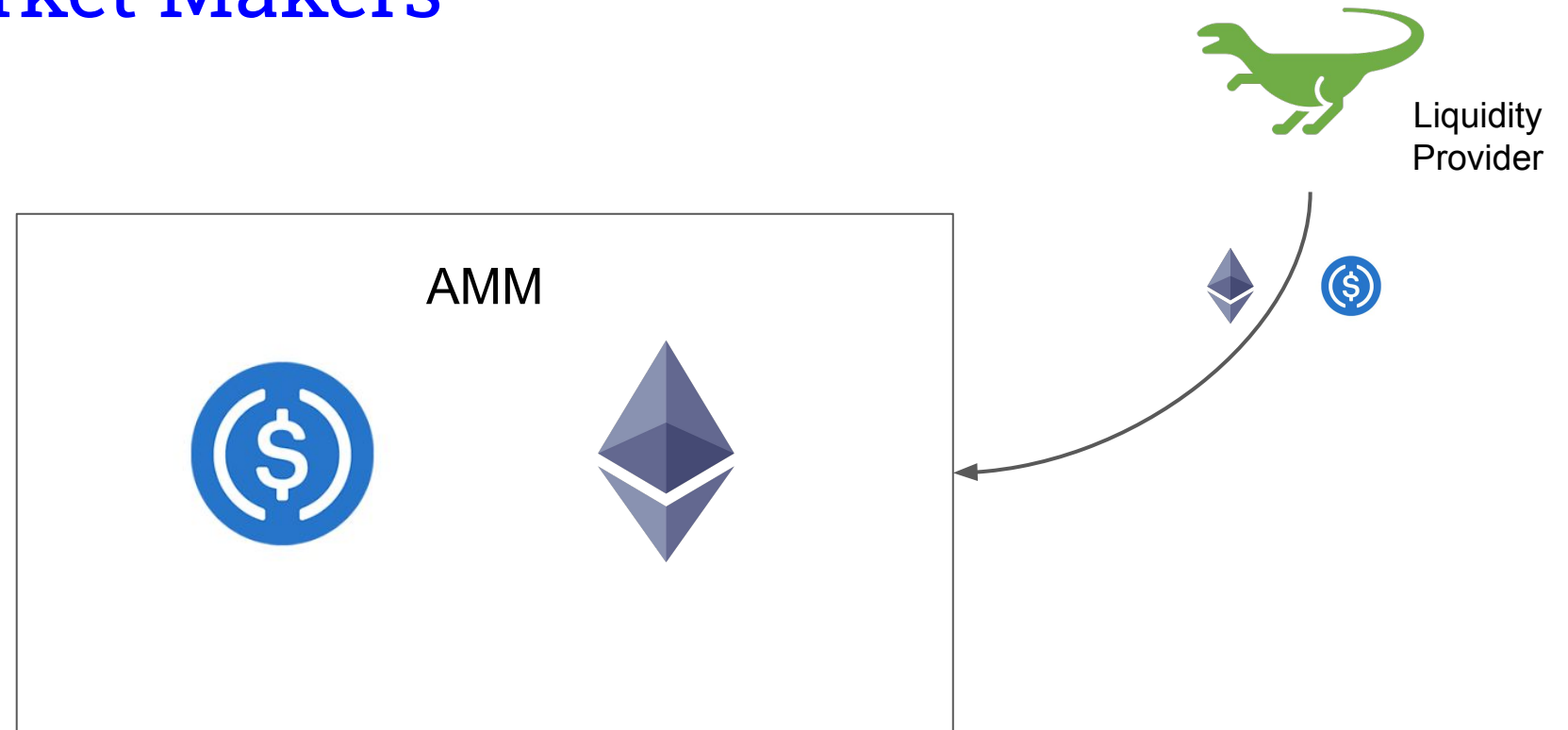


EAS 5830: BLOCKCHAINS

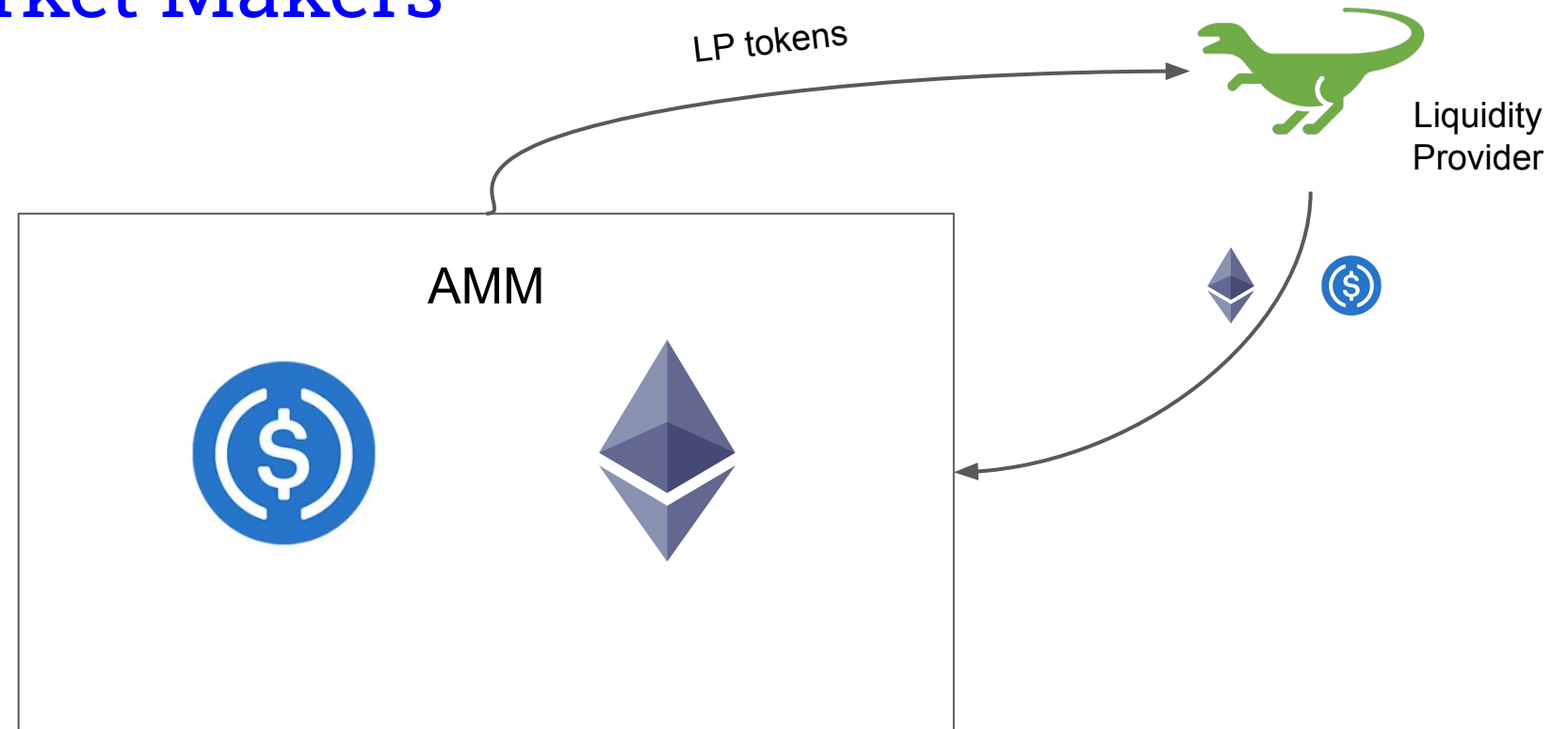
Uniswap v1

Professor Brett Hemenway Falk

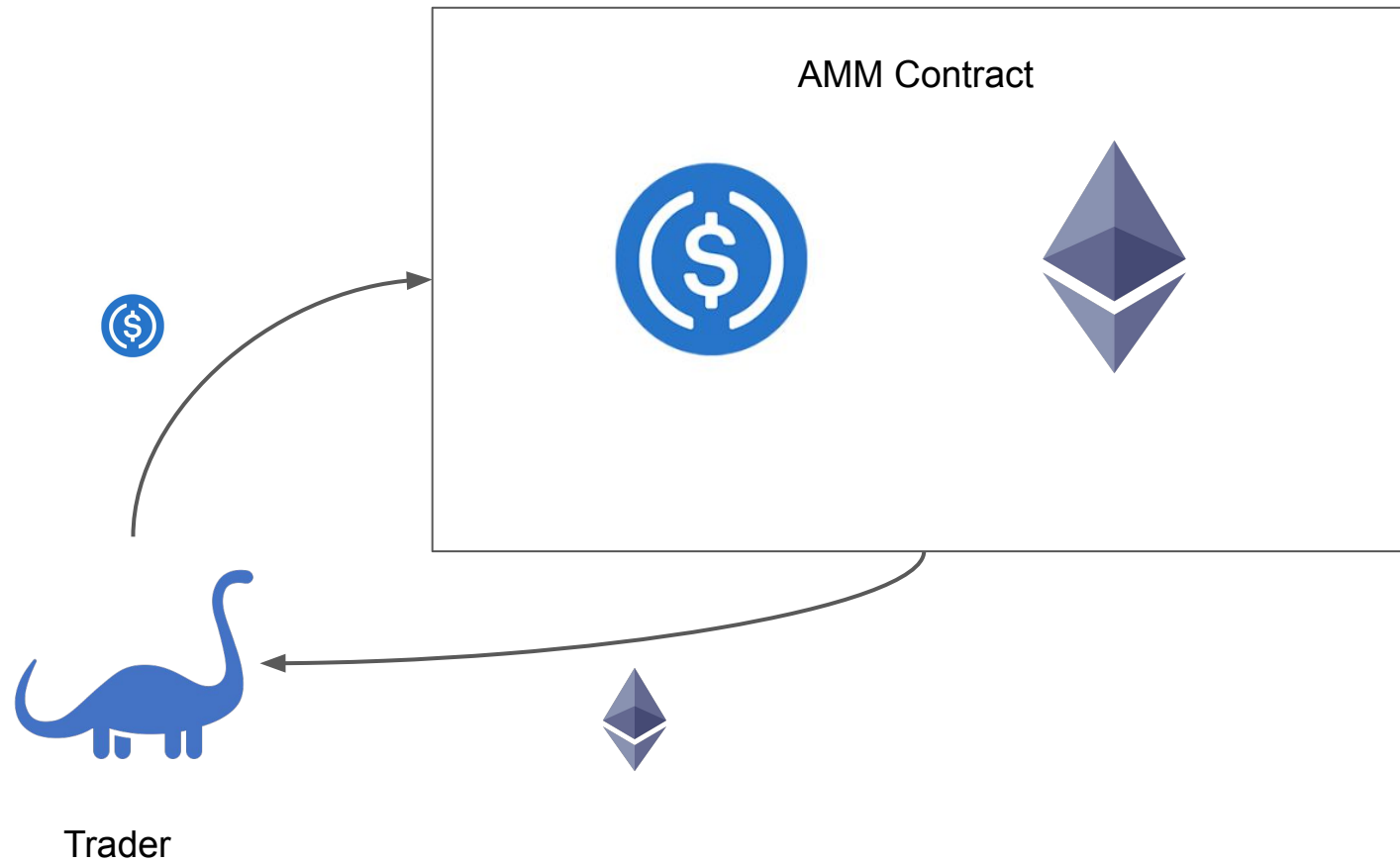
Automated Market Makers

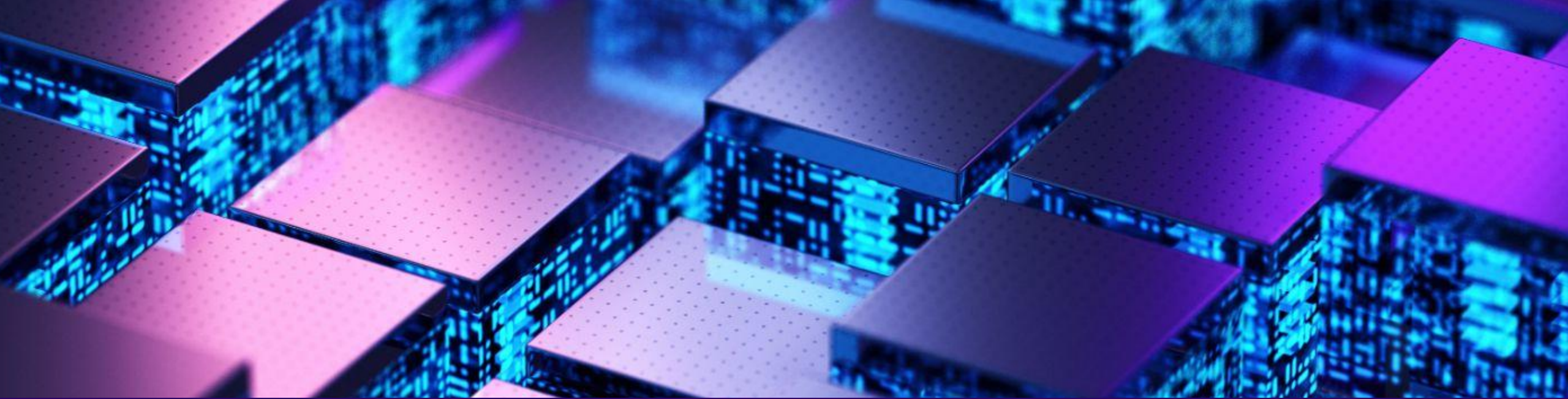


Automated Market Makers



Automated Market Makers

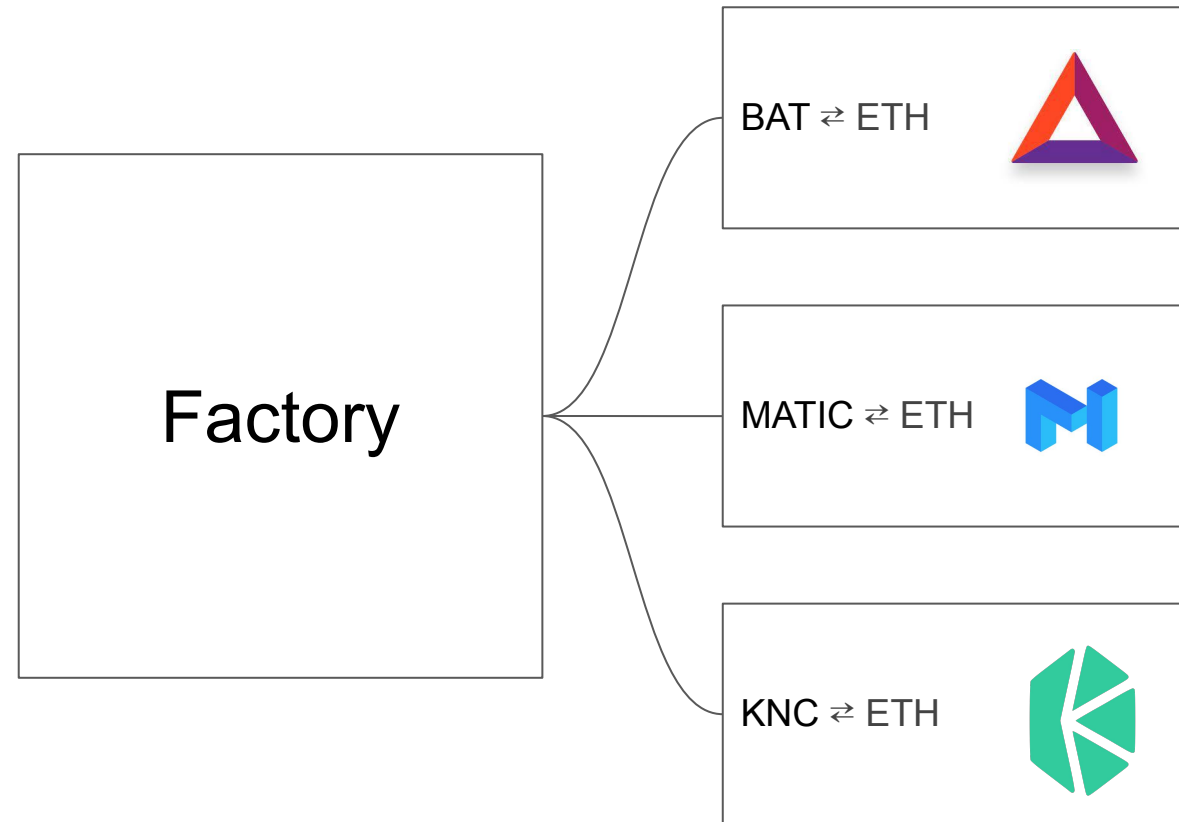




Uniswap V1

Uniswap V1 Architecture

- Trade ETH \rightleftharpoons ERC20
- One contract for each ERC20
- Factory creates / records pool contracts
- pools issue LP tokens
 - pool contract is also ERC20 contract for its own LP tokens
- LPs get .3% fee on all trades



Uniswap V1 Factory Contract

Uniswap Factory

exchangeTemplate: **public**(address)

tokenCount: **public**(uint256)

token_to_exchange: address[address]

exchange_to_token: address[address]

id_to_token: address[uint256]

Exchanges are clones of the contract at this address

Number of exchanges created

Address of underlying ERC20 token → Address of Uniswap exchange

Address of Uniswap exchange → Address of underlying ERC20 token

List of addresses of underlying ERC20 token

Uniswap V1 Exchange Contract

Uniswap Exchange

- Exchange is an ERC20 contract for LP token
 - All exchange tokens have same name (Uniswap V1) and symbol (UNI-V1)
 - ERC20 contracts support
 - balanceOf()
 - transfer()
 - transferFrom()
 - approve()
- Exchange also supports trading ETH for underlying ERC20
 - ethToTokenTransferInput()
 - ethToTokenTransferOutput()
 - (many more)

Convert ETH to Tokens. User specifies:

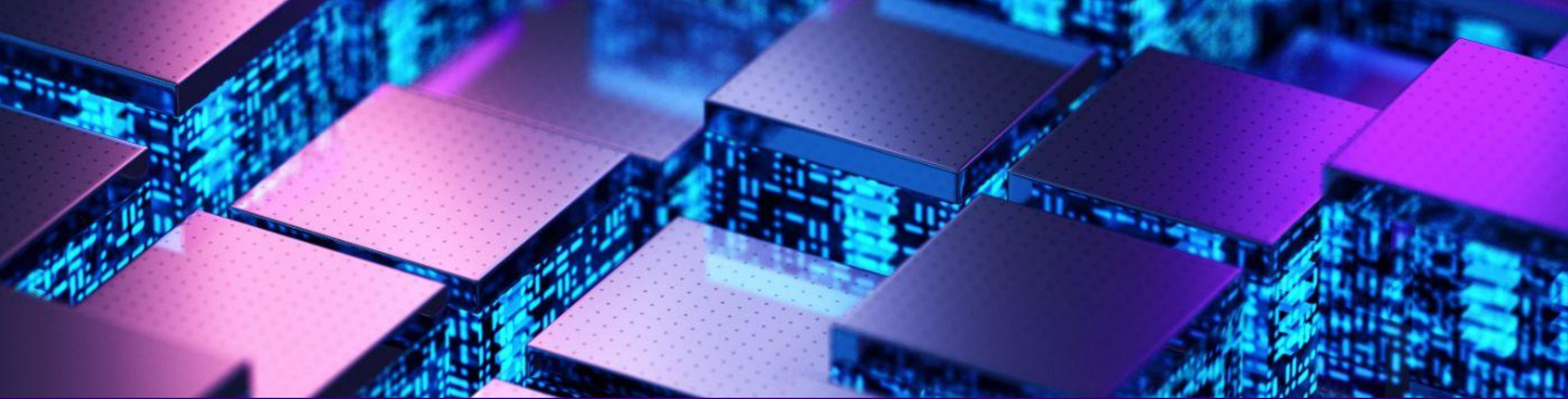
- input ETH
- min number of tokens bought
- transfer address

Convert ETH to Tokens. User specifies:

- maximum input ETH
- exact number of tokens bought
- transfer address

Uniswap V1 Exchange Contract

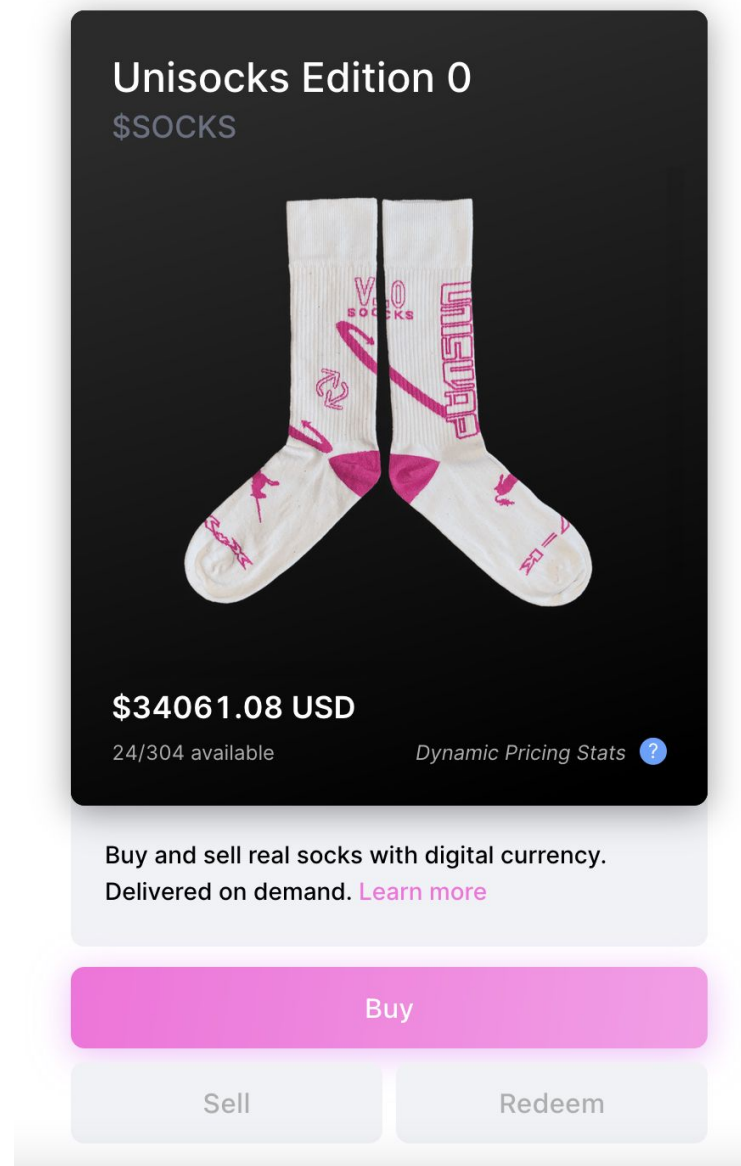
- If Uniswap exchange contract for underlying ERC20 doesn't exist one is created
 - Creator can deposit as much ETH / ERC20 as they like
 - Future liquidity providers must provide ETH / ERC20 in ratio determined by current ratios
- One exchange contract for each token prevents liquidity fragmentation



Unisocks

Unisocks

- [500 pairs of socks released May 9, 2019](#)
- Socks are ERC-20 tokens ([Symbol SOCKS](#))
- ERC-20 tokens can be redeemed for actual socks



Contracts

- SOCKS are [ERC20s](#)
 - Uniswap cannot exchange ERC-721
- When you redeem (“burn”) your socks you get
 - A physical pair of socks
 - An [ERC-721 representing the socks](#)

Pricing



McDongger **OP** · 2y

Go spend an absurd amount of money on one pair of socks for the greater good :)



3



Share

Report

Save



trogdortb001 · 2y

MyCrypto - Jordan

\$40 is a pretty hefty price... but damn it is cool that you can buy with crypto directly.



1



Share

Report

Save



itsarnavb · 2y

The price started a lot lower. It's been bid up significantly.

The initial offering was 500 socks locked alongside 35 ETH.

At \$167/ETH, that's \$11.73 per pair of socks.



2

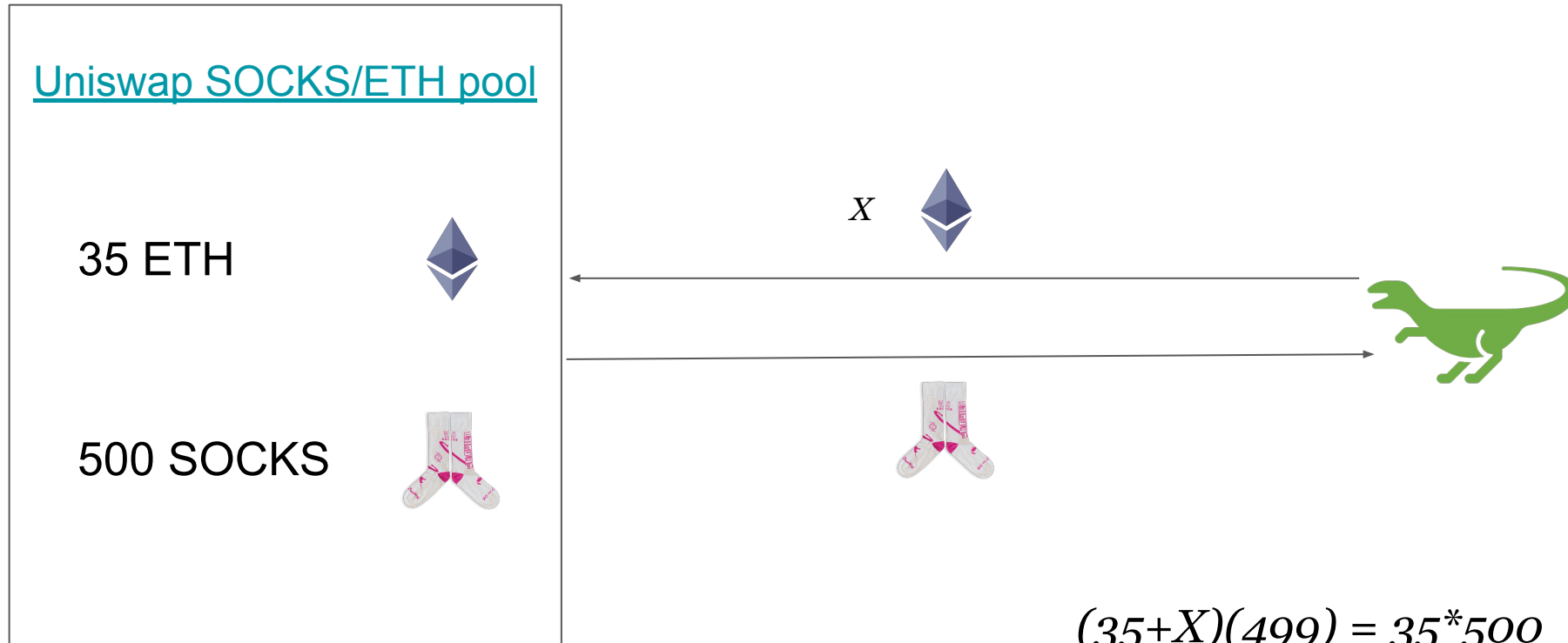


Share

Report

Save

Unisocks distribution

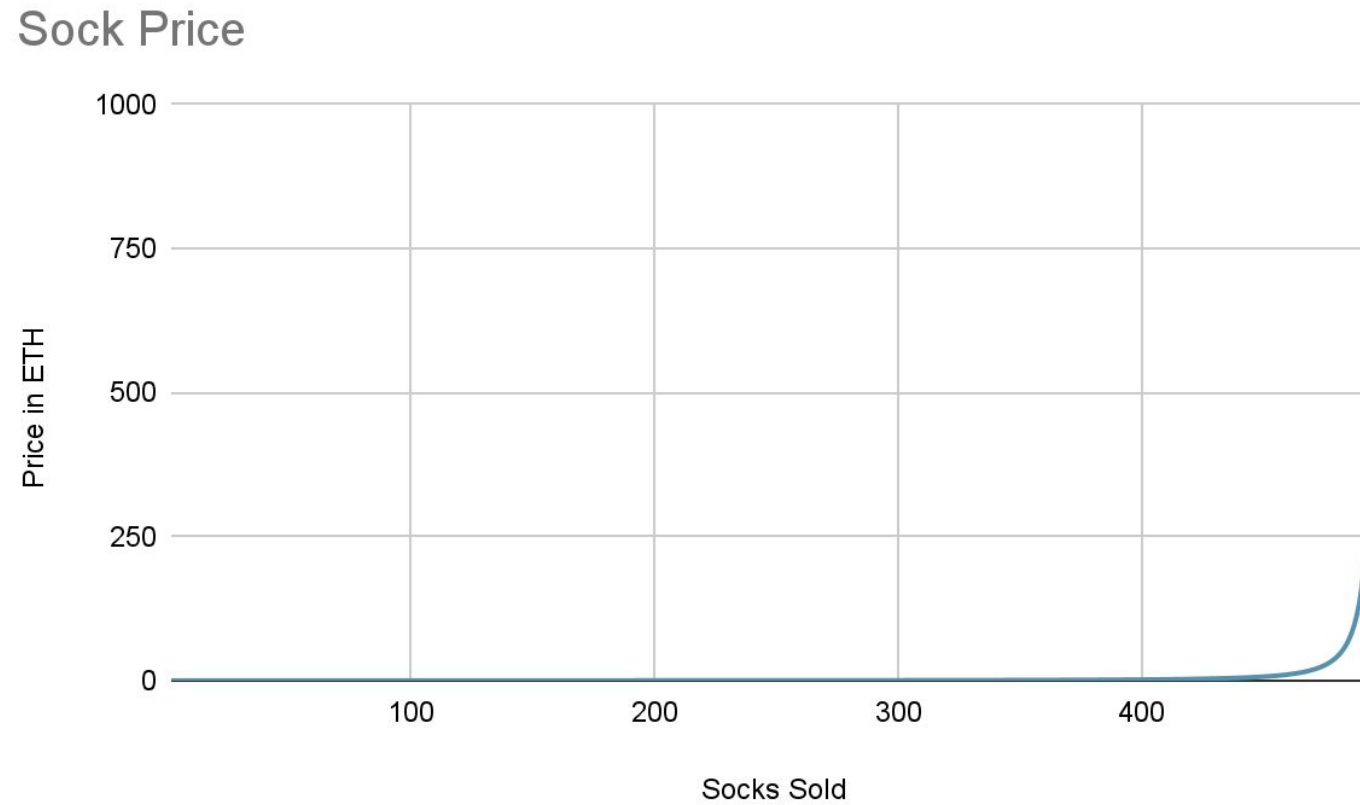


$$K = 500 * 35$$

$$(35+X)(499) = 35*500$$

$$X = 35*500/499 - 35 = .07$$

Unisocks bonding curve



Filter

Status

Buy Now

On Auction

New

Has Offers

Price

\$ United States Dollar (USD)

Min

to

Max

Apply

Collections

280 results

unisocks

Clear All

All Items

Sort by



Unisocks
Unisocks Edition 0

50

Price
100
Last 20



Unisocks
Digital Unisocks Edition 0

0

Last 19.99



Unisocks
Digital Unisocks Edition 0

0

Last 8

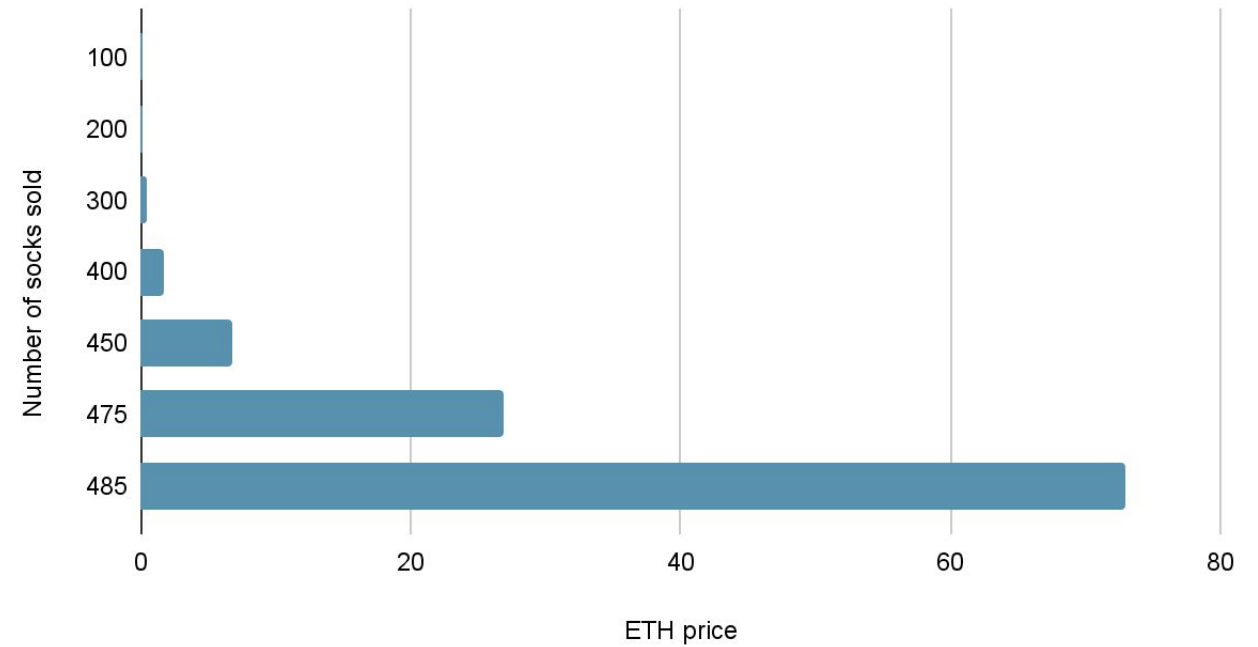
Not just for socks

- Alternative to ICO for token distribution
- Called
 - IDO - "[Initial DEX Offering](#)"
 - BCO - "[Bonding Curve Offering](#)"
- Balancer's [Liquidity Bootstrapping Pools](#) are designed for this

Problems

- Why did Uniswap have to seed the pool with 35 ETH?
- Uniswap's curve is very rigid

Sock price in ETH



Conclusion

- Uniswap v1 is still live on Ethereum
 - It can't be stopped
 - But it doesn't do much volume anymore
- Architecture is clean and simple
 - contracts are written in Vyper
- [Uniswap v1 Whitepaper](#)