

AI In Web3 & Its Applications

SRK @ Sudalai Rajkumar

Head of AI & ML at Growfin,
4X Kaggle Grandmaster



Web3 Then Vs Web3 Now



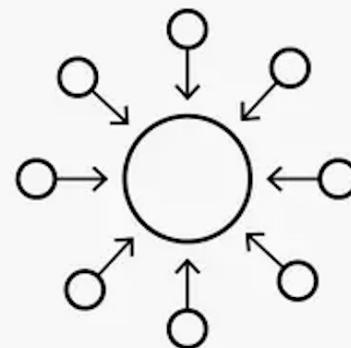
What is Web3?

Evolution of the web from 1.0 to 3.0



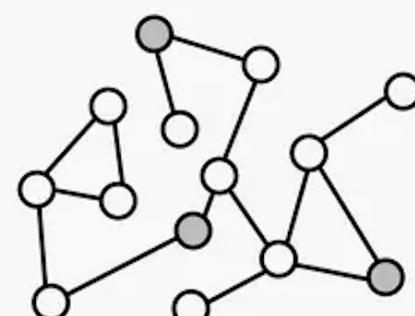
1900s–2000

Static read-only
web pages



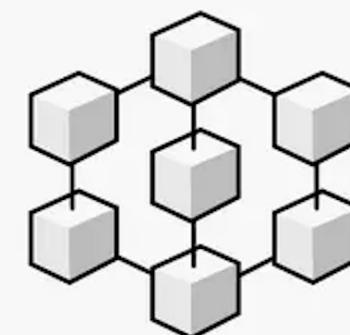
2000s–2020s

Information-centric
and interactive



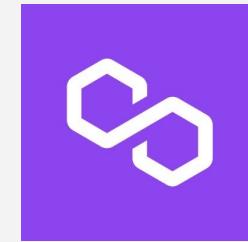
2020s–?

User-centric,
decentralized, private,
and secure

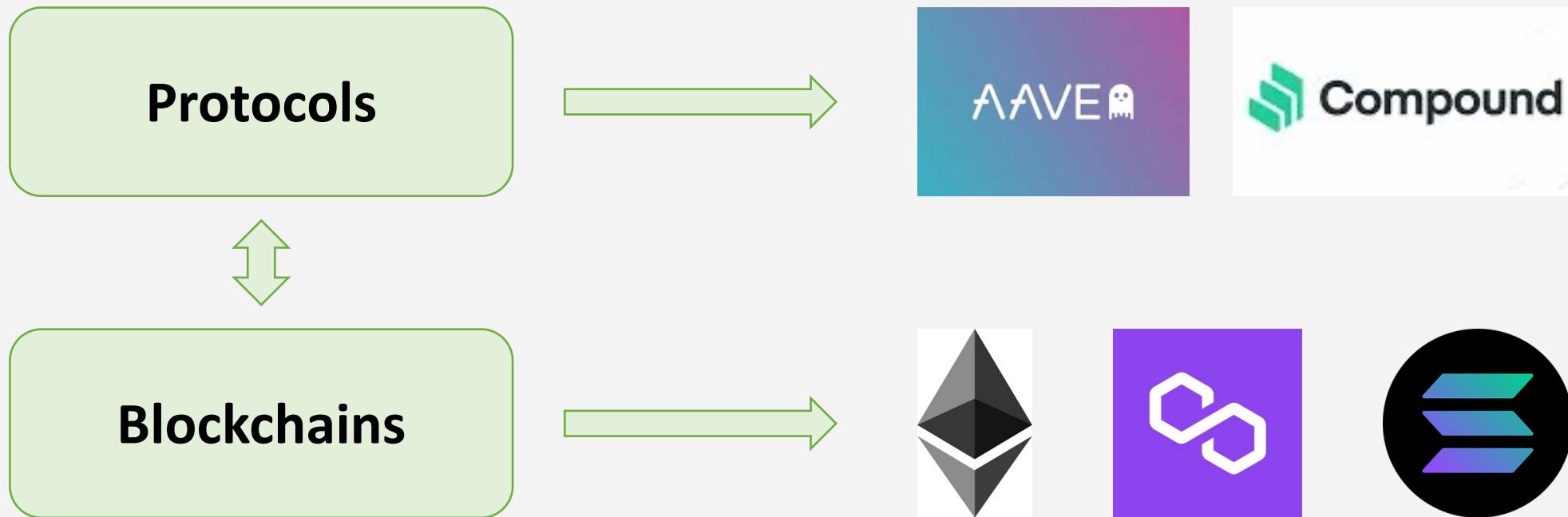


AI in Web3 Stack

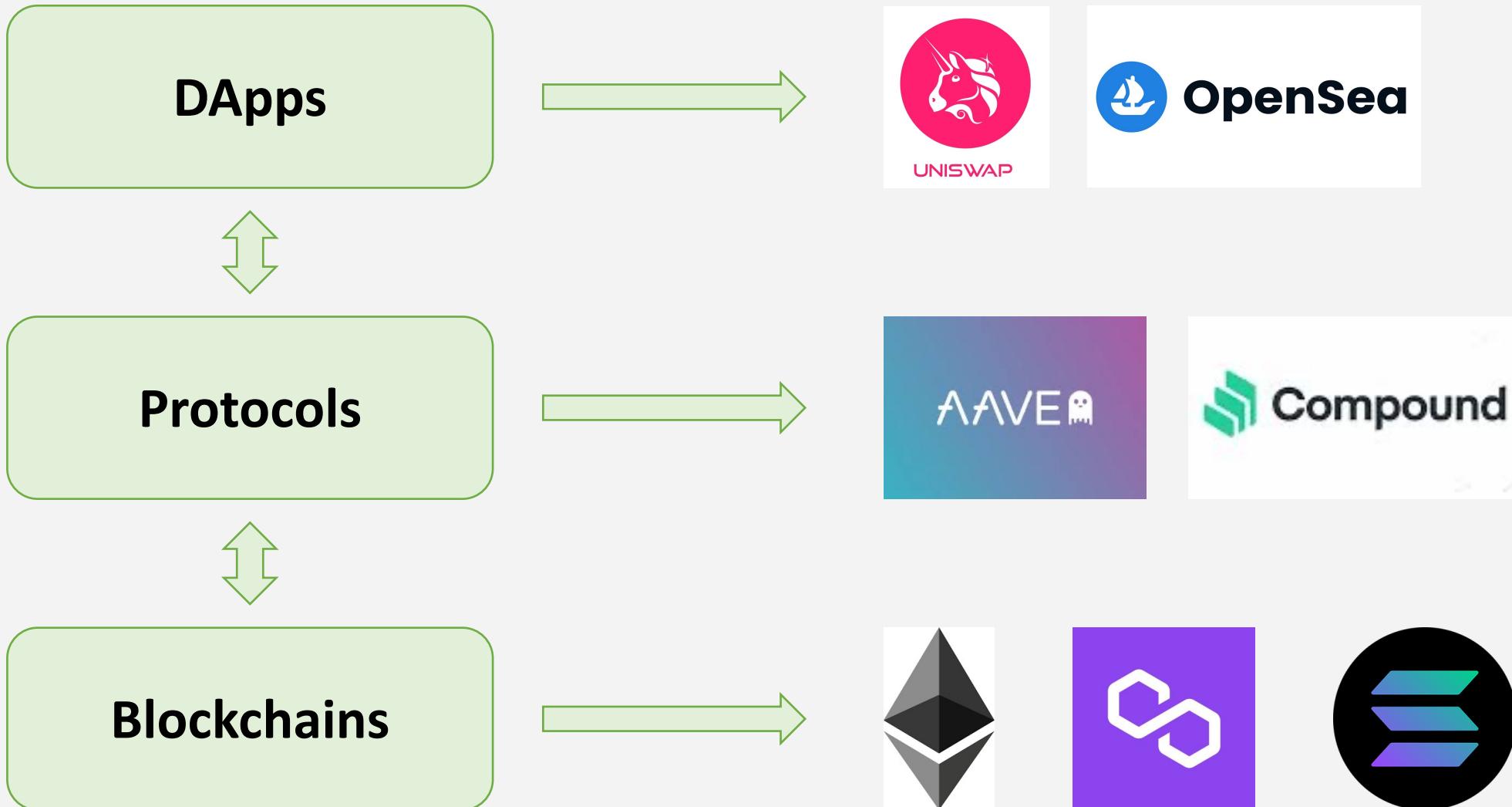
Blockchains



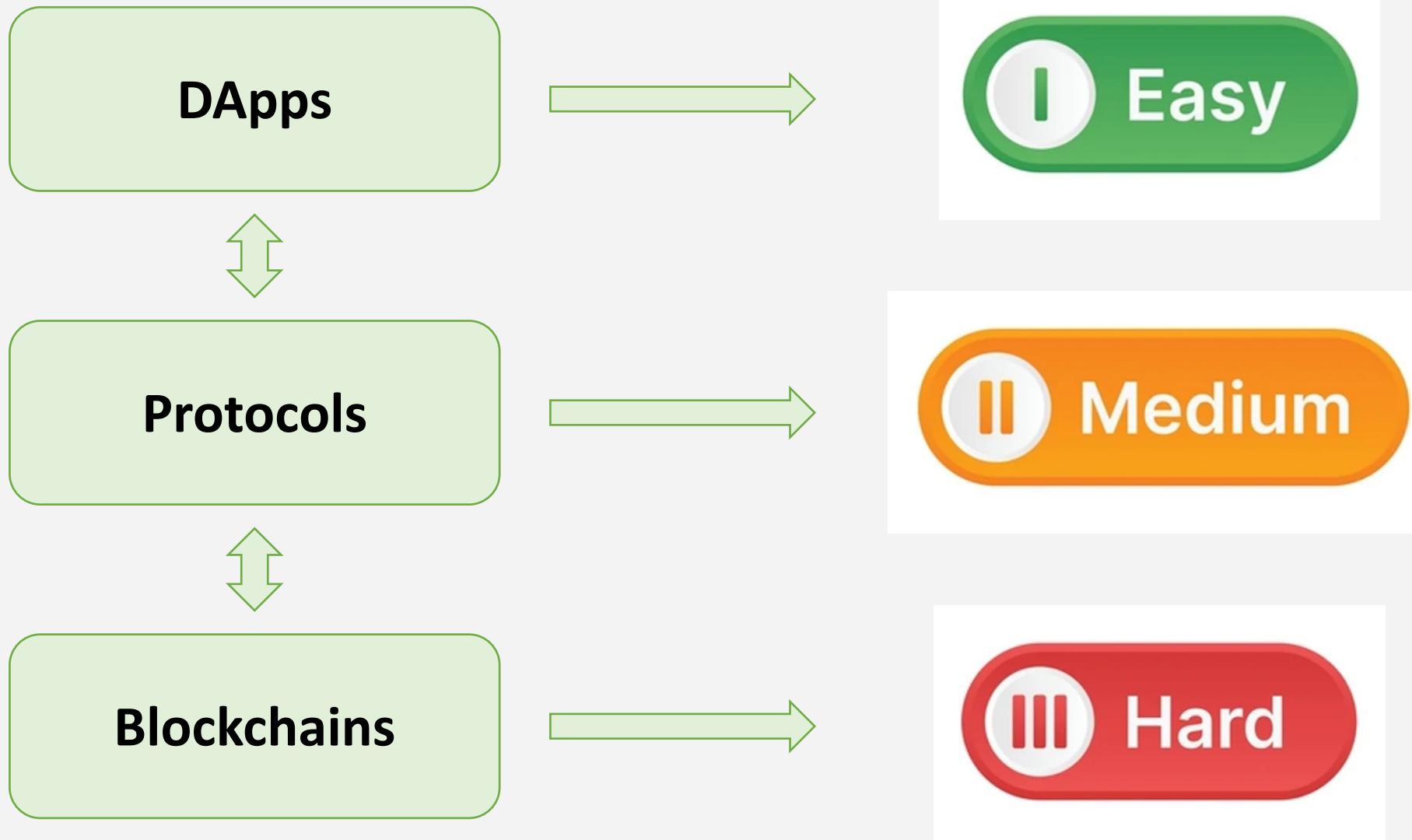
AI in Web3 Stack



AI in Web3 Stack

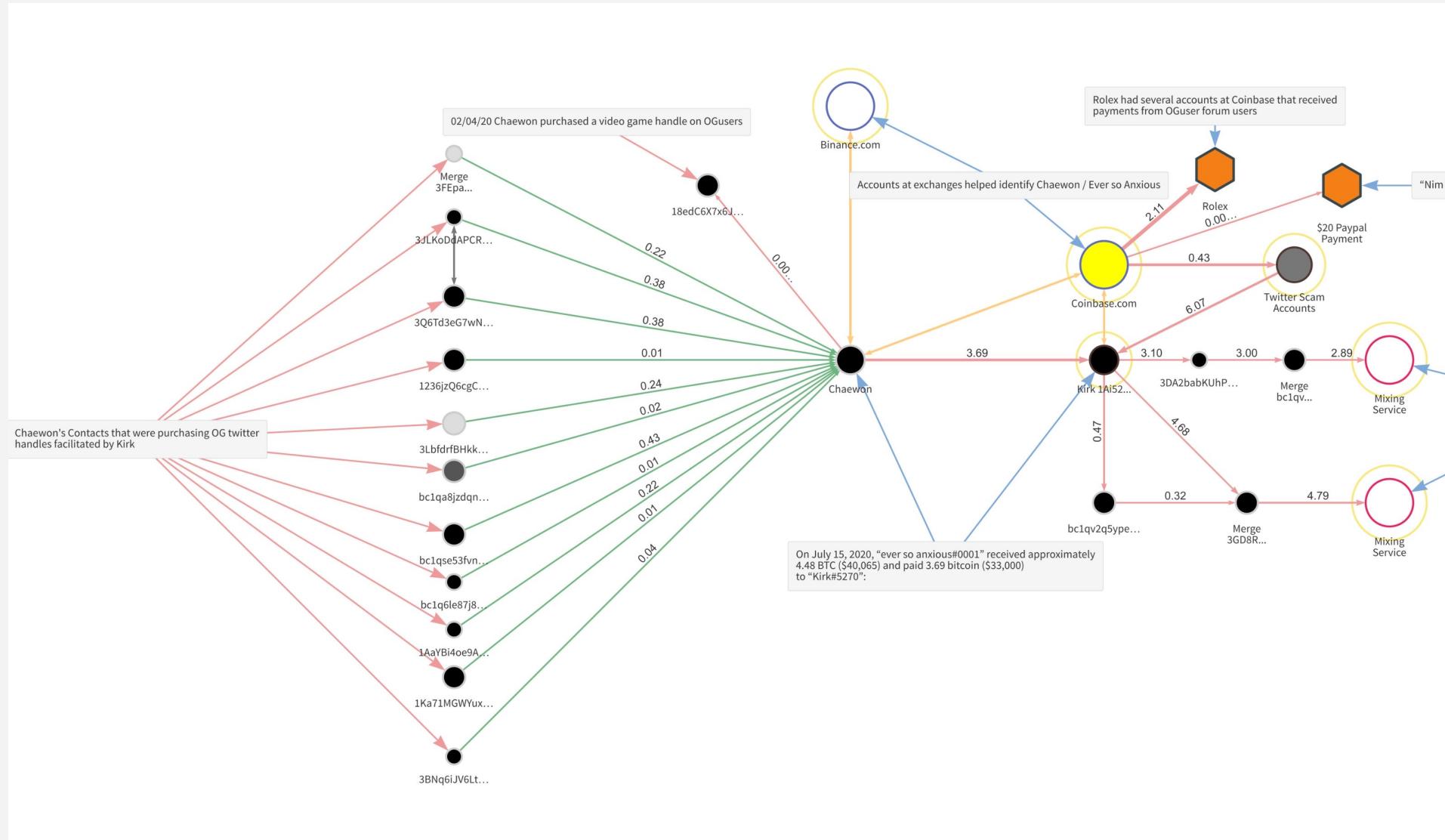


Adoption of AI in Web3 Stack



Applications of AI in Web3

Applications – AML in Blockchain



Applications – Blockchain Analytics

The screenshot shows the Nansen Smart Money dashboard. At the top, there are navigation links: Portfolio, Connect, Smart Alerts, Watchlist, Research Portal (NEW), a help icon, and a user profile with address 0x646...d6f6c. Below the header, a section titled "Smart Money" includes a video icon and a "Segment" dropdown set to "All". Underneath are tabs for "DEX Trades" (which is selected), "Transactions", and "Token Holdings". A note states: "Tokens labeled with a warning sign are either new or have exhibited suspicious behavior. Check out [this article](#) to learn more about Smart Money!"

Top Transactions (Last 24 hours)

Dex	Time	Taker	Taker Amount	Taker Token	Maker
Uniswap	9m ago	Smart Dex Trader	37,620	PRE	Uniswap: V2 USDT
Uniswap	11m ago	@chrismartz	.126	WETH	Uniswap: V2 USDC
Uniswap	12m ago	coolarecats.eth	7.7	WETH	Uniswap: V3 DAI
Uniswap	14m ago	"JASONPETER" on OpenSea	.1216	WETH	Uniswap: V3 FTX
SushiSwap	16m ago	@chrismartz	.15	WETH	SushiSwap: USDC
Uniswap	17m ago	7-7-7.eth	3	WETH	Uniswap: V2 PAXG
Uniswap	18m ago	@chrismartz	.2483	WETH	Uniswap: V3 WETH
Uniswap	19m ago	Smart Dex Trader	88,405	ORBS	Uniswap: V2 WETH
Uniswap	19m ago	First Mover LP	.5	WETH	Uniswap: V2 WETH
Uniswap	20m ago	7-7-7.eth	3	WETH	Uniswap: V3 APE
SushiSwap	22m ago	horseman.eth	8.03	WETH	SushiSwap: USDC
Uniswap	22m ago	50z.eth	.2	WETH	Uniswap: V2 WETH
Uniswap	23m ago	@chrismartz	145	USDC	Uniswap: V3 USDC
SushiSwap	31m ago	Smart Dex Trader	1	WETH	SushiSwap: PROS
Uniswap	31m ago	Smart LP: 0xe53	100,000	USDT	Uniswap: V3 USDC

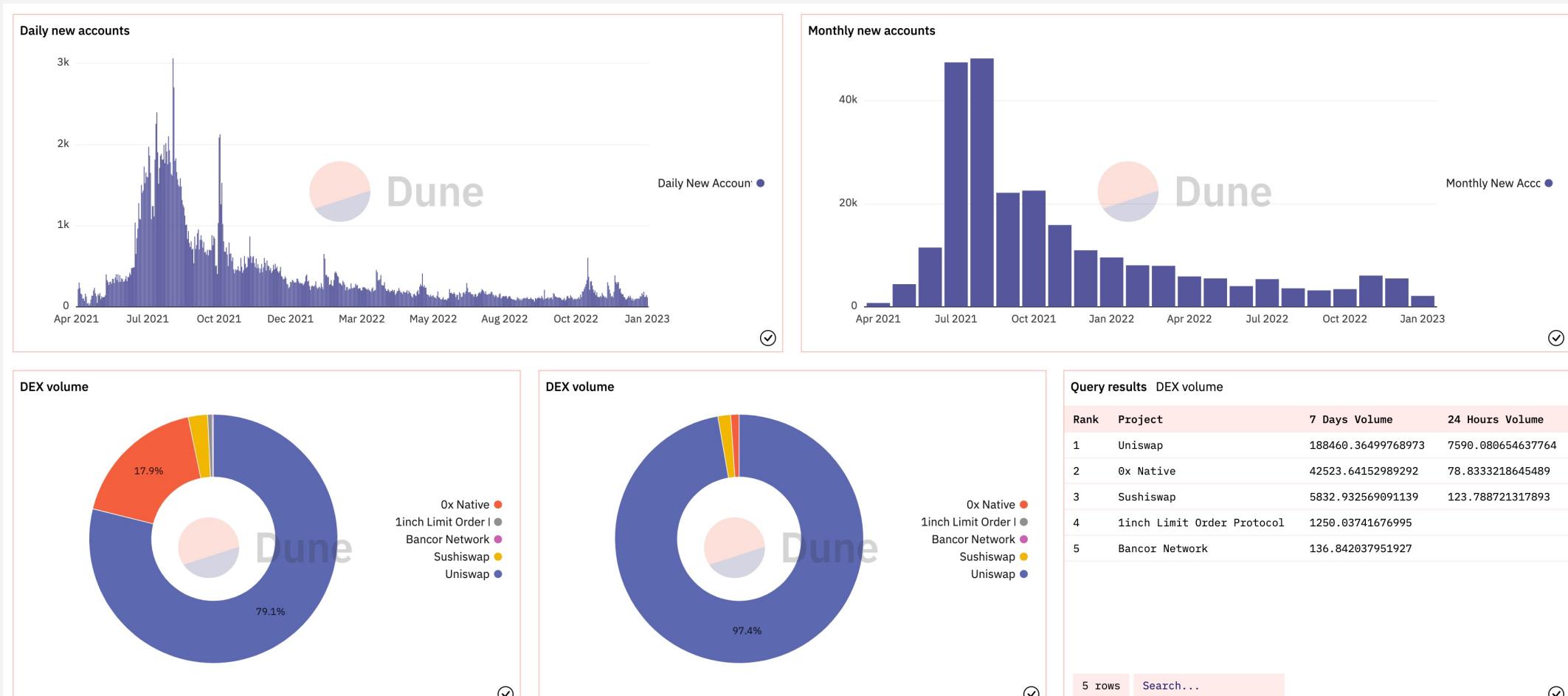
Courtesy: Nansen

Applications – Decentralized Hedge Fund

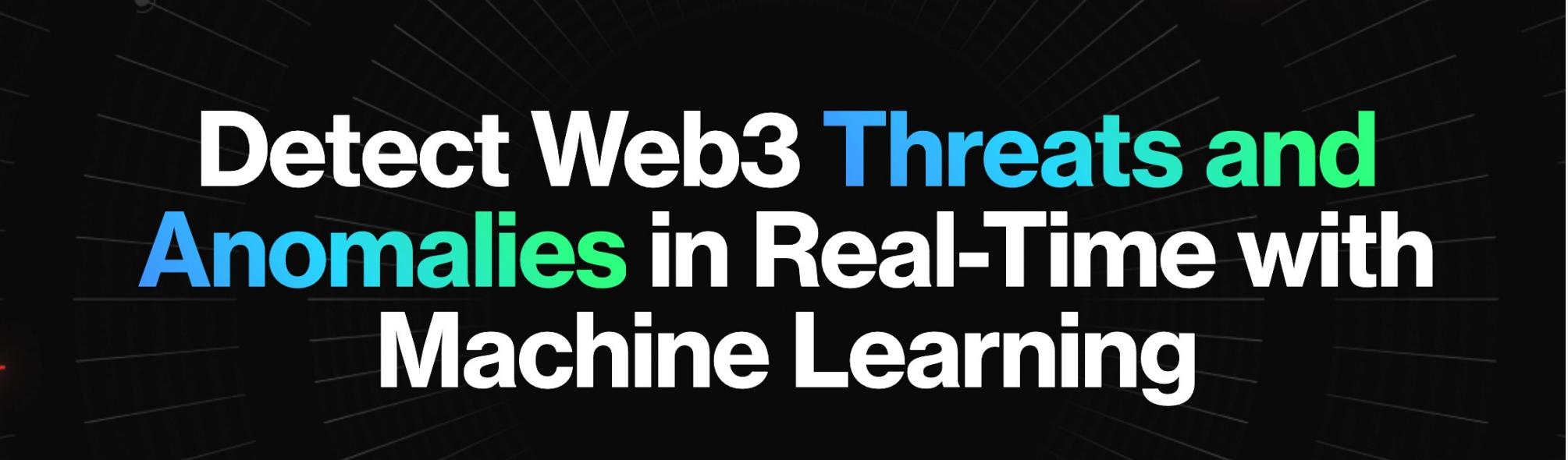
id	era	feature1	...	feature1050	target
n2b2e3dd163cb422	era1	0.75	...	0.00	0.25
n177021a571c94c8	era1	1.00	...	0.25	0.75
n7830fa4c0cd8466	era1	0.25	...	1.00	0.00
nc584a184cee941b	era1	0.25	...	0.00	1.00
nc5ab8667901946a	era1	0.75	...	0.25	0.25
n84e624e4714a7ca	era1	0.00	...	0.75	1.00

Each **id** corresponds to a stock at a specific time **era**. The **features** describe the various quantitative attributes of the stock at the time. The **target** represents an abstract measure of performance a fixed number of weeks into the future.

Applications – GameFi Analytics

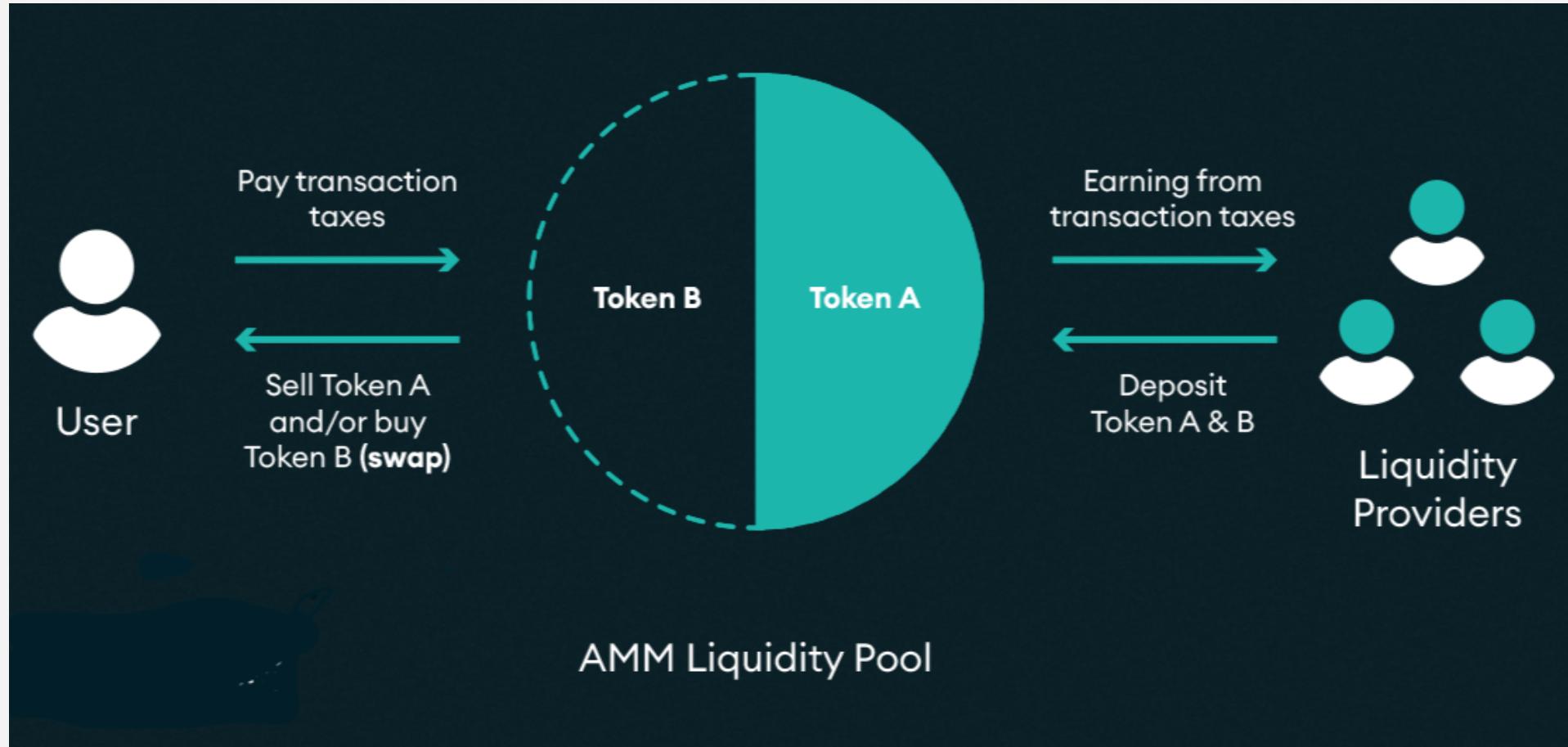


Applications – Blockchain Security

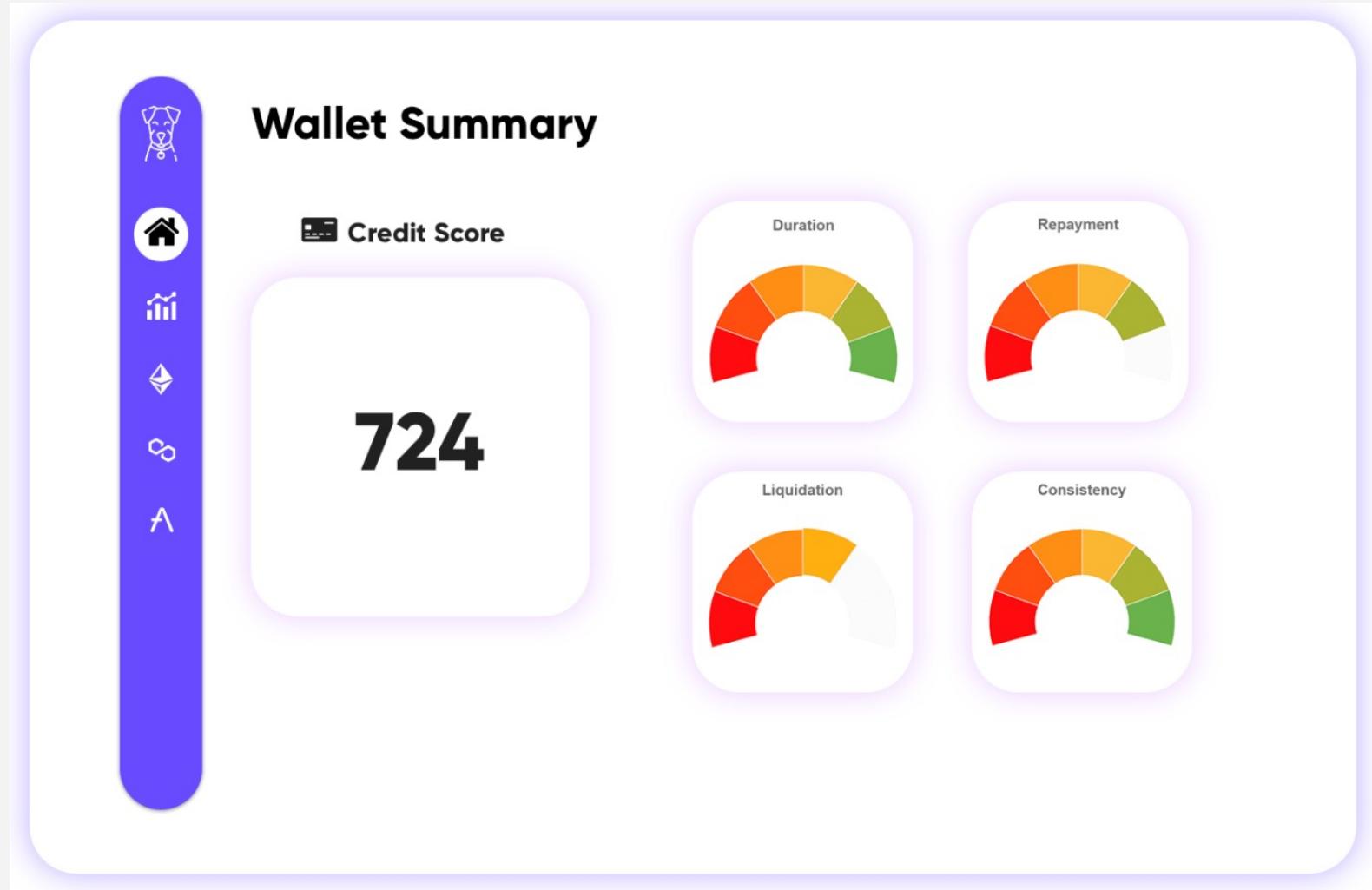


Detect Web3 Threats and Anomalies in Real-Time with Machine Learning

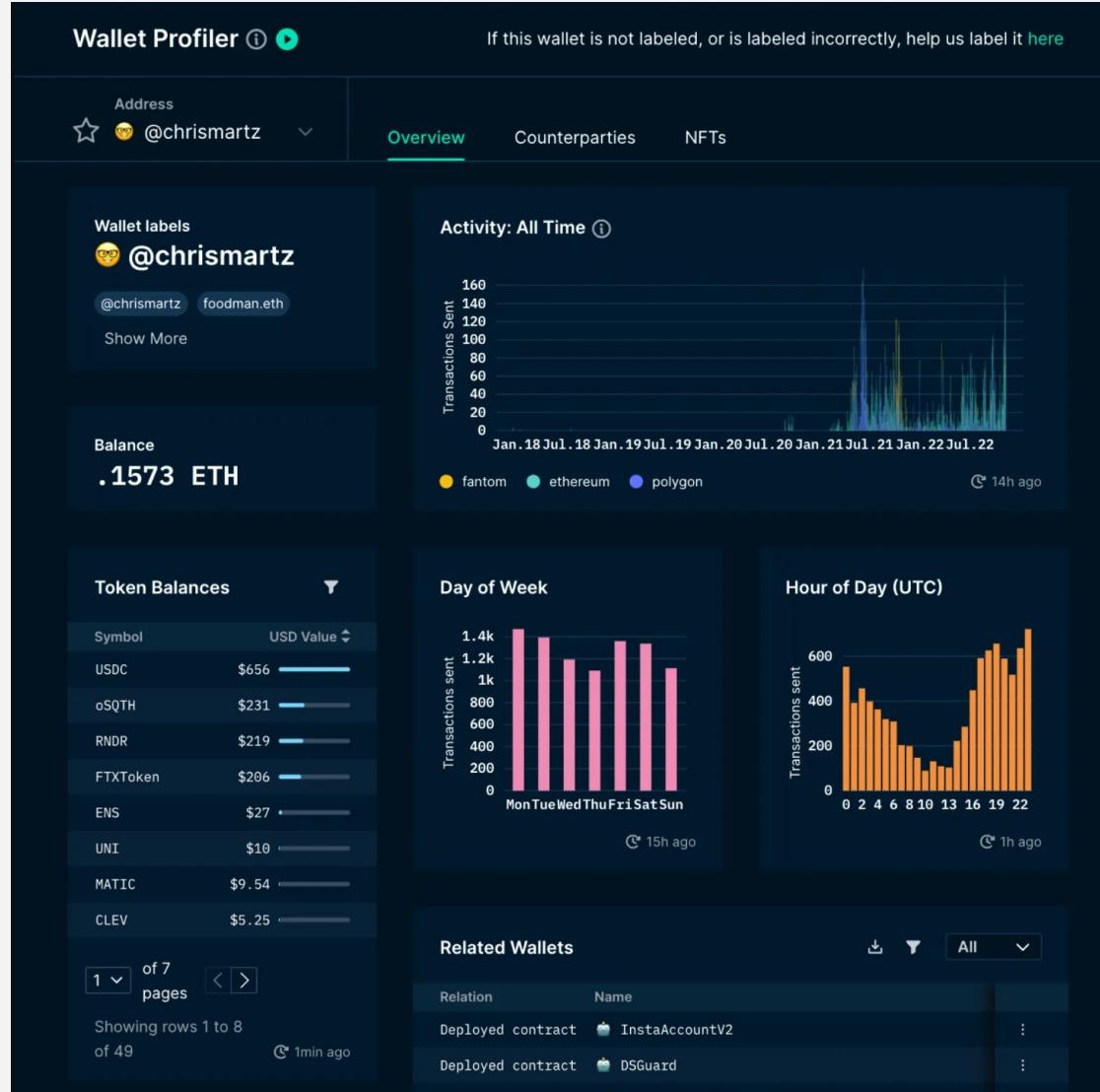
Applications – DeFi – Intelligent AMMs



Applications – DeFi – Credit Scoring



Applications – Wallet Profiling

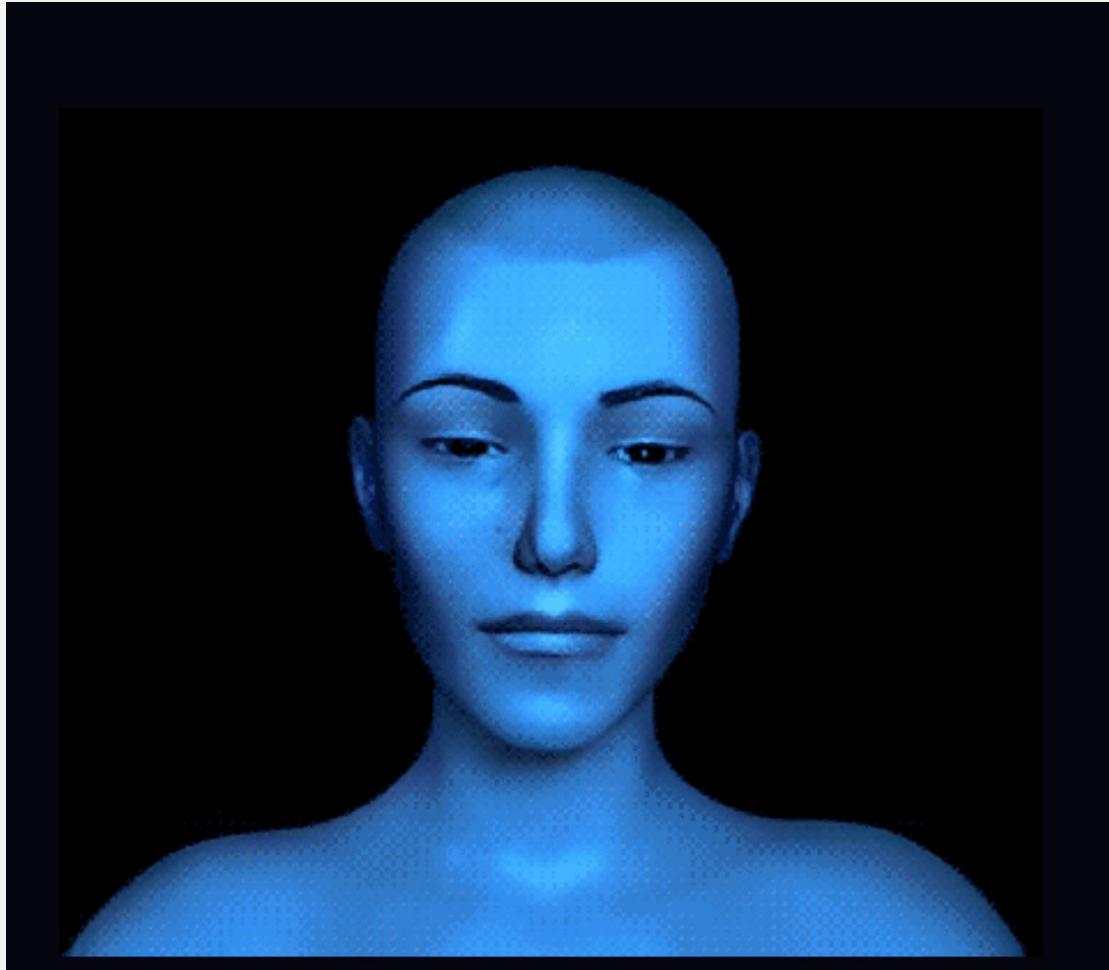


Applications - AI Generated NFTs



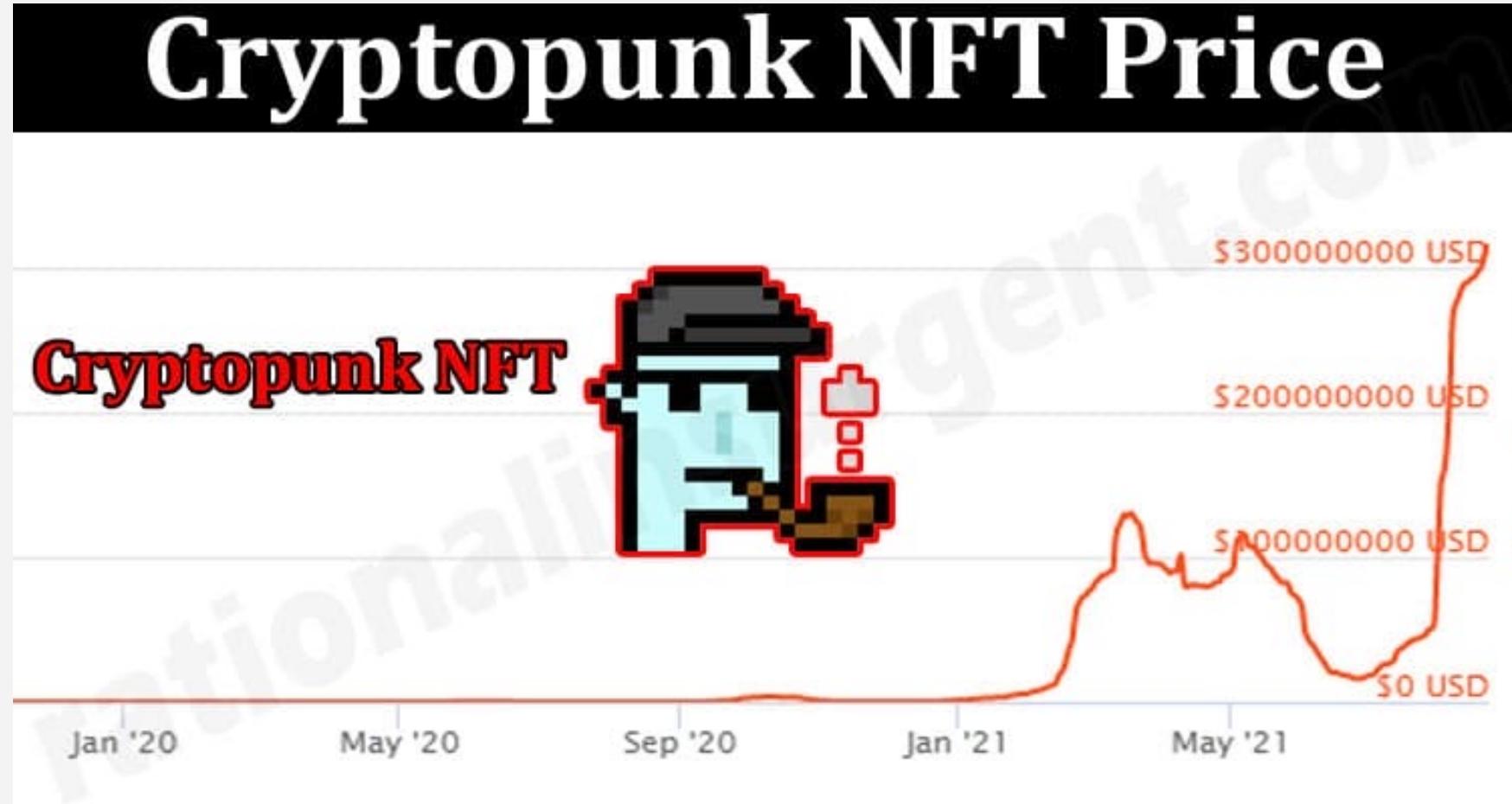
[See Gem Castle by Anne Spalter on SuperRare](#)

Applications - AI Embedded NFTs

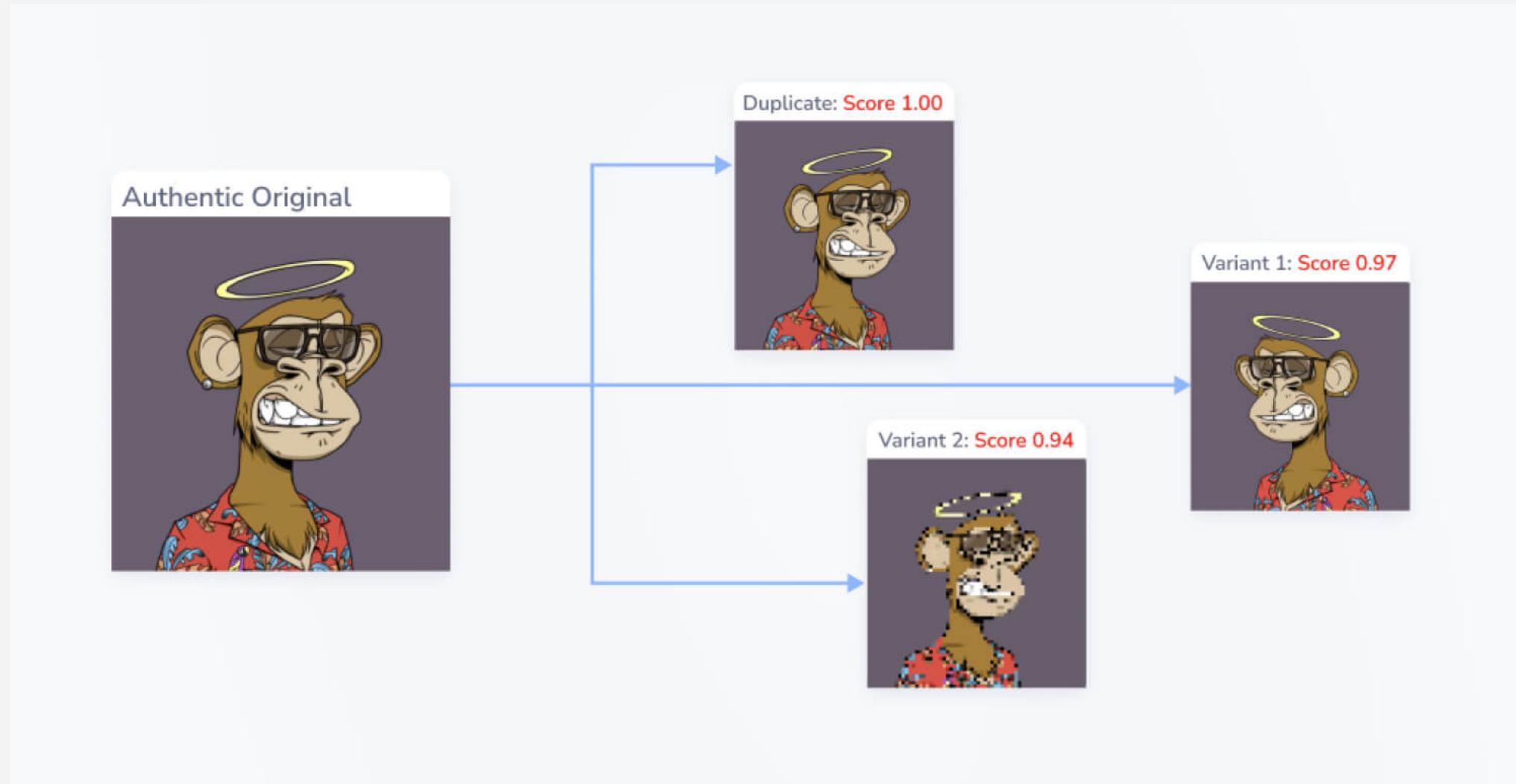


**Alice, the world's first iNFT was auctioned at Sotheby's on
June 10, 2021 for \$478,800. [Read More](#)**

Applications – NFT Price Prediction



Applications – NFT Dupe Detection



How?

Blockchain Data for AI

What are the newest DeFi projects?

QUERY

```
{  
  categories(  
    where: {name: "DeFi"}  
  ) {  
    project  
      orderBy: createdAt,  
    } {  
      name  
      description  
    }  
  }  
}
```

RESULT

```
[  
  {  
    "name": "DeFi Prime",  
    "description": "A source of DeFi data, analytics and market information."  
  },  
  {  
    "name": "Opyn",  
    "description": "A decentralized options trading and risk management platform."  
  },  
  {  
    "name": "Airswap",  
    "description": "A decentralized exchange for peer-to-peer trading of crypto assets."  
  }  
]
```



The Graph is a decentralized indexing protocol that provides search and discovery services for blockchain data. It uses GraphQL to query data from various blockchains and off-chain sources. The interface shows a search bar with the text "the graph" and a grid of circular icons representing different blockchain projects.

Blockchain Data for AI

Search... Discover Favorites My Creations ...

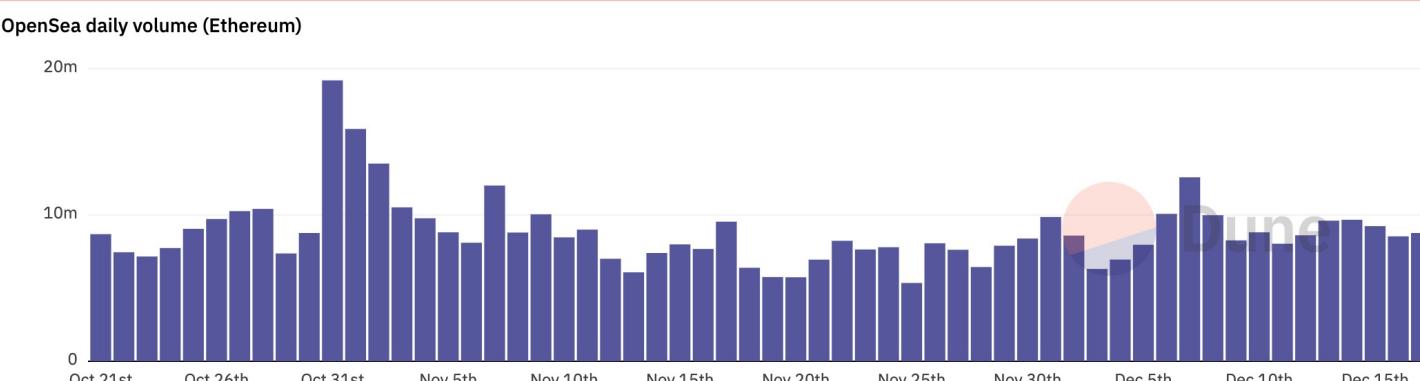
 Dune

@rchen8 / OpenSea daily volume (Ethereum)
forked from @rchen8/OpenSea monthly volume (Ethereum)

```
1 SELECT time_unit,
2      sum(usd) AS usd
3 FROM
4   (SELECT 'wyvern' AS contract,
5        date_trunc('day', a.block_time) AS time_unit,
6        sum((a.original_amount / 10^erc.decimals) * p.price) AS usd
7   FROM dune_user_generated.sohwak_os_nft_trades_opensea_wyvern a
8   LEFT JOIN prices.usd p ON p.minute = date_trunc('minute', a.block_time)
9   AND p.minute >= CURRENT_DATE - '90 day'::interval
10  AND p.contract_address = a.currency_contract
11  LEFT JOIN erc20.tokens erc ON a.currency_contract = erc.contract_address
12  WHERE a.block_time >= CURRENT_DATE - '90 day'::interval
13  AND a.tx_hash not in
14    (SELECT *
15     FROM dune_user_generated.sohwak_os_washtrading_txns)
```

Bar chart Table

OpenSea daily volume (Ethereum)



Date	Volume (m USD)
Oct 21st	~8.5
Oct 26th	~10.5
Oct 31st	~18.0
Nov 5th	~10.5
Nov 10th	~10.0
Nov 15th	~8.5
Nov 20th	~7.0
Nov 25th	~8.5
Nov 30th	~9.5
Dec 5th	~12.0
Dec 10th	~9.0
Dec 15th	~9.0

Blockchain Data for AI

Given `chain_id` and wallet `address`, return current token balances along with their spot prices. This endpoint supports a variety of token standards like ERC20, ERC721 and ERC1155. As a special case, network native tokens like ETH on Ethereum are also returned even though it's not a token contract.

Notes:

- Now supporting Solana
- No support for re-balancing tokens
- Tokens classified as dust

[Example Request](#)[Custom Request](#)

PREVIEW ON ETHEREUM MAINNET

PREVIEW SETTINGS

`chain_id` 1 `address` demo.eth

[RUN](#)[HIDE](#)

GET /v1/`chain_id` 1 /address/`address` demo.eth /balances_v2/

```
curl -X GET https://api.covalenthq.com/v1/1/address/demo.eth/balances_
-u <your_api_key>: \
-H 'Content-Type: application/json'
```

THE BALANCE RESPONSE TYPE OBJECT

```
▼ {
  "address" : "0xfc43f5f9dd45258b3aff31bdbe6561d97e8b71de"
  "updated_at" : "2023-01-19T12:03:17.106082408Z"
  "next_update_at" : "2023-01-19T12:08:17.106082838Z"
  "quote_currency" : "USD"
  "chain_id" : 1
  "items" :
```

[TABLE](#)

On-chain Machine Learning

zkm-community / awesome-zkml Public

forked from [worldcoin/awesome-zkml](#)

[Code](#) [Pull requests](#) [Actions](#) [Projects](#) [Security](#) [Insights](#)

Projects interested in ZKML

- [0xPARC](#) - The 0xPARC Foundation promotes application-level innovation on Ethereum and other decentralized platforms
 - [zkMnist](#)
- [Worldcoin](#) - A Privacy-Preserving Proof-of-Personhood Protocol
 - [proto-neural-zkp](#)
- [Gizatech](#) - Fully on-chain artificial intelligence on Starknet
- [Modulus Labs](#) - Bringing powerful ML models on-chain
- [Risc Zero](#) - The General Purpose Zero-Knowledge VM
- [Supranational](#) - A product and service company developing hardware accelerated cryptography for verifiable and confidential computing
- [Ingonyama \(Hardware\)](#) - Zero Knowledge ASICs (ZPU)
- [Zama.ai \(FHE ML / FHE-ZK ML\)](#) - FHE tooling for machine learning, blockchain and more. ZK-FHE is an interesting research area. [FHE.org](#) is a very interesting community with a lot of potential for collaboration.
- [zkMachineLearning](#) - ZKML tooling for Circom
- [Aleo](#) - Platform for building fully private and programmable Web applications.

Thank you!

Questions?!