

Tab 1



HyperValentPulse



Tracks

- **Primary:**  **Public Goods Track** (open, reusable analytics layer for the Hyperliquid ecosystem)
 - **Secondary:**  **Hyperliquid Frontier Track** (grows ecosystem transparency & culture via readable on-chain insights)
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1) Problem

Raw on-chain data is fast, noisy, and hard to interpret:

- **Traders** lack real-time **sentiment signals** at the transaction level.
- **Learners** struggle to see how market behavior emerges from individual transfers.
- **AI agents** need consistent, **structured** inputs to react programmatically.

Result: valuable signals remain **opaque** and underused.

2) Solution

A **web-based, open-source** dashboard that ingests Hyperliquid transactions, classifies each transaction (tx) as **Bullish / Bearish / Neutral** with **LLM reasoning**, aggregates it into market-level stats, and exposes the data for **humans and AI agents** alike.

Who it helps

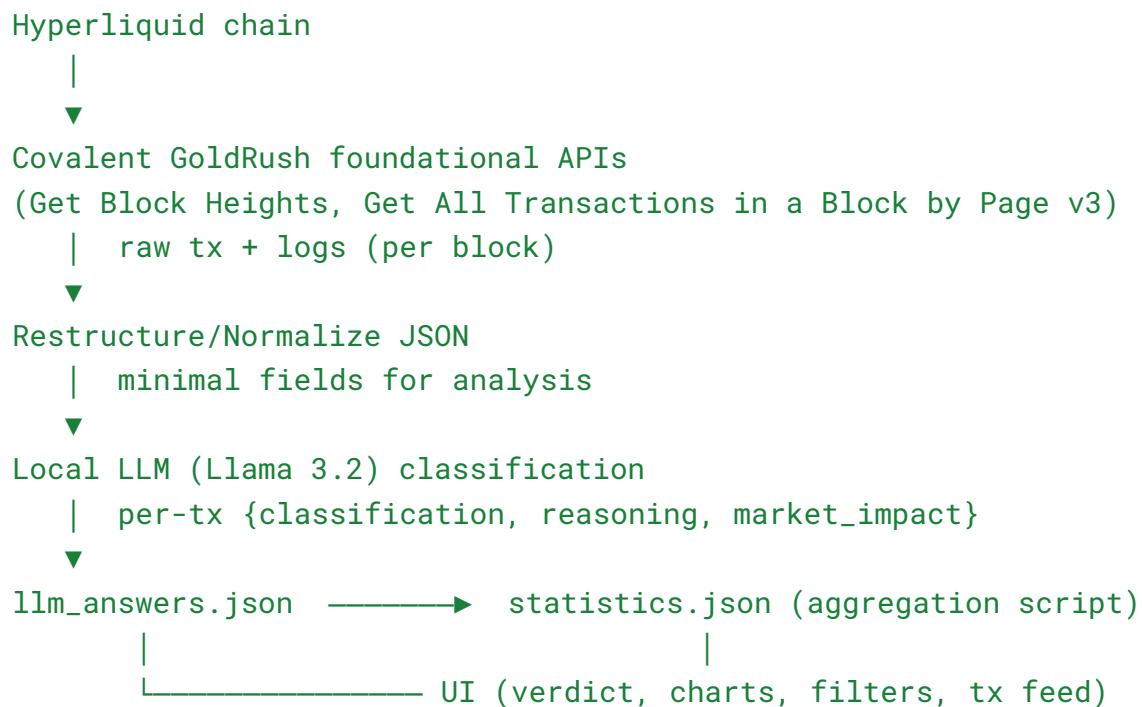
- **Traders:** an extra signal layer (buy/sell pressure, liquidity adds/removes).
 - **Learners:** handson, explainable market behavior.
 - **AI Agents:** machine-readable JSON for autonomous strategies.
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3) What's in the MVP

- **24 hour batch** for July 30 (1291 tx's) with full **LLM classification & reasoning**.
- **Top verdict banner** (Bullish/Bearish) + classification charts.
- **Token/Classification filters + scrollable tx feed** (expandable reasoning).
- **Two JSON artifacts**:
 - `llm_answers.json` → per-transaction insights (for feed).
 - `statistics.json` → aggregated stats (for banner, charts, filters)

4) Technical Architecture & Data Flow

High-level flow



Covalent GoldRush foundational APIs used

1. **Get Block Heights** (day range → block numbers)
2. **Get All Transactions in a Block by Page (v3)** (paginate txs + logs)

Example (raw Covalent output → before restructure)

You provided a full object including `tx_hash`, `block_height`, `dex_flags`, `token_transfers[ ]`, `log_events[ ]`, explorer URL, and gas data. We trim this to just the **analysis-relevant** fields.

5) LLM Prompt (used for every transaction)

Role: You are a blockchain market analyst. Your expertise is in interpreting raw transaction metadata and evaluating its potential impact on market sentiment.

Task: Analyze the following transaction (all token amounts are in native units unless otherwise noted). Classify it into exactly one of: "bullish", "bearish", or "neutral".

Output format: Return a single compact JSON object:

```
{
  "classification": "<bullish|bearish|neutral>",
  "reasoning": "1-3 sentences explaining the classification based on
signals in the metadata",
  "market_impact": "Brief note on potential effect (e.g., buy
pressure, liquidity depth change, negligible)"
}
```

Guidelines:

- Bullish → large buys, liquidity adds, whale accumulation, exchange withdrawals, stable→volatile rotations.
- Bearish → large sells, liquidity removals, whale distributions, deposits to exchanges, volatile→stable rotations.
- Neutral → small/insignificant transfers, internal shuffles, maintenance, or events unlikely to impact sentiment.

The Transaction:{ JSON }

```
{
  "index": 0,
  "tx_hash":
"0x9fdf5eb9a962a84a042b205f2347e71ecc4d3447b47dd9b98943f9b4e6fbc4f3",
  "input_transaction": {
    "tx_hash":
"0x9fdf5eb9a962a84a042b205f2347e71ecc4d3447b47dd9b98943f9b4e6fbc4f3",
    "timestamp": "2025-07-31T00:00:00Z",
    "token": "UBTC",
    "contract": "0x9fdbda0a5e284c32744d2f17ee5c74b284993463",
    "decimals": 8,
    "amount": 0.08032098,
    "from": "0xa92746512789aed57bc1b30083dc5d17e527077e",
    "to": "0x2000000000000000000000000000000000000000000000000000000000000000c5",
    "is_swap": false,
    "is_liquidity_add": false,
    "is_liquidity_remove": false,
    "saw_sync": false,
    "success": true
  },
  "model_output": {
    "classification": "neutral",
    "reasoning": "The transaction is a small transfer of UBTC from a
wallet to another, with no indication of large buys or sells. The
recipient address is a large whale, but the amount transferred is
relatively insignificant compared to their overall holdings.",
    "market_impact": "Negligible"
  }
}
```

B) Aggregates (**statistics.json**) – used for verdict/charts/filters

- `sample_size`
- `classification.counts & .percentages`
- `amounts_by_class`
- `final_verdict` (bullish_count, bearish_count, shares, verdict)
- `unique_tokens_seen` (token → tx count)
- `token_amounts` (token → total moved)
- `token_classification_counts[token]` (bullish/bearish/neutral + total)

(Exact keys already generated in your file; UI reads them directly.)

7) Frontend UX (simple, appealing, hackathon-friendly)

- **Top Verdict Banner:** “Market Verdict: Bullish/Bearish” + counts (color-coded).
- **Stats Overview:** metric cards + **pie/donut** (class distribution) + **bar** (volume by sentiment).
- **Filters:** token selector (dropdown/autocomplete), sentiment toggles.
- **Scrollable Transactions (1290+):** table/card list; columns for time, token, amount, from→to, flags, classification; **expand for reasoning**.
- **Responsive:** desktop table → mobile cards.

Any framework works (React/Vue/Svelte). Charts: Chart.js / Recharts. Styling: Tailwind/MUI/Ant.

8) Demo Flow

1. Open app → **Verdict banner** + headline stats
 2. See **distribution & volume** charts
 3. Choose **token** + **sentiment** filters
 4. Scroll the **tx feed**; expand items for **LLM reasoning**
 5. (Optional) **Agents** consume the same JSONs for automation
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9) Current Limitations

- **Batch (daily)**, not streaming yet (target date used: **July 30**).
 - **Local LLM** adds latency at larger scales.
 - Some **edge cases** (dust/internal shuffles) may be ambiguous.
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10) Future Roadmap

1. **Historical windows** → beyond 24h to **5/10/30 days & monthly** views (trend analysis).
2. **Real-time streaming** → integrate **Covalent GoldRush Streaming** + Hyperliquid infra for continuous ingest, classification, and rolling 24h stats.
3. **Agent-ready APIs** → expose structured endpoints for **autonomous trading/research agents**.
4. **Ecosystem tooling** → package as **SDK + open datasets** for builders, researchers, and educators.

Today: daily sentiment snapshot.

Tomorrow: **multi-day, real-time, AI-ready analytics layer** for Hyperliquid.

11) Open Source & Reusability (Public Goods)

- Clean **data contracts** (`llm_answers.json`, `statistics.json`)
 - **Composable components** (verdict banner, charts, filters, feed)
 - **Docs**: setup, env, run scripts, JSON examples, prompt, and extension points
 - Encourages forks for **custom prompts, token allowlists, heuristics**
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12) Submission Checklist

- **Repo (open source)** with code + README
 - **Sample data** (`llm_answers.json`, `statistics.json`)
 - **Prompt** (documented above)
 - **Demo** (hosted or video)
 - **Track alignment** (Public Goods, Frontier)
 - **Instructions** to run locally (ReadMe file in the U folder)
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13) Elevator Pitch (120 words)

We turn raw Hyperliquid transactions into **actionable sentiment**. Our open-source dashboard ingests daily on-chain data, uses a local **Llama 3.2** model to classify each transaction as **Bullish/Bearish/Neutral** with clear reasoning, and aggregates it into a market verdict with charts and filters. Traders get a **signal layer** beyond price; learners get explainable, hands-on market behavior; and **AI agents** get structured JSON for autonomous strategies. Built on **Covalent foundational APIs** (Get Block Heights, Get All Transactions in a Block by Page v3), the MVP delivers a clean UI and machine-readable outputs. Next, we'll expand to **multi-day windows** and integrate **GoldRush Streaming** for real-time updates evolving into a **multi-day, real-time, AI-ready analytics layer** for the Hyperliquid ecosystem.=

14) 🌐 Future Outlook

While the MVP shows daily sentiment classification across all transactions, the vision is to make the system **more focused, real-time and interactive**:

1. **Historical Expansion** – Extend beyond 24 hours to multi-day or monthly sentiment tracking (5, 10, 30 days). Users will be able to study how sentiment evolves over time.
2. **Real-Time Streaming** – Integrate with **Covalent GoldRush Streaming APIs** and Hyperliquid infra for **live dashboards** that update continuously as transactions occur.
3. **“Real Transactions” Filtering** – Introduce a configurable filter where users define what counts as a **“real” market-moving transaction (e.g., transfers above a set value threshold, whale wallet activity, liquidity adds/removals)**. This streamlines the signal-to-noise ratio by ignoring tiny dust transfers and surfacing only impactful moves.
4. **Cross-Referencing Historical Behavior** – Combine the **Streaming API** with the **Foundational API** to analyze a wallet’s **past activity**. For example, distinguishing between a whale accumulation vs. a routine shuffle.
5. **Conversational Chatbot Interface** – Embed an **AI chatbot layer** on top of the dataset. Users (traders, learners, analysts) could ask: *“Why was this transfer marked bearish?”* or *“Show me bullish whale moves from the last 5 days.”* The chatbot would leverage the structured LLM outputs to provide contextual answers.
6. **Autonomous Agent Integration** – Expose structured JSON APIs that autonomous agents can consume for **programmatic decision-making** (trading, research, monitoring).

👤 About Me

I recently graduated from **Stony Brook University** with a **double major in Computer Science and Applied Mathematics & Statistics**. My academic journey has been rooted in **AI research and development**, but I am now expanding my focus to become equally **blockchain-native**.

Although I come from a primarily **AI-first background**, this project represents my first step into the **Web3 ecosystem** - an attempt to understand blockchain markets, build practical tools and merge the worlds of **decentralized systems and autonomous AI agents**.

My mindset is to grow as a **hybrid technologist and a business developer**, fluent in both AI and blockchain, with the long-term goal of designing systems that **sense, decide and act autonomously** in Web3 environments. HyperValentPulse is my first experiment toward that vision. (**Fun fact - Ideated and completed this project within a week and submitted 3 mins before deadline haha**).