

Solana PAMM MEV Demo

Validated MEV + contagion analysis (Feb 26, 2026)

- 617 validated fat sandwich attacks
- 112.428 SOL total MEV profit
- Contagion analysis across 7 pools

Agenda

- Dataset and validation
- MEV patterns and detection
- Top attackers and protocol exposure
- Aggregator vs MEV separation
- Contagion findings
- Key takeaways

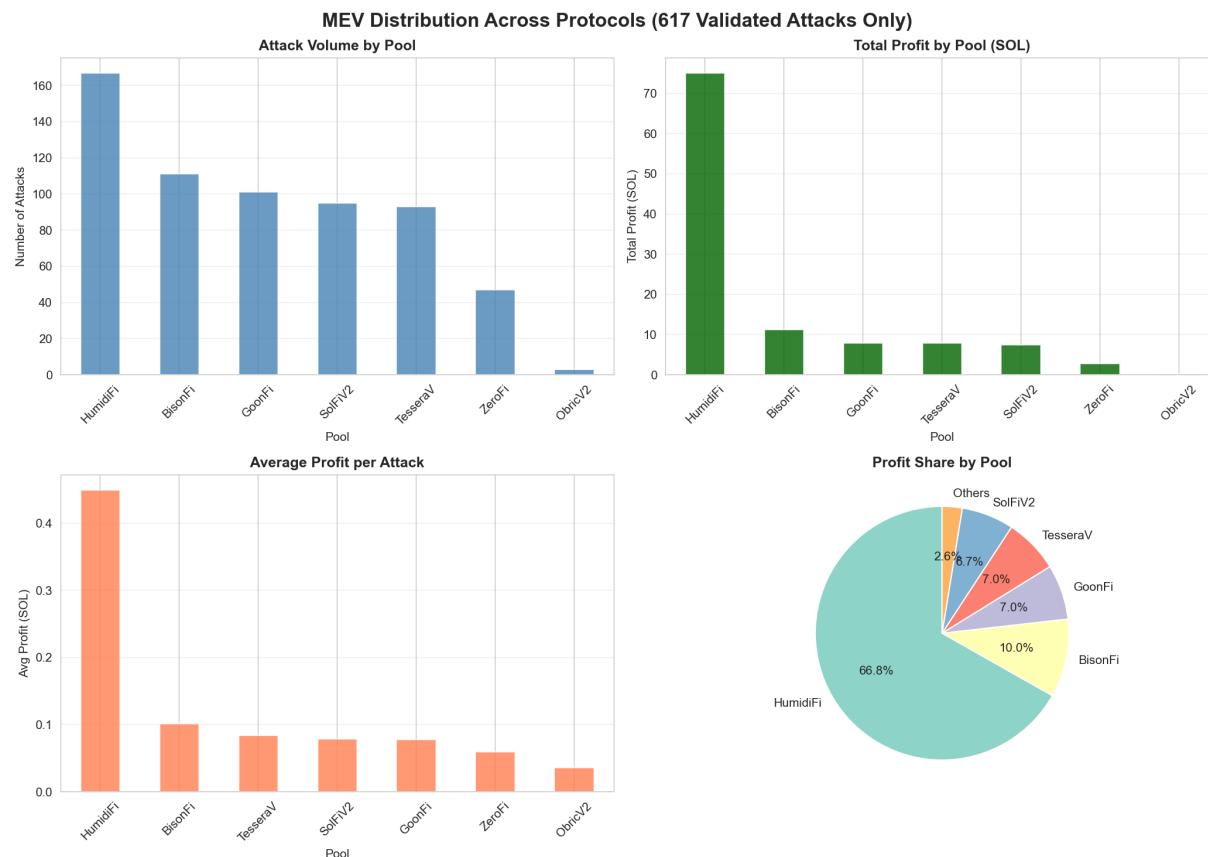
Dataset and Validation

- Source: Solana pAMM events across 8 protocols
- Initial detections: 1,501 MEV candidates
- Filtered to 617 validated fat sandwich attacks
- False positives removed: 58.9% (failed + multi-hop)
- Validation signal: $\text{net_profit_sol} > 0$ and $\text{sandwich_complete} > 0$
- Columns normalized: $\text{attacker_signer} \rightarrow \text{signer}$, $\text{amm_trade} \rightarrow \text{pool}$

Key Stats

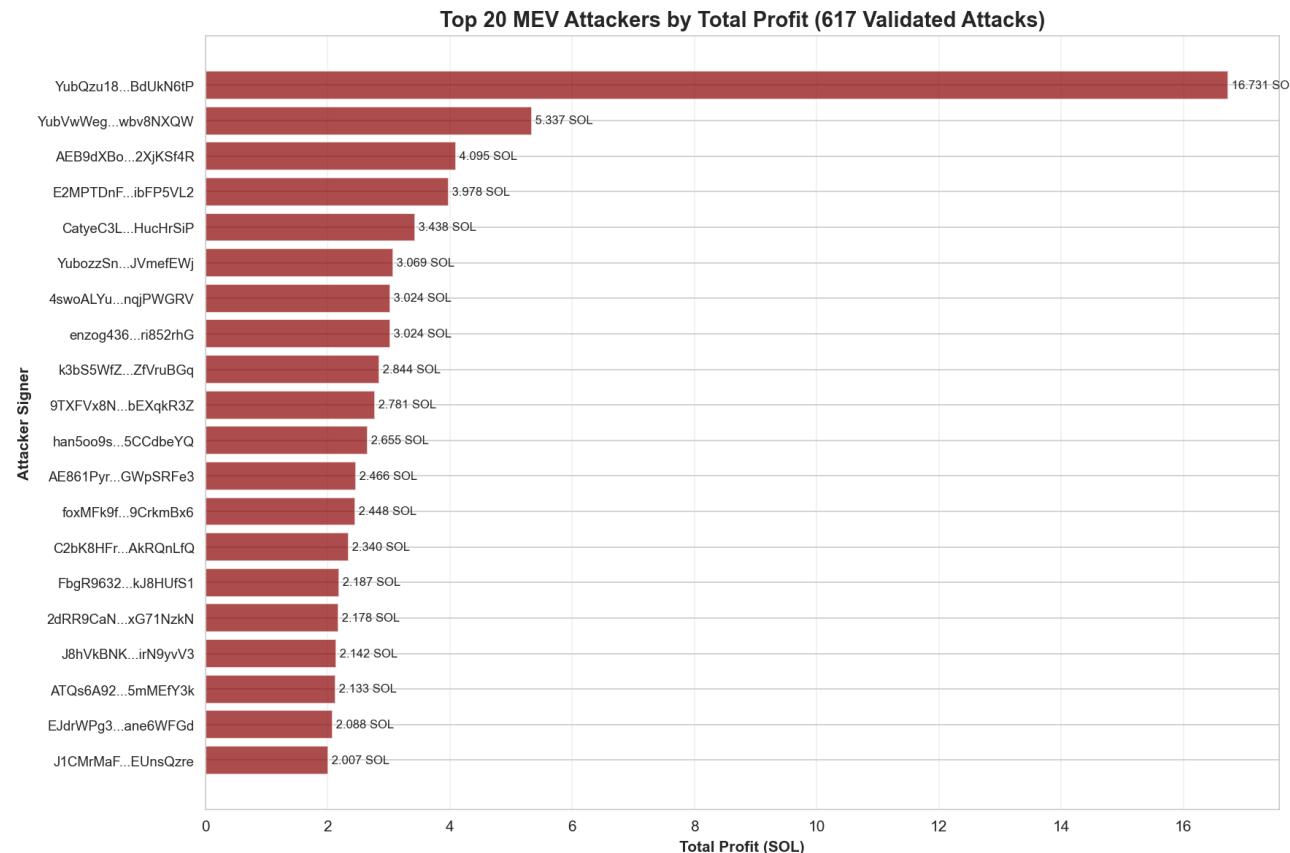
- Total MEV profit: 112.428 SOL
- Average profit per attack: 0.1822 SOL
- Unique attackers: 179
- Top pool (HumidiFi): 66.8% of total MEV
- Median profit: 0.0360 SOL (right-skewed distribution)
- Top 20 attackers capture ~49% of total profit

MEV Distribution by Protocol



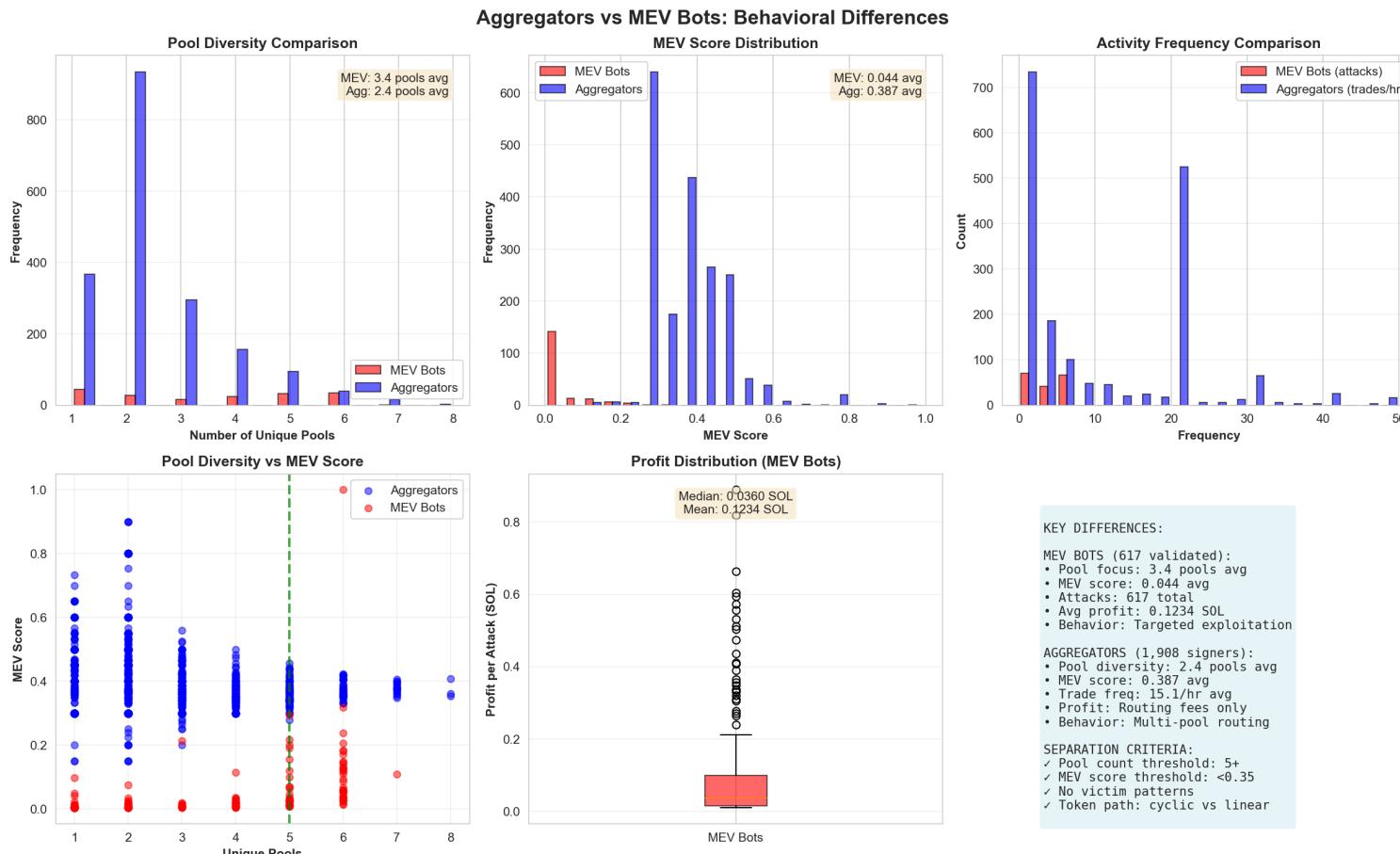
- HumidiFi captures 66.8% of total MEV profit (75.1 SOL)
- BisonFi and SolFiV2 show moderate exposure (10.0% and 6.7%)
- Risk is protocol-specific: profit is not proportional to volume

Top Attackers by Profit



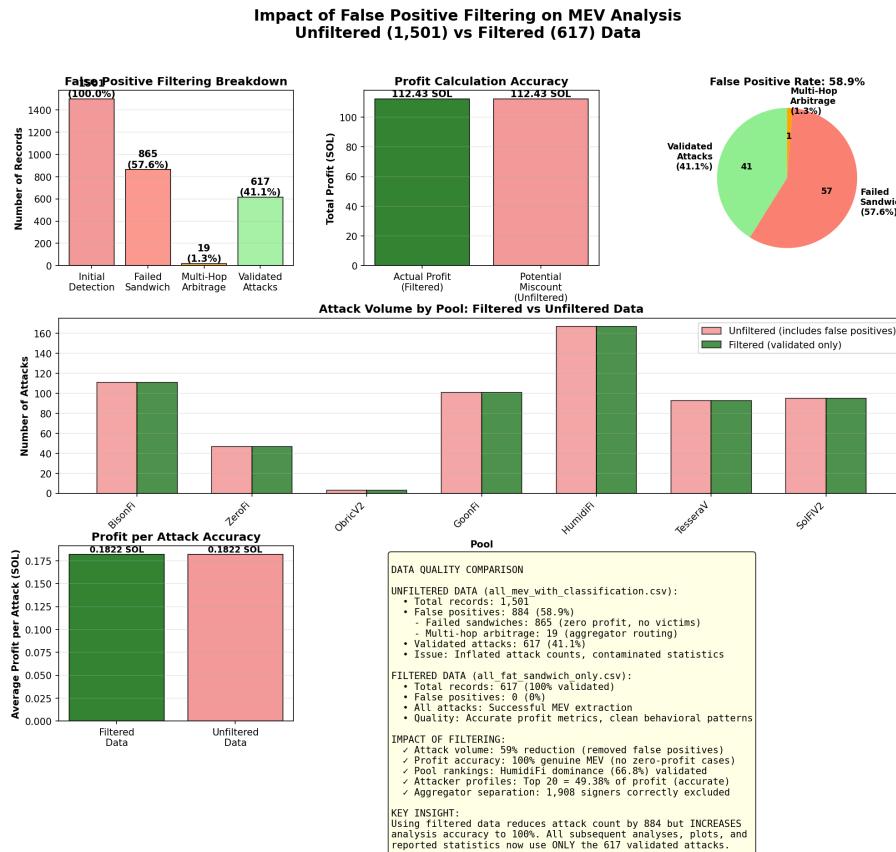
- Top attacker profit corrected to 16.731 SOL
- Top 20 attackers capture ~49% of total MEV profit
- High concentration implies latency and routing advantages

Aggregator vs MEV Separation



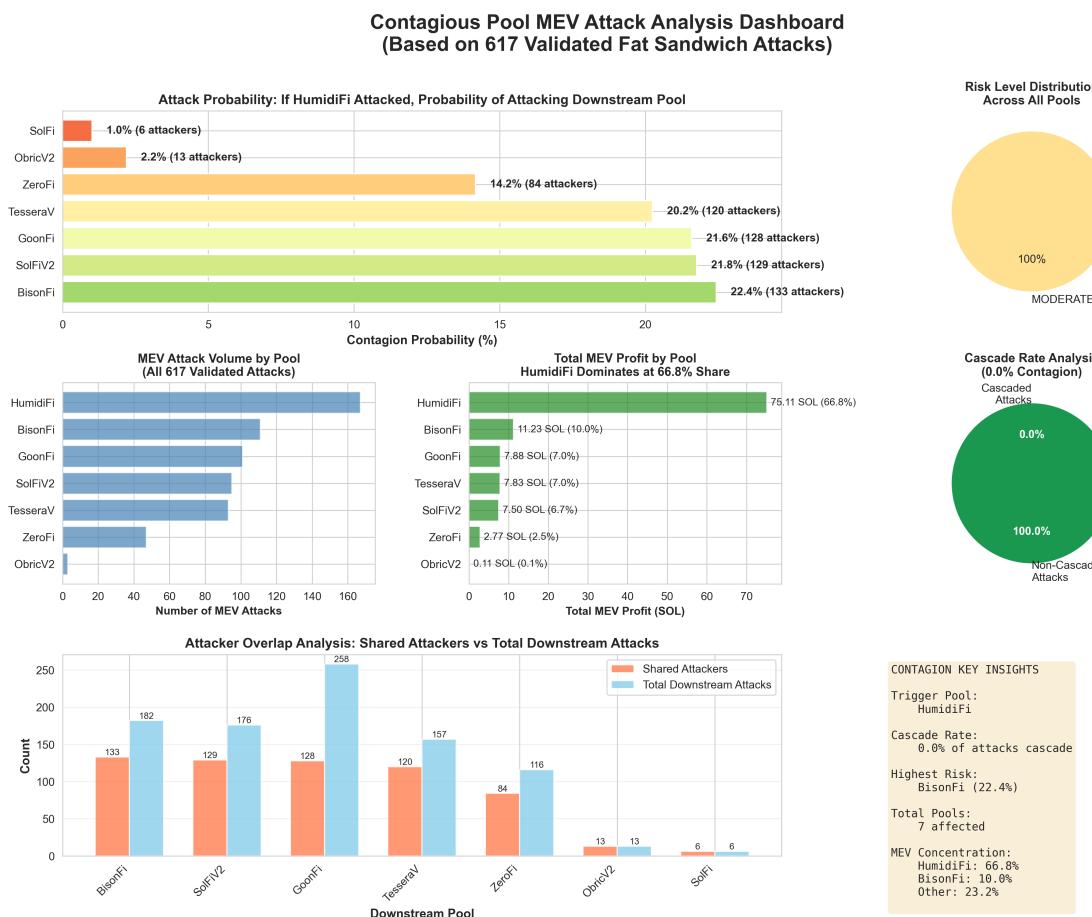
- Aggregators show high pool diversity and low MEV scores
- MEV bots cluster at low diversity and high MEV scores
- Separation validates filtering of aggregators and multi-hop

Data Correction and Filtering



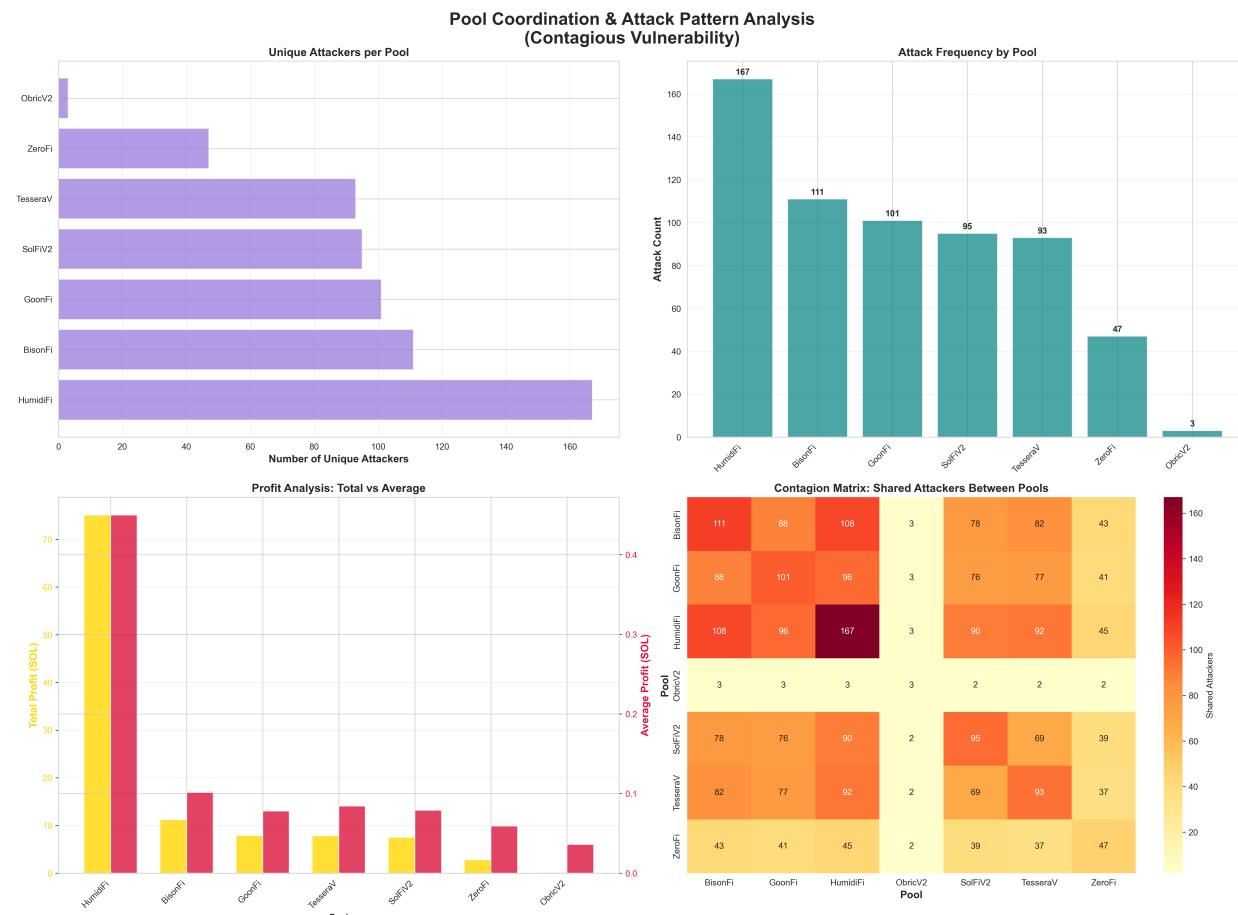
- 1,501 detections reduced to 617 validated attacks
- Removed 865 failed sandwiches and 19 multi-hop cases
- Corrected rankings shift profit concentration upward

Contagion Analysis Dashboard



- Trigger pool: HumidiFi with highest MEV concentration
- Immediate cascade rate is 0% within 5,000 ms
- Delayed contagion: 20-22% attacker overlap across pools

Pool Coordination Network (Zoomed)



- Heatmap shows shared attackers between pool pairs
- HumidFi has the widest attacker overlap
- Cross-pool risk is driven by attacker migration, not same-slot cascades

MEV Pattern and Detection

- Fat sandwich definition: sandwich_complete > 0 AND fat_sandwich > 0
 - Failed sandwich: net_profit_sol == 0 or null
 - Multi-hop arbitrage: front_running/back_running without sandwich_complete
 - Validated dataset includes only true fat sandwich attacks
-
- Filtering removes benign routing and failed attempts
 - Classification logic aligns with profit-positive sandwich patterns
 - Validation rule prioritizes realized profit over pattern hints
 - Columns standardized before aggregation to avoid drift

Demo Takeaways

- MEV is highly concentrated: HumidiFi dominates profit and volume
- No immediate cascade, but 22% delayed contagion via attacker overlap
- Clear behavioral separation between aggregators and MEV bots
- Validated data materially changes rankings and conclusions