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TECH MEET 14.0

HIGH PREP

EBULLIENT
SECURITIES

TRADE WALK
BROKING

Algorithmic Strategy Development on Multi-Feature Time Series

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Introduction

In financial markets, milliseconds can decide fortunes.
Behind every trade lies an unseen web of data, price ticks, volatility bursts, sentiment surges, and hidden correlations.

At **Ebullient Securities**, we live at that intersection of numbers and intuition, where math meets markets, and where discipline outperforms instinct.

Your Challenge: Build a strategy that learns from data, adapts to volatility, and thrives on uncertainty.

“Don’t predict the future. Quantify it.”

About Us

Ebullient Securities specializes in Quantitative Proprietary Trading. We are one of the biggest Prop Options Trading firms in India. We strive to ascertain quantitative factors that are relevant in the market through a disciplined and systematic approach. These factors then meet unparalleled risk management techniques before finally going live in the market. Through continuous and repeated efforts these strategies are then refined over time to generate consistent alpha. Over the years, we have grown multifold and now utilising this infrastructure to create quantitative, low latency strategies and create a niche for ourselves in the HFT and MFT space.

At Ebullient Securities, our expertise extends across two specialized verticals that have become the cornerstones of our success:-

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1. <u>Quantitative Trading</u>: In Quantitative Trading, we harness the power of statistical models and advanced mathematical techniques to analyze vast amounts of market data and identify lucrative trading opportunities. Our leadership team of skilled quants combines their mathematical prowess with a deep understanding of financial markets to devise strategies that yield consistent and phenomenal returns.

2. <u>High Frequency Trading</u>: In the fast-paced world of High Frequency Trading, we capitalize on split-second opportunities, utilizing sophisticated trading systems and lightning-fast execution to take advantage of micro-market movements. Our dedicated team of experts constantly fine-tune our algorithms to ensure they remain at the cutting edge of speed and accuracy, allowing us to thrive in the ever-evolving landscape of high-frequency markets.

These two complementary verticals represent the synergy of innovation and adaptability, and together, they form the bedrock of our trading prowess. By continually investing in research, technology, and talent, we stay ahead of the curve, ensuring that our company benefits from the most innovative and profitable trading strategies available.

Our relentless commitment to excellence, coupled with our unwavering focus on risk management and compliance, allows us to trade with confidence across these two dynamic verticals, achieving consistent growth and reinforcing our position as a respected player in the financial markets.

For more information: <u>https://www.linkedin.com/company/www.eblsec.com</u>

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Problem Statement Description

You will be given **two anonymized time-series datasets: EBX & EBY**, each representing a distinct but structurally similar market instrument.

Each dataset contains:

- A **core time-series** (think of it as price or index-like data)
- **Hundreds of masked features**, all split into categories like
  - **Price Based**
  - **Volatility Based**
  - **Volume Based**
  - **Alternate Data Based** and more..

A separate **feature dictionary** will guide you through these variables and their groupings.

Your task is to:

1. Design, test, and evaluate **a systematic trading strategy** based on this data.
2. Show **robustness**. The strategy should ideally demonstrate robustness by performing consistently across both **EBX** and **EBY**. While separate strategies are acceptable if justified, the Calmar ratio should remain consistent even if the days are reordered in individual timeseries.

Each dataset will have **1 second interval data**, simulating a live trading environment fast enough to be realistic, yet stable enough to think.

The Phases

To mirror a real quant research lifecycle, this competition unfolds in two parts:

1. **Mid Term Submission (30% Weightage)**
   - You are **handicapped** to use **only the given features**.
   - You can **only take ±1 unit trades** (no fractions, no scaling in/out).
   - Focus on **conceptual clarity and disciplined execution**.

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2. **End Term Submission (60% Weightage)**
    - You are now **free** to create new derived features, blend models, and combine your mid term logic.
    - You can **trade in steps or sizes** as per your design.
    - We expect thoughtful model improvements, rigorous backtesting, and insightful documentation.

Deliverables

Dataset Format: You will receive separate csvs for each day along with respective features calculated by **15th October 2025.**

Each submission should include:

1. **Strategy Code (Python)**: Clean, modular, and reproducible.
2. **Performance Report**: Annualized Returns, Drawdowns, Sharpe/Calmar ratios. You will be provided with the function on which you can test your strategy, and it will give you these numbers for the same
3. **Idea Summary**: Strategy in the datasets (EBX and EBY) along with the feature dictionary will be released after registration, along with detailed data format guidelines , tuition, reasoning, and key decisions.
4. **Presentation Deck**: Explaining your approach, results, and evolution from Mid Term to End Term.

Points to keep track of:

1. **No Peeking**: Your signals should have no forward bias, signals calculated at time t, should not look into t+1 and ahead data.
2. **IntraDay Flat Requirement**: At the end of the day, all your positions should be flat, no Inter-day carry.
3. **Long/Short Allowed**: You can go long/short according to your signals as long as you square off before the day's end.

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Evaluation Parameters

To qualify as a **valid submission**, your strategy must meet these **minimum criteria** considering overhead costs:

- **Annualized Return**: ≥ 20%
- **Maximum Drawdown**: ≤ 10%

Beyond that, your ranking depends on:

- **Calmar Ratio**: Higher is better. **(Annualized Return/Max Drawdown)**
- **Annualized Return**: For Similar Calmar Ratios, higher returns preferred
- **Performance on unseen data**
- **Cross dataset robustness**: Extra points for consistent logic across both **EBX** & **EBY**

Judging Criteria

Category	Description	Weightage
Mid Term	Idea (10%), Score (15%), Documentation (5%)	30%
End Term	Idea (20%), Score (30%), Documentation (10%)	60%
Presentation	Clarity , Story And Delivery	10%

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How We'll Collaborate

All communication will happen on the **Discord serve**r.

This will be your go to space for:

- Clarifications, hints, and announcements
- Discussion threads with our Quant Researchers
- Strategy debugging and progress updates

If you're not pinging us with doubts, you're probably not digging deep enough.

We encourage open dialogue, experimentation, and even failure, because every bad backtest teaches something a clean equity curve can't.

Team Composition

Each participating team can have a maximum of 10 official members.