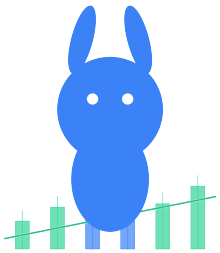
BunnyQuant

Technical Analysis Platform

User Guide

Technical Analysis & Risk Management



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1 Introduction

1.1 What is BunnyQuant?

BunnyQuant is an advanced quantitative trading platform that combines technical analysis with professional risk management. Built by traders for traders, BunnyQuant provides institutional-grade analytics through a simple web interface.

1.2 Key Features

- **Risk & Reward Analysis**: Detailed risk/return calculations with CVaR/CGain
- **Fractal Analysis**: Market trend identification (trending, mean-reverting, random)
- **Market Cycle Detection**: Identify cycles and current phase
- **Adaptive Signals**: Trading recommendations based on market conditions
- **Support/Resistance**: Automatic identification of key price levels
- **Distribution Analysis**: Statistical risk assessment
- **Real-time Data**: Yahoo Finance integration
- **Multiple Timeframes**: Support from minutes to months

1.3 Target Audience

This platform is suitable for:

- Traders seeking professional risk management tools
- Investors requiring comprehensive technical analysis
- Portfolio managers needing adaptive strategies

2 Getting Started

2.1 Account Registration

1. Navigate to `https://quant.drnamlabs.com`
2. Click **"Sign Up"** in the top-right corner
3. Enter your email and create a password
4. Verify your email
5. Log in to access the platform

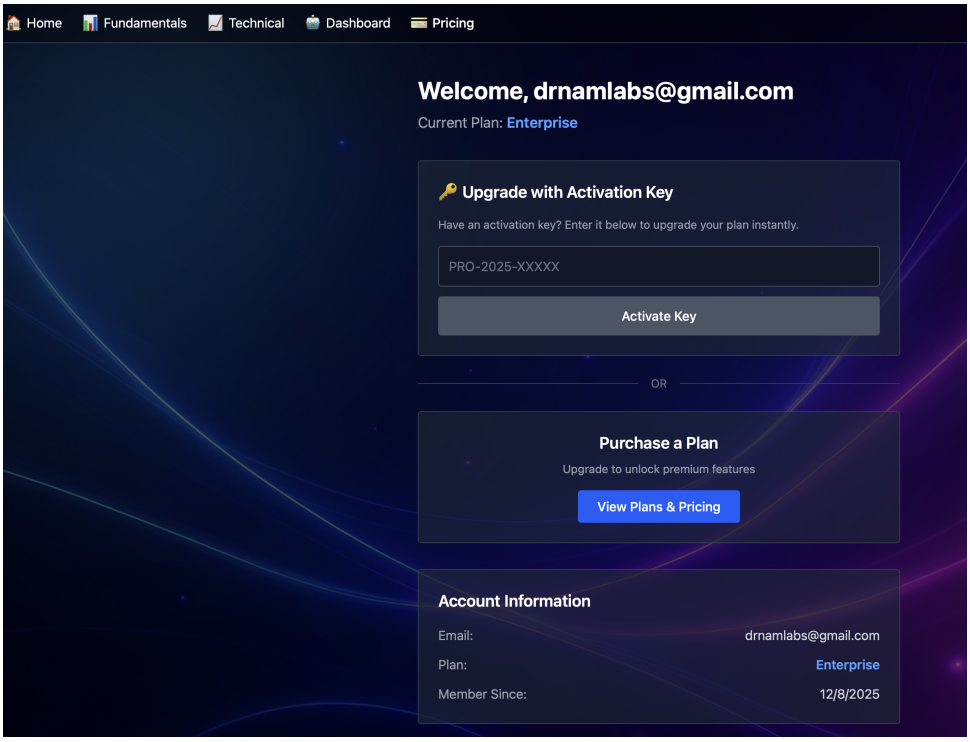

Figure 1: BunnyQuant Main Dashboard

2.2 Interface Overview

The BunnyQuant interface consists of three main sections:

Navigation Bar Access analysis modules (Fundamentals, Technical, Settings)

Input Panel Configure stock ticker, timeframe, and analysis parameters

Results Panel View charts, metrics, and trading signals

2.3 Quick Start

1. Enter ticker symbol: `AAPL`
2. Select interval: `1 day`
3. Choose lookback: `3 months`
4. Click **"Analyze"**
5. Review comprehensive analysis results

3 Fundamental Analysis

3.1 Overview

The Fundamentals module provides key financial metrics:

- Market capitalization and enterprise value
- P/E ratio, PEG ratio, and valuation multiples

- Revenue, profit margins, and growth rates
- Analyst recommendations
- Company and sector information

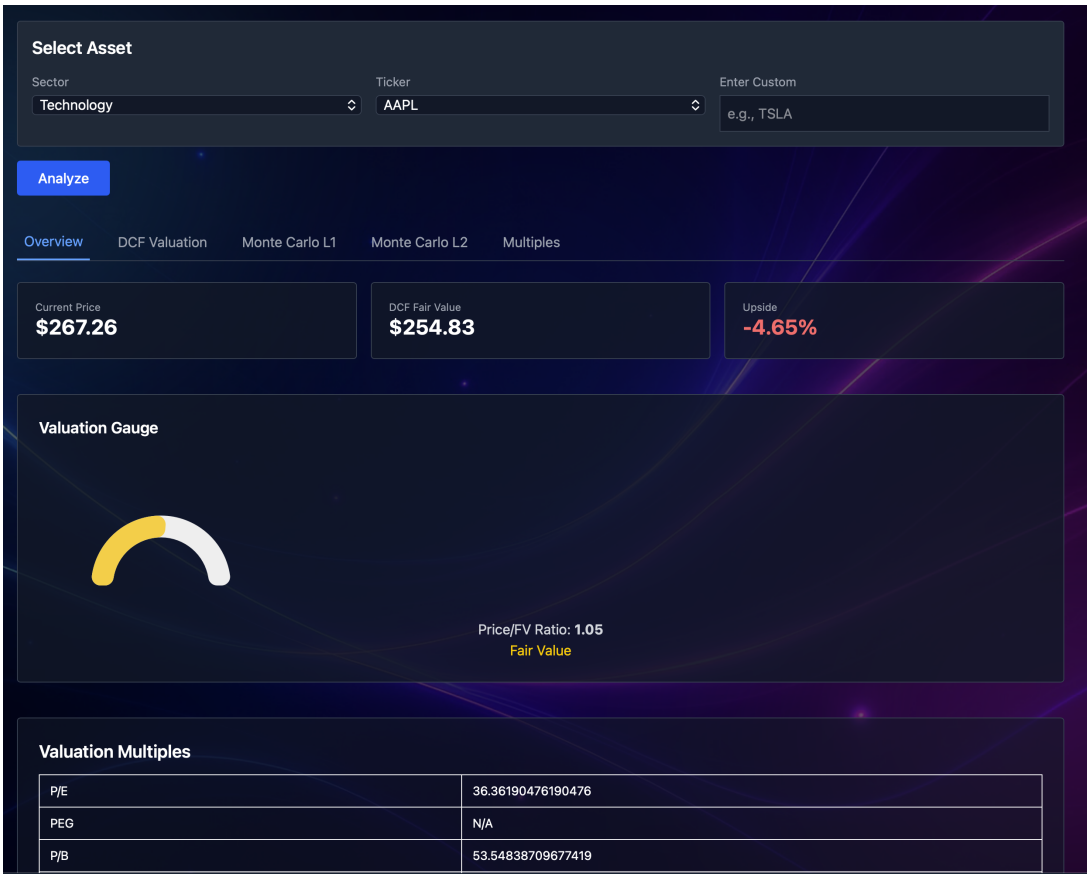

Figure 2: Fundamental Analysis Dashboard

3.2 How to Use

- Check financial health before technical analysis
- Screen stocks by valuation
- Understand sector positioning and competition
- Combine strong fundamentals with good technical signals

4 Technical Analysis Framework

4.1 Overview

BunnyQuant's technical analysis platform provides 8 specialized modules:

1. **Overview/Signals** - Summary metrics and signals
2. **Market Cycle** - Market cycle analysis
3. **Adaptive Signals** - Adaptive trading signals

4. **Risk & Reward** - Position sizing and risk management
5. **Fractal Analysis** - Market regime classification
6. **Pivot & S/R Levels** - Support/Resistance and pivot points
7. **S/R Engine Diagnostics** - Detailed S/R diagnostics
8. **Distribution Analysis** - Return distribution analysis

The header displays:

- **Current Price**: Real-time price
- **Overall Trend**: Trend direction and momentum
- **S/R Signal**: Support/Resistance signal

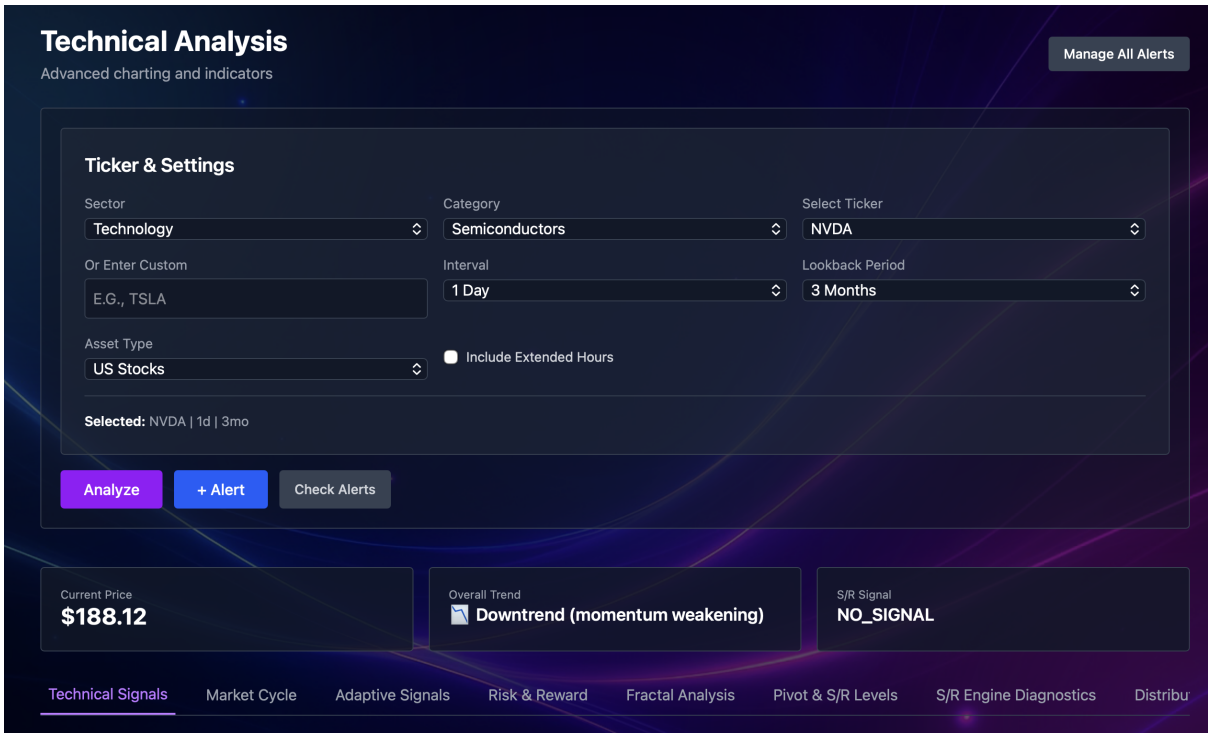

Figure 3: Technical Analysis Platform

4.2 Overview & Signals Tab

4.2.1 Purpose

The Overview tab provides a consolidated view of all modules:

- Current market condition summary
- Key technical indicators
- Signals from multiple modules
- Quick reference metrics

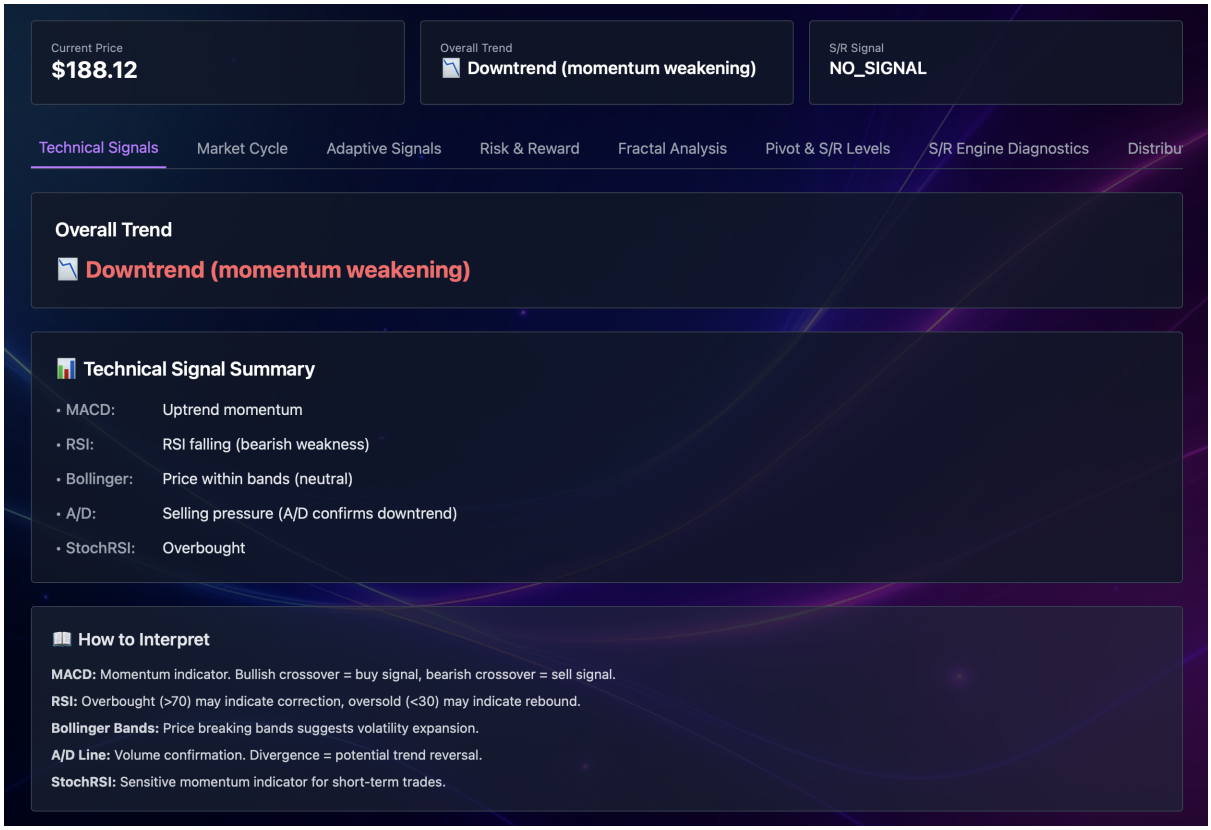

Figure 4: Overview & Signals Tab

4.2.2 Displayed Metrics

Price Action Current price with trend context

Momentum Strength and direction of trend

Support/Resistance Key price levels

Aggregate Signal Buy/Sell/Neutral from all modules

4.3 Market Cycle Tab

4.3.1 Purpose

Identifies recurring patterns in price movement to help traders:

- Anticipate turning points
- Optimize entry/exit timing
- Understand market rhythm
- Identify phase transitions

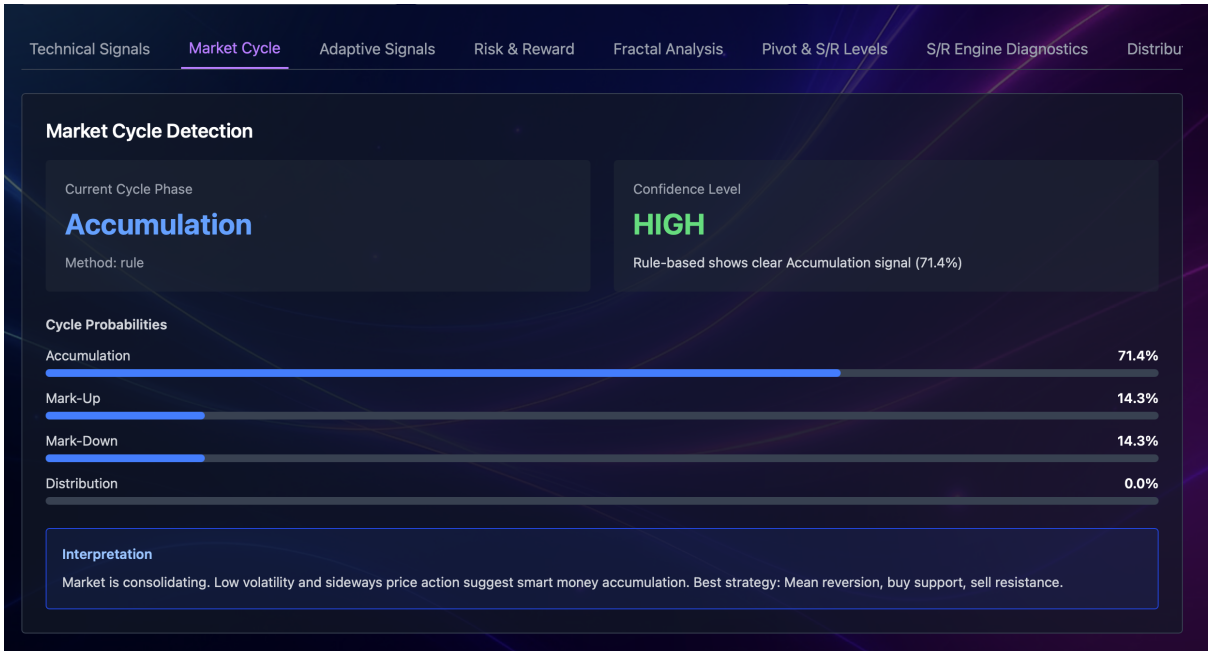

Figure 5: Market Cycle Analysis

4.3.2 Key Components

Dominant Cycle The primary oscillation period in the market, typically:

- **Day Trading**: 20-60 minute cycles
- **Swing Trading**: 5-20 day cycles
- **Position Trading**: 20-60 day cycles

Cycle Strength Indicates how regular and predictable the cycle is:

- **Strong Cycle (>70%)**: Reliable, good for timing
- **Medium Cycle (40-70%)**: Present but variable
- **Weak Cycle (<40%)**: Irregular, use with caution

Current Phase Position within the cycle (0-360 degrees):

- **0-90°**: Expansion phase (bullish)
- **90-180°**: Peak zone (take profit area)
- **180-270°**: Contraction phase (bearish)
- **270-360°**: Bottom zone (accumulation area)

4.3.3 Trading Strategy

Table 1: Cycle-Based Trading Strategy

Cycle Strength	Phase	Action
Strong (>70%)	270-360°	Look for long entries
Strong (>70%)	90-180°	Look for short entries or take profit
Medium (40-70%)	Any	Confirm with other signals
Weak (<40%)	Any	Ignore cycle, use other modules

4.4 Adaptive Signals Tab

4.4.1 Overview

Provides trading recommendations that adapt to current market conditions. Unlike fixed indicators, these signals adjust based on:

- Market regime (trending vs. mean-reverting)
- Volatility levels
- Risk/reward profile
- Cycle phase

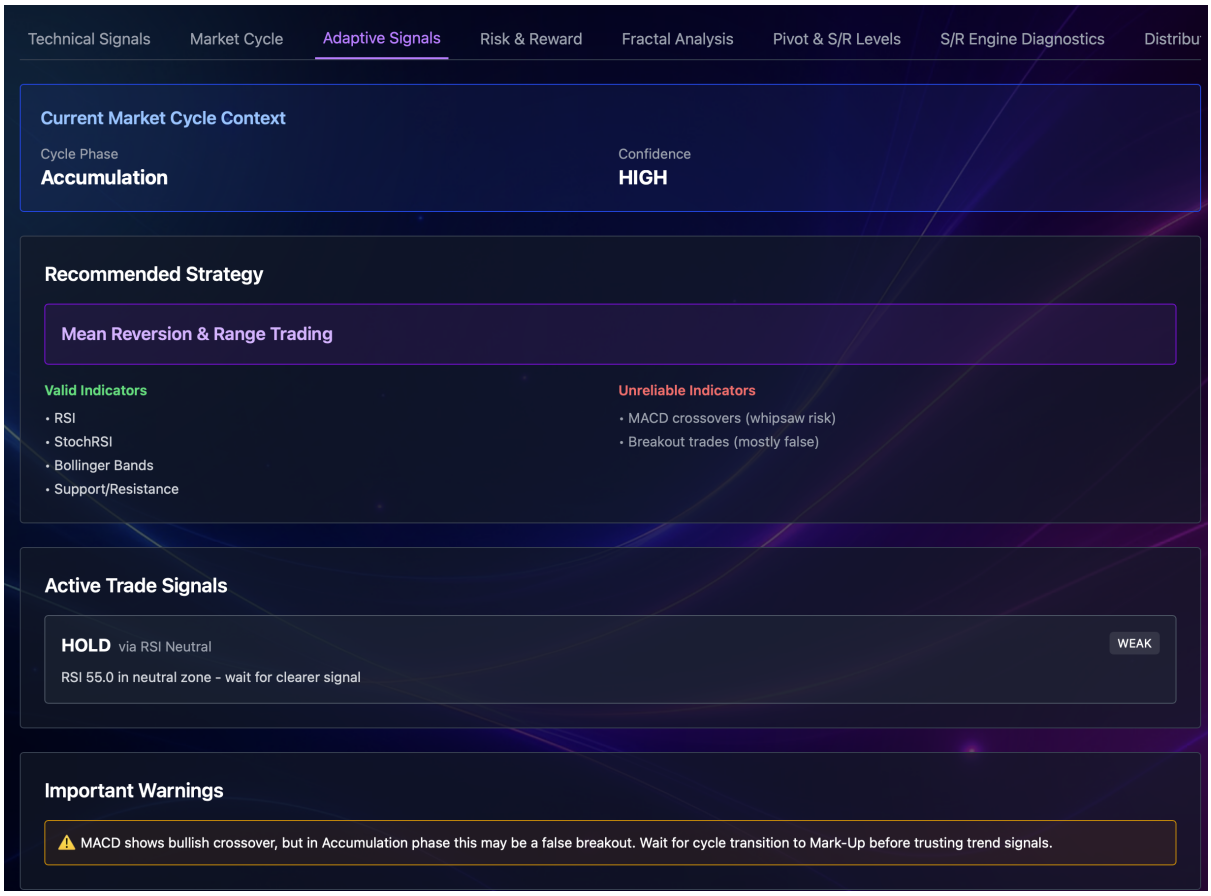

Figure 6: Adaptive Signals Dashboard

4.4.2 Signal Types

BUY Signal Favorable entry for long positions

- Positive risk/reward ratio
- Uptrend or mean-reversion bounce
- Near support levels

SELL Signal Favorable entry for short positions or exit longs

- Negative risk/reward
- Downtrend or resistance rejection
- Near resistance levels

NEUTRAL Signal No clear directional edge

- Random walk regime
- Poor risk/reward
- Conflicting indicators

4.4.3 Signal Confidence

Table 2: Signal Confidence Interpretation

Confidence Level	Interpretation
90-100%	Very high confidence - strong setup
70-89%	Good confidence - trade with normal size
50-69%	Moderate confidence - reduce position size
Below 50%	Low confidence - wait for better setup

4.4.4 How to Use

1. Check signal direction (BUY/SELL/NEUTRAL)
2. Verify confidence level (>70% preferred)
3. Review contributing factors
4. Cross-reference with S/R levels
5. Size position based on confidence

4.5 Risk & Reward Tab

4.5.1 Purpose

Professional position sizing and risk management tool that calculates:

- Optimal entry price
- Position size based on account risk
- Stop loss placement
- Take profit targets

- Risk-adjusted performance metrics

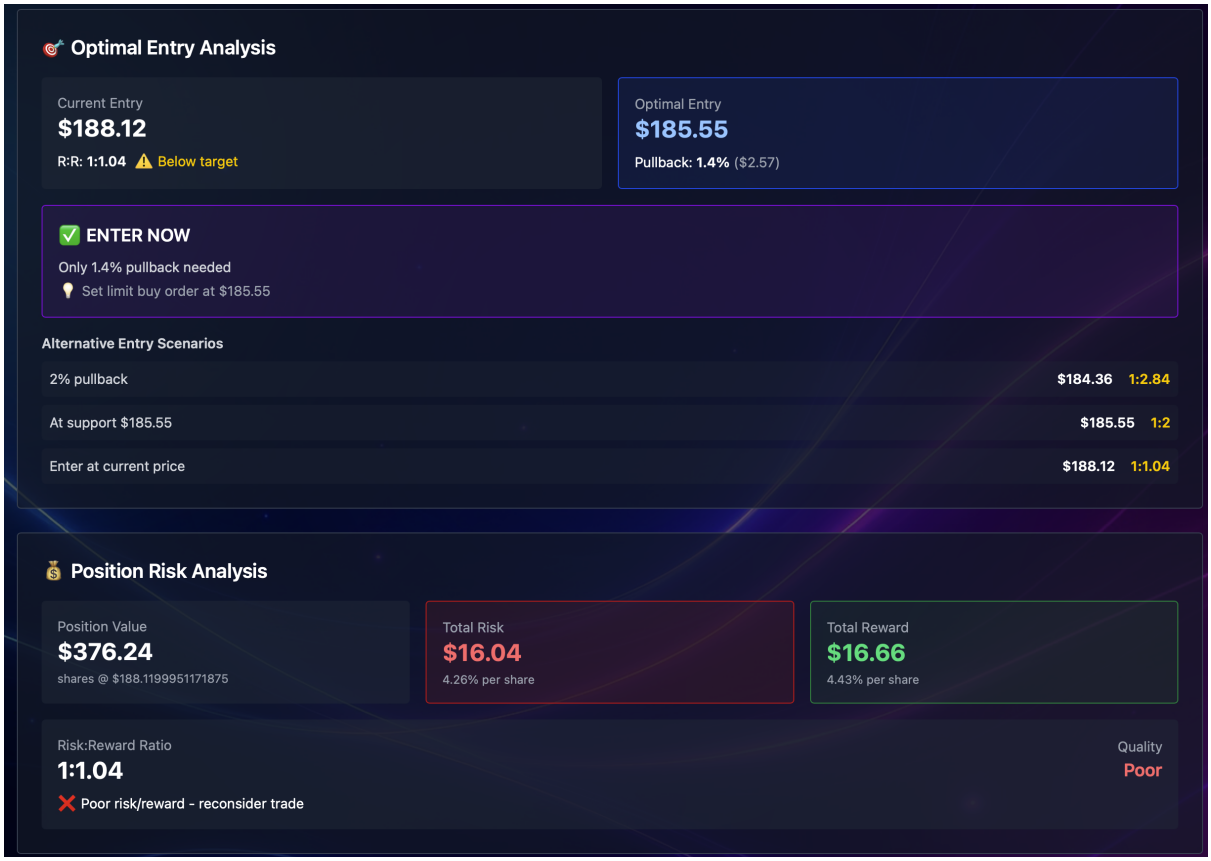

Figure 7: Risk & Reward Analysis

4.5.2 Key Metrics

CVaR (Conditional Value at Risk) Expected loss in the worst 5% of scenarios. Lower (more negative) is riskier.

CGain (Conditional Gain) Expected profit in the best 5% of scenarios. Higher is better.

CGain/CVaR Ratio Risk-adjusted performance metric:

- $>$ **2.0**: Excellent risk/reward
- **1.5-2.0**: Good setup
- **1.0-1.5**: Acceptable with confirmation
- $<$ **1.0**: Poor risk/reward, avoid

4.5.3 Position Sizing Calculator

Enter your parameters:

Account Size Total trading capital

Risk Per Trade Percentage willing to lose (typically 1-2%)

Entry Price Planned entry point

Stop Loss Stop loss level

Output:

- Number of shares to buy
- Total position value
- Dollar risk amount
- Recommended take profit levels

4.5.4 Risk Management Rules

1. Never risk more than 2% per trade
2. CGain/CVaR should be > 1.5
3. Place stops below recent support
4. Use wider stops in high volatility
5. Reduce position size in uncertain markets

4.6 Fractal Analysis Tab

4.6.1 Purpose

Classifies the market into three behavioral regimes to help traders choose the right strategy:

1. **Trending Markets**: Price has persistent directional movement
2. **Mean-Reverting Markets**: Price oscillates around an average
3. **Random Walk**: No predictable pattern

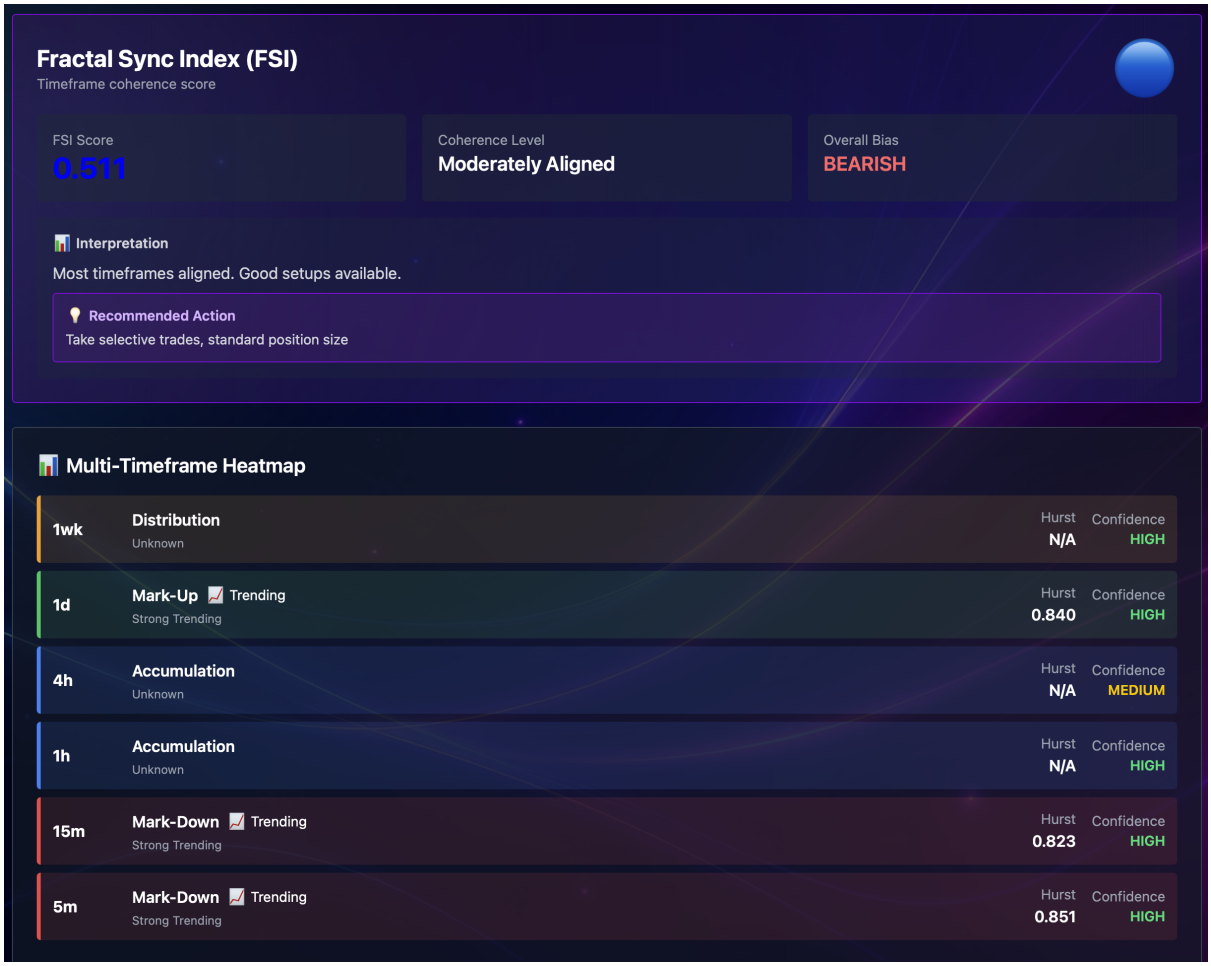

Figure 8: Fractal Analysis Dashboard

4.6.2 Market Regimes

The system uses a numerical indicator (Hurst Exponent) to classify markets:

Table 3: Market Regime Classification

Regime	H Value	Characteristics
Trending	$H > 0.55$	Persistent trends, momentum works
Random Walk	$0.45 \leq H \leq 0.55$	No clear pattern, avoid directional trades
Mean-Reverting	$H < 0.45$	Oscillating, range-bound, reversals work

4.6.3 Trading Implications

Trending ($H > 0.55$)**:** Momentum strategies, follow the trend

Random Walk ($0.45 \leq H \leq 0.55$)**:** Avoid directional trades

Mean-Reverting ($H < 0.45$)**:** Contrarian strategies, buy dips/sell rallies

4.6.4 Displayed Metrics

- **Current Hurst Exponent**: Real-time regime classification
- **Hurst Evolution Chart**: Historical regime changes
- **Regime Stability**: How stable the current regime is
- **Transition Probability**: Likelihood of regime change

4.7 Pivot & S/R Levels Tab

4.7.1 Overview

Calculates and displays key price levels where buying/selling pressure may emerge.

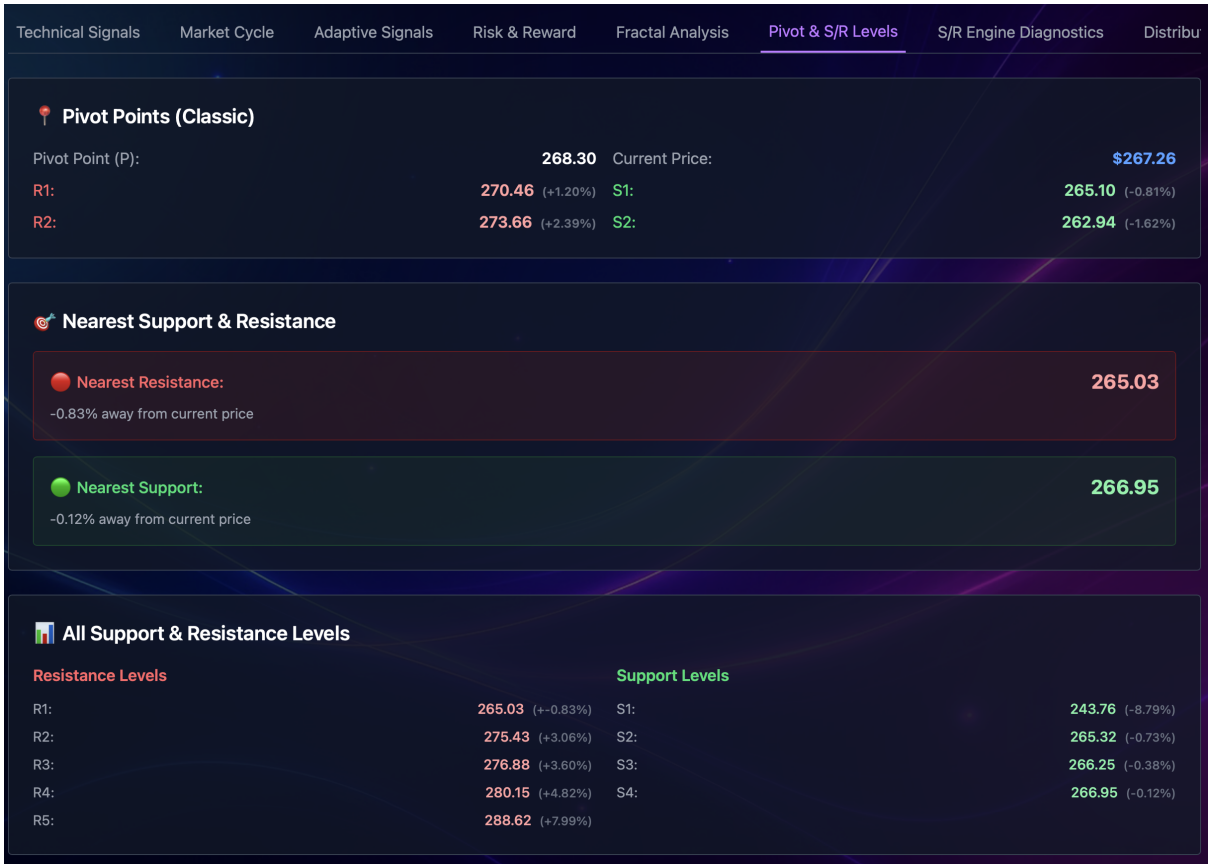

Figure 9: Pivot & S/R Levels

4.7.2 Pivot Points

Standard pivot points calculated from previous period, including:

- Pivot Point (P)
- Resistance 1, 2, 3 (R1, R2, R3)
- Support 1, 2, 3 (S1, S2, S3)

4.7.3 Support & Resistance Levels

Automatic S/R Levels detected by algorithm

Historical Levels Previous swing highs/lows

Psychological Levels Round numbers (e.g., $100, $150, $200)

Strength Rating 1-5 scale based on number of tests and volume

4.7.4 Trading with S/R

Support Levels (Buy Zones)

- Look for bounces at support
- Place stops slightly below support
- Increase position at strong support

Resistance Levels (Sell Zones)

- Take profits near resistance
- Look for breakouts above resistance
- Short opportunities when rejected at resistance

4.8 S/R Engine Diagnostics Tab

4.8.1 Purpose

Advanced diagnostic tool showing how the Support/Resistance detection algorithm works.

Figure 10: S/R Engine Diagnostics

4.8.2 Diagnostic Metrics

Detection Confidence Algorithm's confidence in identified levels (0-100%)

Level Density Number of S/R levels per price range

Cluster Analysis Grouping of nearby levels (zones)

Volume Profile Price levels with highest trading volume

Touch Count Number of times price tested each level

Recency Score Weight given to recent vs. historical levels

4.8.3 How to Use

- Validate reliability of S/R levels
- Understand why certain levels are prioritized

- Refine understanding of support/resistance
- Distinguish between clustered zones vs. clear levels

4.9 Distribution Analysis Tab

4.9.1 Overview

Statistical analysis of return distribution, providing insights into price behavior.

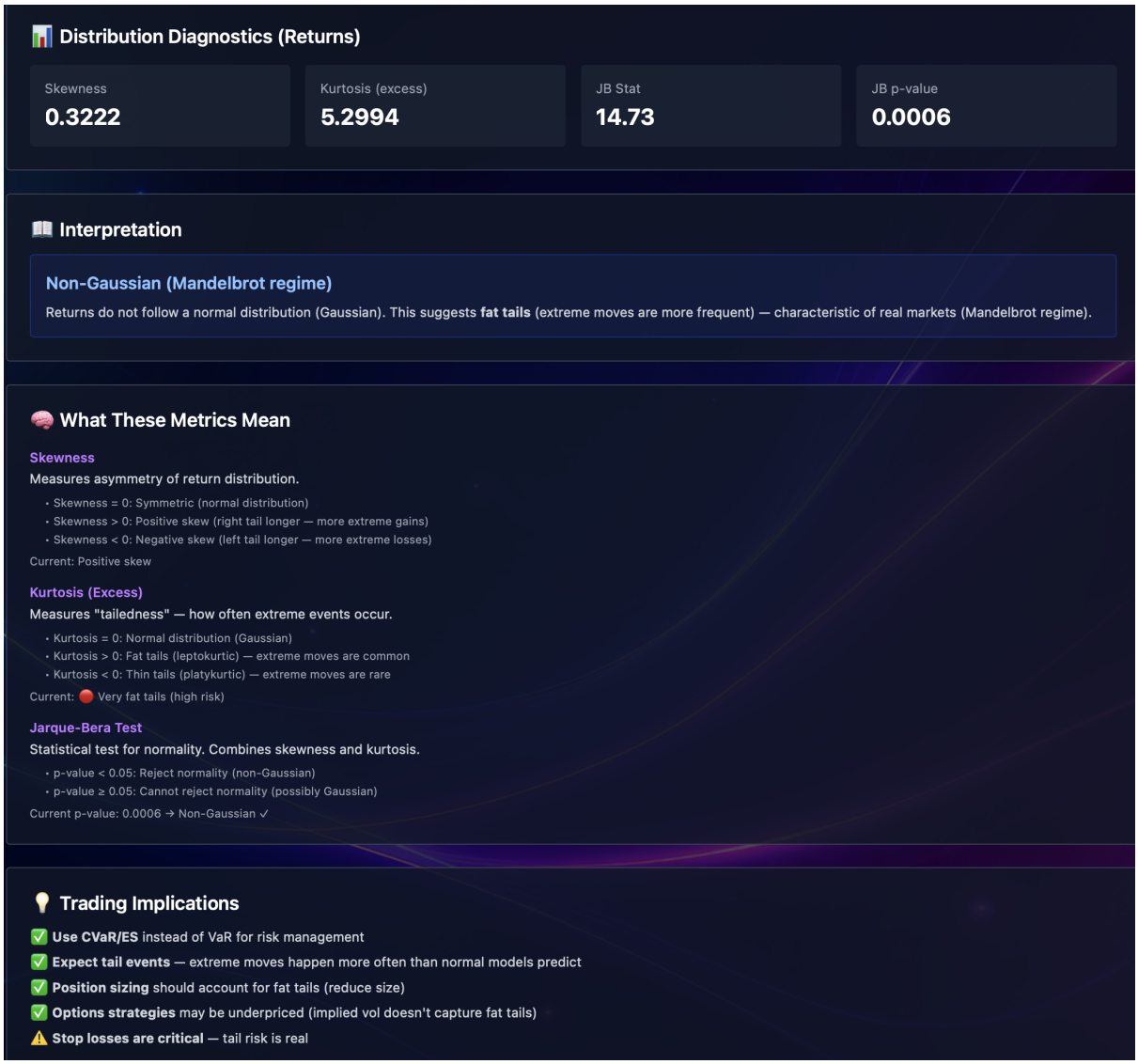

Figure 11: Distribution Analysis

4.9.2 Displayed Metrics

Distribution Histogram Frequency chart of daily/hourly returns.

Statistical Measures

Mean Return Average return per period

Median Return Middle value of distribution

Standard Deviation Volatility measure

Skewness Distribution asymmetry (positive = right tail longer)

Kurtosis "Fatness" of tails (> 3 = fat tails, crash risk)

Tail Analysis

- **Left Tail (Downside)**: Frequency and magnitude of large losses
- **Right Tail (Upside)**: Frequency and magnitude of large gains
- **Fat Tails**: Risk of crashes/rallies beyond normal distribution

4.9.3 Interpretation

Table 4: Distribution Characteristics & Meaning

Characteristic	Value	Meaning
Skewness	> 0.5	Positive momentum, trending
Skewness	< -0.5	Negative momentum, caution
Kurtosis	> 5	Fat tails, use wider stops
Kurtosis	< 3	Normal distribution, standard risk
StdDev	Increasing	Rising volatility, reduce size
StdDev	Decreasing	Calming volatility, normal size

4.9.4 Practical Applications

1. **Position Sizing**: Higher kurtosis → smaller positions
2. **Stop Placement**: Wider stops in fat-tailed distributions
3. **Regime Confirmation**: Changing distribution = regime shift
4. **Risk Assessment**: Tail analysis reveals true downside risk

5 Integrated Analysis Workflow

5.1 Complete Trading Decision Process

5.1.1 Step-by-Step Workflow

1. **Quick Assessment (Overview Tab)**
   - Check current trend direction
   - Review S/R signal status
   - Get snapshot of all indicators
2. **Identify Market Regime (Fractal Analysis)**
   - Calculate current Hurst exponent
   - Classify as Trending, Mean-Reverting, or Random Walk
   - Note regime stability and change probability

3. **Analyze Market Cycles (Market Cycle Tab)**
   - Identify dominant cycle period
   - Assess cycle strength
   - Determine current phase position
4. **Get Trading Signal (Adaptive Signals)**
   - Review BUY/SELL/NEUTRAL recommendation
   - Check signal confidence level
   - Understand signal rationale
5. **Identify Key Levels (Pivot & S/R)**
   - Map support and resistance zones
   - Note pivot points for day trading
   - Assess level strength ratings
6. **Size Position & Set Stops (Risk & Reward)**
   - Calculate optimal entry price
   - Determine position size
   - Set stop loss and take profit levels
   - Verify risk-reward ratio
7. **Validate Distribution (Distribution Analysis)**
   - Check return distribution characteristics
   - Assess tail risk (kurtosis)
   - Adjust stops for fat-tailed distributions
8. **Fine-Tune Entry (S/R Engine Diagnostics)**
   - Validate S/R level reliability
   - Identify high-confidence zones
   - Time entry based on level clusters

6 Troubleshooting

6.1 Common Issues

6.1.1 No Data Returned

Possible Causes:

- Invalid ticker symbol
- Ticker not available on Yahoo Finance
- Insufficient historical data for lookback period

Solution:

- Verify ticker on Yahoo Finance
- Reduce lookback period
- Check for data availability issues

6.1.2 Unstable Regime Classification

Possible Causes:

- Analysis window too small
- High-volatility asset (crypto, penny stocks)
- Regime transition period

Solution:

- Increase lookback period
- Use longer timeframes (daily → weekly)
- Wait for regime stabilization

6.1.3 Low Signal Confidence

Possible Causes:

- Random walk regime
- Poor risk-reward profile
- Weak or unclear cycle

Solution:

- **Do not force trades**
- Wait for clearer setups
- Analyze on multiple timeframes
- Consider alternative assets

6.2 Support

- **Email:** support@drnamlabs.com
- **Documentation:** https://quant.drnamlabs.com/docs
- **Discord:** https://discord.gg/bunnyquant

BunnyQuant

Quantitative Trading Platform

https://quant.drnamlabs.com

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