# VGeo-MNS Dashboard – Quick-Start User Guide

The dashboard provides a sample of data extracted from our model to showcase a user-friendly UI dashboard for users to easily monitor news, conduct statistical analysis for trades, and provide feedback for model retraining. Please note that features like “Model Validation” are still under development but users will be able to simulate the feedback submission. Please share any feedback if you would like certain features to be designed differently and if there are any additional features you would like to see.

***Filter Warnings:*** *Applying broad filters (e.g.,* ***All History + Breaking & Recap + Significant & Insignificant News****) can slow the dashboard due to Streamlit rendering limitations. Watch the top-right loading indicator to finish and avoid changing filters mid-load.*

**Link to the dashboard**

## 1. Dashboard Features

The dashboard is designed to provide a comprehensive view of market events, combining news sentiment with quantitative market impact analysis. Here is an overview of the key features:

- **Sidebar Filters**: Robust controls to slice and dice the news feed by ticker, date range, sentiment classification, and sentiment-to-price alignment etc.
- **News Cards**: Each event displayed as a distinct card containing the headline, publication date, ticker symbol, and AI-generated summary explaining the classification rationale
- **Event Lifecycle Analysis**: Quantitative metrics section within each card displaying key indicators (price movement, volume spike, volatility change) to measure event impact. Expandable via "Show More Metrics" for detailed statistics
- **Price Trend Visualization**: charts showing price action in two timeframes:
    - *Hourly Chart*: Intraday price movement in the hours before and after news publication
    - *Daily Chart*: Stock performance relative to benchmark index across a T-30 to T+15 window, highlighting periods where the stock outperformed or underperformed the index
- **Model Reasoning**: Detailed explanation of the classification logic, including breaking vs. recap determination, significance scoring methodology, and actionable trading insights derived from the analysis

- **Model Validation Feedback**: Interactive interface enabling users to validate or correct model predictions (Sentiment, Price Alignment, Significance) to improve accuracy over time

## 2. Navigation & Interaction

Navigating the dashboard is centered around the sidebar filters and the main feed of news cards. As default, the dashboard will show all news events marked as Significant based on our model's reasoning ordered by date in descending order (latest to oldest).

**Using Filters:**

- **Global Search**: Use the search bar to look up keywords across the entire dataset. It scans the Headline, Description, Key Factors, Reasoning, and Ticker Name fields to find any matching text.
- **Ticker:** Defaults to 'All Tickers.' Click the dropdown to select and view news for a specific company (e.g., RNECY).
- **Date:** Defaults to 'Last 5 Days.' Click the dropdown to switch between:
    - All History: Shows all news events to this day
    - Specific Date: Pick a single calendar day.
    - Date Range: Select a start and end date to analyze a specific period.
- **Sentiment:** Filter events by the model's sentiment classification. Options include Positive, Negative, or Neutral.
- **Alignment:** Filter based on whether the market reaction matched the news sentiment.
    - Aligned: The price moved in the expected direction (e.g., Positive News + Price Up).
    - Divergent: The price moved opposite to the news (e.g., Positive News + Price Down).
    - Unknown: Data was insufficient to determine alignment.

    ***Note:*** *The alignment will be based on T+3 CAR data if provided, but it will fall back to T+1 if not available. On the day of the news, no alignment status will show up.*

- **Show Only Breaking News:** Toggle this checkbox to filter for events tagged as "Breaking", excluding routine recaps or summaries.
- **Show Only Significant News:** Toggle this checkbox to view only events classified as "SIGNIFICANT", filtering out low-impact or noise items.

- **Hide User-Flagged Duplicates:** Defaults to ON. This hides events that users have previously flagged as duplicates, ensuring a cleaner news feed. Uncheck to see all raw entries.

**Card Interaction**:

- **Expanders**: Click on **"Price Trend Analysis", "Model Reasoning", "Model Validation",** and **"Show Source Details"** to reveal detailed charts and feedback forms. These are collapsed by default to keep the view clean.
- **Scrolling**: The dashboard uses a continuous scroll layout. As you adjust filters, the list of cards automatically updates.

## 3. Understanding the Metrics

We provide a suite of statistical metrics to quantify how a news event impacted the market before and after (labeled as T-1, T+0, and T+1). Here is how they are calculated:

| Metric | Calculation / Definition | Interpretation |
|---|---|---|
| **Stock/Index Close** | The stock/index's closing price on a given day and percentages changes compared to the previous day's closing price | The final trading price after the market closed. The data also shows the changes in stock/index return compared to the previous day's closing price |
| **Rel. to Index** | (Stock Return - Index Return) --> Computed based on TOPIX | How much the stock outperformed or underperformed its benchmark index on the event day. |
| **Pre-Event CAR (T-3)** | Cumulative Abnormal Return from 3 days prior to 1 day prior. | Indicates if the market was already pricing in the news (leakage) or trending before the event. |

| | | |
|---|---|---|
| **Post-Event CAR (T+3)** | Cumulative Abnormal Return from 1 day after to 3 days after. | Measures the short-term drift or reaction persistence after the event. |
| **Gap % (Market Open)** | (Open - Prev Close) / Prev Close | The percentage jump in price at the market open, reflecting overnight reaction to news. |
| **Intraday (Stock/Idx)%** | (Close - Open) / Open | The price movement solely during trading hours, excluding the overnight gap for both stock price and index for comparison. |
| **Sigma Move (Last 30d)** | Z-Score:<br><br>(Day Return - Mean 30d Return) / Std Dev 30d Return | Measures how "extreme" the move was relative to the last 30 days of volatility. A value > 2.0 indicates a statistically significant move. |
| **Vol Z-Score (Last 20d)** | (Today's Volume - Average Volume) / Standard Deviation of Volume<br><br>Calculated over the last 20 trading days. | Measures how many standard deviations today's volume differs from the recent mean. A Z-Score > 2.0 indicates a statistically significant anomaly, suggesting a strong reaction from market participants. |
| **Vol Ratio (Last 20d)** | Today's Volume / Average Volume (Last 20 Days) | A ratio > 1.0 means volume was higher than the recent average, indicating heightened investor interest. |

## 4. Reading the Price Trend Chart

The **Price Trend Analysis** visualizes stock price behavior surrounding news events across two timeframes:

**Hourly Chart (T-1 to T+1):**

- **Axes**:
  - **X-Axis**: Calendar date with hourly timestamps.
  - **Y-Axis**: Stock price in local currency (displayed as whole numbers)
- **Lines**:
  - **Light Blue Line**: Hourly price movement in local currency
  - Dots indicate trading hours when the market was open
- **Annotations**:
  - **Yellow Dot**: News publication timestamp (Japan local time)
  - **Red Vertical Lines**: T-1 and T+1 boundaries framing the 48-hour event window
- **Tooltips**: Hover over any data point to display exact date, and price (formatted to 2 decimals, e.g., ¥5,234.56)

***Note:*** *Enhancement in progress—multiple news articles for the same company published on the same day will be consolidated into a single chart view*.

**Daily Chart (T-30 to T+15):**

- **Axes**:
  - **X-Axis**: Calendar dates.
  - **Y-Axis**: Daily Return % (day-over-day change). Values are shown as whole numbers (e.g., 5 = 5%).
- **Lines**:
  - **Dark Blue Line**: Stock's daily return.
  - **Light Blue Line**: Benchmark index's daily return (enables comparison of relative performance and correlation)
  - Dots indicate days when the market was open
- **Annotations**:
  - **Yellow Line**: Marks the **Event Day (T+0)**.

    - **Red Vertical Lines**: Mark **T-3** (3 days before) and **T+3** (3 days after) to frame the immediate event window.
- **Tooltips**: Hover over any data point to display exact date, asset name, and return percentage (formatted to 2 decimals, e.g., +5.23%)

## 5. Model Validation – Giving Feedback

- This section allows you to provide expert feedback to improve the model's accuracy over time.
- **Sentiment Validation**: Review the model's assigned sentiment classification (e.g., POSITIVE, NEGATIVE, NEUTRAL). If inaccurate, select "No" and correct it by choosing the appropriate sentiment from the dropdown.
- **Alignment Validation**: Confirm whether the sentiment correctly aligns with the observed price movement. If "No", manually reclassify the relationship as Aligned, Diverged, or Unknown.
- **Source Quality**: Rate the reliability and credibility of the news source or reporter (Yes or No) to help the model prioritize trusted information in future classifications.
    - **Note:** Enhancement in progress—sources and reporters will be translated to English
- **Significance Assessment**: Confirm whether the news event was truly "Significant" (high market impact) or "Insignificant" (low impact/noise).
- **Duplicate/Recap Flagging**: Mark the item as a Duplicate or Recap if it repeats previously reported information, helping the model learn to filter out redundant content.
- **Additional Feedback:** Use the text box to document detailed analysis or specific observations about the event, providing rich context for future model enhancements.

***Note:*** *In this demo version, feedback is simulated. In the production version, submitting this form will log data for model retraining. Although you can simulate submissions, no data will be recorded in the current version.*