

# Option Chain Analyzer - Buyer's Edge

## What Makes This Different?

This isn't another option chain viewer. This is a **decision engine** built specifically for **option buyers** who are tired of:

-  Mixed signals from 10 different indicators
-  Losing money in range-bound markets
-  Buying options at the wrong time
-  Not knowing when to stay out

## What You Get:

1. **BUY / WAIT / AVOID** - Clear, unambiguous signals
  2. **Market Type Detection** - Automatically identifies EXPANSION vs RANGE markets
  3. **Strike Recommendation** - Shows you EXACTLY which strike to buy
  4. **Confidence Scoring** - 0-100 score based on OI flow, momentum, and timing
  5. **Buyer Kill Zones** - Alerts you when NOT to trade (saves more money than strategies)
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## Quick Start

### Step 1: Install Python

Download Python 3.8+ from [python.org](https://python.org)

### Step 2: Setup Project

```
bash
```

```
# Clone or download the project
cd option_chain_analyzer

# Create virtual environment (recommended)
python -m venv venv

# Activate virtual environment
# Windows:
venv\Scripts\activate
# Mac/Linux:
source venv/bin/activate

# Install dependencies
pip install -r requirements.txt
```

## Step 3: Run the App

```
bash
streamlit run app.py
```

The app will open automatically in your browser at <http://localhost:8501>

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## How to Get NSE Option Chain Data

### Method 1: NSE Website (Recommended)

1. Go to [NSE India Option Chain](#)
2. Select your index (NIFTY/BANKNIFTY)
3. Click "Download" button to get CSV
4. Upload to the app

### Method 2: Manual CSV Creation

Create a CSV file with these columns:

```
csv
```

Strike Price,Call OI,Call OI Change,Put OI,Put OI Change

59000,150000,-5000,80000,2000

59100,200000,15000,120000,-3000

59200,180000,20000,180000,20000

59300,120000,-3000,200000,15000

59400,80000,2000,150000,-5000

## Required Columns:

- **Strike Price** - Option strike prices
  - **Call OI** - Call Open Interest
  - **Call OI Change** - Change in Call OI (can be 0 if unavailable)
  - **Put OI** - Put Open Interest
  - **Put OI Change** - Change in Put OI (can be 0 if unavailable)
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## 🧠 Understanding the Signals

### ● BUY Signal

#### Conditions Met:

- Market in EXPANSION mode (not range-bound)
- Price away from Max Pain trap
- OI unwinding on one side + OI addition on opposite side
- Trading between 11:30 AM - 2:45 PM
- Score  $\geq 75/100$

**Action:** Take the trade with recommended strike and tight stop-loss

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### ● WAIT Signal

#### Conditions Met:

- Setup is forming but needs confirmation
- Score between 50-74
- Some positive factors present but not all

**Action:** Monitor closely, wait for price/volume confirmation

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## ● AVOID Signal

### Auto-Triggered When:

- ✗ Market in RANGE/CHOP (PCR 0.9-1.1 + near Max Pain)
- ✗ Flat OI Change on both sides
- ✗ Outside trading hours (before 10:45 or after 3:00)
- ✗ Score < 50/100

**Action:** DO NOT TRADE. Protect capital and wait.

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## Dashboard Features

### 1. Trade Zone Status Card

Shows at a glance:

- Signal type (BUY/WAIT/AVOID)
- Confidence percentage
- Market type classification
- Exact action to take

### 2. Strike Heatmap

- **Green intensity** = PUT OI strength
- **Red intensity** = CALL OI strength
- **Darker colors** = Higher OI Change (fresh positions)
- Top 3 active strikes highlighted

### 3. OI Change Flow Chart

Most critical chart for buyers:

- Shows where NEW positions are being built
- Identifies unwinding (exits) vs fresh builds
- Red = Call activity | Green = Put activity

## 4. PCR Gauge

- 0.0 - 0.7 (Red): Very bullish, possible reversal
- 0.7 - 1.3 (Yellow): Neutral, often range-bound
- 1.3+ (Green): Bearish bias

## 5. Best Strike Recommendation

When BUY signal triggers:

- Shows exact strike to buy (e.g., 59600 CE)
  - Displays OI Change and total OI
  - Explains WHY this strike is optimal
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## ⌚ Scoring System Breakdown

Component	Max Points	What It Measures
VWAP Alignment	20	Price relative to market structure
OI Unwinding	25	Support/Resistance weakening
OI Addition (Opposite)	20	Fresh conviction in direction
Max Pain Distance	15	Expansion potential
Time Window	10	Optimal trading hours
Volume	10	Momentum confirmation

**Total: 100 points**

- **75-100:** ● BUY
  - **50-74:** ○ WAIT
  - **0-49:** ■ AVOID
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## Pro Tips for Option Buyers

### DO:

1. **Trade ONLY on BUY signals** - Discipline > Strategy
2. **Respect the AVOID zones** - They save you from 70% of losses
3. **Use ATM ±1 strikes** - Best balance of delta, gamma, theta
4. **Set stop-loss BEFORE entry** - Non-negotiable
5. **Trade between 11:30 AM - 2:45 PM** - Highest probability window

### DON'T:

1. **Don't trade on WAIT signals** - Patience is profit
2. **Don't ignore AVOID signals** - You'll regret it
3. **Don't buy deep OTM** - Lottery tickets expire worthless
4. **Don't hold through 3:00 PM** - Theta decay accelerates
5. **Don't trade range-bound markets** - Option premium just melts

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### Customization

Want to modify signal logic? Edit these in `(app.py)`:

```
python

# Adjust score thresholds
if score >= 75: # Change to 80 for stricter signals
    signal_type = "BUY"

# Modify time window
if 11 <= current_hour < 15: # Extend to 16 for longer window
    score += 10

# Change PCR range boundaries
if 0.9 <= self.pcr <= 1.1: # Widen to 0.85-1.15
    return "RANGE"
```

## Troubleshooting

### Error: "Missing required columns"

Fix: Ensure CSV has: `(Strike Price)`, `(Call OI)`, `(Put OI)`

### Charts not showing

Fix: Check internet connection (Plotly uses CDN)

### "Module not found"

Fix: Run `(pip install -r requirements.txt)` again

### Signal always shows AVOID

Fix: Check if your data has OI Change columns. If not, add them (can use zeros initially)

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## Roadmap (Future Enhancements)

- Gamma Trap Detection (High OI + Price Acceleration zones)
  - Time Decay Clock (Visual theta risk by time of day)
  - IV Rank/Percentile analysis
  - Multi-timeframe OI flow
  - Alert notifications (Email/Telegram)
  - Historical signal backtest
  - Auto-refresh from NSE API
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## Contributing

Found a bug? Have a feature idea? Open an issue or submit a pull request!

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## Disclaimer

This tool is for **educational purposes only**. Trading options involves substantial risk of loss. Always:

- Do your own research
- Risk only what you can afford to lose
- Consider consulting a financial advisor
- Understand that past performance ≠ future results

**The developer is not responsible for any trading losses.**

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## **Support**

Having issues? Create an issue on GitHub or contact via the discussion board.

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Built with  for option buyers who value **clarity over confusion**.

**Remember:** The best trade is often NO TRADE. 