Project: Development of an Algorithmic Trading AI with Machine Learning

Description:

This project aims to create an artificial intelligence (AI) that can do trading automatically in different financial markets. It will learn from its mistakes to improve its investment strategies over time. The AI will use algorithmic models and machine learning techniques to make trading decisions based on real-time data and historical analyses.

Functional Requirements:

Data Capture and Analysis:

The AI must have the ability to get real-time data from multiple financial markets, including asset prices, trade volumes, and other relevant indicators.
It should analyze this data to identify patterns, trends, and investment opportunities.

Algorithmic Model Development:

Multiple algorithmic models need to be designed and implemented that decide when to buy, sell, or hold financial assets.
These models should be adaptable to fit the market better.

Automatic Execution of Trades:

The AI should execute buy and sell orders automatically through trading platforms using APIs.
It must follow predefined investment strategies and adjust decisions based on past results.

Machine Learning and Continuous Improvement:

After each trade, the AI should analyze outcomes and assess the success of decisions.
The AI should use this info to get better and make smarter choices next time.

Intuitive User Interface:

A user interface must be provided, enabling users to monitor the AI's performance, view executed trades, and access detailed reports.

Non-Functional Requirements:

Low Speed and Latency:

The system must make fast decisions and execute trades within fractions of a second to capitalize on real-time opportunities.

Security and Data Protection:

The AI must operate securely, safeguarding financial and personal data involved in trades.

Adaptability to Different Markets:

The AI should function effectively across various markets and financial assets, adapting to their specific characteristics.

- Stock markets (Like the shares of Apple or Tesla for example)
- Foreign exchange market (Fiat money from different countries)
- Cryptocurrency markets (Like Bitcoin or Ethereum)

Reliability and Stability:

The system should be reliable and stable, operating without interruptions and avoiding critical failures.

Continual Learning Capacity:

The AI should consistently learn from new market conditions, adapting its strategies accordingly.

Understandable Documentation:

Detailed documentation should be provided explaining the AI's functionality, implemented models, and how to interpret generated reports.

In Conclusion…

This project aspires to develop an advanced AI capable of making intelligent trading decisions and learning from its mistakes to improve over time. Its success depends on the accuracy of algorithmic models, the quality of the data used, and the AI's ability to adapt to market changes.