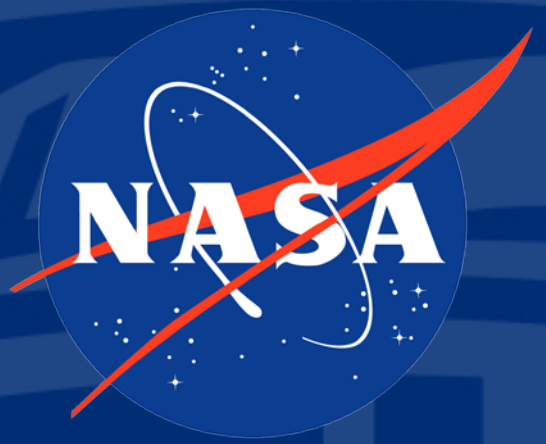


Web 3.0 with a Focus on Blockchain

By Jim Kyung-Soo Liew, Ph.D.
President of SoKat and Associate Professor JHU
NASA Goddard IS&T Colloquium Lecture Series
Wednesday, May 4, 2022, 11am-12pm EST
IS&T Colloquium Committee Host: Matt Dosberg

Contents

- Introductions
- Friedman (e-cash) → Satoshi (P2P e-cash)
- Blockchain
- Internet Evolution from Web 1.0 to 3.0
- Decentralized Ownership
- Conclusions

Who is SoKat?

SOKAT

Your trusted partner in AI for Mission Success

CAPABILITY STATEMENT

OUR VALUE PROPOSITION

We build the most advanced **Artificial Intelligence** technology solutions for the Institutional Investor, Industry Partners, and Federal Government by leveraging the hidden power of their data so that services are delivered more **efficiently**, with greater **efficacy**, and enhanced **accountability** to the **American people**.

CORE CAPABILITIES

AI and Machine Learning

Data Solutions

Cloud Computing

8(a) STARS III

SoKat awarded GSA 8(a) STARS III GWAC

Read More

JAIC

SoKat wins $249M Blanket Purchase Agreement for JAIC's Artificial Intelligence Testing & Evaluation

Read More

WHY SOKAT

- **Proven Success:** Our AI model currently **in production across federal government** and available to **8 million federal employees** across **30 federal agencies.**
- **Education:** AI teaching and training across government agencies; aim to position **U.S. as the world leader in AI.**
- **Collaboration:** Knowledge-sharing across academia, industry and government
- **Academic Powerhouse:** Johns Hopkins University faculty and staff on team
- **Talent Pipeline:** Robust and deep supply of talent from JHU and other universities

ACT-IAC

Johns Hopkins University

Igniting Innovation

AWARDS

2018 - GCN Government Innovation Award for **Intelligent Grants Automation**
2018 - First deployment of **Blockchain for Federal Grants** - Booz Allen Hamilton's report by Data Foundation
2019 - GCN Government Innovation Award for **Intelligent Grants Automation**
2020 - ACT-IAC Igniting **Innovation Transformer** Winner
2020 - **GSA AI/ML** EULA Challenge Winner (3rd place)
2021 - **VA NAII AI** Tech Sprint Winner (1st place Patient Experience; 2nd place overall)

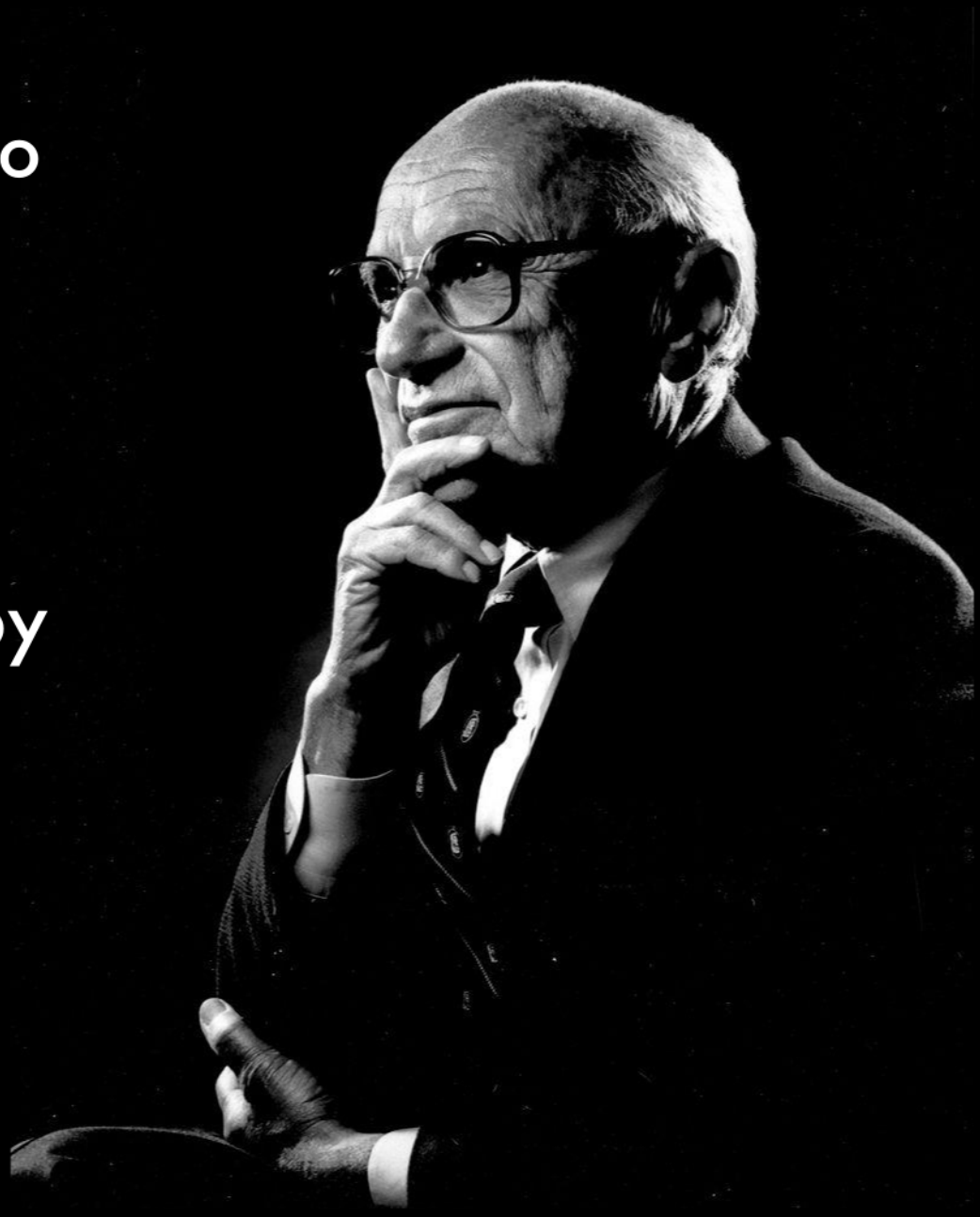
Challenge.gov

VA U.S. Department of Veterans Affairs

Government Innovation Awards

"I think that the Internet is going to be one of the major forces for reducing the role of government. The one thing that's missing, but that will soon be developed, is a reliable e-cash, a method whereby on the Internet you can transfer funds from A to B without A knowing B or B knowing A."

- Milton Friedman, 1999



Lots of Blockchain Tinkering...

…then on October 31, 2008!

Bitcoin: A Peer-to-Peer Electronic Cash System

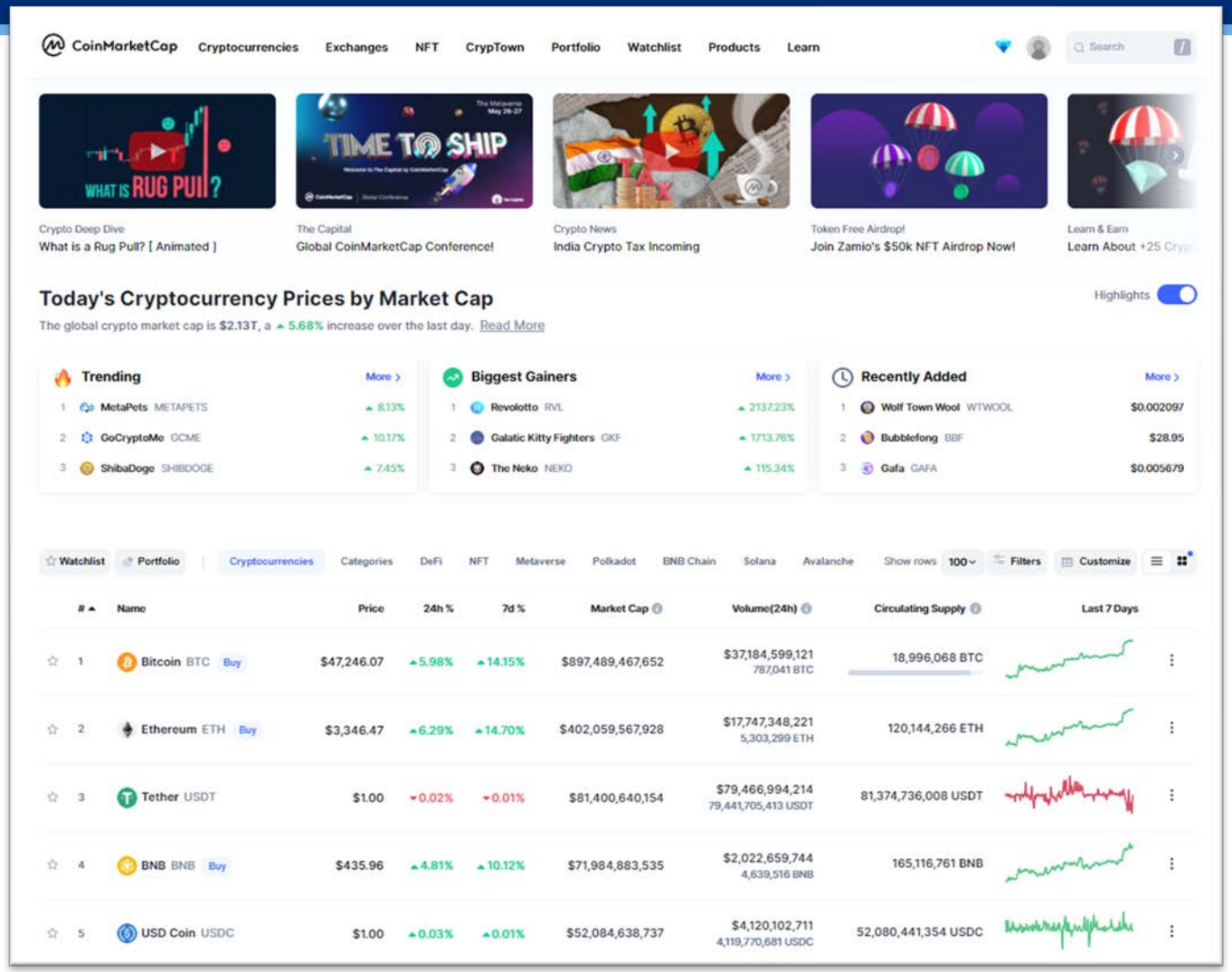
Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending.

https://bitcoin.org/bitcoin.pdf

Beyond the Crypto Hype

Cryptos Found on CoinMarketCap.com

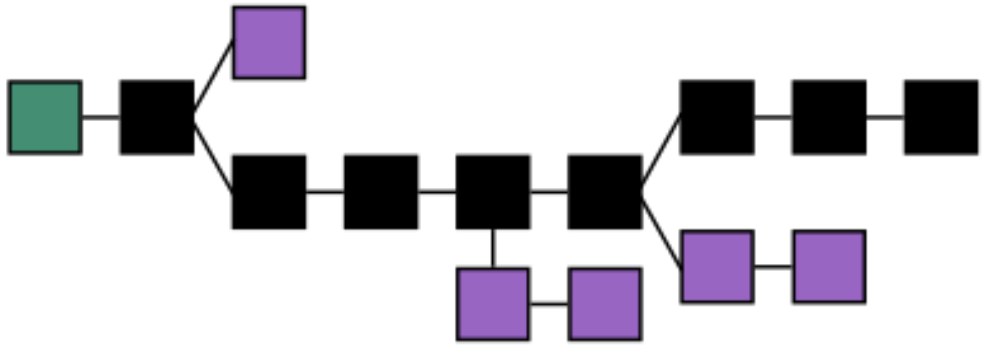


Note that this course will **NOT**:

1) Teach you how to day-trade cryptos successfully
2) Provide a superficial understanding of blockchain
3) Teach all the technical details
4) Prepare one to be a technically proficient Dapps programming

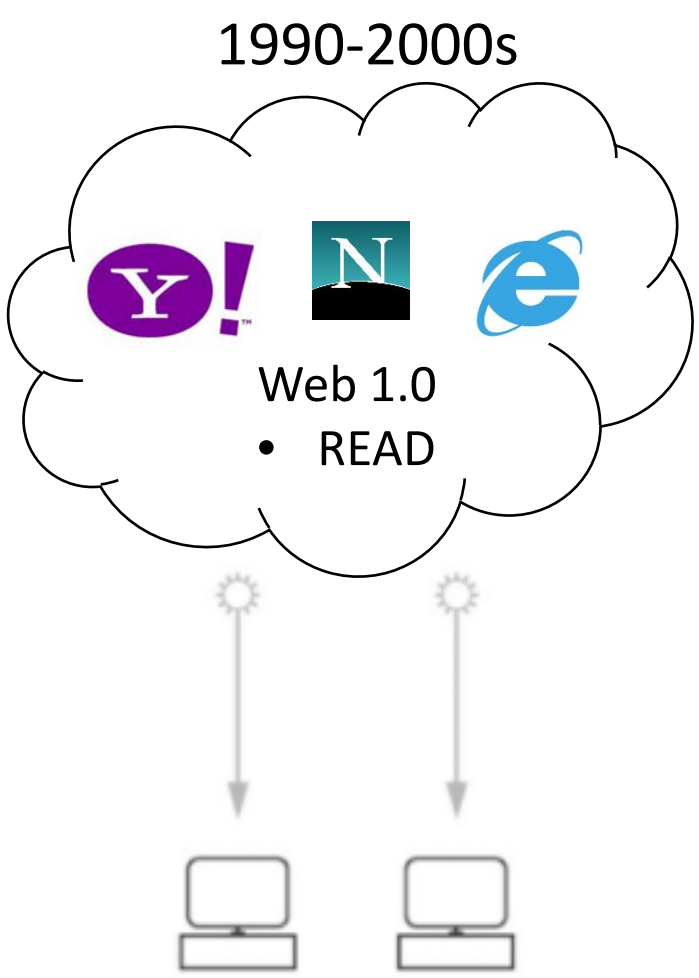
Blockchain (wiki)

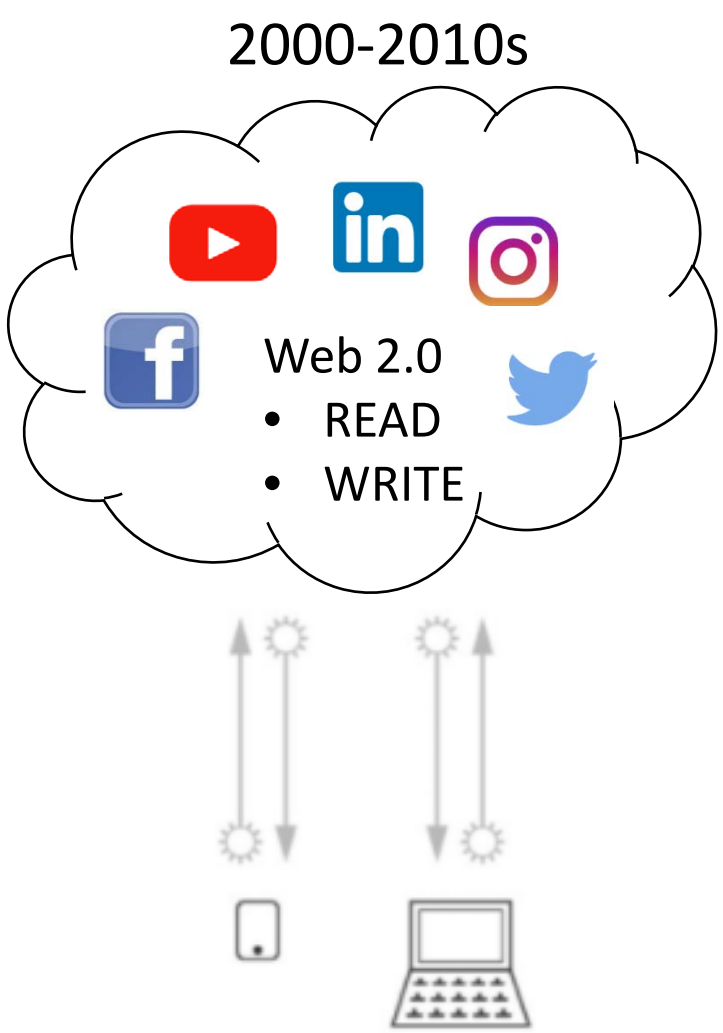
A blockchain, originally block chain, is a **growing list of records**, called blocks, that are linked using **cryptography**

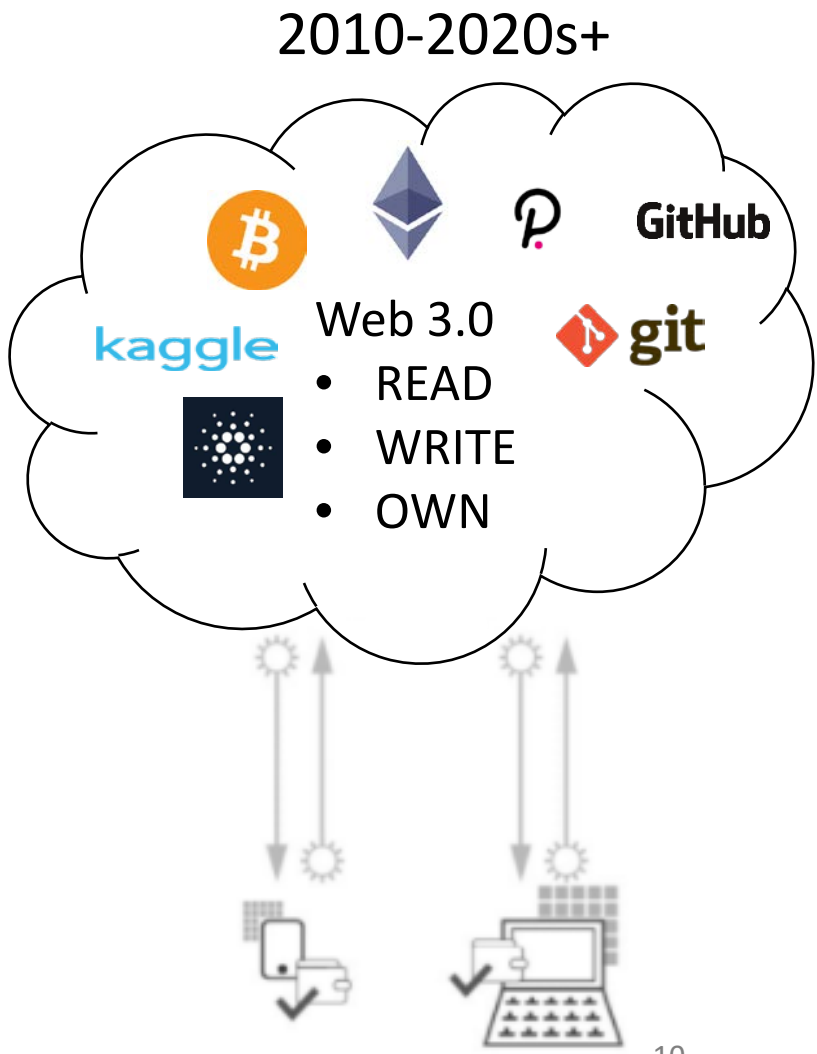


https://en.wikipedia.org/wiki/Blockchain

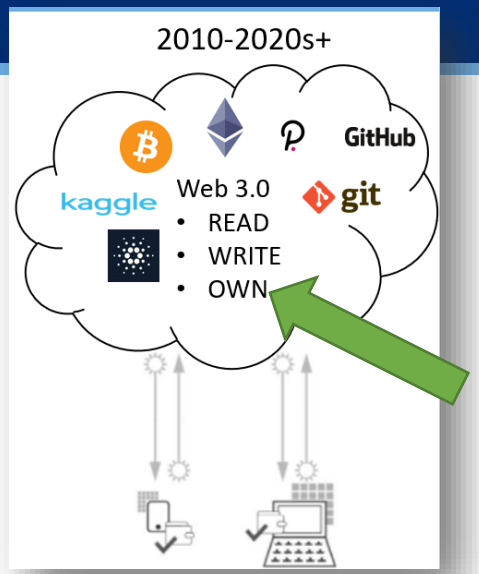
Web 1.0 to 3.0 – The Evolution of the Internet



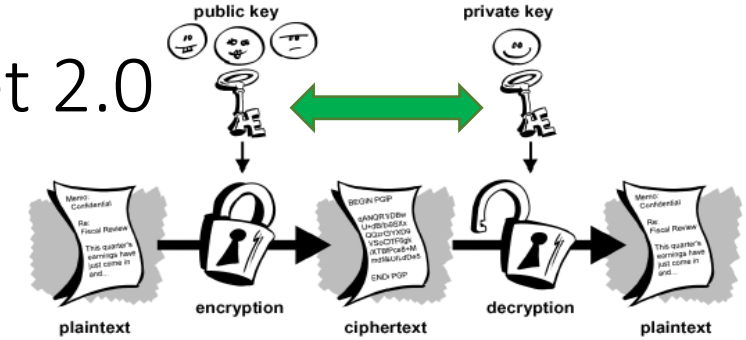




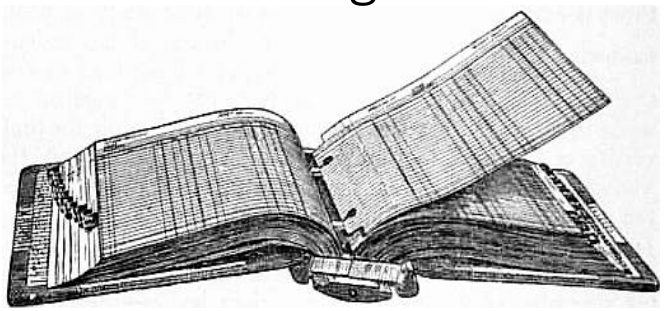
Decentralized Ownership



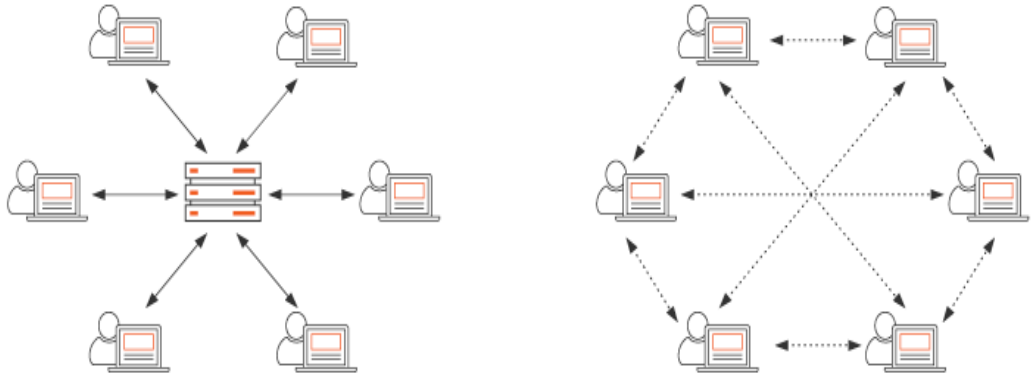
Wallet 2.0



Public Ledger



Centralized vs Decentralized



SOKAT

Traditional Banking to CeFi (Centralized Finance and Trusted Brands)

FTX

coinbase

BINANCE.US

kraken

GEMINI

KUCOIN

SOKAT

Out with the Old and in with the New!

Crypto CEOs testify before lawmakers on digital assets — 12/8/21

https://www.youtube.com/watch?v=F_kZELcynKQ

CeFi to Wallets (Empower Individuals)

FTX

METAMASK

Phantom Wallet (Solana)

coinbase

BINANCE.US

Wallet

kraken

My Algo

GEMINI

TRUST WALLET

KUCOIN

SOKAT

DeFi (Decentralized Finance)

UNI

PancakeSwap

METAMASK

FTX

Phantom Wallet (Solana)

RAYDIUM

coinbase

Wallet

BINANCE.US

Curve

My Algo

kraken

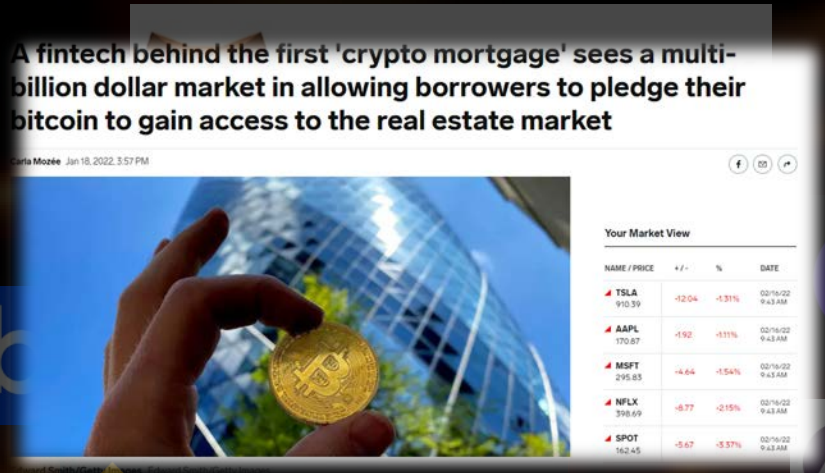
GEMINI

TRUST WALLET

KUCOIN

SOKAT

Tokenizing Assets (Digital and Real)



Attracting the World's Brightest Minds

People

Crypto Is Attracting World's "Brightest Minds": Paul Tudor Jones

by Chris Williams 22 hours ago

Paul Tudor Jones says he's long on crypto due to the space's "intellectual capital."

Photo: Reuters

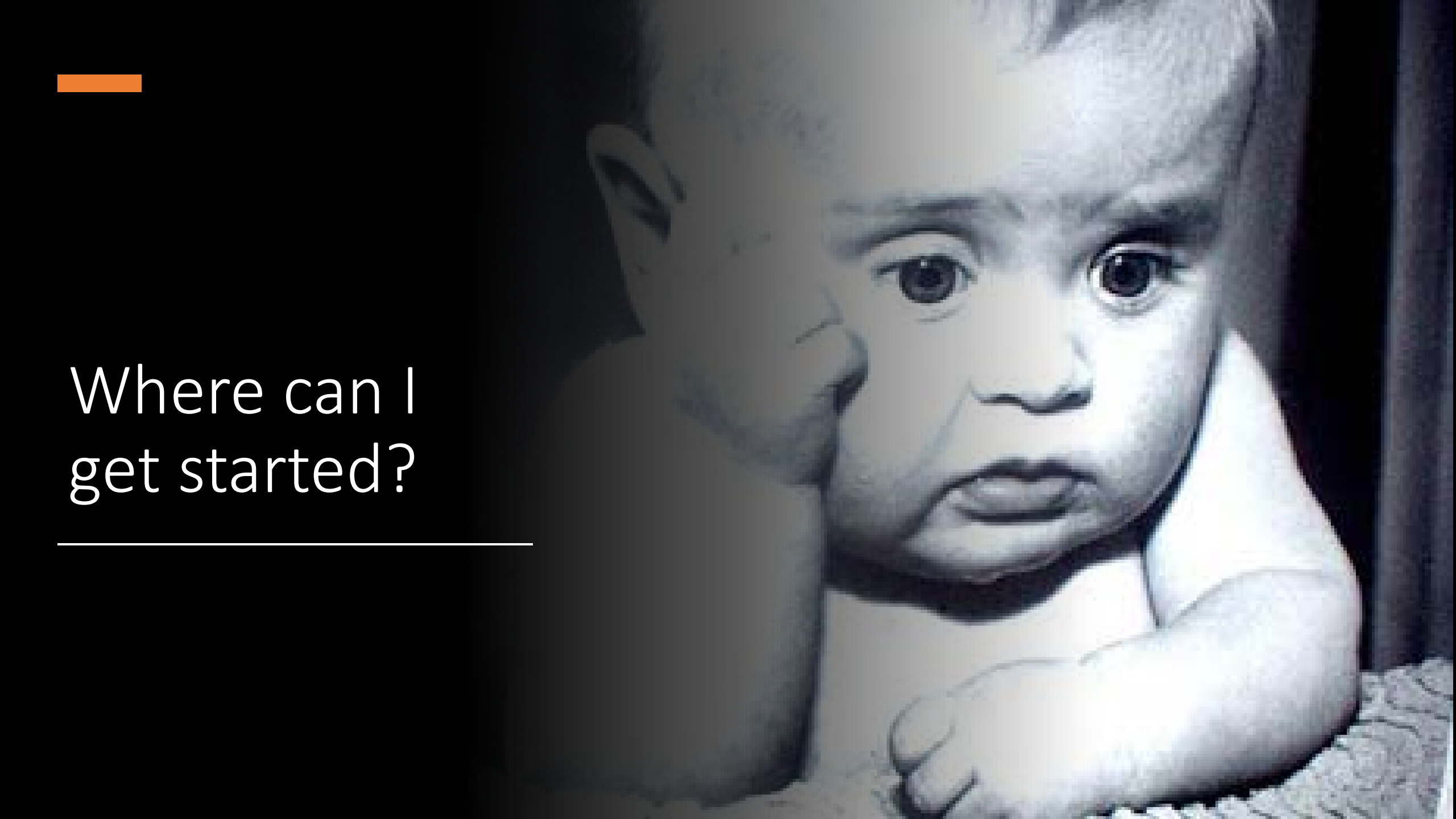
Key Takeaways

- Paul Tudor Jones has said that he believes crypto could have a bright future because the space is attracting "the smartest and brightest minds."
- He also said that crypto's value proposition as a borderless form of money is part of the reason he has an allocation to the asset class.
- Jones was among the first Wall Street titans to publicly declare that Bitcoin could have value as an inflationary hedge during the COVID-19 crisis.

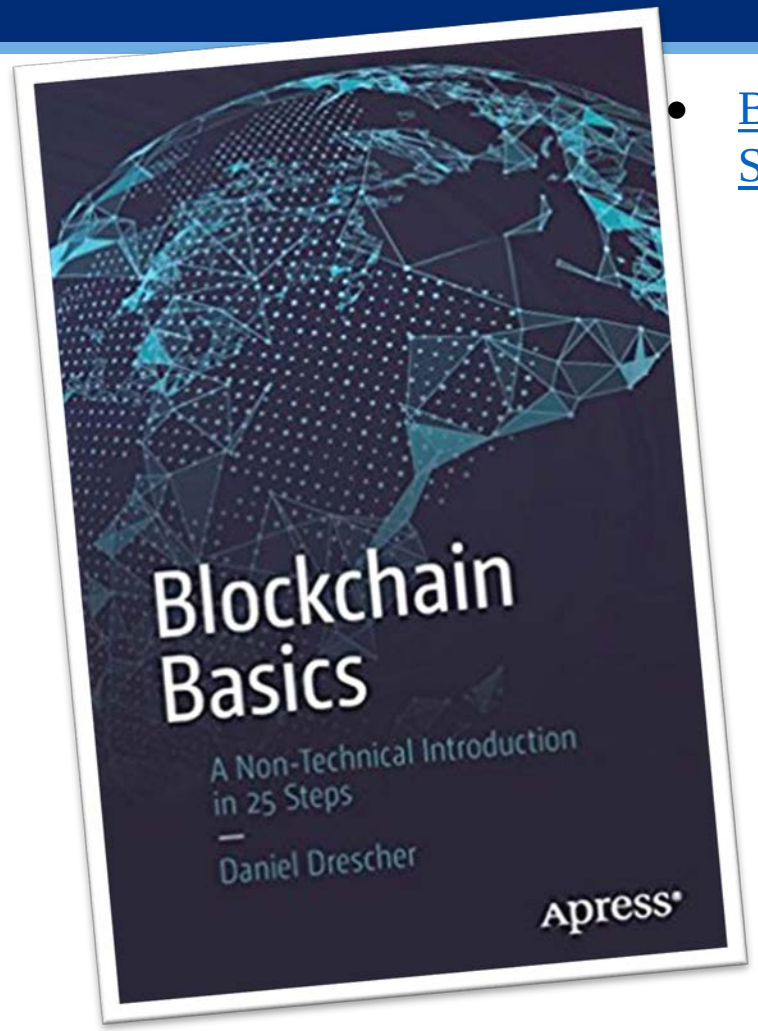
- "the smartest and brightest minds"
- Has a Bright Future
- Value prop - borderless form of money
- Tudor's allocating
- Bitcoin inflationary hedge

https://cryptobriefing.com/crypto-attracting-worlds-brightest-minds-paul-tudor-jones/?utm_source=main_feed&utm_medium=rss

Where can I get started?



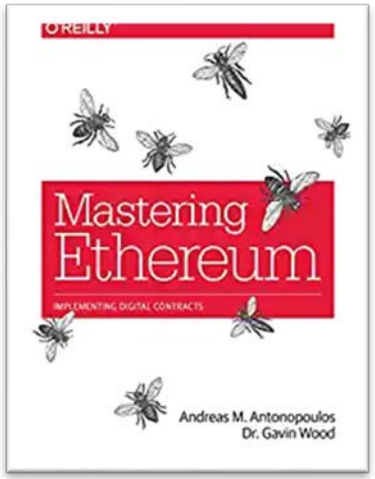
Course Readings Include

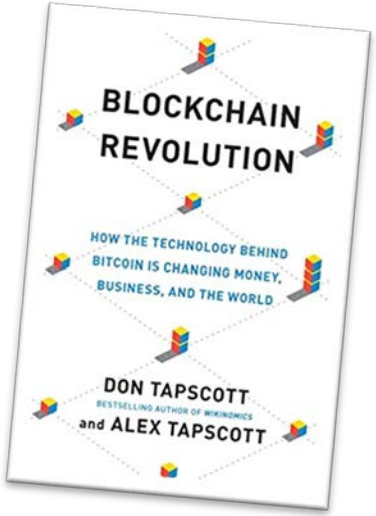


- Blockchain Basics – A Non-Technical Introduction in 25 Steps, by Daniel Drescher Apress 2017

Optional:

- Mastering Ethereum: Building Smart Contracts and Dapps, 1st Edition, O'Reilly by Andreas M. Antonopoulos and Dr. Gavin Woods, 2019

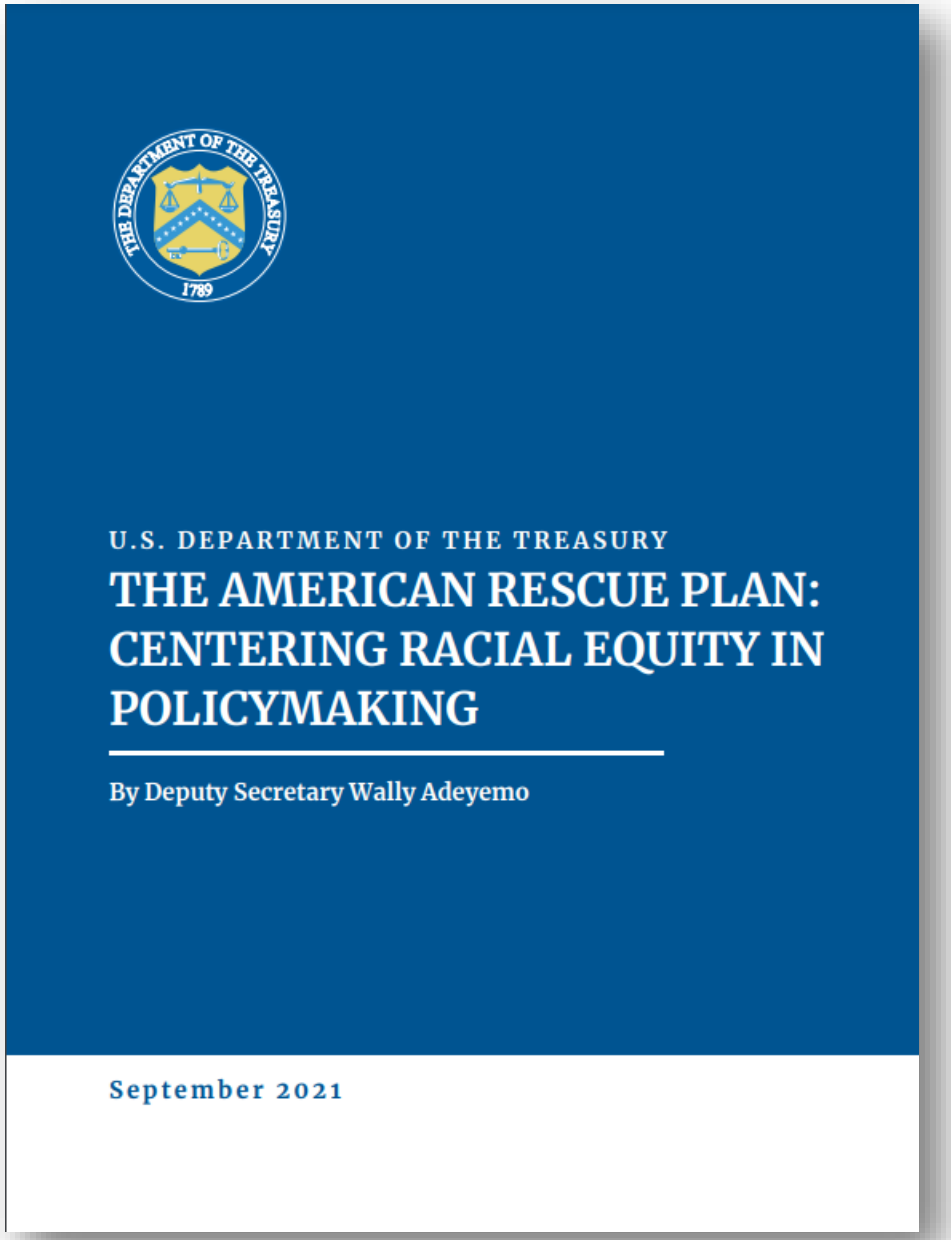




Optional Textbooks:

- Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World by Don Tapscott

Deputy Secretary Wally Adeyemo

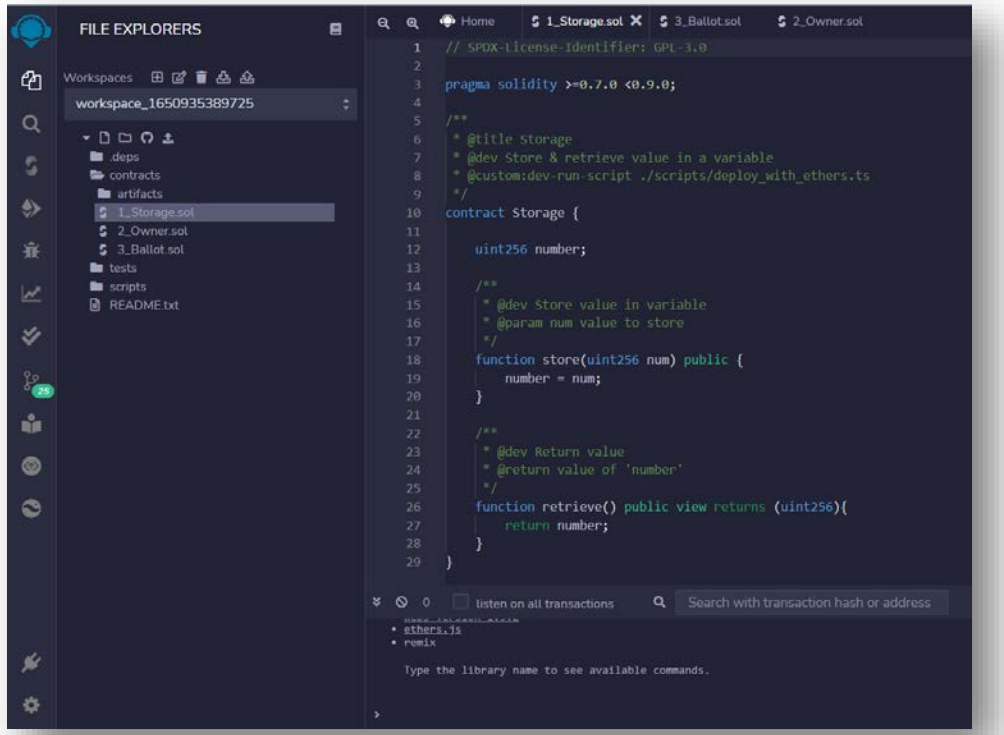


“Research has shown that if women, people of color, and low-income children had the same opportunities as high-income white males, the U.S. innovation rate would be four times its current level.”

Technical or Non-Technical?

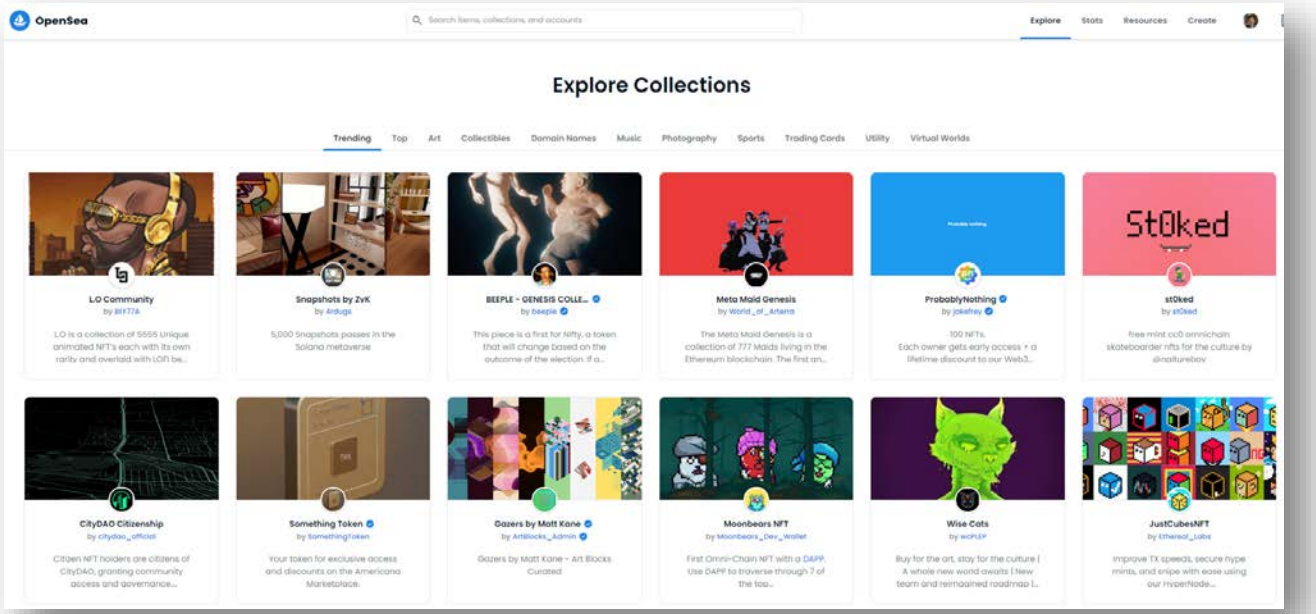
REMIX

https://remix.ethereum.org/

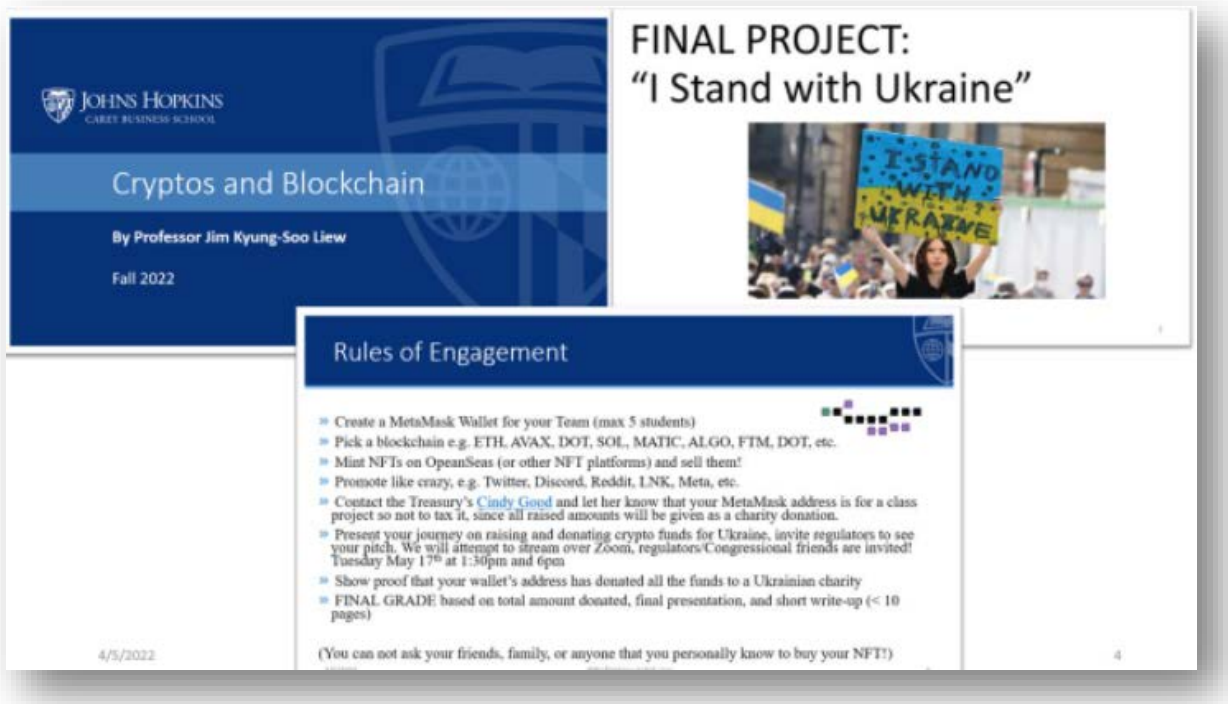


OpenSea

https://opensea.io/



JHU MBAs' Final Projects Due in Two Weeks



Rules of Engagement:

1. Create a MetaMask Wallet for your Team (max 5 students)
2. Pick a blockchain e.g. ETH, AVAX, DOT, SOL, MATIC, ALGO, FTM, etc.
3. Mint NFTs on OpeanSea (or other NFT platforms) and sell them!
4. Promote like crazy, e.g. Twitter, Discord, Reddit, LinkedIn, etc.
5. Contact the U.S. Department of the Treasury's Cindy Orellana Good and let her know that your MetaMask address is for a class project so not to tax it, since all raised amounts will be given as a charity donation.
6. Present your journey on raising and donating crypto funds for Ukraine, invite regulators to see your pitch. We will attempt to stream over Zoom, regulators/Congressional friends are invited! Tues May 17th at 1:30pm and 6pm
7. Show proof that your wallet's address has donated all the funds to a charity.
8. FINAL PROJECT GRADE will be based on total amount donated, final presentation, and short write-up (< 10 pages)

(You can not ask your friends, family, or anyone that you personally know to buy your NFT!)

Conclusions

- Not surprisingly, it's People, People, People
- Web 3.0 markets are efficient focus on building value
- Watch for the shifting-trends within blockchains
- Blockchain will disrupt but we are still early
- Experimentation is key – Learn By Doing!
- Identify and share unique Web 3.0 risks

- Please do stay in touch! E: jim@sokat.com

Build for what's next™

Explain Blockchain

- After watching the video… Explain blockchain again
- Can you describe it at different levels?
- Try out with your friends and family.

Proof of Stake vs Proof of Work

Purpose of Blockchain

- *BlockChain is a tool for achieving and maintaining integrity in a distributed system.*