

## Abstract

This project applies Large Language Models (LLMs) to combine quantitative and qualitative market information into actionable trading signals. We built a pipeline that aggregates macroeconomic events, firm-level news, and equity price data, integrating them with technical indicators. A multi-agent system simulates Quantitative, Macro, and News analysts, with a Portfolio Manager agent issuing buy/hold/sell recommendations.

We tested this framework on a diverse stock universe—Apple, Eli Lilly, Verizon, and BlackRock—covering key market sectors. Our results show that while overall predictive accuracy is modest, the approach yields interpretable trading signals that reflect market trends. These findings support the potential of LLM-based, agent-driven analysis for intraday trading and highlight opportunities for future improvement through broader data and enhanced risk controls.

## Background & Introduction

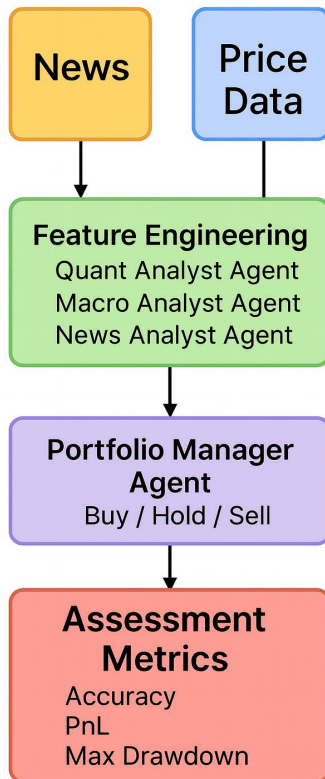
- Financial markets depend on both quantitative data (prices, indicators, economic events) and qualitative information (news, sentiment, policy).
- Integrating these diverse data sources into structured, actionable signals is challenging for analysts.
- Large Language Models (LLMs) offer a new approach to combine market data and news, potentially improving decision-making.

## Project Goal

Assess whether large language models (LLMs) can systematically extract and integrate structured and unstructured market data, including news and quantitative signals.

Develop an automated pipeline to generate concise trading signals and market overviews, enabling BlackRock traders and analysts to quickly understand what's happening in the market when there is big jump in the asset price.

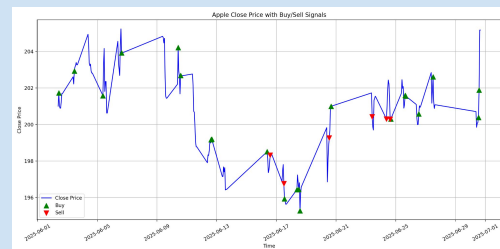
## Methodology



## Results

Our pipeline shows that LLM-driven multi-agent systems, when supplied with both structured (price) and unstructured (news) market data, can generate interpretable trading signals across diverse market sectors. By applying our framework to representative stocks—Apple (technology), Verizon (communications), BlackRock (financials), and Eli Lilly (healthcare), we **achieved better-than-random accuracy rates** (up to ~41%), with **positive returns** in some cases and controlled drawdown. These results highlight the promise of combining news and price data for scalable, automated investment decision-making across different market environments.

## Example - Apple



**Accuracy: 0.41**  
**Total Return: 0.49%**  
**Max Drawdown: -1.69%**

## Conclusion & Next Steps

Our results confirm that **LLM-powered multi-agent systems can effectively combine news and price data to generate trading signals** across multiple sectors. Applying this approach to stocks like Apple, Verizon, BlackRock, and Eli Lilly yielded promising alignment with market trends. Next steps include expanding to more assets, integrating richer data sources, and refining the pipeline to improve both speed and prediction accuracy.