

ARCHIMEDES A.I. ANALYSIS ENGINE VS: AVERAGE RETAIL TRADING

INTRODUCTION

There has been increasing acknowledgment of the vital role technology plays in democratizing stock market trading and investment opportunities. However, accessing sophisticated trading strategies and market analysis tools has traditionally been limited to institutional investors and hedge funds, creating an uneven playing field for retail traders. Conventional trading approaches often rely on basic technical indicators and general market sentiment, overlooking the complex patterns and correlations that drive market movements. To bridge this divide, the Archimedes Trading platform leverages advanced machine learning algorithms to provide retail traders with institutional-grade trading insights and automated execution capabilities, marking a significant shift in how individual investors can participate in financial markets..



RESULTS & DISCUSSION

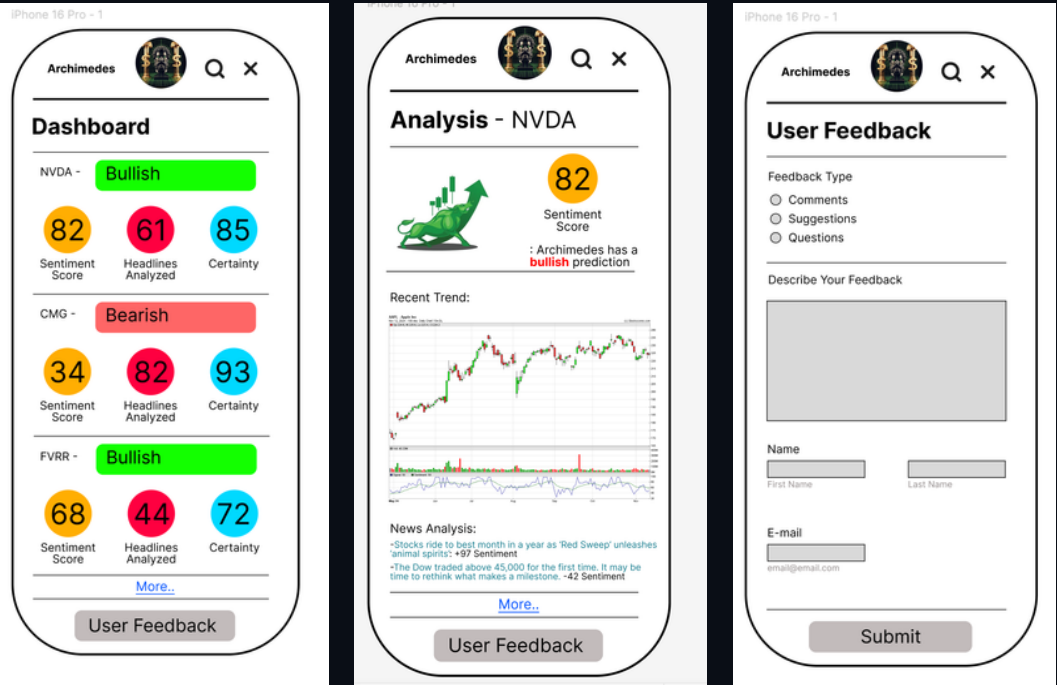
In this study, a sophisticated approach was developed to analyze and predict market behavior through comprehensive financial data integration. The system utilizes real-time data from multiple market indices (NASDAQ, Semiconductor sector, and individual stock performance) to generate actionable trading signals. Our model examines the relationships between various market metrics (trading volume, price movements, technical indicators, and sentiment analysis) across different market segments. Through the implementation of advanced technical analysis tools including RSI, MACD, and moving averages, combined with sentiment analysis from news sources, a dynamic recommendation system was created. This system is capable of generating precise buy, sell, or hold signals by evaluating market trends, relative strength, and cross-market correlations. intensities.

FUTURE IMPLICATIONS

Through analysis of institutional trading advantages versus retail trading limitations, it's evident that technological inequality creates significant market disadvantages for individual investors. Our research into the Archimedes Trading platform demonstrates how machine learning algorithms could level this playing field. By democratizing sophisticated trading strategies previously exclusive to major firms, the platform aims to provide retail traders with competitive advantages against institutional investors.

| Trading_Date | Stock_Symbol | Opening_Price | Closing_Price | Volume | Volume_Change | RSI_Status | MACD_Signal | Trading_Signal |
|---------------------|--------------|---------------|---------------|-----------|---------------|-----------------|-------------|----------------|
| 2024-11-19 00:00:00 | NVDA | 141.32 | 147.01 | 227834900 | 2.69 | Neutral (50.00) | Bullish | HOLD |
| 2024-11-20 00:00:00 | NVDA | 147.41 | 145.89 | 309871700 | 36.01 | Neutral (50.00) | Bullish | HOLD |
| 2024-11-21 00:00:00 | NVDA | 149.35 | 146.67 | 400946600 | 29.39 | Neutral (50.00) | Bullish | HOLD |
| 2024-11-22 00:00:00 | NVDA | 145.93 | 141.95 | 236406200 | -41.04 | Neutral (50.00) | Bullish | HOLD |
| 2024-11-25 00:00:00 | NVDA | 141.99 | 136.02 | 344941900 | 45.91 | Neutral (50.00) | Bearish | HOLD |
| 2024-11-26 00:00:00 | NVDA | 137.70 | 136.92 | 190287700 | -44.83 | Neutral (50.00) | Bearish | HOLD |
| 2024-11-27 00:00:00 | NVDA | 135.01 | 135.34 | 225411300 | 18.46 | Neutral (50.00) | Bearish | HOLD |

APPLICATION DESIGN



ETHICAL CONCERNS

AI can process and analyze larger amounts of data than humans, and recognize subtle patterns, reliably analyze historical data and market trends for portfolio risks, and operate more efficiently without human limitations like exhaustion or bias. It may struggle with incorporating external factors like political events, making decisions with insufficient data, communicating directly with investors, or having its complex decision-making processes understood by others. It raises ethical concerns including potential inherited biases from training data, market manipulation through multiple funds making identical decisions, harmful societal impacts from purely profit-driven investments. A.I. also has a vulnerability to data breaches due to handling sensitive information, and questions of liability when AI decisions lead to financial losses.



Analysis of retail trading and AI market trends reveals stark contrasts between current retail trader performance and future AI trading adoption. Current data shows 40% of retail traders quit within their first month, while only 1% achieve consistent profitability. Trading habits indicate 85% use daily charts and 86% rely on technical analysis, yet this widespread use of traditional tools hasn't improved success rates significantly. Looking forward, the AI trading market shows exponential growth, projected to reach \$50.4B by 2033, representing a 10.7% year-over-year increase in market size. This growth trajectory suggests an accelerating shift from conventional retail trading methods to AI-augmented approaches, potentially addressing the high failure rates currently seen in retail trading through automated, data-driven decision making.