

TradingAgents: Multi-Agents LLM Financial Trading Framework



Paper Join us! Code
tauric.ai

Yijia Xiao^{1,3}, Edward Sun^{1,3}, Di Luo^{1,2}, Wei Wang^{1,3}

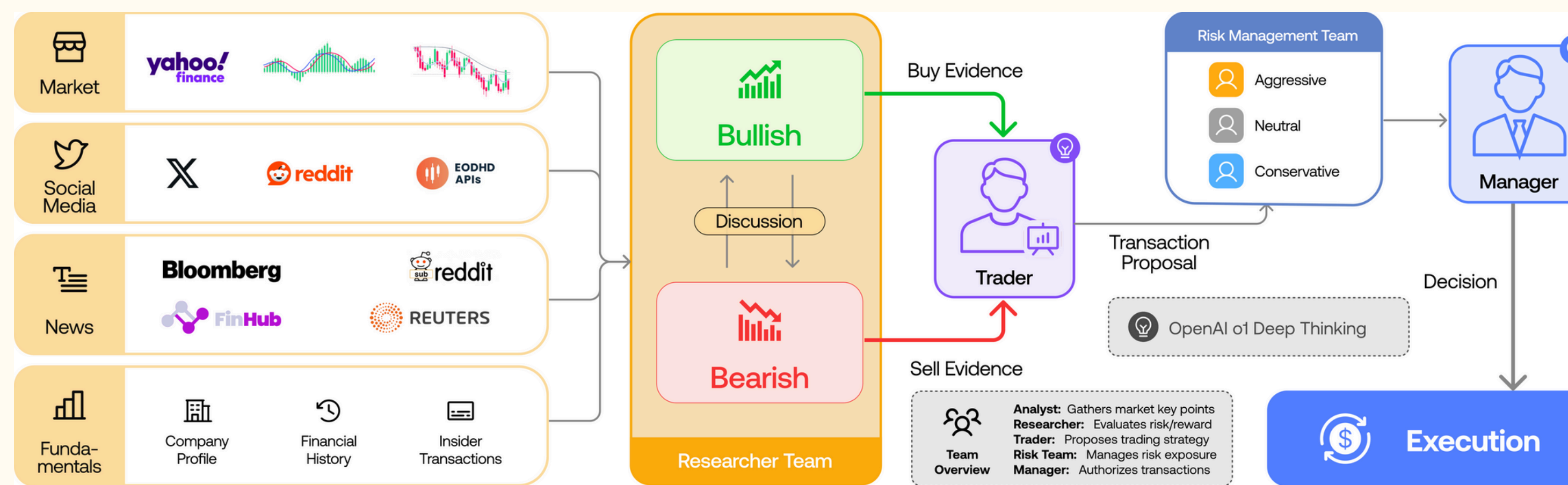
¹University of California, Los Angeles, ²Massachusetts Institute of Technology, ³Tauric Research

TradingAgents Overview

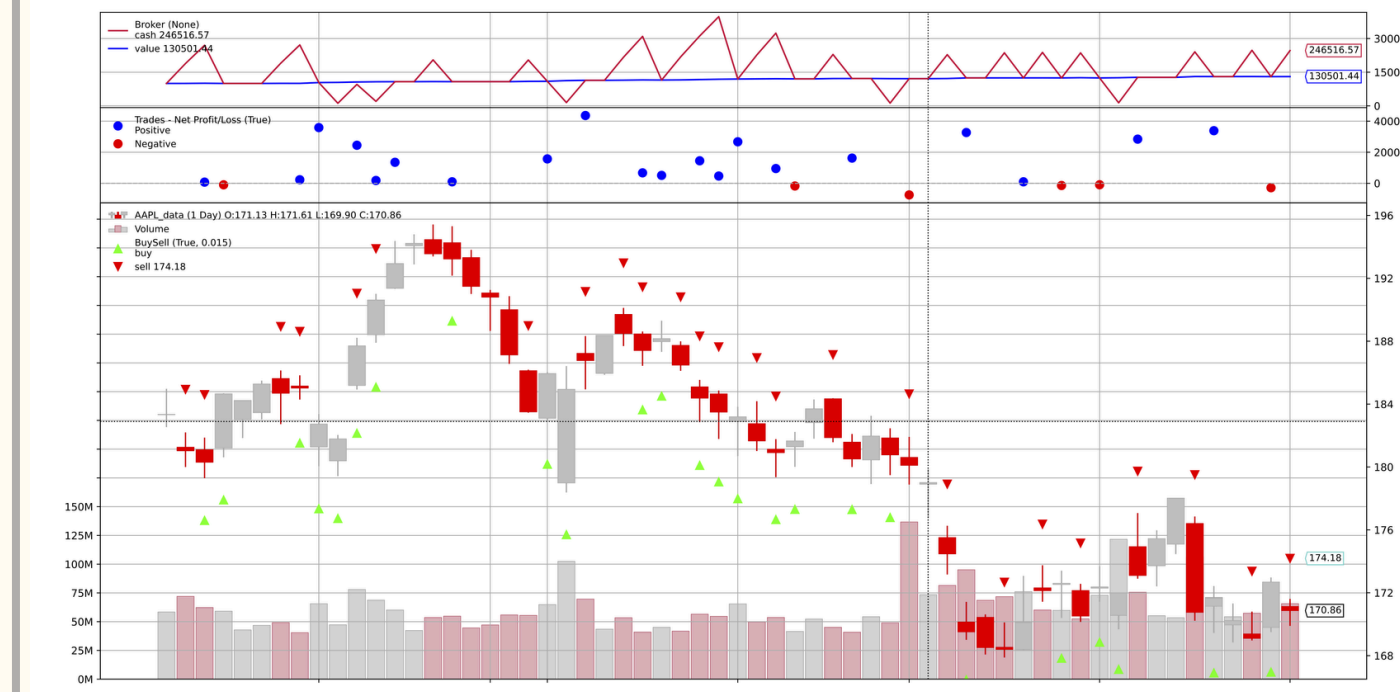
- Novel trading framework **TradingAgents** inspired by real-world trading firms.
- LLM-powered agents in **specialized roles** for financial information preprocessing
- Bull & Bear **researchers** assess market conditions, traders synthesize insights.
- The team of **risk management** ensures controlled exposure.
- Improves trading performance via dynamic collaboration.

Key Features

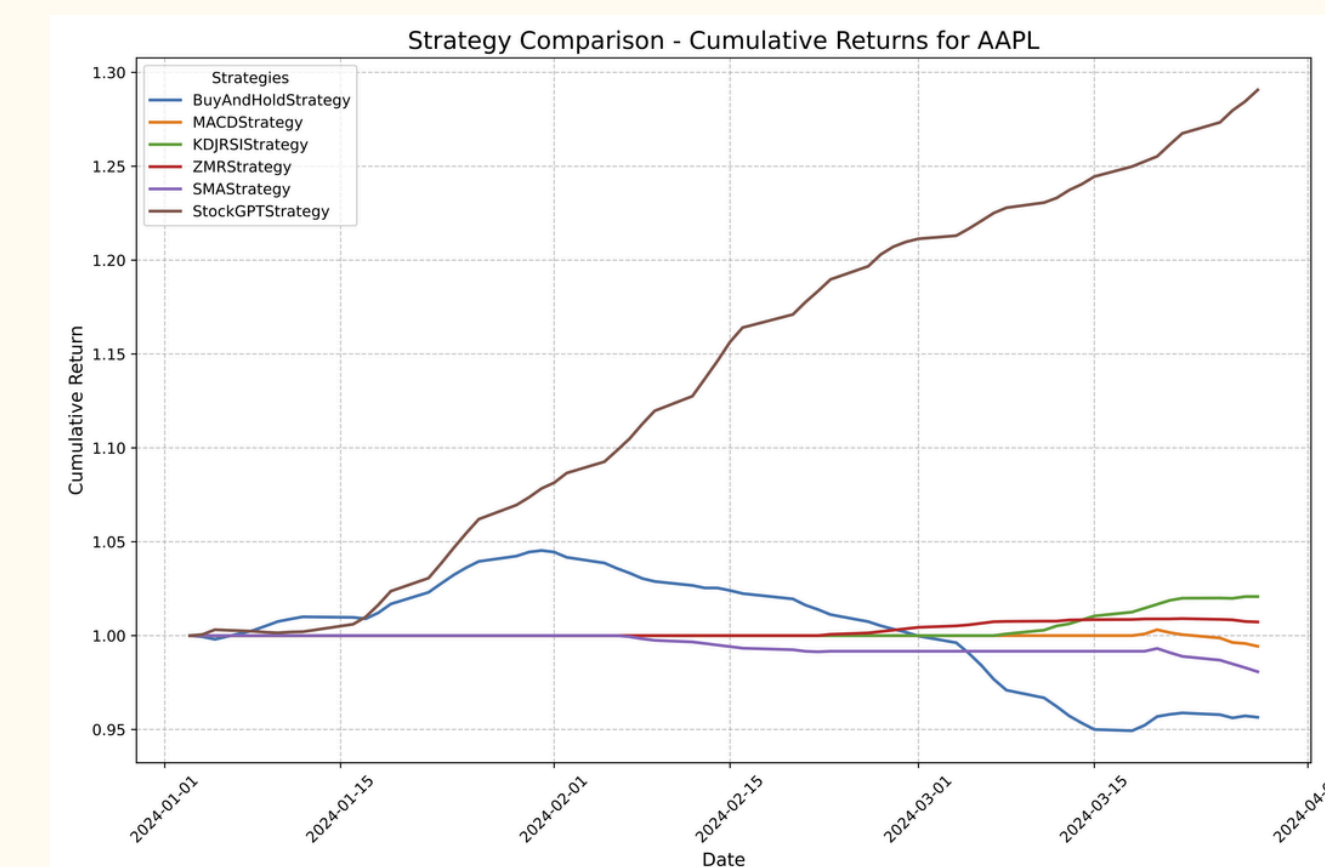
- Structured multi-agent workflow for decision-making.
- Hybrid communication: structured outputs + natural language debates.
- Diverse agent roles (analysts, researchers, traders, risk managers).



Analysts Team	Four analysts concurrently gather relevant market information.
Research Team	The team discusses and evaluates the collected data.
Trader	Based on the researchers' analysis, the trader makes the trading decision.
Risk Management Team	The team assesses the decision against market conditions to mitigate risks.
Fund Manager	The fund manager approves and executes the trade.



TradingAgents Transactions for \$AAPL



TradingAgents Cumulative Returns

I. Analyst Team

The Analyst Team gathers and analyzes market data across various domains:

- Fundamental Analysts: Assess fundamentals to identify undervalued or overvalued stocks.
- Sentiment Analysts: Analyze social media and public sentiment to gauge market mood.
- News Analysts: Evaluate news and macroeconomic to predict market movements.
- Technical Analysts: Use technical indicators to forecast price trends and opportunities.

Market Goal: Analyze market trends using technical indicators Key Points Summary: Tech Sector Growth RSI: Strong fluctuations, overbought conditions, price corrections expected ... (ADX, Bollinger Bands...)	Social Media Goal: Analyze social media sentiment trends Key Points Summary: AAPL Social Sentiment (Nov 4-19, 2024) Positive Sentiment Peaks: Notable on Nov 15 (0.5445) and Nov 11 (0.426)... (Negative Sentiment, High Engagement...)	News Goal: Analyze global economic trends affecting markets Key Points Summary: Global Econ Trends & Sector Insights US Economic Policy: Trump's return sparks mixed reactions... (AI & Tech Growth, Semiconductor Focus...)	Fundamentals Goal: Analyze & evaluate company financials & stock performance Key Points Summary: Apple Inc. Financial Analysis Strong Profitability: High margins, impressive ROE and ROA ... (Liquidity & Leverage Risks, Valuation Concerns...)
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Bullish Goal: Evaluate the investment potential of Apple Inc. Key Points Summary: Apple Investment Outlook Growth Potential: AI-powered smart home expansion drives revenue... (Strong Financials, Market Sentiment...)	Bearish Goal: Assess the risks of investing in Apple Inc. Key Points Summary: Apple Investment Risks Competitive Challenges: Late entry into smart home market, ... (Geopolitical Tensions, Valuation & Liquidity...)
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Debate

II. Researcher Team

Critically evaluates analyst data through a dialectical process, identifying opportunities & risks.

- Bullish Researcher: Highlight positive market indicators & growth potential.
- Bearish Researcher: Focus on risks and negative market signals.

III. Trader Agents

Make decisions based on analyst team reports and research team discussion and evaluations.

- Assessing analyst and researcher recommendations | Determining trade timing and size.
- Executing buy/sell orders | Adjusting portfolios in response to market changes.

IV. Risk Management Team & Manager

Oversees the firm's exposure to market risks, ensuring risk under control.

- Assessing market volatility and liquidity | Implementing risk mitigation strategies.
- Advising Trader Agents on risk exposures | Aligning portfolio with risk tolerance.

Trader Goal: Evaluate and make decisions on market opportunities Key Points Summary: Apple Inc. Trading Decision Strong Financials: High profitability, strong cash flow, robust margins... (Growth Potential, Valuation Risks...)	Decisions BUY Apple Shares Reasoning: Strong financials and growth prospects outweigh valuation and liquidity risks. Recommendation: Buy for long-term growth despite short-term risks.
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Risky Goal: Advocate for high-reward, high-risk investment strategies	Neutral Goal: Provide a balanced perspective on Apple investment	Safe Goal: Emphasize a conservative investment strategy with risk mitigation
----------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------

Report

Manager Goal: Provide investment recommendations based on market analysis Key Points Summary: Buy Recommendation for Apple Strong Fundamentals: Robust earnings growth and market capitalization ... (Innovation Leadership, Resilience to Risks...)
