Our MEV Journey on HyperEVM

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Introduction: What is MEV?

MEV

Maximal Extractable Value (MEV) is the value that validators (or miners) could extract by including/excluding/reordering transactions in a block.

- Arbitrage (DEX-DEX, CEX-DEX)
- Liquidations
- Frontrunning/Backrunning/Sandwiching
- Long tail MEV

Arbitrages are the most common type of MEV, with around 90% of total MEV.

Introduction: What is MEV?

Searchers

Actively seeking MEV is called *searching* for MEV, and those who search for MEV are called *searchers*.

Searchers are basically blockchain (DeFi) version of traders of high-frequency trading (HFT) firms of traditional finance.

Let's search!

- DEX-DEX arbitrage
- No need for capital
- Open for everyone

Why HyperEVM?

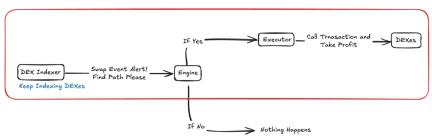


- Early Stage
- Lack of Infrastructure
- Deep liquidity
- High Activity
- (Seemingly) Low Competition

Architecture



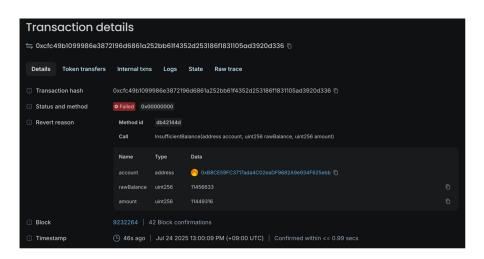
DEX-DEX Arbitrage Process



Requirements & Strategies

- Low Latency ⇒ Colocation (AWS at Tokyo)
- Fast & Efficient Pathfinding ⇒ Caching Pool Data
- Precise Calculation ⇒ Reuse of battle-tested libraries and custom implementation of long-tail DEXes
- Top-of-Block Inclusion \Rightarrow Higher Priority Fee
- Cost Minimization ⇒ Custom smart contract

```
2025-07-24T04:00:07.849527Z INFO engine::graph::graph: Finding the most negative cycle starting from: 0x5748ae796ae46a4f1348a1693de4b5056048556
2025-07-24T04:00:07.862252Z INFO engine::graph::graph: Finding the most negative cycle starting from: 0xb8ce59fc3717ada4c02eadf9682a9e934f625ebb
2025-07-24T04:00:07.907598Z INFO engine: TOPPORTUNITY ANALYSIS: profit=0.206692%, dynamic_threshold=0.055650%, path fee=0.053000%, path length
=2. safety multiplier=1.05, net profit=0.153692% target="arbitrage engine"
2025-07-24T04:00:07.907632Z INFO engine: ▼ MANUAL OVERRIDE: Accepting any positive opportunity - net profit=0.153692% target="arbitrage engine"
2025-07-24T04:00:07.907643Z INFO engine: SUMMARY: total cycles=2, accepted=1, filtered by threshold=0, analysis failures=0 target="arbitrage"
engine"
2025-07-24T04:00:07.907653Z INFO run executor: of Opportunity detected: ArbitrageOpportunity {
   path: Path {
      edges: [
          PoolEdge {
              amm address: 0x337b56d87a6185cd46af3ac2cdf03cbc37070c30,
              from token: 0xb8ce59fc3717ada4c02eadf9682a9e934f625ebb,
              weight: 3.7826135164434636.
          PoolEdge {
              amm_address: 0x313ced5da609d678d945c19091baaf3a022537a1.
              to token: 0xb8ce59fc3717ada4c02eadf9682a9e934f625ebb.
              weight: -3.7875321409148746.
       total weight: -0.004918624471411004,
   optimal amount in: 11456633.
   expected profit: 23680.
   profit percentage: 0.20669248984409294.
.
2025-07-24T04:00:07.907723Z INFO executors::arbitrage executor: 🖋 ULTRA FAST MODE; Skipping all validations for maximum speed target="arbitrage"
executor"
2025-07-24T04:00:07.907732Z INFO executors::arbitrage executor: 💆 Building flashloan swap sequence for cycle token target="arbitrage executor"
cycle token=0xB8CE59FC3717ada4C02eaDF9682A9e934F625ebb path length=2
2025-07-24T04:00:07.907913Z INFO executors::arbitrage_executor: Selected pool for flashloan target="arbitrage_executor" flashloan pool=0x337b56d
87A6185cD46AF3Ac2cDF03CBC37070C30 flashloan_token=0xB8CE59FC3717ada4C02eaDF9682A9e934F625ebb max_liquidity=34822279076854
2025-07-24T04:00:07.908113Z INFO executors::arbitrage executor: 🛭 Built flashloan swap seguence target="arbitrage_executor" original_path_lengt
h=2 swap_structs_count=2 flashloan_strategy="Execute swaps in original order with flashloan"
2025-07-24T04:00:08.500281Z INFO executors::arbitrage executor: * Transaction sent with profit-scaled fees target="arbitrage executor" tx hash=
0xcfc49b1099986e3872196d6861a252bb61f4352d253186f1831105ad3920d336 profit percentage=0.20669248984409294 priority fee gwei=60 max fee gwei=160 ga
s limit=1000000 optimal amount in=11456633 expected profit=23680
2025-07-24T04:00:08.500576Z INFO run executor: 📥 Transaction sent! Hash: 0xcfc49b1099986e3872196d6861a252bb61f4352d253186f1831105ad3920d336. Ex
pected profit: 23680 (check logs for actual result)
```



Questions

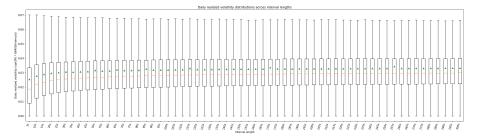
- Who?
- Why?
- How much?

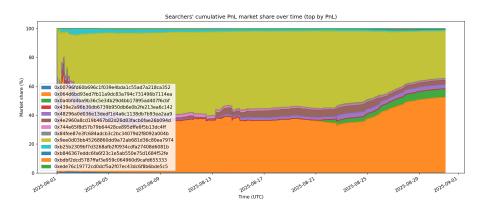
Data

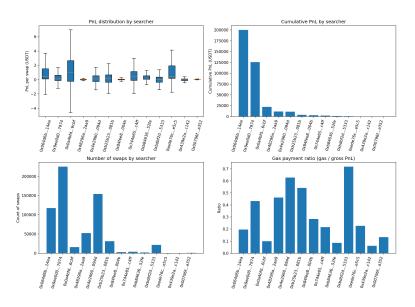
- HYPE-USDT Pair only (Why?)
- Every swap in August 2025
- Orderbook Data: Tardis.dev
- Transaction Logs: eth_getBlockReceipts from archive node provided by QuickNode

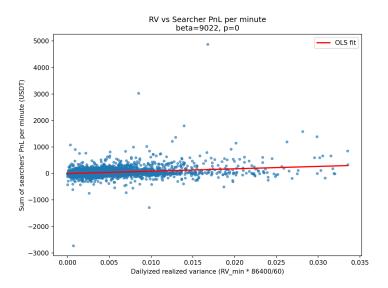
Methodology

- Calculate mid-price as weighted mean of BBOs
- Calculate PnL as 1-second markout minus gas fee
- Judge as Searcher if:
 - Cumulative PnL is positive
 - ▶ More than 30 transactions (1 per day)
- Volatility (Variance) is calculated as 1 minute realized variance









Conclusion

- We tried searching for MEV on HyperEVM but failed
- Market was already highly competitive and dominated by top 2 players
- Classical result of relation between volatility and informed trading was confirmed again

Thank you!