

CryptoMPT



ETHGlobal
BANGKOK

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Crypto Modern Portfolio Theory

Trade-off between risk and returns.

CryptoMPT combines the rigor of traditional financial theory with the transparency and automation of blockchain, making it a valuable tool for crypto investors and DeFi ecosystems.



The Problem & Opportunity

The Problem:

- The cryptocurrency market is highly volatile, with assets that often exhibit unpredictable and correlated price movements. Investors struggle to balance risk and return effectively.
- Traditional portfolio optimization lack transparency and are prone to manipulation.

Opportunity

- CryptoMPT uses principles of Modern Portfolio Theory (MPT) to suggest optimal asset allocations that maximize return for a given level of risk or minimize risk for a desired level of return.
- CryptoMPT stores portfolio recommendations on-chain, enabling decentralized finance (DeFi) protocols to access and utilize this data trustlessly.



Live Demo

Derive an optimal portfolio with data from last week

Assets Selected

Three relatively distinct classes of crypto currencies were selected. These include bluechips like bitcoin and ethereum, as well as well established DeFi protocols tokens. Last but not least a set of highly volatile meme coins were also selected.

1. L1

BTC
ETH
SOL

2. DeFi

AAVE
LINK
UNI

3. MEMES

DOGE
PEPE
WIF

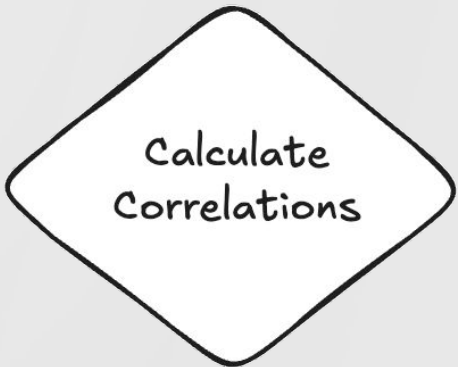


High-level Overview

1.



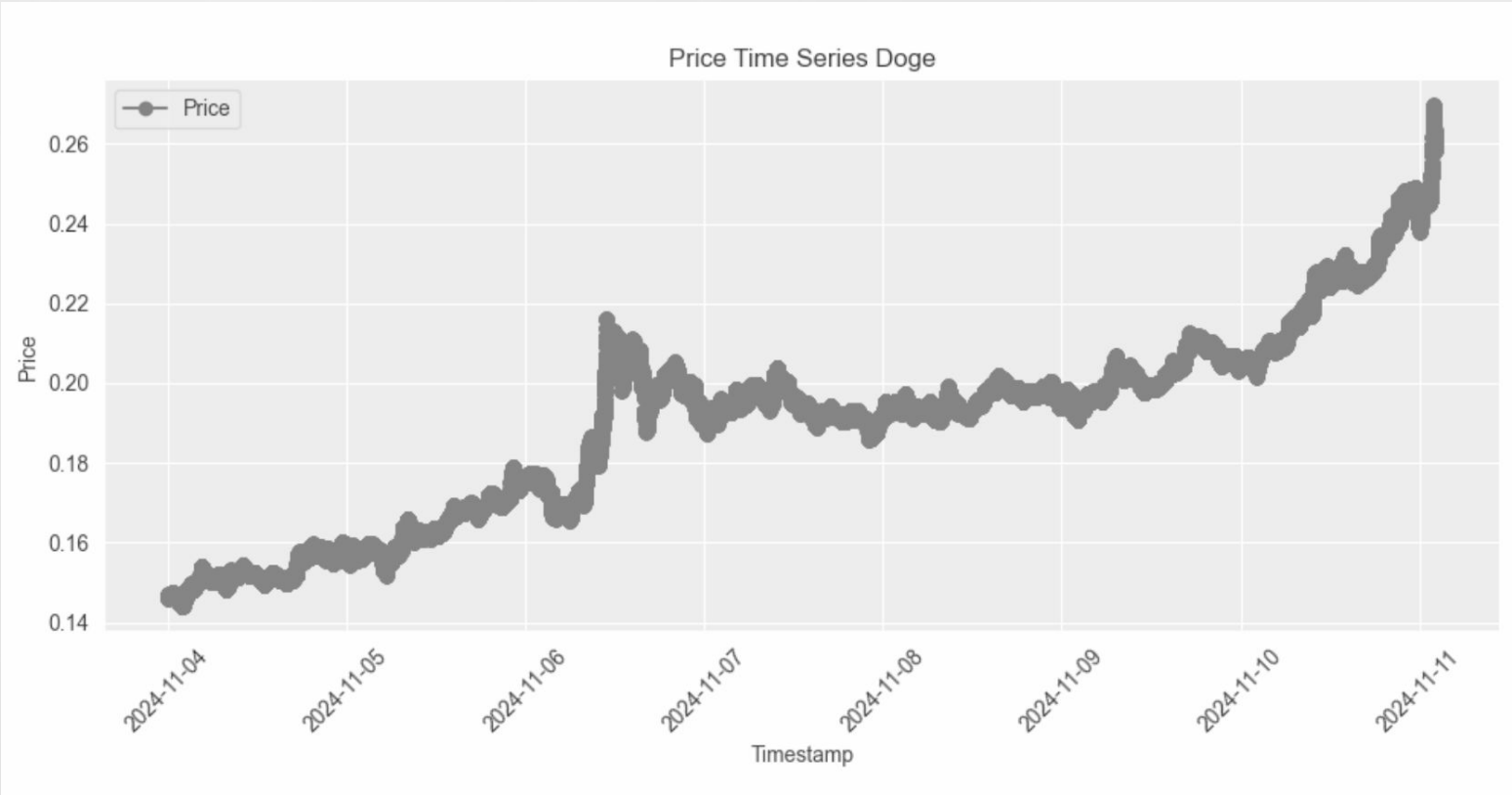
2.



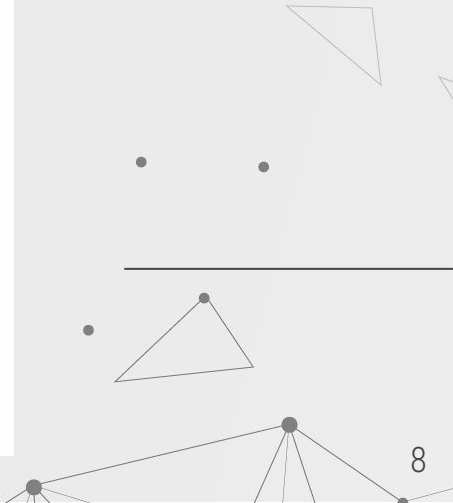
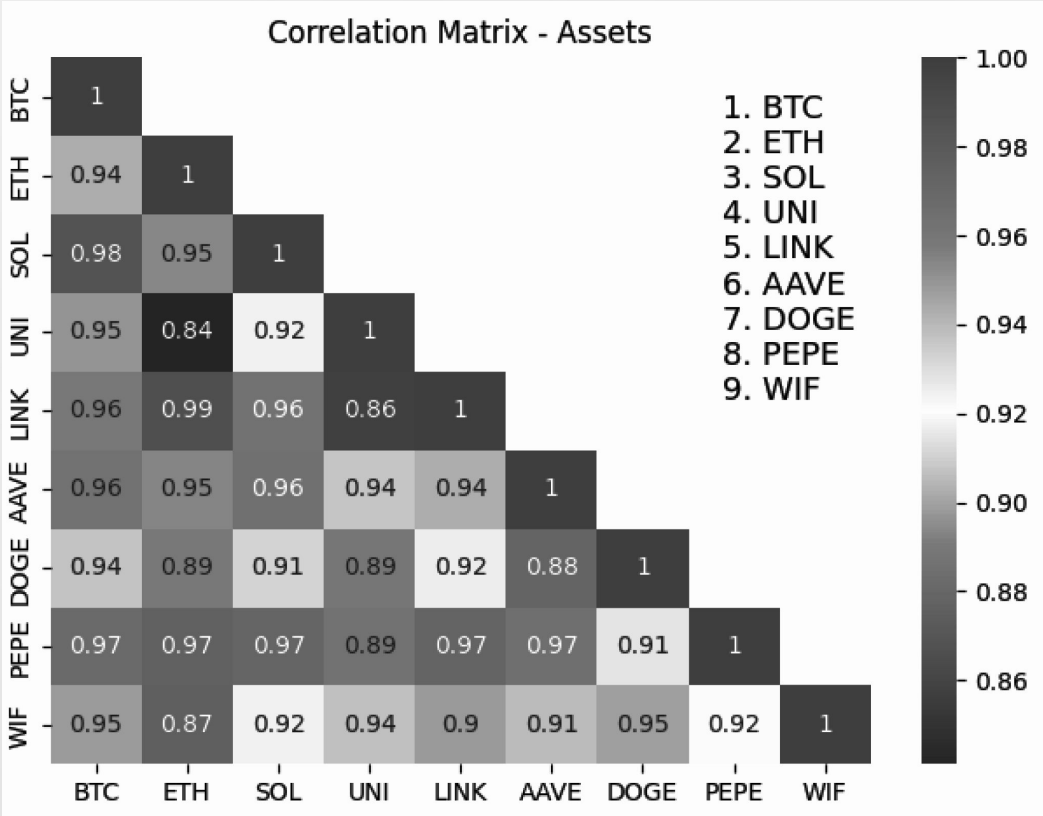
3.



1. Historical Price Data



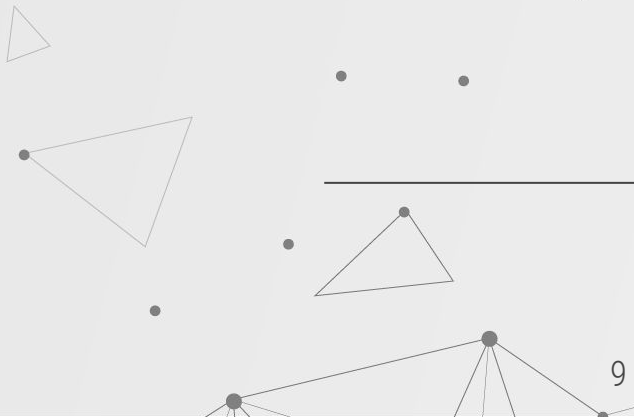
2. Asset Correlations



3. Portfolio Allocations

With CryptoMPT it is possible to choose a portfolio that minimizes risk (variance), maximizes potential returns, or find a good balance between risk / rewards.

=== Lowest Variance ===	=== Best Sharpe Ratio ===	=== Maximise Returns ===
Portfolio allocations:	Portfolio allocations:	Portfolio allocations:
btc : 34.06%	btc : 20.30%	doge : 100.00%
eth : 18.90%	eth : 19.32%	Expected return : 2846.60%
sol : 12.62%	sol : 13.76%	Sharpe ratio : 16.72
uni : 6.93%	uni : 7.77%	Expected volatility : 170.30%
link : 11.28%	link : 13.47%	
aave : 5.74%	aave : 8.62%	
doge : 3.07%	doge : 5.84%	
pepe : 4.00%	pepe : 6.91%	
wif : 3.40%	wif : 4.00%	
Expected return : 1505.55%	Expected return : 1690.30%	
Sharpe ratio : 50.24	Sharpe ratio : 53.24	
Expected volatility : 29.97%	Expected volatility : 31.75%	



CryptoMPT Test Oracles

Example CryptoMPT Oracle was deployed and verified in the following chains and addresses:

BitKub Testnet:	0xa1AC5bD954aa0857F15287eC67Fee4d5587f6E04
UniChain Testnet:	0xa1AC5bD954aa0857F15287eC67Fee4d5587f6E04
Scroll Testnet:	0xa1AC5bD954aa0857F15287eC67Fee4d5587f6E04
Mantle Testnet:	0xa1AC5bD954aa0857F15287eC67Fee4d5587f6E04
Rootstock Testnet:	0xa1AC5bD954aa0857F15287eC67Fee4d5587f6E04
Morpho Testnet:	0xa1AC5bD954aa0857F15287eC67Fee4d5587f6E04
Flare Testnet	0x18253170C3F5719E621Cc65330135032cBA33632

Future Vision

Data Feeds

On-chain Oracles

CryptoMPT

An open platform that keeps track of asset allocations that optimise for highest sharpe ratio

Consumers

Better Understanding
of Risk / Rewards

DeFi

Automated Lending
and Rebalancing

- ❑ Globally accessible from anywhere anytime
- ❑ Immutable and auditable history
- ❑ Transparent portfolio insights
- ❑ Decentralized and trustless
- ❑ Secure and reliable metrics
- ❑ Open source and open data
- ❑ Fostering innovation and collaboration

THANK - YOU

Does anyone have any questions?

Code available:

[@github/anton-io/ethglobal-2024-bangkok-cryptompt](#)