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## UC Berkeley's Nobel NFT: Assessment

- Value as an experiment on cutting-edge
- Favorable PR worth \$millions
- Some funding (esp. Blockchain@Berkeley student group)
- Stoked staff culture of innovation
- First alumni DAO
- Carbon footprint
- Artificial scarcity online & UC Berkeley image
- Possible other Berkeley NFTs
  - CRISPR-Cas9 (2020 Nobel in chemistry)
  - Zero Knowledge Proof (2012 Turing Award)



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## Value of NFTs to Universities: *Artifact Auction*

- Value of NFT image auctions beyond experimentation?
  - Use value? Not really
  - Social status value? Maybe (depending on your disposition)
  - Resale value? Speculative
- Freakonomics podcast:  
Hidden Side of the Art Market, episode 486, "Lots of monkey business"
- Artificial Scarcity Online:  
*NFTs & the Explosive Rebirth of Artificial Scarcity*, Luke Dormehl, March 22, 2021

[Hyped over-priced] "NFTs are, on some level, patently absurd. Users aren't buying a work of art that they alone can enjoy. They are purchasing a nonexclusive addition to a public record that associates their name with a virtual item on a ledger that virtually no one will ever read. It's like a strange hyper-capitalist parody dreamed up by William Gibson. But, like the macro story at the heart of tech bubbles, they have a truthiness to them that makes them resonate."



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## Value of NFTs to Universities: *Licensing IP*

- Panel with Experts on University Tech Transfer, Blockchain, NFTs, IP Law:  
*IPwe's Advisory Committee for University Technology Transfer Explores Opportunities for Patent NFTs*
- DeFi MOOC: Introduction to Blockchain Technologies  
Lecture 2 at onset:

**What is a blockchain?**

**Abstract answer: a blockchain provides coordination between many parties, when there is no single trusted party**

if trusted party exists ⇒ no need for a blockchain



The screenshot shows a video player interface for a lecture titled "Lecture 2 Premiere: Introduction to Blockchain Technologies". The video content includes a title "What is a blockchain?", an abstract answer in a purple box, and a note that a trusted party negates the need for a blockchain. The video player shows 4,727 views, a premiere date of Sep 2, 2021, and a subscribe button for the "DeFi MOOC" channel with 9.1K subscribers.



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## Questions About Berkeley Nobel NFT

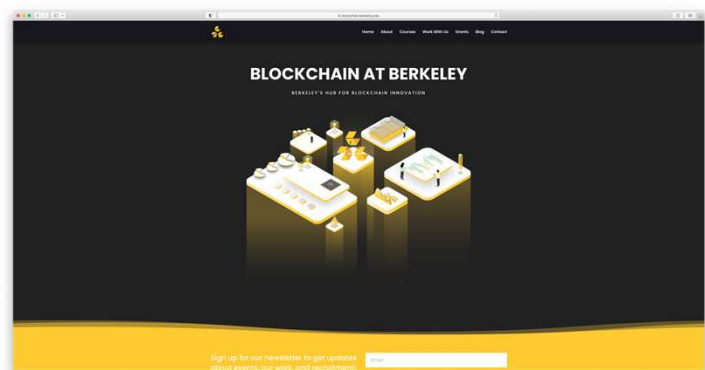
- Team
- Design
- Legal
- Finance
- Marketing
- Auction



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## Berkeley Nobel NFT : *Team* $\geq$ 25 People

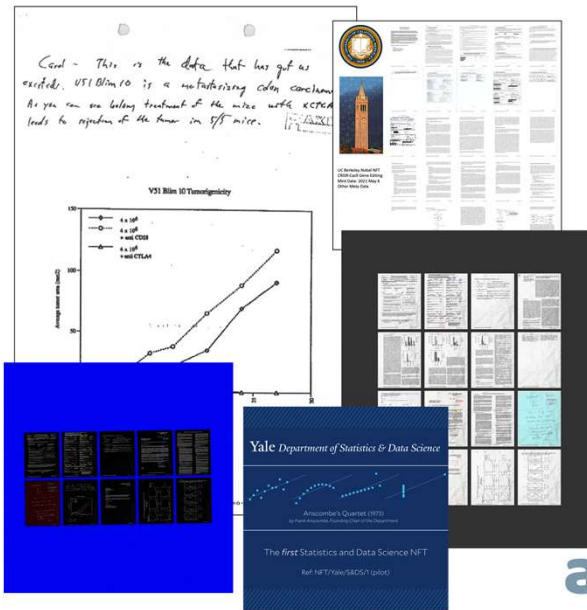
- NFT isn't in job descriptions
- Diverse, cross-functional
- Staff, alums, students, profs
- What know & who know (e.g. Foundation.app people)
- Balance  
move fast & be first  
vs  
don't break laws or get sued



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# Berkeley Nobel NFT: *Design*

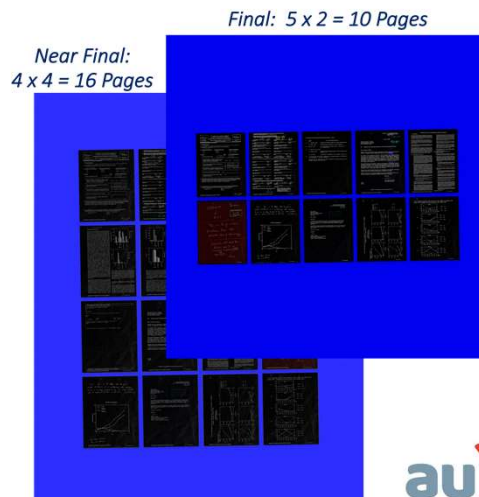
- May 18: Raw Content from case files
- May 20: Prototype images for NFT art
- Cas9 NFT vs CIT NFT
- Graphic Artist:
  - May 25: 6 design alternatives
  - Avant Garde, brutalist style
  - Allison tilt
  - Neon blue with black & white "pops"
- NFT Project Team Requirements
  - Must be legible when zoomed-in
  - Must be digital art, not poster or advertisement
- Brand Compliance Staff:
  - May 26: design team meeting
  - Target bidders/audience: alums or collectors?
- Other
  - Name: *The Fourth Pillar*
  - Description
  - UC Berkeley page on Foundation.app website



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# Berkeley Nobel NFT: *Legal*

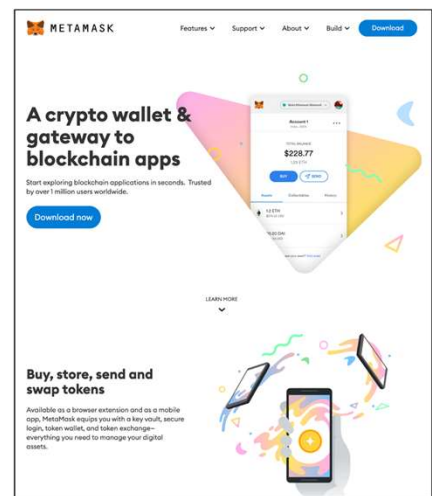
- NFT art copyright vs disclosure docs copyright vs invention patent rights; who owns what?
- CRISPR-Cas9 litigation
- Cancer immunotherapy (CIT) alternative
- Regulation (AML/KYC, Securities, etc.)
- Tax treatment on proceeds from sale of asset
- Auction payment not a charitable donation
- Auction website's ToS (financial, liability, IP)
- May 26 remove 4 pages of CIT NFT
- May 26 UC Berkeley Chancellor approval



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## Berkeley Nobel NFT: *Finance*

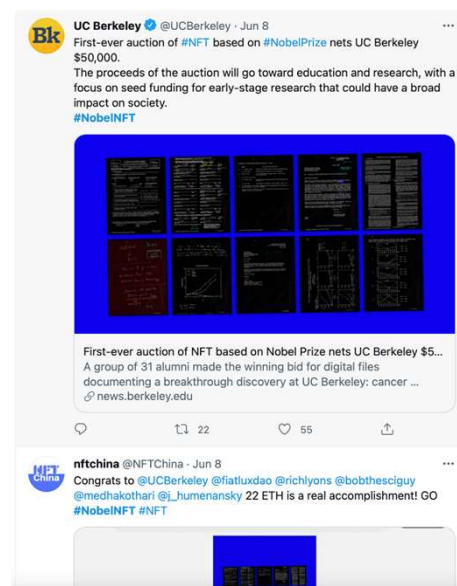
- Foundation.app auction platform: 85% first, 10% subsequent FOREVER
- Wallet owner:
  - Individual (forever responsibility)
  - University of California (legal & policy issues)
  - UC Berkeley Foundation (non-profit)
- Wallet pass phrase
- Ether for gas to fuel minting & listing
- Not tax-deductible donation to UCB



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## Berkeley Nobel NFT: *Marketing*

- Positioning
  - Building awareness of UC Berkeley
  - Not about advertising or commercialization
  - Backlash on carbon use & hyped concept
- Press releases
- NY Times exclusive
- Twitter is key
- Press interviews
- Clubhouse app
- Need >= 2 whale bidders
- Results: [landE.berkeley.edu/nobelNFT](https://landE.berkeley.edu/nobelNFT)



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# Berkeley Nobel NFT: Auction

- Minting: Thursday May 27 (delayed 1 day)
- Reserve price: Tuesday June 1
- Marketing key
- Lining-up >2 whale bidders
- Fiatlux DAO: Sunday June 6
- Listing: Monday June 7 (delayed twice several days)
- Double overtime auction
- 6 bids up to 22 ETH = ~\$50K

The screenshot shows an NFT auction interface. The title is "The Fourth Pillar (UC Berkeley, 2021)". The current bid is 22.00 ETH (\$42,848.56). The auction is owned by @fiatluxdao. The activity log shows several bids, with the highest being 22.00 ETH from @fiatluxdao on June 8, 2021, at 10:39pm. The auction was won by @fiatluxdao for 22.00 ETH (\$42,848.56) on June 8, 2021, at 10:39pm. The listing was created by @UCBerkeley on May 27, 2021, at 9:03am.



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# Questions?



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*Blockchain, NFTs and Universities: How to Navigate and Monetize*



**Charles R. Macedo**, Partner



**Mike Cohen**, Director, Innovation  
Ecosystem Development



**Patrick McLaren**, COO

