

Meet Predictoor: Accountable Accurate Prediction Feeds

Trent McConaghy
Ocean Protocol





REPLAY

SPORTS LIVE



/u/legennn

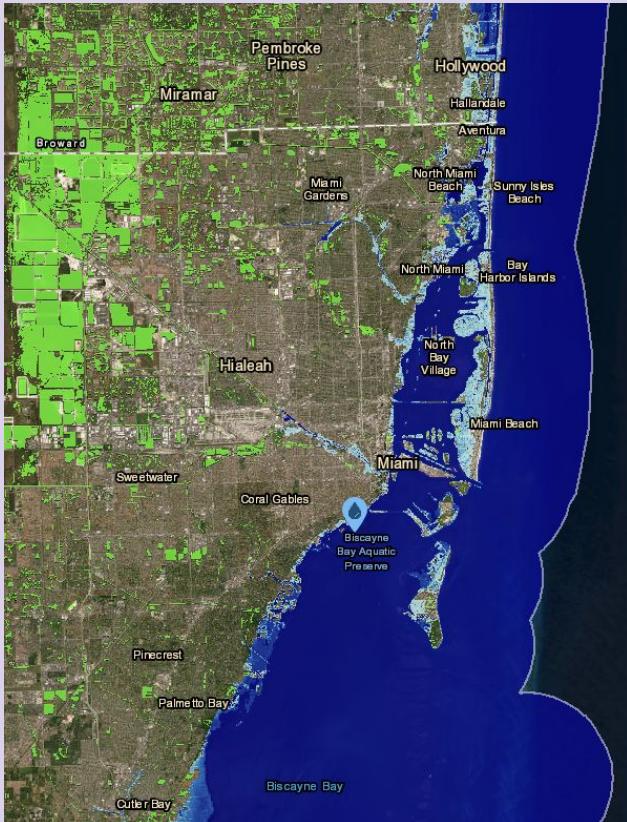


Miami vs sea level rise [NOAA]

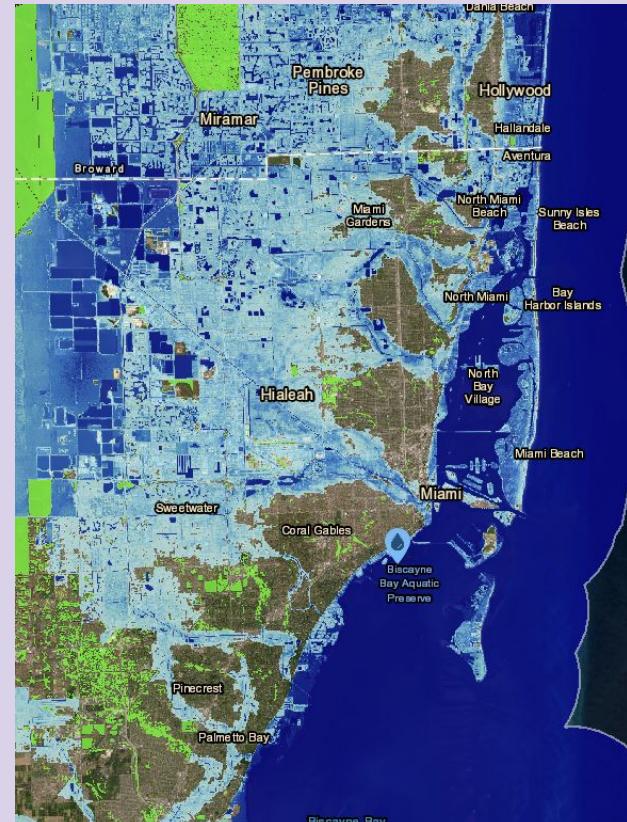
Today



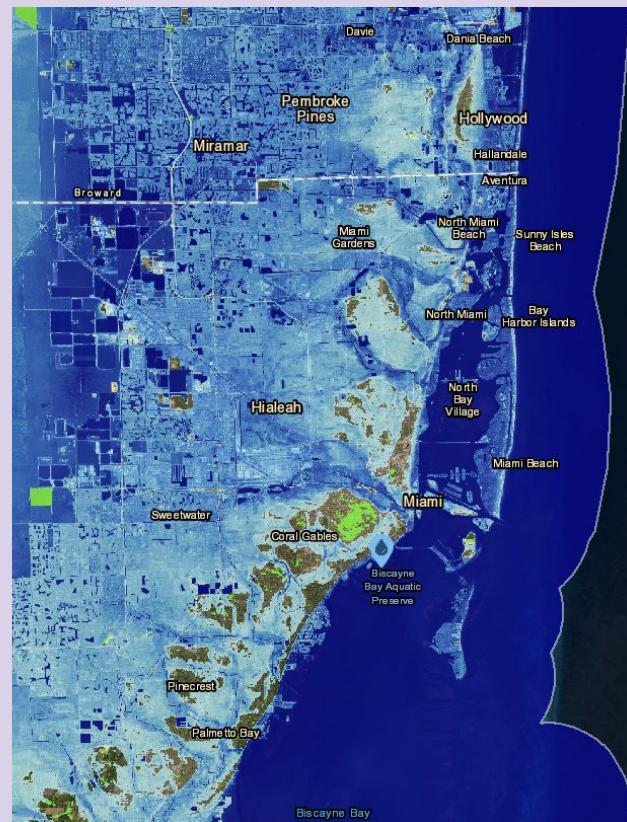
0.9m



2.1m

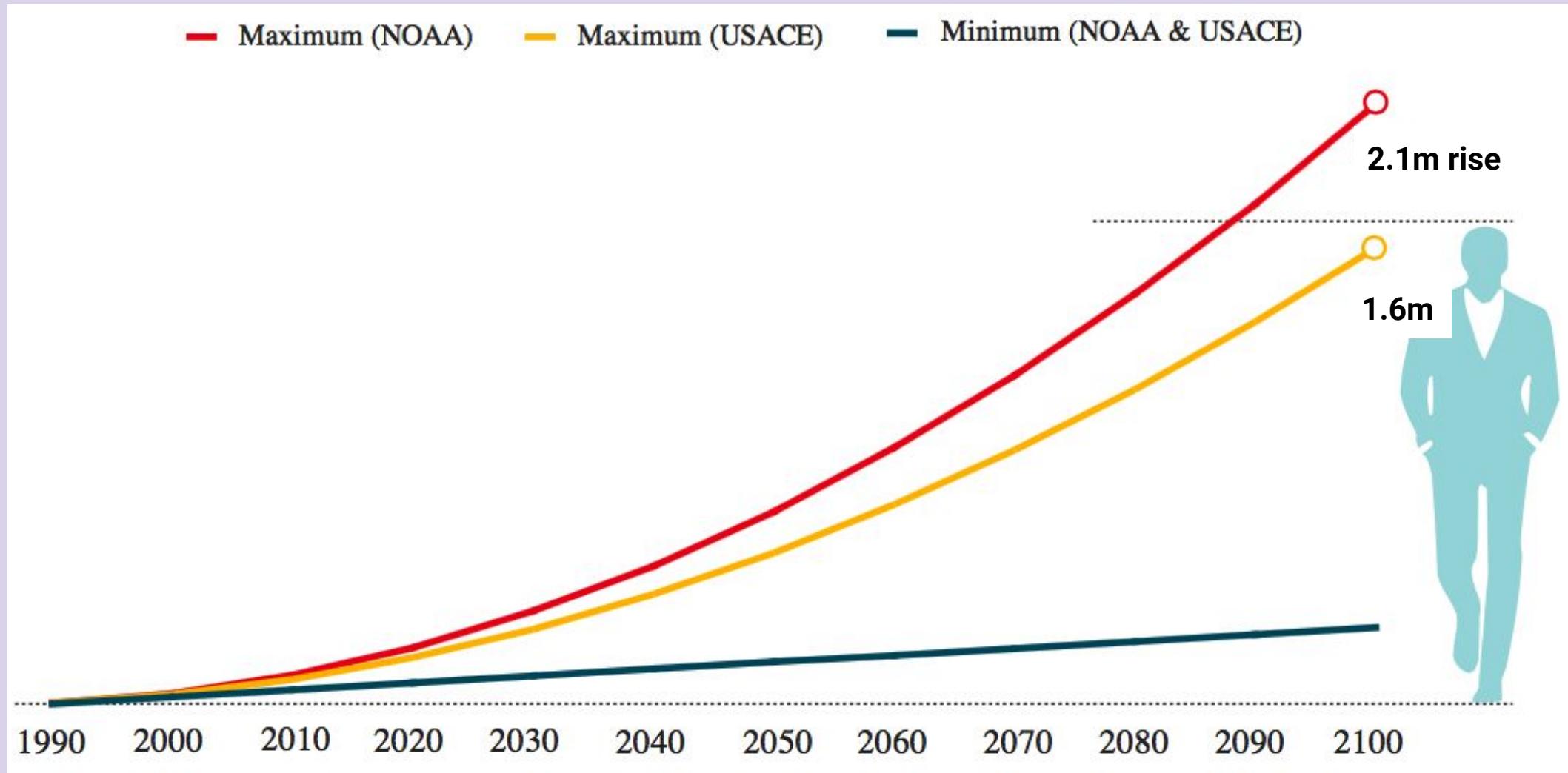


3m

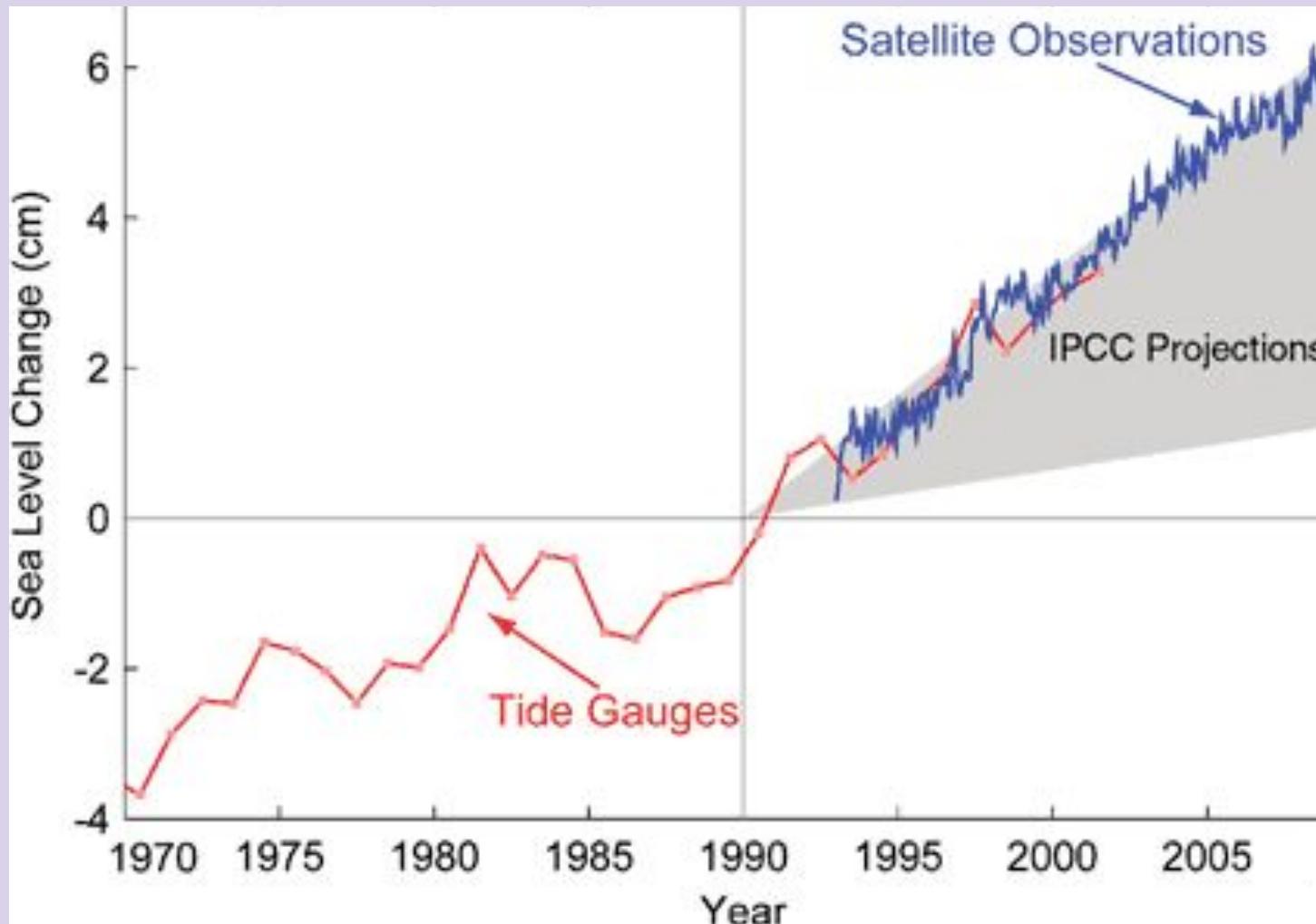


Miami sea level prediction feeds

It will be underwater 😱 ; only question is when



Previous sea level prediction feeds were too optimistic

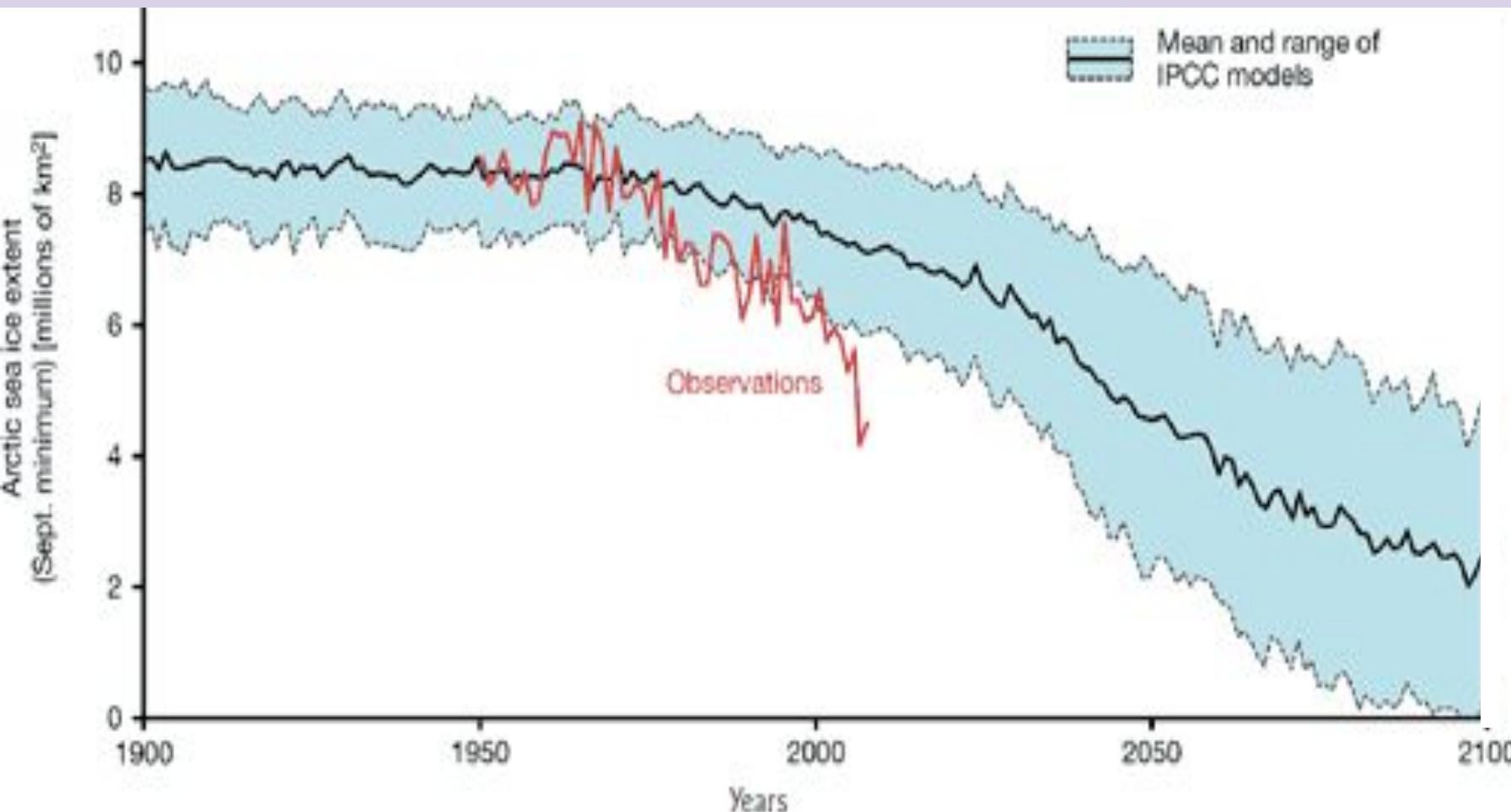


"underestimated the rate of sea level rise because the rapid melting of the ice sheets and glaciers was not incorporated"

There's a lot on the line!

How do we get more accurate predictions?

Previous sea ice prediction feeds were too optimistic



"Melting of Arctic sea-ice has accelerated far beyond the expectations of climate models ...40% greater..."

There's a lot on the line!

How do we get more accurate predictions?

There's great value for accurate prediction feeds

In climate, real estate, agriculture, logistics, crypto markets



There's a lot on the line!

How do we get more accurate predictions?

The background of the image is a vibrant, abstract composition dominated by shades of purple and blue. It features several bright, glowing streaks that curve and flow across the frame, creating a sense of motion and depth. These streaks are particularly prominent in the upper right and lower left areas. In the lower center, there is a darker, semi-transparent rectangular overlay containing the text.

Towards accurate prediction feeds



**For accurate prediction feeds, make predictions accountable
Correct → \$\$, wrong → lose \$\$**

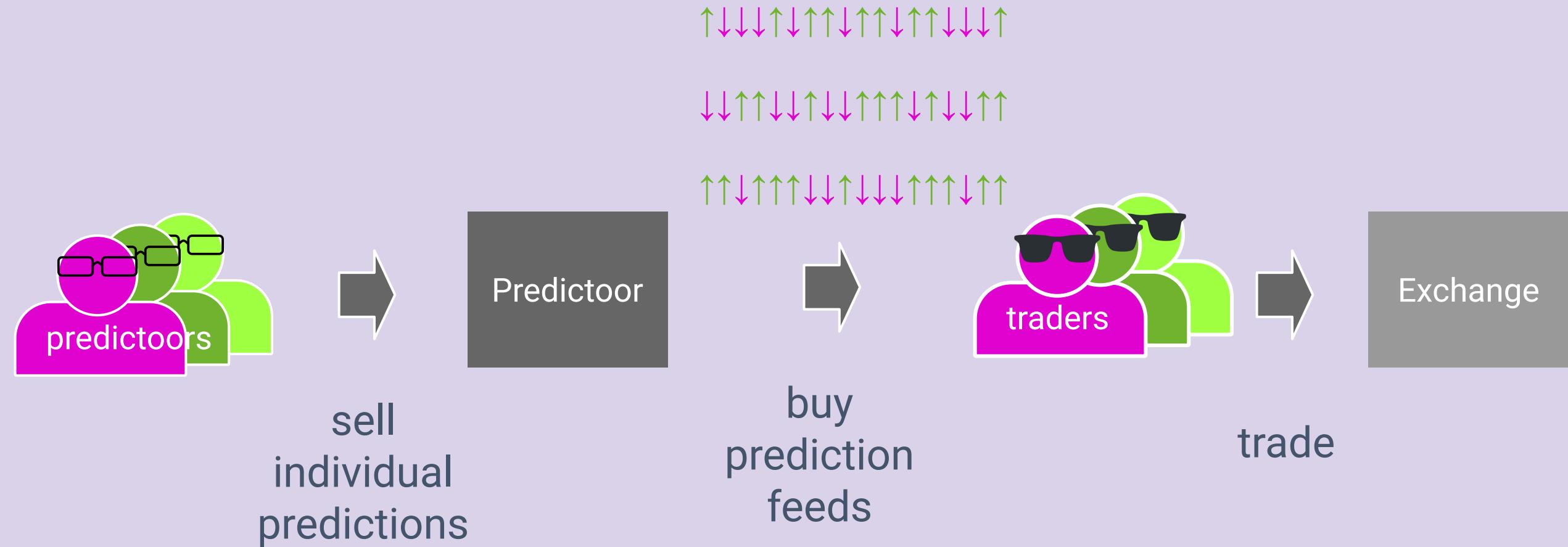
The goal

- 10,000+ prediction feeds
- globally-distributed
- anyone can predict and earn \$
- accountable --> accuracy
- non-custodial
- privacy-preserving

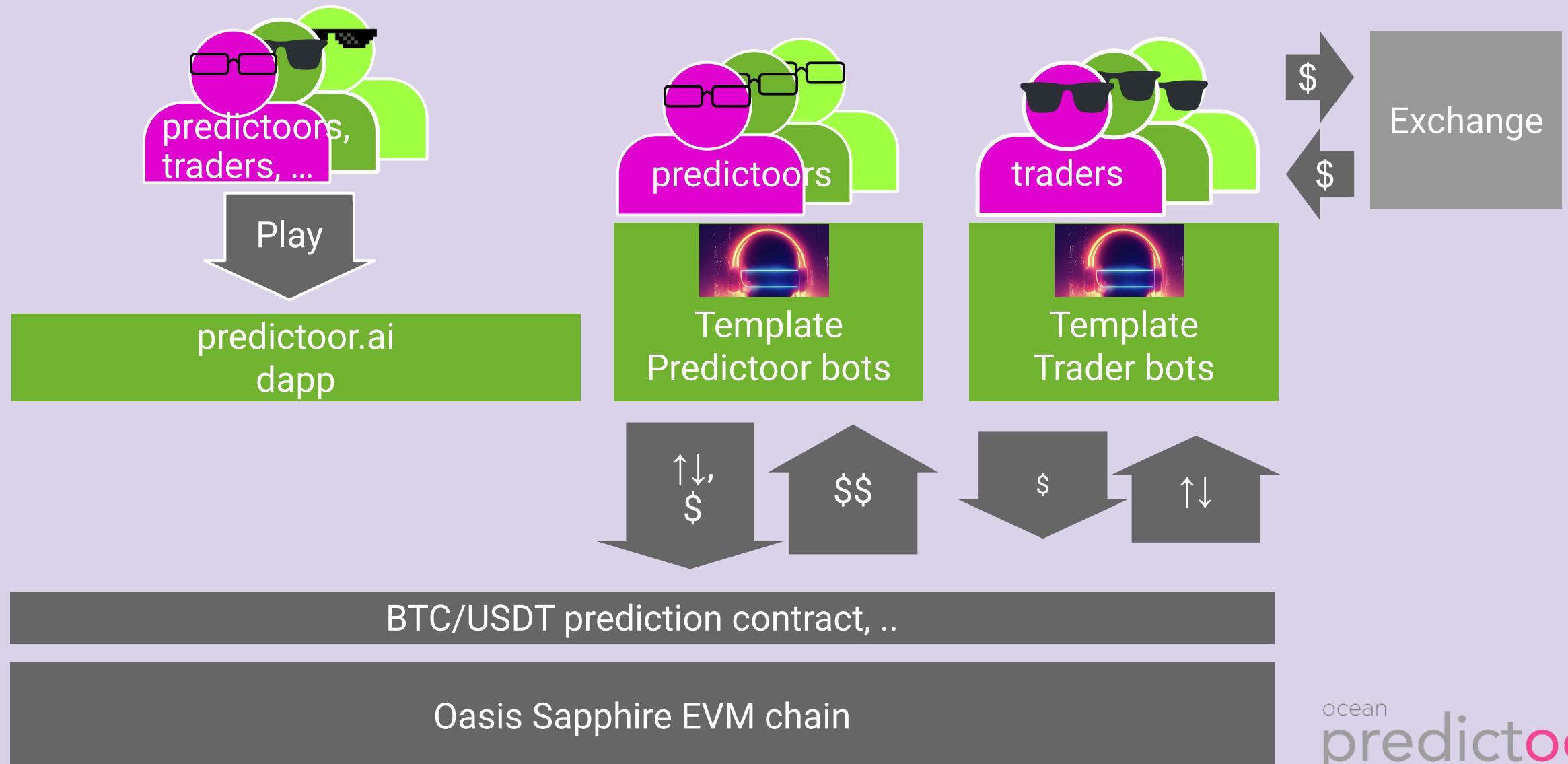


ocean
predictoor

Predictoor Overview



Predictoor Structure



predictoor.ai is live

ocean
predictoor

Oasis Sapphire Testnet [0xf25B...54C2](#) [ipy SDK](#) [About](#)

Asset (5m)	11:15	11:20	11:23	11:25 Predictions	Accuracy 24h	Subscription
BTC-TUSD <small>BINANCE</small>	\$26250.91	\$26237.44	\$26247.81	+ 1 stated Pred ?	49%	+ 3 / 24h <small>FREE</small>
DOGE-USDT <small>BINANCE</small>	\$0.06361	\$0.06356	\$0.06358	+ 0.01 stated Pred ?	51.8%	+ 3 / 24h <small>1h 11min left</small>
BTC-USDT <small>BINANCE</small>	\$26213.62	\$26198.19	\$26213.51	-	49.8%	+ 3 / 24h <small>BUY</small>
ETH-USDT <small>BINANCE</small>	\$1645.09	\$1644.29	\$1644.87	-	42.2%	+ 3 / 24h <small>BUY</small>
ADA-USDT <small>BINANCE</small>	\$0.2578	\$0.2575	\$0.2576	-	55.3%	+ 3 / 24h <small>BUY</small>
BNB-USDT <small>BINANCE</small>	\$216.9	\$216.7	\$216.8	-	50.5%	+ 3 / 24h <small>BUY</small>
TRX-USDT <small>BINANCE</small>	\$0.07902	\$0.07899	\$0.07897	-	50%	+ 3 / 24h <small>BUY</small>
SOL-USDT <small>BINANCE</small>	\$19.77	\$19.76	\$19.79	-	53%	+ 3 / 24h <small>BUY</small>
XRP-USDT <small>BINANCE</small>	\$0.5037	\$0.5036	\$0.5039	-	48.4%	+ 3 / 24h <small>BUY</small>
DOT-USDT <small>BINANCE</small>	\$4.284	\$4.274	\$4.278	-	49.6%	+ 3 / 24h <small>BUY</small>
LTC-USDT <small>BINANCE</small>	\$63.24	\$63.21	\$63.27	-	49.7%	+ 3 / 24h <small>BUY</small>

BALANCE + 1,958

Prediction feeds for the top 10 tokens (non-stablecoins)

For USDT pairs on Binance

5m ahead predictions

Predictoor bot templates



Predictoor

main → pdr-backend / pdr_backend / predictoor / approach1 / predictoor_agent1.py

trizin Reduce random stake amount (#134) · 5 days ago · History

Code Blame 149 lines (120 loc) · 5.08 KB

```
1 import sys
2 import random
3 import time
4 from typing import Dict, List, Tuple
5
6 from enforce_typing import enforce_types
7
8 from pdr_backend.models.feed import Feed
9 from pdr_backend.predictoor.approach1.predictoor_config1 import PredictoorConfig1
10
11
12 @enforce_types
13 class PredictoorAgent1:
14     """
15     What it does
16     - Fetches Predictoor contracts from subgraph, and filters them
17     - Monitors each contract for epoch changes.
18     - When a value can be predicted, call predict.py::predict_function()
19     """
20
21
22 def __init__(self, config: PredictoorConfig1):
23     self.config = config
24
25     self.feeds: Dict[str, Feed] = self.config.get_feeds() # [addr] : Feed
26
27     if not self.feeds:
28         print("No feeds found. Exiting")
29         sys.exit()
```



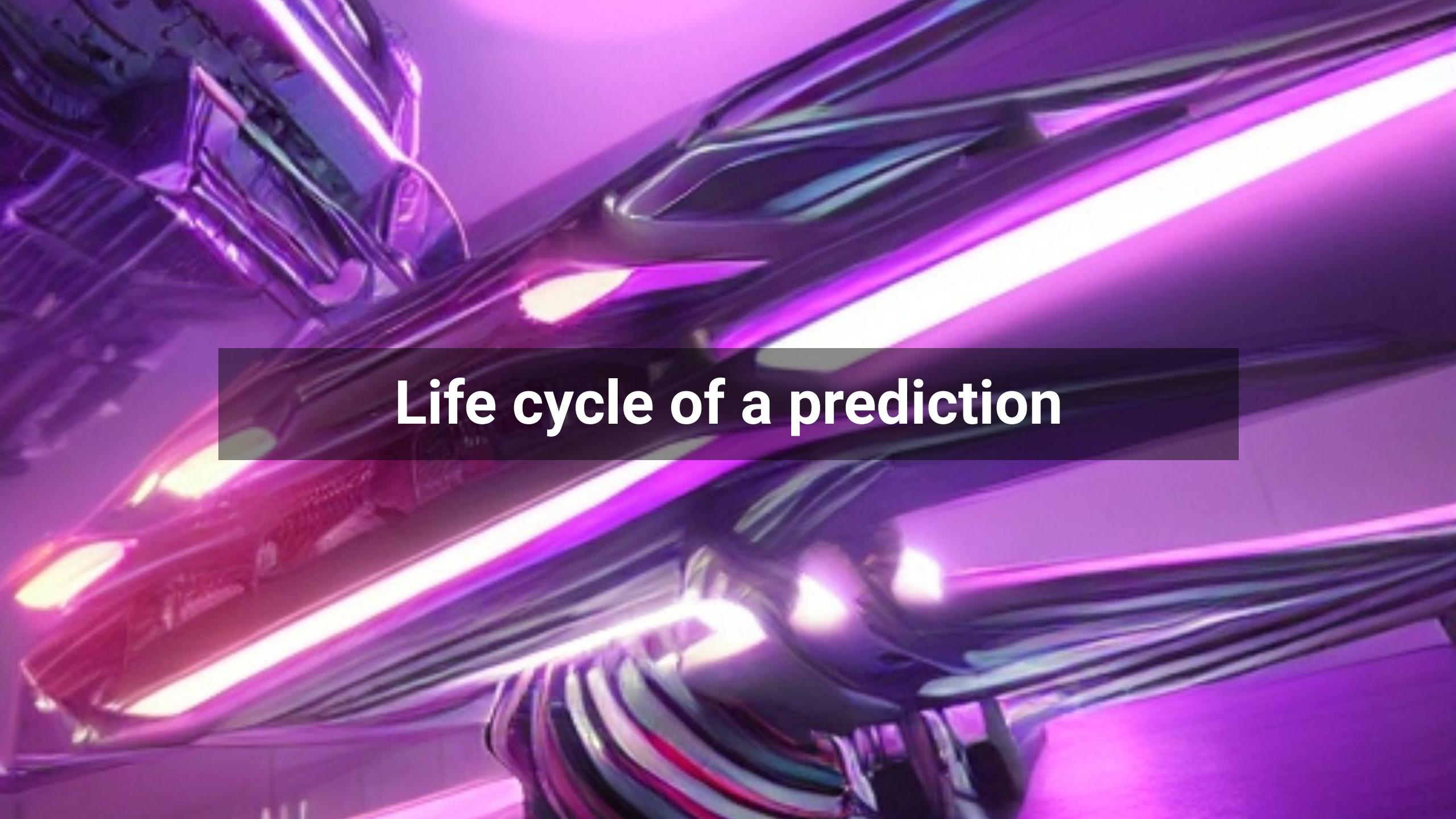
Trader

main → pdr-backend / pdr_backend / trader / trader_agent.py

trizin #157 - [trader] Move max tries to trader agent config class (#159) · yesterday · History

Code Blame 176 lines (145 loc) · 5.99 KB

```
1 import sys
2 import time
3 from typing import Any, Callable, Dict, List, Optional, Tuple
4
5 from enforce_typing import enforce_types
6
7 from pdr_backend.models.feed import Feed
8 from pdr_backend.trader.trader_config import TraderConfig
9 from pdr_backend.util.cache import Cache
10
11
12 # pylint: disable=too-many-instance-attributes
13 class TraderAgent:
14     def __init__(
15         self,
16         trader_config: TraderConfig,
17         _do_trade: Optional[Callable[[Feed, Tuple], Any]] = None,
18         cache_dir=".cache",
19     ):
20         self.config = trader_config
21         self._do_trade = _do_trade if _do_trade else do_trade
22
23         self.feeds: Dict[str, Feed] = self.config.get_feeds() # [addr] : Feed
24
25         if not self.feeds:
26             print("No feeds found. Exiting")
27             sys.exit()
```



Life cycle of a prediction

epoch t

epoch t+1

epoch t+2

Exchange



Buy / sell



Buy feed, see
↑↓ pred'n & stake



Sell / buy



Get trueval
"↑"



Submit "↑"

Contract

Store ↑↓

Σ

Distribute \$



Predict "↑"
(and stake)





Predictoor & privacy

Predictoor & privacy: the challenge

Predictoor needs privacy for:

1. Submitted predictions
2. Compute aggregate predictions; and
3. Aggregated predictions - only subscribers can see

(While remaining decentralized, non-custodial, etc.)



Ocean Predictoor uses Oasis Sapphire for Privacy

We researched & prototyped many privacy technologies.

We chose Oasis Sapphire:

- It could handle the privacy needs cleanly end-to-end
- It's the only privacy-preserving EVM chain in production (!)
- Uses Intel SGX as Trusted Execution Environment (TEE)

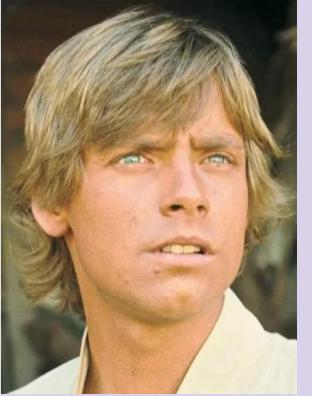




How to Earn \$

How to become a predictoor

Calling all AI/ML jedis



1. Play with
predictoor.ai

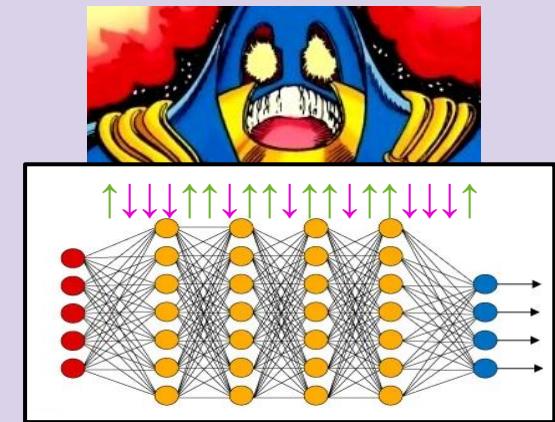
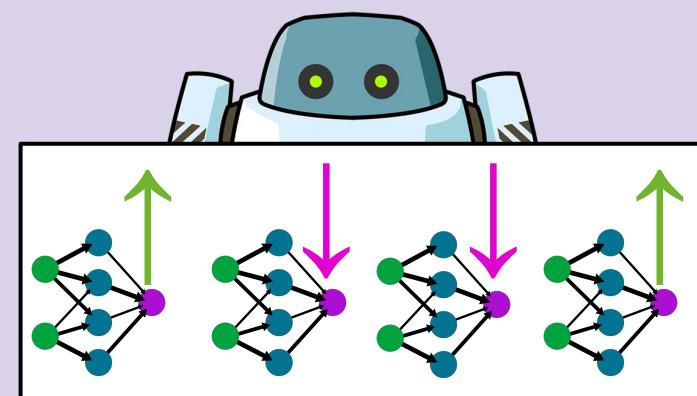
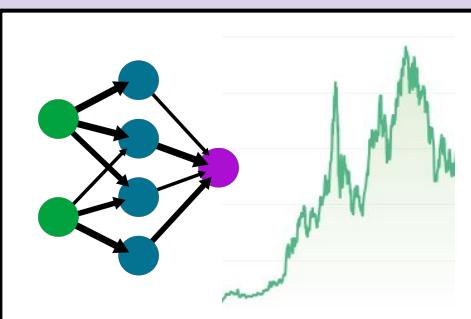
2. Do Challenge DF
One-off predictions

3. Run a predictoor bot
Continuous predictions

4. Optimize the bot
Increase \$\$

A screenshot of the predictoor.ai dashboard. It shows a table of asset balances and a line chart of price movements over time.

Asset (\$m)	11/19	11/20	11/21	11/22	11/23
BTC-USD	\$26250.91	\$26237.44	\$26247.8	\$26247.8	\$26247.8
DODGE-USDT	\$0.06361	\$0.06356	\$0.06356	\$0.06356	\$0.06356
BTC-USDT	\$26213.62	\$26198.19	\$26198.19	\$26213.51	\$26213.51
ETH-USDT	\$1645.09	\$1644.29	\$1644.87	-	42.2%
ADA-USDT	\$0.2578	\$0.2575	\$0.2576	-	55.3%
BNB-USDT	\$216.9	\$216.7	\$216.8	-	50.5%
TRX-USDT	\$0.07902	\$0.07899	\$0.07899	-	50%
SOL-USDT	\$19.77	\$19.76	\$19.79	-	53%
XRP-USDT	\$0.5037	\$0.5036	\$0.5039	-	48.4%
DOT-USDT	\$0.284	\$0.274	\$0.278	-	49.6%
LTC-USDT	\$0.324	\$0.321	\$0.327	-	49.7%



How Predictoors Earn \$

1. Feed sales

- All \$ goes to predictoors (except a % for fees)
- Distributed pro-rata by stake among correct predictoors

2. Stake reshuffling

- Incorrect predictoors have their stake slashed
- Slashed stake is distributed pro-rata among correct pdr's

3. Predictor Data Farming

- An incentive program that amounts to additional \$ for pdr's
- 37,000 OCEAN/week rewards ($\approx \$10K/week$)

4. (Bonus) Challenge DF. One-off predictions

5. (Bonus) Passive DF & Volume DF. Lock OCEAN for veOCEAN, curate

How to become a trader in Predictoor

Calling all trading wizards



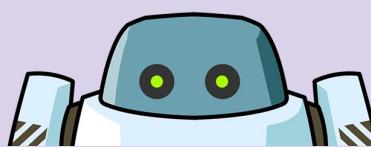
1. Play with
predictoor.ai

A screenshot of the predictoor.ai web interface. The top navigation bar includes links for 'Oasis Sapphire Testnet', 'Ethereum - Mainnet', 'by SDK', and 'About'. Below the navigation is a table showing asset prices (in USD) for various pairs: BTC-USD, LTC-USD, DOGE-USD, and ETH-USD. The table includes columns for current price, previous price, and percentage change. To the right of the table, there are sections for 'Accuracy' (40% for 11:20) and 'Subscription' (3/24h). At the bottom, there is a summary of the total balance.

Asset (USD)	11:19	11:20	11:21	11:22	11:23	11:24	11:25	Accuracy	Subscription
BTC-USD	\$26250.01	\$26237.44	\$26237.44	\$26247.8	\$26247.8	-	-	40%	= 3 / 24h
LTC-USD	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	-	-	18%	= 3 / 24h
DOGE-USD	\$0.03556	\$0.03558	\$0.03558	\$0.03558	\$0.03558	-	-	18%	= 3 / 24h
ETH-USD	\$26213.02	\$26198.19	\$26198.19	\$26213.51	\$26213.51	-	-	40.8%	= 3 / 24h
								41.2%	= 3 / 24h

BALANCE = 1.958

2. Run a trader bot
Continuous trading



3. Optimize the bot
Increase \$\$



How Traders Earn \$

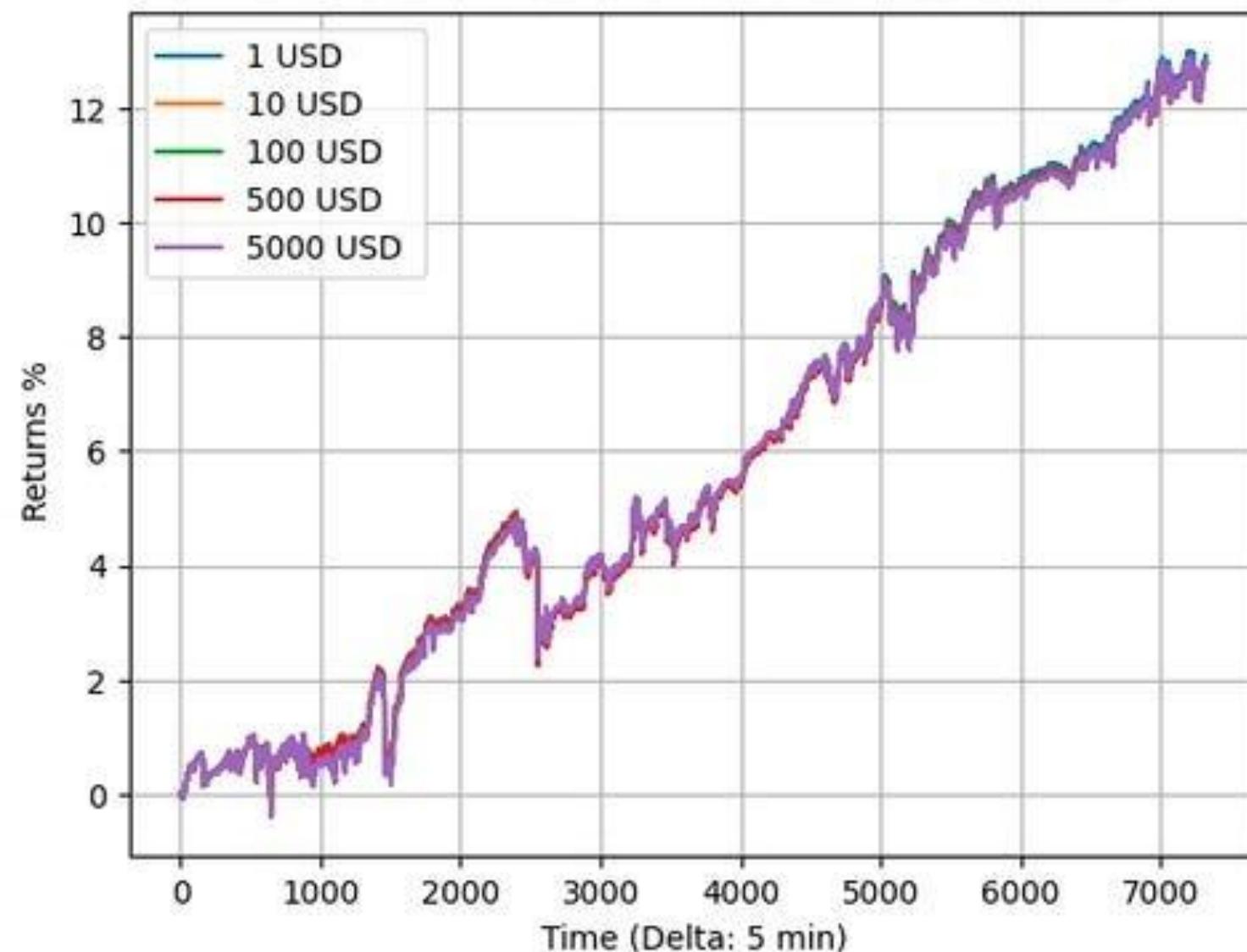
One single yet powerful main way to earn:

Trading revenue. Buy low and sell high (and vice versa).

- All \$ goes to predictoors (except a % for fees)
- Distributed pro-rata by stake among correct predictoors

Bonus: **Passive DF & Volume DF.** Lock OCEAN for veOCEAN, curate.

Sample Benchmark



BTC/USDT on Binance

Model training dates:
Jan 1, 2021 to Jun 30, 2023

Prediction dates:
Jul 1, 2023 to Jul 24, 2023
Always 5m ahead; 7000 ticks

"Baseline" trading strategy:

- if prediction is " \uparrow " then buy, if " \downarrow " then sell
- exit the position 5 min later

This example:

- accounts for order-book slippage
- ignores trading fee

Predictoor for devs & entrepreneurs

- **Create your own dapps & prediction feeds for a different vertical**
 - Code is all open-source Apache2
- **Use prediction feeds as a new DeFi primitive.** "Future oracles"
 - For derivatives on top. Relation with options, futures, etc
 - For stablecoins & loans: predictions to reduce collateralization ratio
- **And whatever you else you dream of:)**

Timeline



**Predictoor
Testnet**

4
wks



**Predictoor
Mainnet**
60min feeds

4
wks



**Predictoor
Data Farming**

Conclusion

Introducing Predictoor

Accountable Accurate Prediction Feeds

- Crowd-sources predictions
- Globally distributed, non-custodial
- Built on Ocean stack
- Privacy-preserving via Oasis Sapphire
- Predictoors make \$ doing AI/ML;
traders \$ by using feeds

Try at
predictoor.ai





ocean
predictoor

Appendix

How to get more accurate predictions [of time-series]

Main idea:

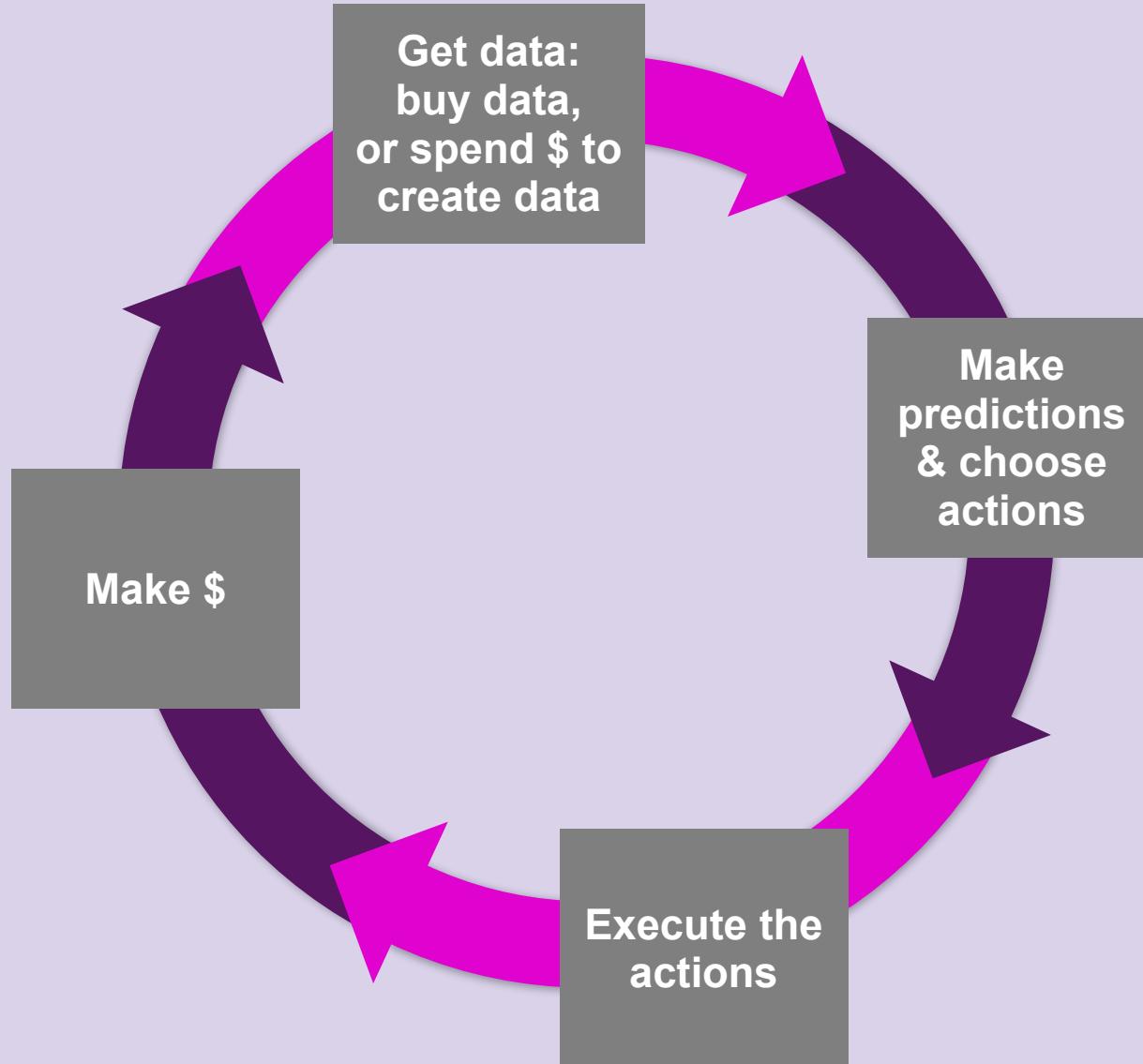
- Get people to put \$ where their mouth is
- Accurate prediction → make \$. Inaccurate → lose \$.
- Q: Isn't this prediction markets? They use \$ for accountability.
- No, those are for one-off predictions. E.g. "will Biden win in 2024?"
- What we want: a stream of predictions over time, ie a "prediction feed"



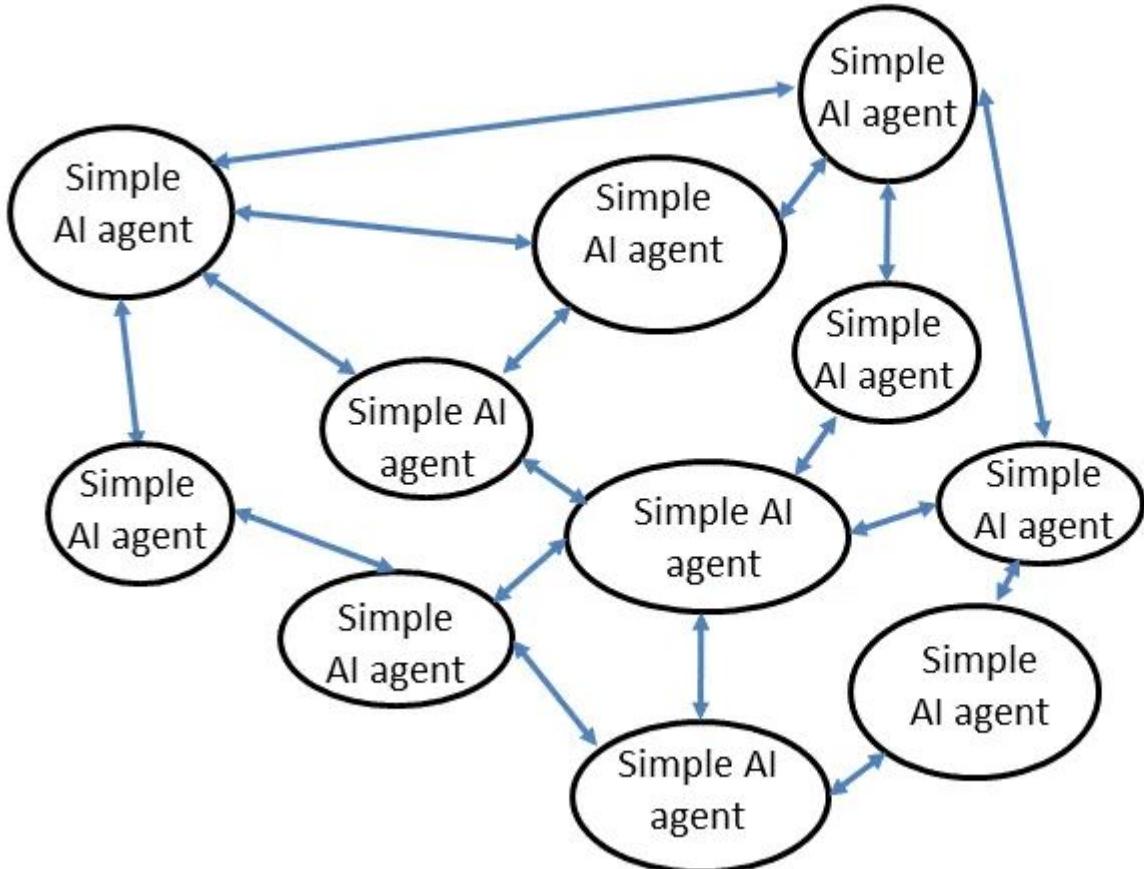
*Tomorrow belongs to those
who can hear it coming.*

--Bowie

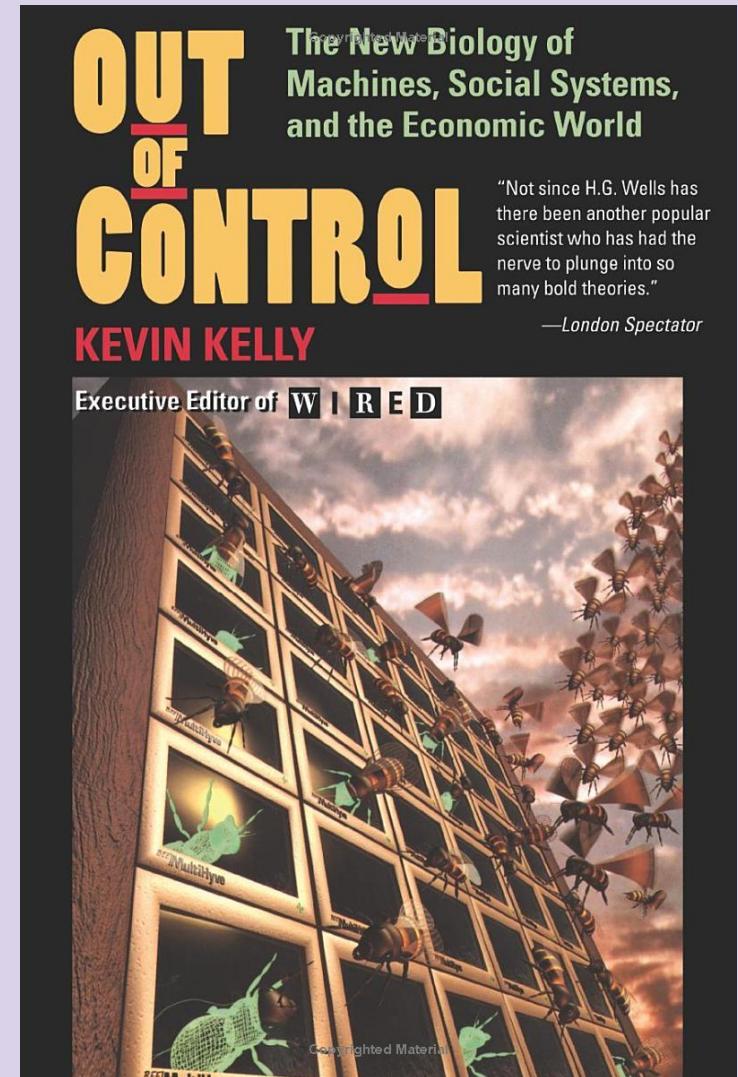
Data value-creation loop



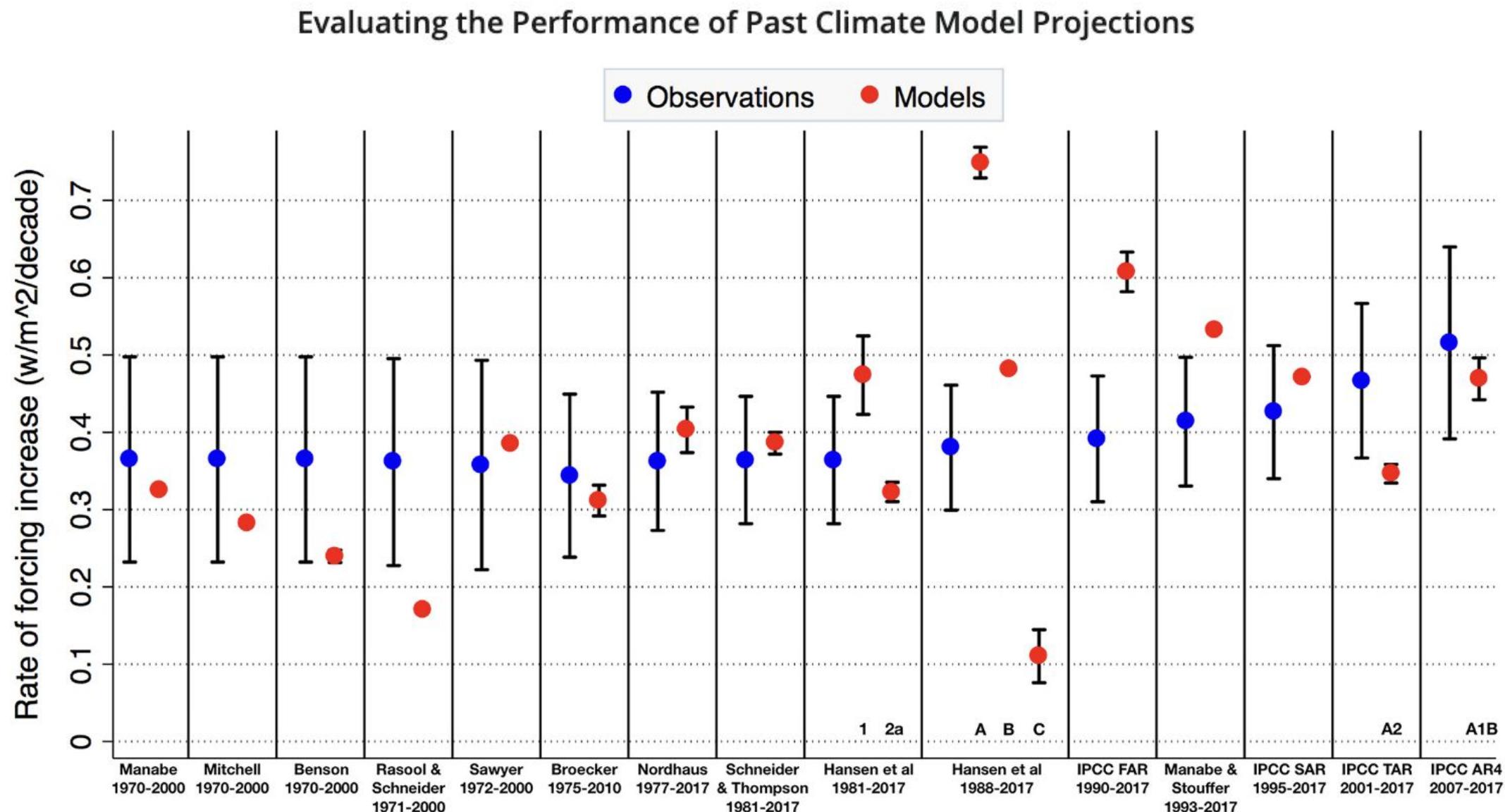
What might happen?



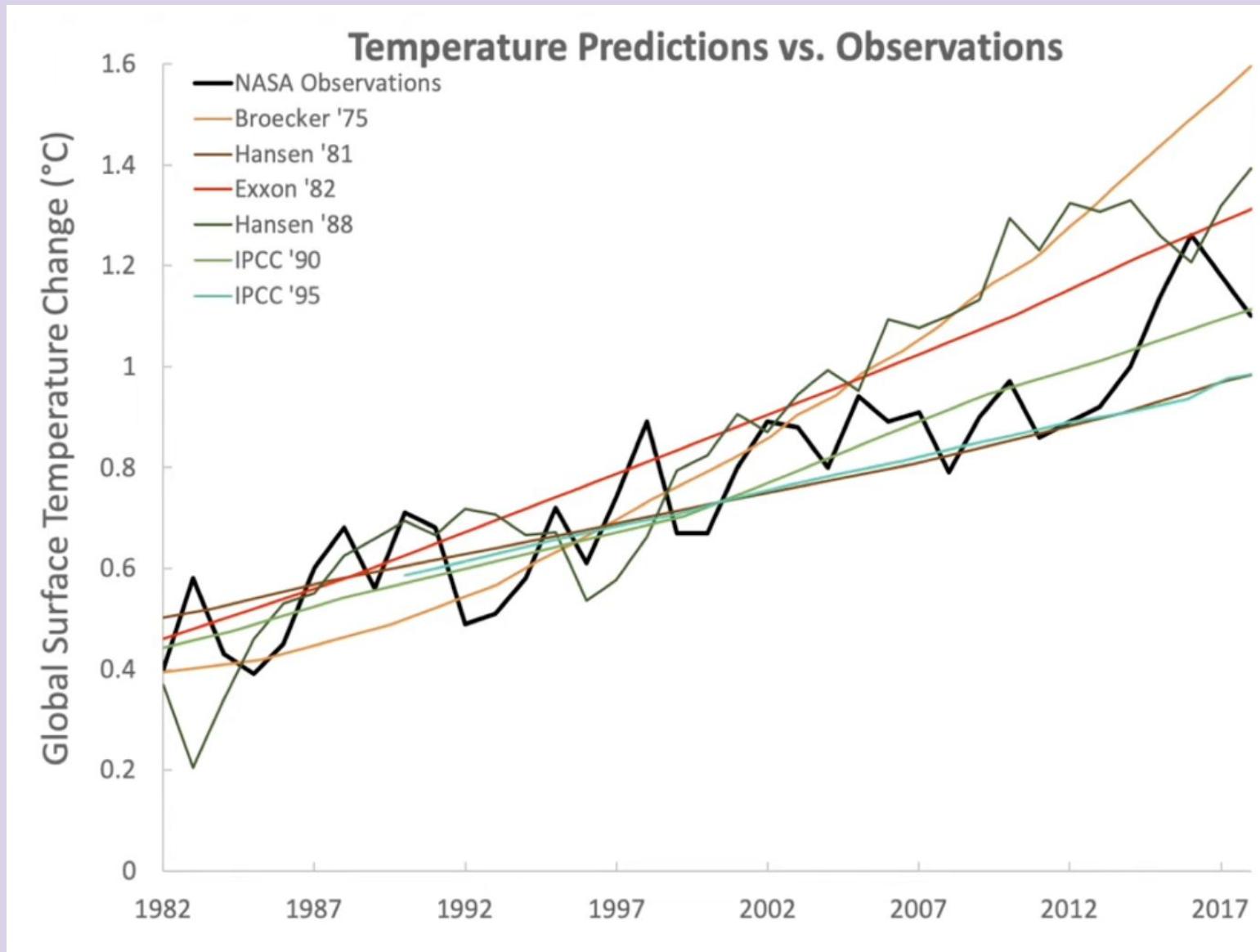
Emergent higher-level complexity.
E.g. simple AI agents are ants, but complex swarm behavior emerges



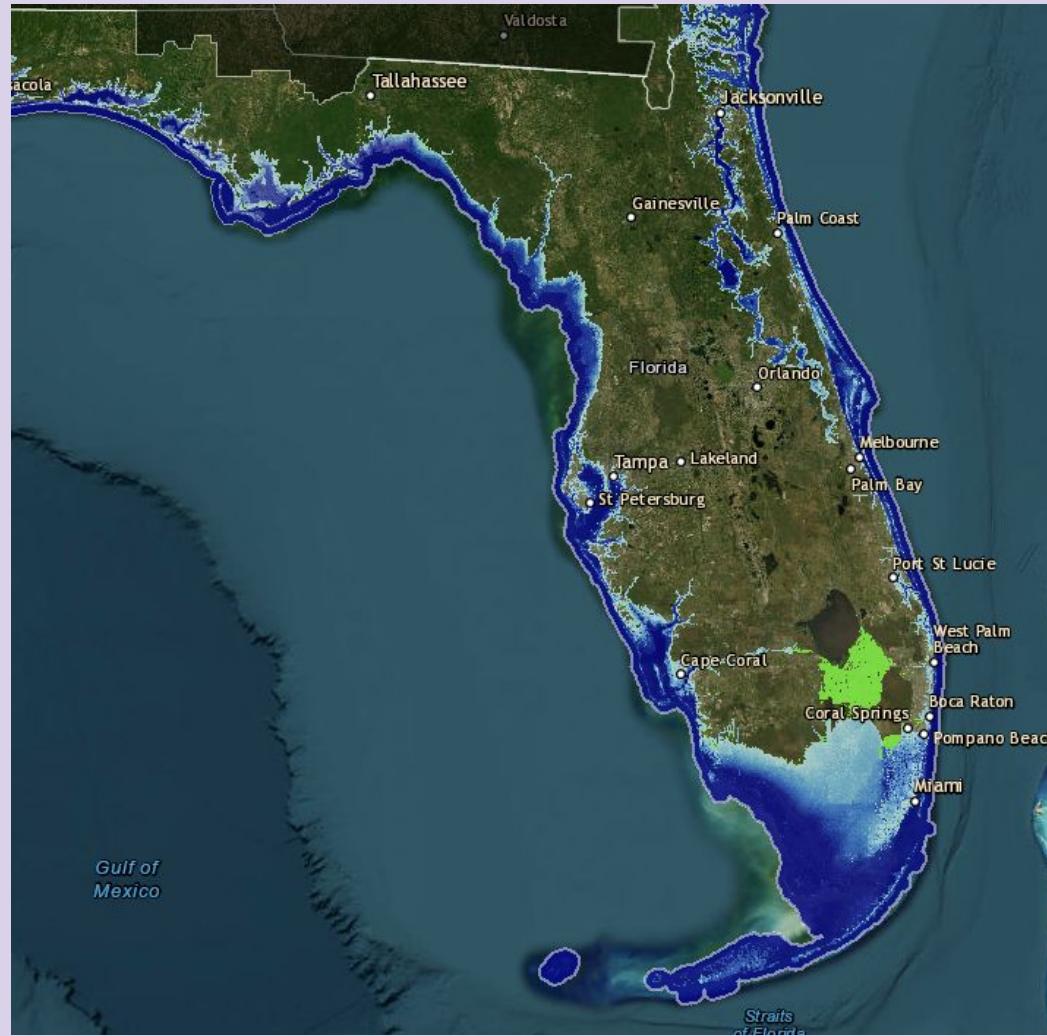
How accurate have past predictions been? [Hausfather et al 2019]



How accurate have past predictions been? [Nuccitelli 2019]



Florida at 3m rise



Predictions for the next 300 years [NASA]

