Web3 x AI: Pond - The Model Layer for Crypto AI

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→

Bill Shi

- Co-founder of Pond

- Worked in academia, tech giant, and startups
- Enjoy doing research in machine learning and graph for 10+ years, with publications in NeurIPS, ICML, PNAS, Nature Comm, etc.

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Objective of This Lecture

- Provide an overview on blockchain data, models, and AI

- Introduce Pond, the model powerhouse for Crypto AI, and cover the whole development process from model ideation to application

- Provide hands-on experience and practical guidance
  to start building in Web3 x AI

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Topic 01

Why Crypto-native AI models

✦ Topic 01: Why Crypto-native AI models

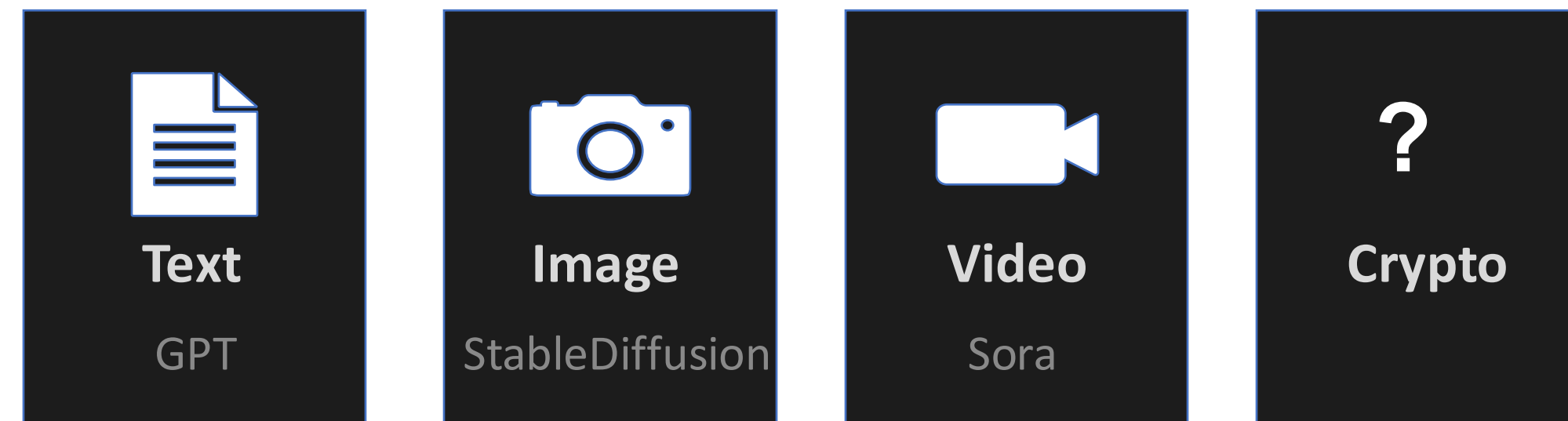## What is different between Web2 and Web3 AI

IN WEB2

GPT has revolutionized text generation and AI

StableDiffusion has changed image generation

IN CRYPTO

**We are still in the phase of data analytics**

Or chatgpt over news and tweets

Text	Image	Video	?
Text	**Image**	**Video**	**Crypto**
GPT	StableDiffusion	Sora	

✦ Topic 01: Why Crypto-native AI models

Blockchain is a complex web of interactions

Block	Age	From		To	Amount
20895223	12 secs ago	0xa83114A4...9F37fCCcb	→	0xaB879d3b...Fd4eCD936	0.03111
20895223	12 secs ago	0x4491E3BD...A12b045Eb	→	0xCF6dAAB9...287ffDEAa	0 ETH
20895223	12 secs ago	0xAc34d7C1...df599c3a0	→	0x00000000...072C22734	0 ETH
20895223	12 secs ago	0x54AcEBf2...03598c9EA	→	0x0A0f4321...daF03f0A0	0 ETH
20895223	12 secs ago	0xbb64768E...63986fdE5	→	Tether: USDT Stablecoin	0 ETH
20895223	12 secs ago	0x51B6EcF1...D11437E79	→	0xDe44500b...24Df3e8dD	0 ETH
20895223	12 secs ago	acidity.eth	→	Seaport 1.6	0 ETH
20895223	12 secs ago	0x104F4B4D...650759ABC	→	0x5Bd7D64f...89c632fB2	0.00050
20895223	12 secs ago	0x65Ef26D2...272d3C5e2	→	0x473b4b61...3adA1Da46	0.00084

Block explorer (Etherscan) view of blockchains
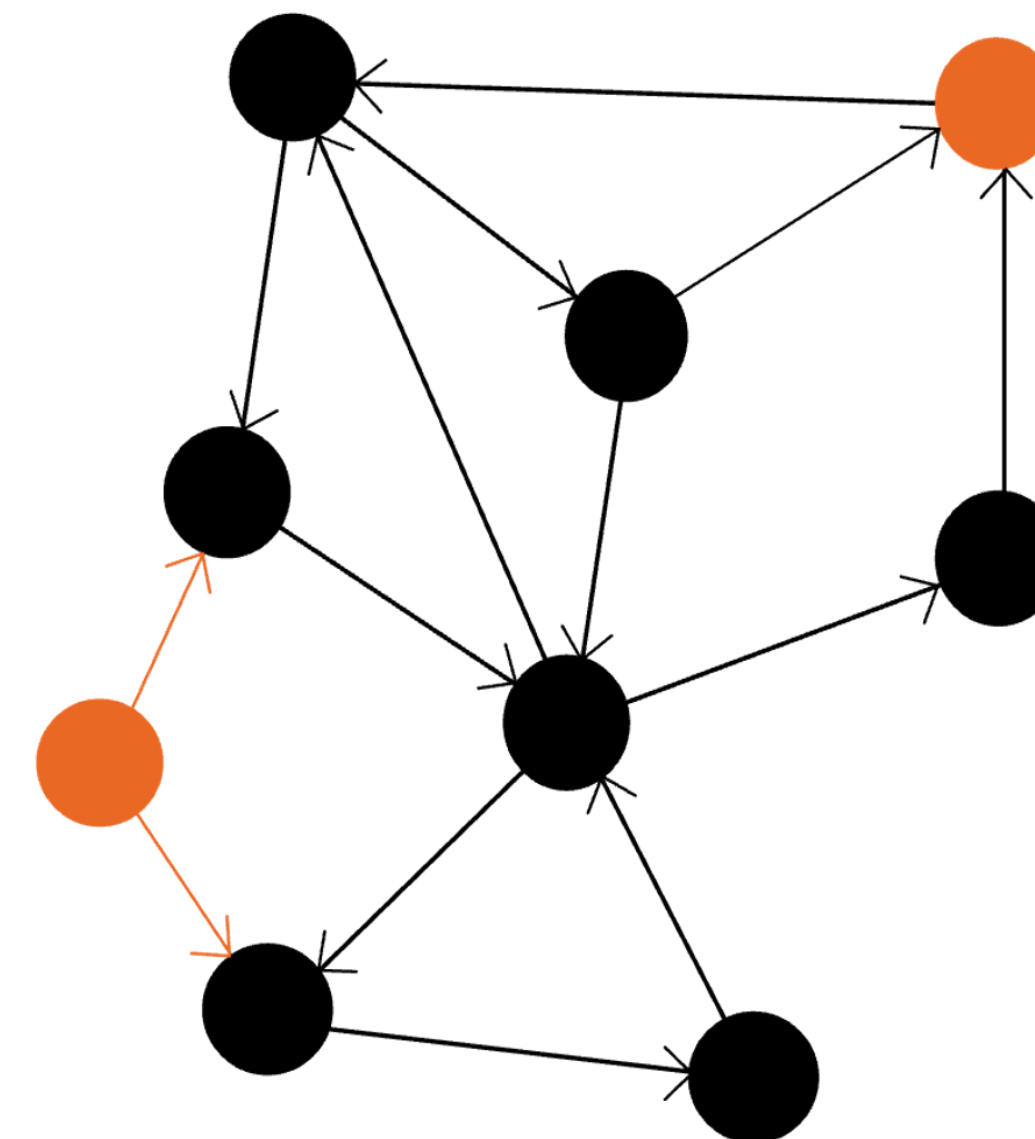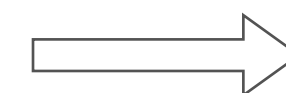
Pond's graph view of on-chain interactions

Twitter: **@OpenBuildxyz @PondGNN**

✦ **Topic 01:** Why Crypto-native AI models

Crypto use cases require more than language models

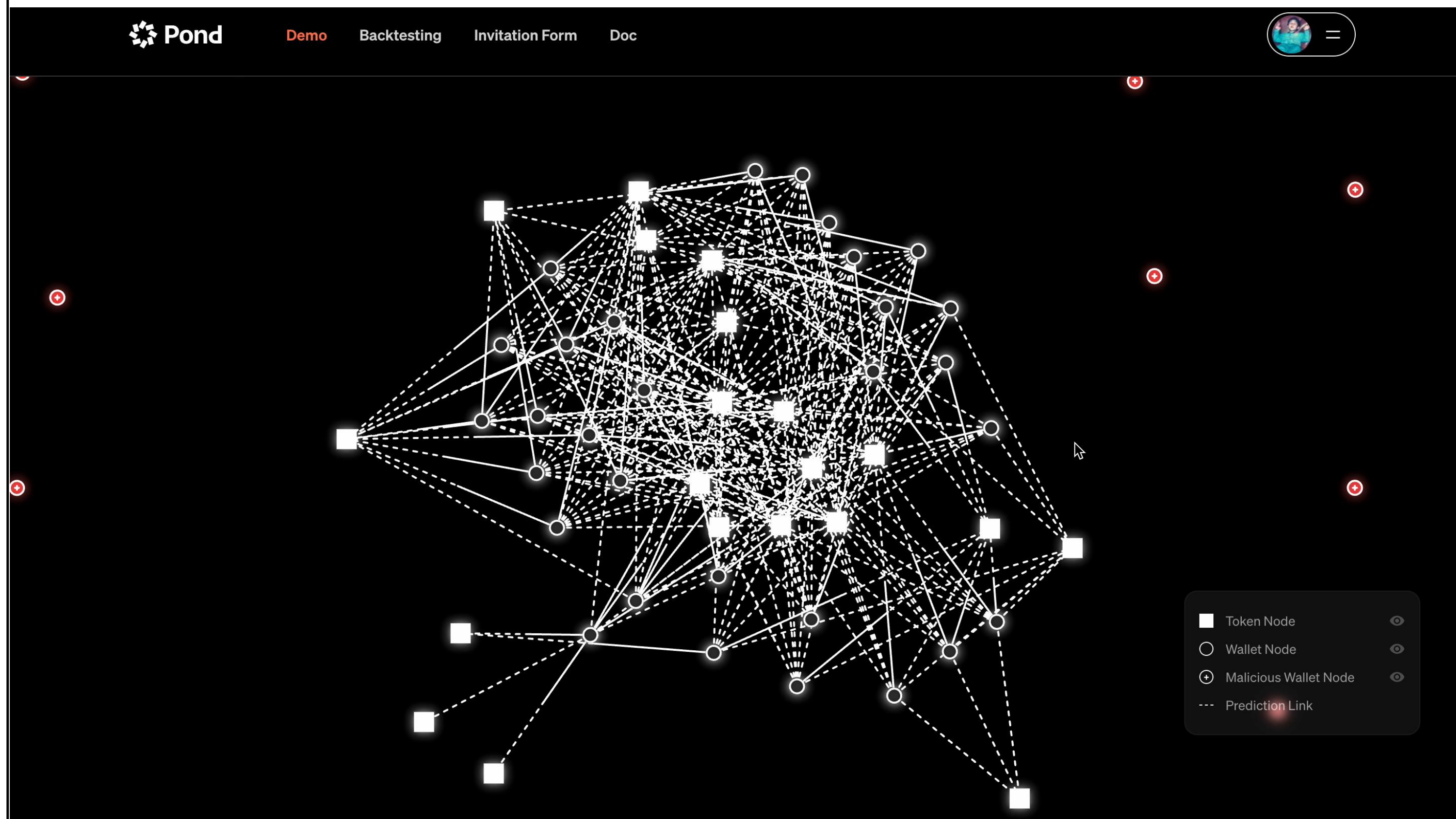Price Prediction

Security

Risk
Management

Recommendation

✦ Topic 01: Why Crypto-native AI models

## Predict malicious addresses based on behavioral patterns

Above 90% precision and recall

Natural language explanation by integrating with LLM

model_name	AUC	Accuracy	Precision	Recall
Pond Security Fusion Model	**0.904**	**0.936**	**0.936**	**0.904**
Transformer	0.887	0.723	0.725	0.779
MLP	0.791	0.865	0.911	0.763
RandomForest	0.891	0.929	0.930	0.891
LR	0.750	0.843	0.845	0.751
Naive Bayes	0.580	0.762	0.826	0.581

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✦ Topic 01: Why Crypto-native AI models

Predict next interactions based on historical interactions
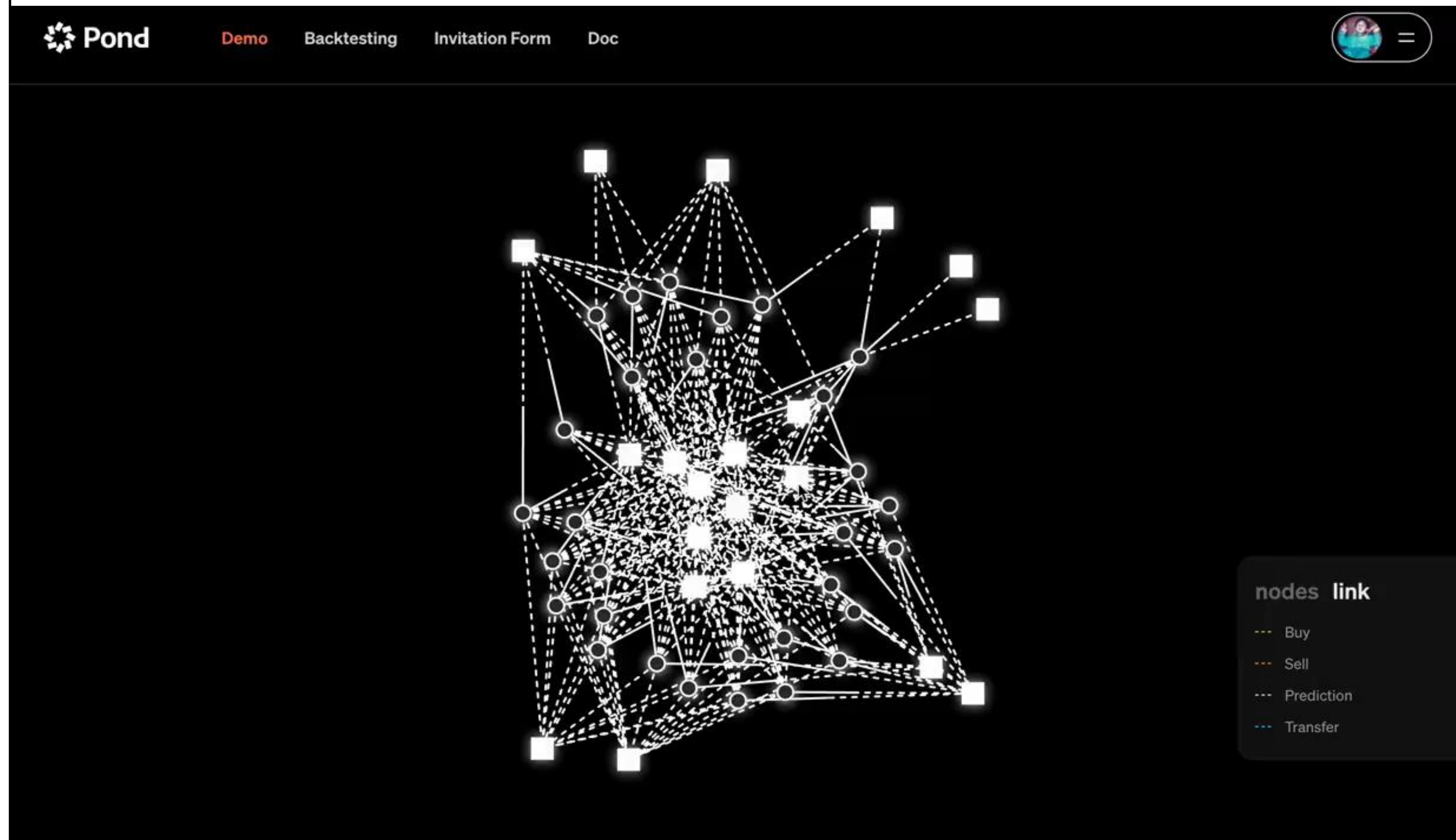
NFT recommendation model: Based on historical NFT trades and mints, predict what NFTs you will likely interact with next.

Model performance
- Mean rank: 12/128, AUC: 0.868
- Precision@5: 52.8%,
- Precision@10: 70.43%

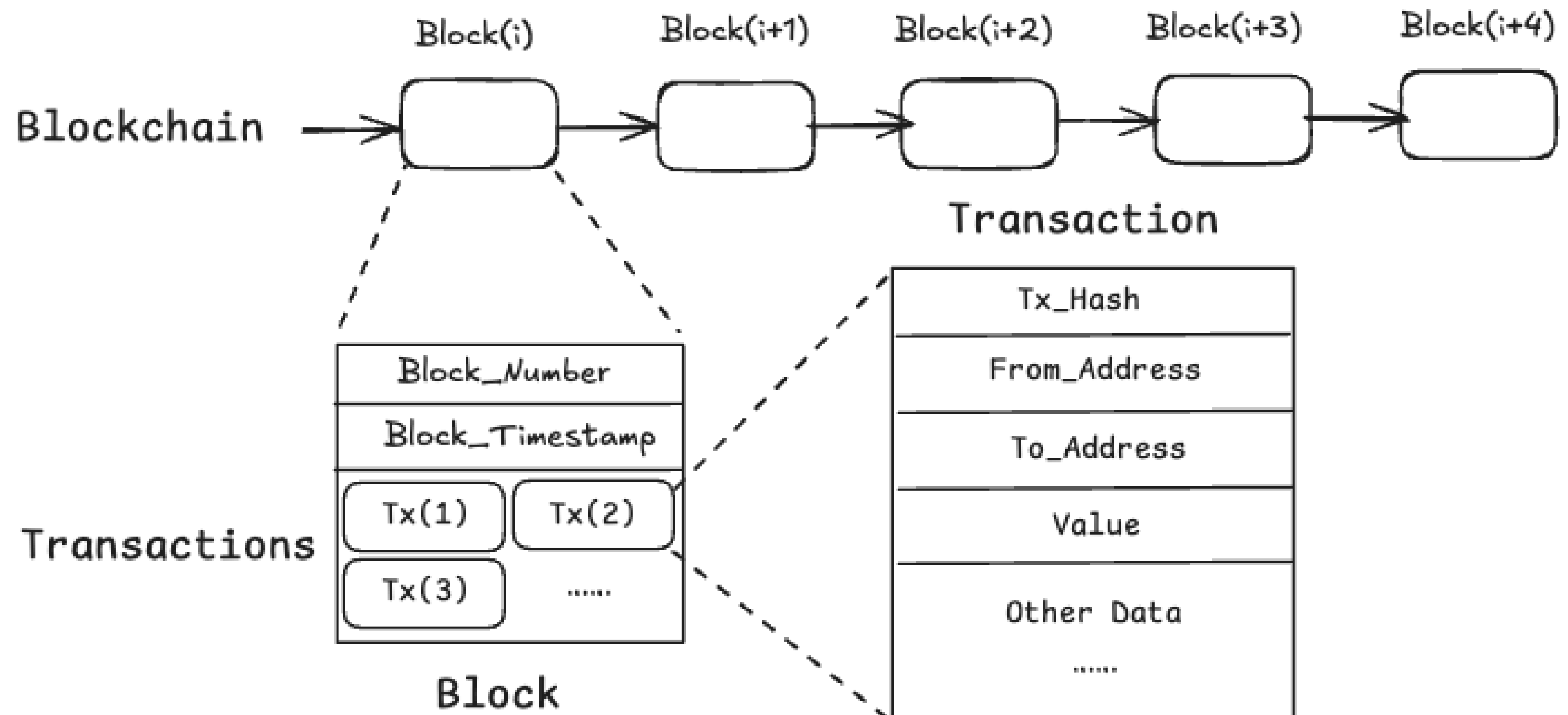Twitter: **@OpenBuildxyz @PondGNN**

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Topic 02

Blockchain 101 for data scientists

Bitcoin: The Dawn of Blockchain

Imagine a public ledger that records transfers of bitcoins from one user to another.
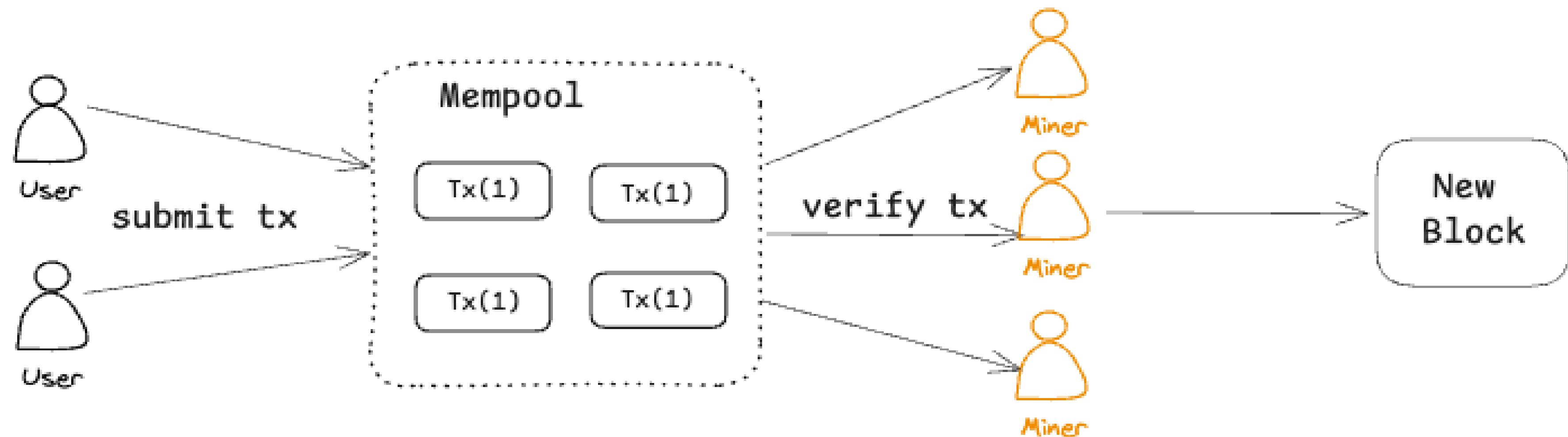
- Address: A unique identifier for a user

- Transaction: A record of a transfer

- Block: A group of transactions bundled together

Why Blocks?

Decentralization: blockchain is maintained by a network of nodes (i.e., computers) instead of a central database

✦ **Topic 02:** Blockchain 101 for data scientists

Ethereum: Smart Contracts and the EVM

- Smart Contract: A piece of code stored on the blockchain that automatically executes actions when predefined conditions are met such as when called by a user or another smart contract.

- EVM (Ethereum Virtual Machine): The runtime environment for smart contracts on Ethereum. It ensures that smart contracts execute consistently across all nodes in the network.

- Logs and events: Emitted by smart contracts when they execute, containing information about what happened during the execution.

Topic 02: Blockchain 101 for data scientists

A New Era Begins: ERC-20, NFT, DeFi, DeSo, ...

Native Transfers	Transactions	Token Transfers	NFT Transfers
Tx_Hash	Tx_Hash	Tx_Hash	Tx_Hash
Origin_From_Address	From_Address	Origin_From_Address	Origin_From_Address
Origin_To_Address	To_Address	Origin_To_Address	Origin_To_Address
From_Address	Value	From_Address	NFT_From_Address
To_Address	Other Data	To_Address	NFT_To_Address
Amount_Precise	......	Contract_Address	NFT_Address
AMOUNT_USD		Amount_Precise	TokenID
AMOUNT		Amount_USD	ERC1155_VALUE
......		......	......

✦ **Topic 02:** Blockchain 101 for data scientists

Extended Learning

- [Blockchain 101 for Data Scientists](#)
- **Books**:
  - *Mastering Bitcoin* by Andreas M. Antonopoulos
  - *Mastering Ethereum* by Andreas M. Antonopoulos and Gavin Wood
- **Online Resources**:
  - [Ethereum Documentation](#)
  - [Blockchain at Berkeley](#)
  - [Coursera's Blockchain Courses](#)
- **Communities**:
  - [Ethereum Stack Exchange](#)
  - [Reddit's r/ethereum](#)

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Topic 03

Pond: the model layer for Crypto AI

✦ **Topic 03:** Pond: the model layer for Crypto AI

cryptopond.xyz

✦ **Topic 03:** Pond: the model layer for Crypto AI

Pond's Vision

- Be the AI model layer for Web3

- Create truly valuable AI products by providing support for the end-to-end development from model ideation to model application

- Build a fair ecosystem for all developers and users, leveraging decentralized economics

✦ **Topic 03:** Pond: the model layer for Crypto AI

Why Pond

Two challenges faced by the AI/ML community in Web2

- Data monopolies
  - AI developers have little leverage as data is locked inside the tech giants
  - Data isolation makes it hard to collaborate, slowing down innovation
- Revenue monopolies
  - The big platforms have sole power on revenue allocation while supply and demand sides on the platforms have little impact
  - This is even worse in the AI era. Your data is used to train the models without paying you.
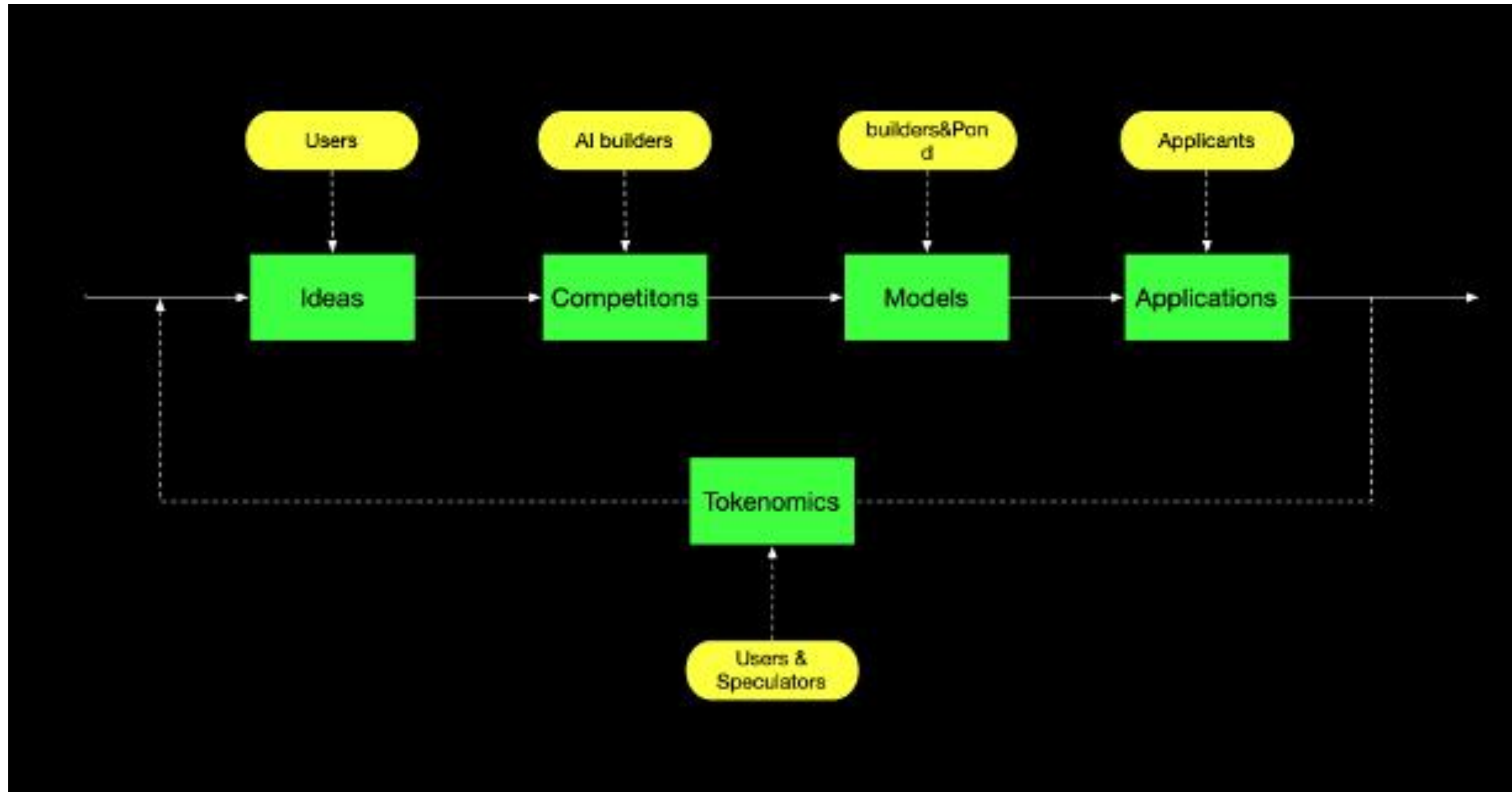
✦ Topic 03: Pond: the model layer for Crypto AI

Pond's Mission

- Focus on Web3+AI, helping developers build valuable AI applications with on-chain data

- Build a decentralized ecosystem, allowing all kinds of participants to collaborate and compete to create bigger value than any single individual could

- Leveraging tokenomics and decentralized technologies to make sure everyone is paid fairly

# ✦ **Topic 03:** Pond: the model layer for Crypto AI

Pond Platform and Ecosystem

✦ Topic 03: Pond: the model layer for Crypto AI

AI Model Ideas

Did you know AI models can be built using on-chain data? Pitch your ideas to be reviewed by world-class AI engineers and a vibrant community, with the chance to shape the future of technology. Share your vision, watch it evolve, and turn it into reality. Each member can submit up to three ideas per month—start making your mark today!
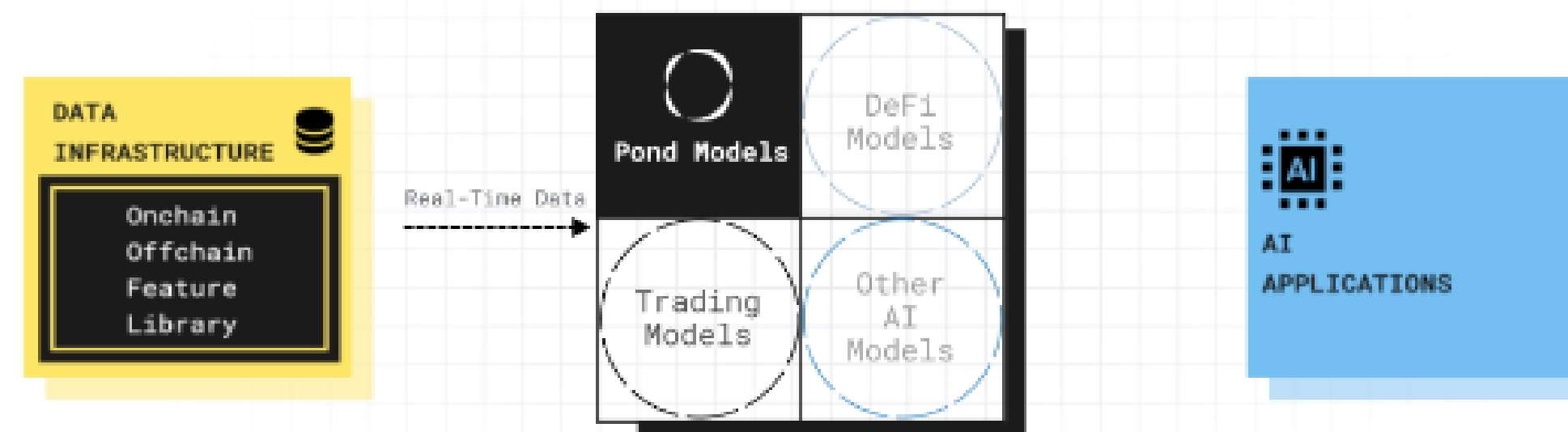
New Idea

🕐 **January 1, 2025 - January 31, 2025**   🗳 **3 out of 3**

🕐 **Ongoing**   ⊘ Done

Tips: Every two weeks, qualified ideas will be launched as competitions in the Model Factory

| **Predict cryptocurrency price trends based on changes in...**	**sybil attack security model**	**Calculate the similarity of each address on the...**	**Volatility Prediction for Tokens on Base**
Twitter is the most widely used social media platform in the cryptocurrency domain, containin...	detect onchain sybil atttack and sybil address clusters	All actions of blockchain addresses are public. If we can train a model based on the behavior of these...	Predicting token price volatility on the Base blockchain requires a combination of blockchain-specif...
▲ 15727	▲ 12397	▲ 8465	▲ 5912

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Topic 03: Pond: the model layer for Crypto AI

Model Factory

Powered by Pond's advanced graph-based AI model, data and inferencing infrastructure, developed by world-renowned AI experts, we elevate everyone to a world-class level. Pond handles all the heavy lifting so that you can create maximum value in the simplest way and be rewarded for transforming the market.

DATA INFRASTRUCTURE

Pond Models — DeFi Models, Trading Models, Other AI Models

AI APPLICATIONS
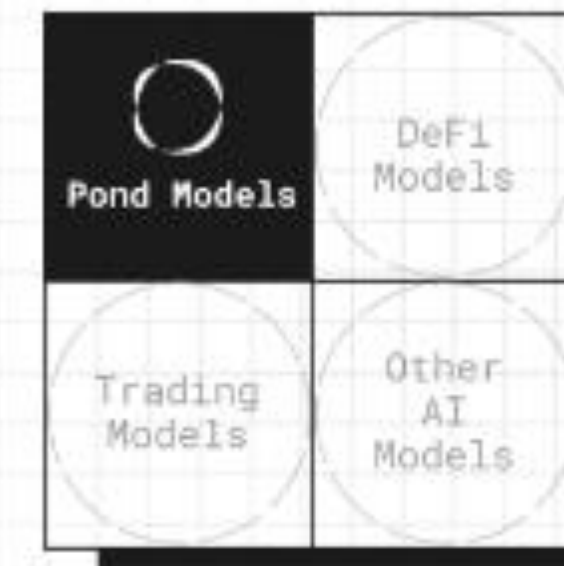
Wallet Risk Scoring on Base
30 days to go

Base · Virtual · Hyperbolic

Assess wallet risk levels by analyzing transaction histories,...

8485 Participants — Prize: **$7000**

Token Recommendation on ...
44 days to go

Base · Virtual · Hyperbolic

Recommend potential alphas on Base based on transaction history...

5246 Participants — Prize: **$7000**

Alpha Detection on Base
Ongoing

PRICE — Token Medium Term

Predict 7-day relative price changes for tokens on Base

23058 Participants

Price Estimation on Pump.fun
Ongoing

Predict 7-day relative price changes for tokens on pump.fun

14499 Participants

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✦ **Topic 03:** Pond: the model layer for Crypto AI

Pond Model Labs

The most comprehensive model solutions in the blockchain space, developed by a global community of Web2 and Web3 developers across diverse crypto use cases.

👍 Overall   👍 Recommendation   🛡 Security

ZORA NFT Recommendatio...

On-Chain Recommendation System: Making Discoveries &...

♡ Like 5320
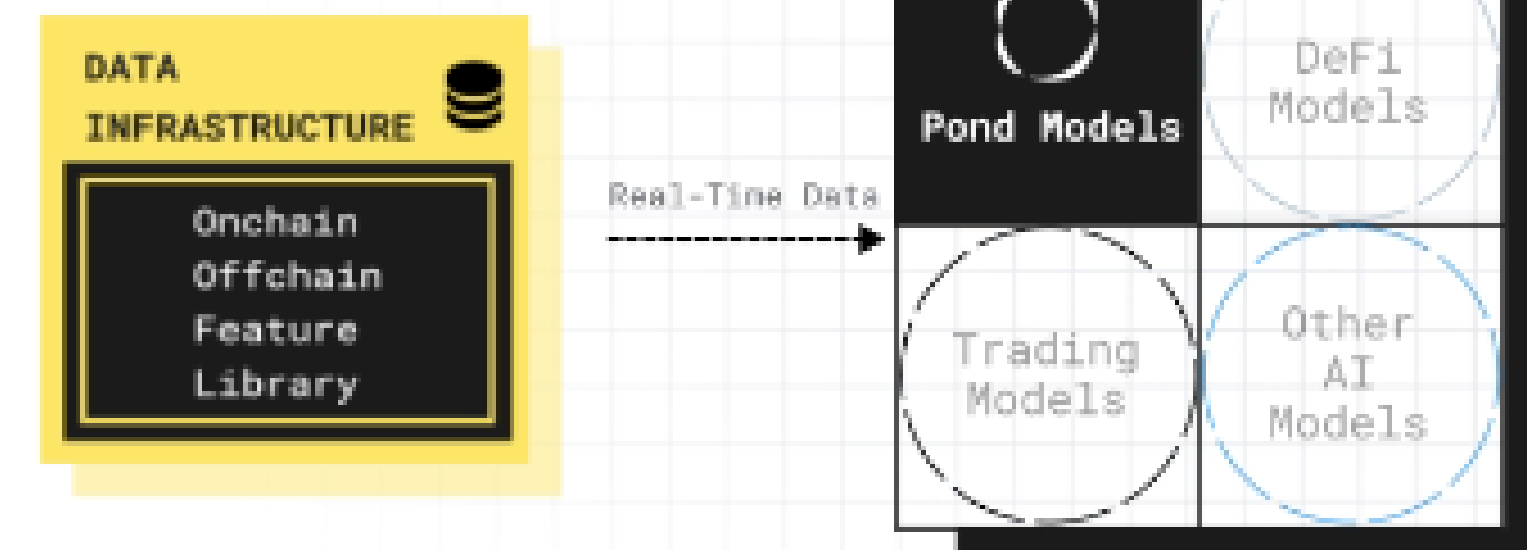
Sybil Address Prediction

An model aims to detect on-chain "Sybil Attacks"
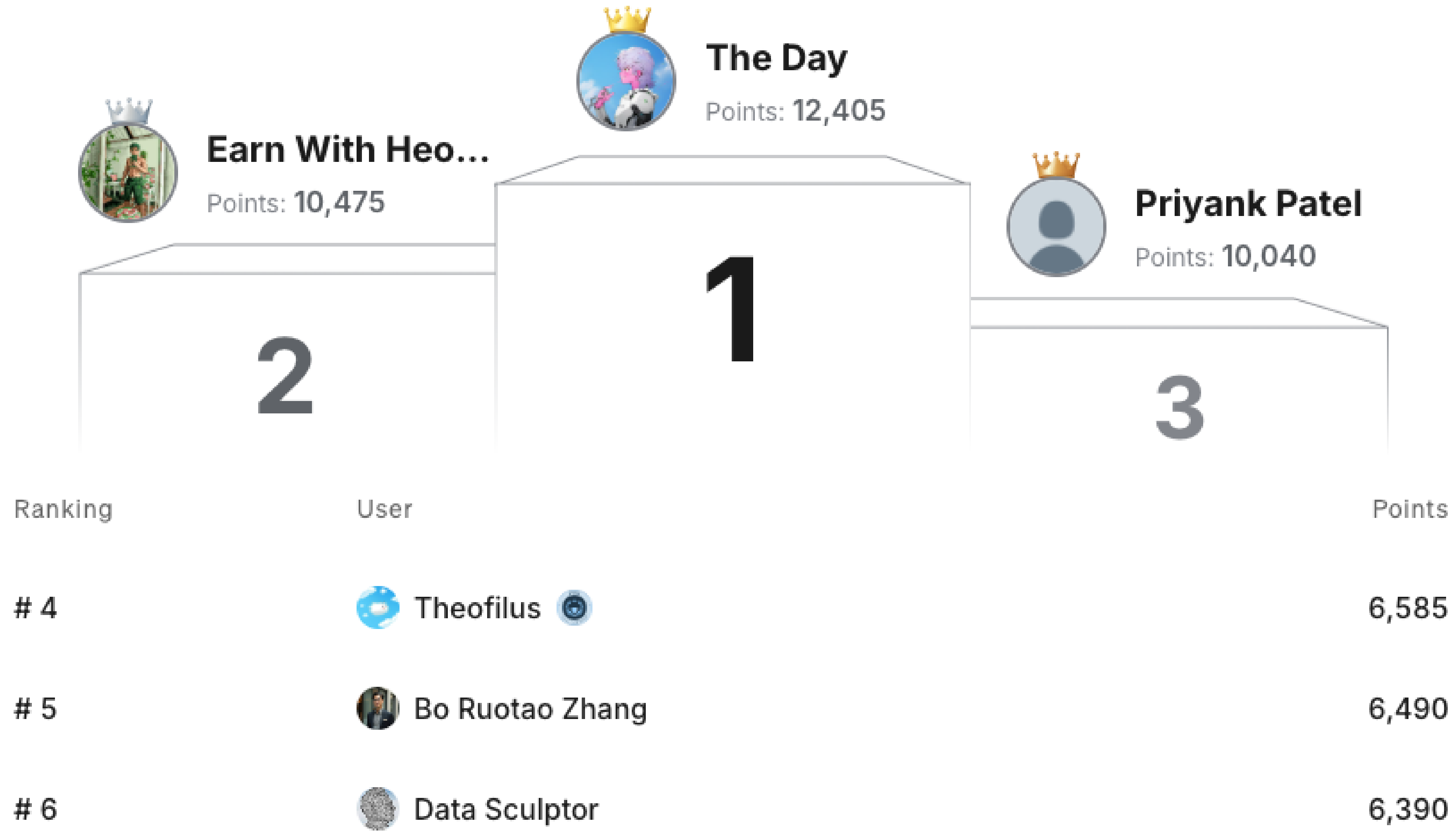
❤ Like 4404

Security Model

Analyze whether an account is secure by detecting and examini...

♡ Like 3798

✦ **Topic 03:** Pond: the model layer for Crypto AI

The Day
Points: **12,405**

Earn With Heo...
Points: **10,475**

Priyank Patel
Points: **10,040**

Ranking	User	Points
# 4	Theofilus	6,585
# 5	Bo Ruotao Zhang	6,490
# 6	Data Sculptor	6,390

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Topic 04

End-to-end model development with Pond

Thanks for watching!

Pond

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