VERTEX

BY QUANT ATLAS

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IN A NUTSHELL

VERTEX is a systematic reversal-detection dataset designed to quantify when price action is forming a genuine local or structural turning point after reaching abnormal, overextended states.

For every bar it outputs calibrated probabilities of a bullish reversal (a forming trough) and a bearish reversal (a forming peak), at both a local (tactical) and a structural scale. The scores are built from multi-scale price extension, trend-efficiency decay, volatility transition, closing-range re-entry, persistence, and distance from equilibrium, all computed point-in-time from the close.

The delivery of **VERTEX** is a regular stream of these reversal scores and the discrete, causal signals they trigger on global assets. A bullish signal marks a probable bottom and expected upturn; a bearish signal marks a probable top and expected downturn, both separated into tactical local turns and broader structural turns with conviction labels.

USE CASES

- **Machine-learning reversal feature**: the point-in-time reversal score, direction, scale, and conviction drop straight into a feature library as a directional turning-point input that is largely orthogonal to momentum and mean-reversion factors.

- **Reversal confirmation overlay**: an existing directional thesis is checked against **VERTEX** to confirm it is being entered into a probable local or structural turn rather than against one.

- **Exit and exposure management**: open positions are mapped to **VERTEX** direction and conviction to flag elevated turning-point risk and support risk management.

- **Cross-sectional reversal screening**: assets are ranked by local and structural reversal conviction to surface where tops and bottoms are most probable.

- **Signal validation and benchmarking:** internal signals are segmented by alignment, opposition, or neutrality versus **VERTEX**'s turning points.

DELIVERY METHODS

- Delivery is primarily structured through **R2**, the preferred channel for institutional clients requiring automated, reliable, and compliant data ingestion. Integration supports direct pipeline delivery with full version control, making it the recommended starting point. Quant Atlas also supports **S3** bucket delivery for teams operating within **AWS**-native data pipelines and **API** access for custom retrieval workflows. PDF and workbook reports are available for product validation and committee review.

- Core dataset outputs can be delivered in **CSV** or **JSON** format, depending on whether the client prefers tabular research files, systematic ingestion, or platform integration.

- The granularity and update frequency depend on the product and the selected asset universe. Some datasets are designed for hourly delivery, while others are more suitable for daily or slower institutional workflows. Frequency can be increased or reduced based on the client's requirements, provided that the change does not materially reduce signal quality, data stability, or validation reliability.

PERFORMANCE EVALUATION

- Refer to the **Performance** sample document for the evaluation process. If you would like to request an evaluation document for a selected group of assets, we are able to provide that.

- For this type of dataset, key evaluation metrics are the extrema precision index (EPI) with its precision, recall, and F1; extrema coverage and lead-time/timeliness profiles; random-timing, random-direction, and constant/all-bar baseline comparisons; empirical coincidence p-values; precision, actionable, and conviction lift; information coefficient and orthogonality versus standard factors; horizon and signal decay; chronological stability across the test sample; ranking and calibration quality (average precision, ROC AUC, Brier); and others.

- A data dictionary is provided in the **Performance** sample document.

CONTACT US

You may reach us through the following means for any type of questions you have.

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