

# NIFTY TRADING & OPTIONS ANALYZER

Complete Analysis Inventory & Feature Documentation

App: vob.py (5,240 lines) | 86 Total Features | Streamlit + Dhan API + Supabase  
Including: Aether Flow PineScript v6 Indicator (10 modules)

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## A. TECHNICAL ANALYSIS MODULES (Python-based)

#	Module / Class	What It Does	Key Outputs
1	PivotIndicator	Multi-TF pivot detection (3M, 5M, 10M, 15M, 1H)	Swing High/Low pivot levels, S/R lines on chart
2	VolumeOrderBlocks	Volume-based Order Block detection	Bullish OB (teal), Bearish OB (purple), S/R levels
3	TriplePOC	Point of Control across 3 periods (10, 25, 70)	POC1 (pink), POC2 (blue), POC3 (green) lines, signals
4	FutureSwing	Swing projection with volume delta analysis	Direction (Bull/Bear), projected target %, volume delta
5	ReversalDetector	Intraday reversal detection (bullish + bearish)	Score (0-6), verdict (Strong Buy to Strong Sell), entry rules

## B. OPTIONS CHAIN ANALYSIS

#	Analysis	What It Computes	Signal Output
6	18-Factor Bias Scoring	LTP, OI, ChgOI, Vol, Delta, Gamma, Theta, Ask, Bid, IV, DVP, Pressure, DeltaExp, GammaExp, Level, PCR, PCR Signal, AskBid	Per-strike bias classification
7	Max Pain Calculation	Strike where option buyers lose most (CE+PE pain)	Max Pain level as support
8	OI Wall Detection	Identifies max CE OI (resistance) and max PE OI (support)	OI Wall Resistance & Support levels
9	Fresh OI Buildup	Spots fresh CE/PE buildup from change-in-OI	Fresh CE Buildup (resistance), Fresh PE Buildup (support)
10	Option Chain Verdict	Aggregate scoring of all bias factors	Strong Bullish / Bullish / Neutral / Bearish / Strong Bearish
11	Operator Entry Detection	OI + ChgOI alignment check	Entry Bull, Entry Bear, No Entry
12	Fake vs Real Move	Validates if price move is backed by OI	Scalp / Momentum classification

### 18 Bias Factors Detail

#	Factor	#	Factor	#	Factor
1	LTP Bias	7	Theta Bias	13	DeltaExp (Delta Exposure)
2	OI Bias	8	AskQty Bias	14	GammaExp (Gamma Exposure)
3	ChgOI Bias	9	BidQty Bias	15	Level Detection (S/R/Neutral)
4	Volume Bias	10	AskBid Bias	16	PCR (Put-Call Ratio)
5	Delta Bias	11	IV Bias	17	PCR Signal (Bull/Bear/Neutral)
6	Gamma Bias	12	DVP Bias (Delta-Vol-Price)	18	PressureBias (Bid-Ask)

## C. GREEKS & GAMMA EXPOSURE (GEX) ANALYSIS

#	Analysis	What It Computes	Signal Output
13	Black-Scholes Greeks	Delta, Gamma, Vega, Theta, Rho per strike	Full Greeks table (expandable)
14	Net GEX Calculation	Dealer gamma exposure per strike	Net GEX value, histogram chart
15	Gamma Flip Level	Strike where dealer gamma crosses zero	Flip level (key pivot for price)
16	GEX Magnet	Strike with highest positive gamma (price attraction)	Magnet strike level
17	GEX Repeller	Strike with most negative gamma (price acceleration)	Repeller strike level
18	GEX Market Regime	Positive GEX = Pin/Chop; Negative GEX = Trend/Breakout	Regime label + interpretation
19	GEX Time Series	Historical GEX tracking for ATM +/- 2 strikes (200 entries)	5-column time series charts
20	GEX Change Alerts	Monitors GEX sign flips, >30% changes, gamma flip crossings	Telegram alerts

## D. PCR (PUT-CALL RATIO) ANALYSIS

#	Analysis	What It Computes	Signal Output
21	PCR per Strike	Put/Call OI ratio for each strike	PCR value per strike
22	PCR Time Series	Historical PCR for ATM +/- 2 strikes (200 entries)	5-column time series charts
23	PCR Signal	Thresholds: >1.2 = Bullish, <0.7 = Bearish	Signal badge per column
24	PCR x GEX Confluence	Cross-analysis of PCR + GEX for combined signal	STRONG BULL/BEAR, BULL RANGE, BEAR TREND badges

## E. SUPPORT & RESISTANCE AGGREGATION (HTF S/R Panel)

#	S/R Source	Support Level	Resistance Level
25	Max Pain	Max Pain strike	--
26	OI Wall	Max PE OI strike	Max CE OI strike
27	Gamma Exposure	PE Gamma support	CE Gamma resistance
28	Delta Exposure	PE Delta support	CE Delta resistance
29	Fresh OI Buildup	Fresh PE buildup	Fresh CE buildup
30	Market Depth	Max BidQty strike	Max AskQty strike
31	Pivot Support (5M)	5-min pivot lows	5-min pivot highs
32	Pivot Support (15M)	15-min pivot lows	15-min pivot highs
33	Pivot Support (1H)	1-hr pivot lows	1-hr pivot highs
34	VOB Zones	Volume OB support	Volume OB resistance

## F. CHART VISUALIZATIONS

#	Chart Type	Library	Location
35	Candlestick + Volume (OHLCV with overlays)	Plotly	Left column (main)
36	Pivot Level Overlays (multi-TF lines)	Plotly	On candlestick chart
37	VWAP Line (yellow dotted)	Plotly	On candlestick chart
38	VOB Zones (colored rectangles)	Plotly	On candlestick chart
39	Triple POC Lines (3 horizontal levels)	Plotly	On candlestick chart
40	Net GEX Histogram (strike-by-strike bars)	Plotly	Right column
41	PCR Time Series (5 line charts)	Plotly	Right column
42	GEX Time Series (5 line charts)	Plotly	Right column
43	30-Day Price Trend	Plotly	Analytics dashboard
44	30-Day Volume Trend	Plotly	Analytics dashboard

## G. DASHBOARD & METRICS COMPONENTS

#	Component	Data Shown
45	Spot Price Card	Current price, change (pts + %), color-coded green/red
46	Day High/Low	Intraday range
47	Volume Metric	Current volume
48	POC Position Table	Above/Below/Inside for each POC period
49	Swing Projection Table	Direction, target, delta, historical swing %
50	Reversal Score Panel	Bullish score (0-6), Bearish score (0-6), individual signals
51	Trading Psychology Panel	Entry guidelines and rules
52	Option Chain Bias Table	All 18 bias factors per strike
53	GEX Summary Cards	Net GEX, Flip, Magnet, Repeller
54	GEX Breakdown Table	Call GEX, Put GEX, Net GEX per strike
55	Greeks Table (expandable)	All greeks + IV + bid/ask per strike
56	30-Day Analytics Dashboard	Avg price, volatility, max gain/loss

## H. ALERT & NOTIFICATION SYSTEM

#	Alert Type	Trigger Condition	Channel
57	Trading Signal Alert	Bullish/Bearish pivot signal detected	Telegram
58	ATM Verdict Alert	Strong Bullish/Bearish verdict triggered	Telegram
59	GEX Sign Flip	Net GEX crosses zero (regime change)	Telegram
60	Large GEX Change	Delta GEX exceeds 30% threshold	Telegram
61	Gamma Flip Crossed	Price crosses gamma flip strike level	Telegram

## I. SIDEBAR CONFIGURATION

#	Setting	Options
62	Timeframe selector	1m, 3m, 5m, 10m, 15m
63	Pivot toggles	3M, 5M, 10M, 15M (individual on/off)
64	Pivot proximity slider	+/- 1-20 points
65	Expiry date selector	Weekly/Monthly expiry list from Dhan API
66	Historical days slider	1-5 days of candle data

#	Setting	Options
67	Use Cached Data toggle	Cache (Supabase) vs Live API
68	Auto-refresh toggle	2-min interval option
69	Telegram signal toggle	Enable/disable push notifications
70	Database cleanup	Clear 7/14/30 day old data from Supabase
71	Save Preferences	Persist user settings to Supabase
72	Analytics Dashboard toggle	Show/hide 30-day analytics panel

## J. AETHER FLOW PINESCRIP v6 INDICATOR (10 Modules)

External TradingView indicator: SMC Flow System v1.2 by Fatich.id

#	Module	In-Chart Feature
73	Mxwll Suite	CHoCH / BOS / I-CHoCH / I-BOS + HH/HL/LH/LL swing labels
74	Auto Fibonacci	10 fib levels (0.236 to 1.618) auto-drawn from swing pivots
75	Session Heatmap	NY (red) / Asia (green) / London (gold) background colors
76	Session Dashboard	Real-time session timer + volume activity classification (5-tier)
77	UT Bot Alerts	ATR trailing stop Buy/Sell signals with label management
78	Hull Suite	HMA/EHMA/THMA trend bands (default length 55)
79	LuxAlgo FVG	Fair Value Gap detection + mitigation tracking + dashboard
80	LuxAlgo Order Blocks	Volume-pivot Order Block zones with wick/close mitigation
81	Three-Bar Reversal	Pattern recognition with 4 trend filters (MA, ST, DC, None)
82	Reversal Signals	TD-Sequential-style 9-count momentum phases with S/R levels

### PineScript Indicator - 12 Alert Conditions

Alert Message	Trigger	Frequency
UT Long	UT Bot Buy signal fires	Once per bar
UT Short	UT Bot Sell signal fires	Once per bar
Hull trending up	MHULL crosses above SHULL	Once per bar
Hull trending down	SHULL crosses above MHULL	Once per bar
Bullish FVG detected	New bullish Fair Value Gap forms	Once per bar
Bearish FVG detected	New bearish Fair Value Gap forms	Once per bar
Bullish FVG mitigated	Bullish FVG mitigated by close	Once per bar
Bearish FVG mitigated	Bearish FVG mitigated by close	Once per bar
Bullish OB Formed	Bullish order block detected via volume pivot	Once per bar
Bearish OB Formed	Bearish order block detected via volume pivot	Once per bar
Bullish OB Mitigated	Bullish OB mitigated (wick or close)	Once per bar
Bearish OB Mitigated	Bearish OB mitigated (wick or close)	Once per bar

### PineScript Indicator - Input Parameters (80 total)

Group	Count	Key Parameters
Smart Money Concepts	8	Bull/Bear color, Show Int/Ext, Sensitivity (3/5/8, 10/25/50), Structure type
Swing Labels	2	Show HH/LH, Show LH/LL

Group	Count	Key Parameters
High/Low	4	Show 1D/4H levels and labels
Auto Fibs	31	10 show toggles, 10 fib values (0.236-1.618), 10 colors, master toggle
Sessions	4	NY/Asia/London colors, Transparency (0-100)
UT Bot Settings	6	Key Value (2), ATR Period (6), Heikin Ashi mode, Label mgmt, Max labels (3)
Hull Suite Settings	10	Source, Variation (HMA/EHMA/THMA), Length (55), Multiplier, HTF, Colors, Band
FVG	12	Threshold %, Auto, Unmitigated levels, Mitigation, Timeframe, Extend, Dynamic, Colors, Dash
LuxAlgo Order Blocks	12	Vol Pivot Length (5), Bull/Bear counts (3), Colors, Line style/width, Mitigation
Three Bar Reversal	14	Pattern type, S/R mode, Colors, Trend filter type, MA type/lengths, ST factor, DC len
Reversal Signals	11	Momentum/Exhaustion display, S/R levels, Risk levels, Targets, Trade setup, Warnings



## K. DATA SOURCES & APIs

#	Source	What It Provides	Integration Method
83	Dhan API (dhanhq)	Live OHLCV candles, LTP, option chain, greeks, expiry list	REST API with rate limiting + exponential backoff (2s,4s,8s,16s)
84	Supabase	Persistent storage: candles, preferences, analytics history	supabase-py client library with auto-cleanup
85	yfinance	Fallback/alternative price data source	yfinance library (pip package)
86	Black-Scholes (scipy)	Greeks calculation engine using norm.cdf	scipy.stats.norm for analytical solutions

## SUMMARY TOTALS

Category	Count
Technical Analysis Modules (Python)	5
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Greeks & GEX Analyses	8
PCR Analyses	4
S/R Level Sources	10
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PineScript Indicator Modules	10
PineScript Alert Conditions	12
Data Sources	4
TOTAL UNIQUE ANALYSES / FEATURES	86

## Verdict Scoring Scale

Score Range	Verdict	Action
>= +4	Strong Bullish	High-confidence long entry
>= +2	Bullish	Moderate long bias
-1 to +1	Neutral	No directional bias
<= -2	Bearish	Moderate short bias
<= -4	Strong Bearish	High-confidence short entry

## PCR x GEX Confluence Matrix

PCR Signal	GEX Regime	Confluence	Meaning
Bullish (>1.2)	Positive (Pin/Chop)	BULL RANGE	Bullish bias, range-bound pinning expected
Bullish (>1.2)	Negative (Trend)	STRONG BULL	Bullish with breakout potential
Bearish (<0.7)	Positive (Pin/Chop)	BEAR RANGE	Bearish bias, range-bound movement
Bearish (<0.7)	Negative (Trend)	STRONG BEAR	Bearish with breakdown potential
Neutral (0.7-1.2)	Positive	NEUTRAL PIN	No direction, tight range expected
Neutral (0.7-1.2)	Negative	VOLATILE	No direction, large swings possible

# TECHNOLOGY STACK & DEPENDENCIES

Package	Version	Purpose
streamlit	>=1.28.0	Web application framework (main UI)
streamlit-autorefresh	>=0.1.6	Auto-refresh component (30-second interval)
requests	>=2.31.0	HTTP client for API calls
pandas	>=2.1.0	Data manipulation and analysis
numpy	>=1.24.0	Numerical computation
scipy	>=1.11.0	Black-Scholes Greeks calculation (norm.cdf)
plotly	>=5.17.0	Interactive charts and visualizations
pytz	>=2023.3	Timezone handling (Asia/Kolkata IST)
openpyxl	>=3.1.0	Excel file handling
supabase	>=1.0.3	Database client (Supabase persistence)
dhanhq	>=2.0.2	Dhan trading API client
yfinance	>=0.2.28	Yahoo Finance data (fallback source)
pandas_ta	>=0.3.14	Technical analysis indicators library

# MARKET HOURS & OPERATIONAL INFO

Parameter	Value
Trading Hours	8:30 AM - 3:45 PM IST (Monday - Friday)
Timezone	Asia/Kolkata (IST)
Auto-Refresh Interval	30 seconds (configurable)
PCR History Depth	Last 200 entries per strike
GEX History Depth	Last 200 entries per strike
Historical Days (configurable)	1-5 days of candle data
Cached Data	Available outside market hours via Supabase
API Rate Limiting	Exponential backoff: 2s, 4s, 8s, 16s on failure