

Current State Analysis For

Voice Enabled, AI/ML Powered Financial Market Prediction System

Project Context

The primary purpose of this project is to make meaningful recommendation to the investor to invest on which financial assets. The main purpose of this study is not to provide a new or improved ML method, compare several competing ML methods, nor study the predictive power of the variables in the input set.

Aims

- The main aim of this project is to make a reasonable price forecasting for the top-rated financial assets (price) i.e. stock by considering most discriminating factor 's data built and train the model by employing artificial intelligence (AI).
- Built a real time financial data driven visual information system by retrieving the live financial data via web socket API and historical data.
- Understand the working of new technology called Blockchain and its application and its influence in financial marketplace.

Evaluate the statistical dependency of AI features considered for financial forecasting employing artificial intelligence (AI) and machine learning (ML) modelling. which provides the financial stakeholders with quantitative estimate and features categories on AI tools. Perform a data science process to know insides of top rated cryptos so that people get benefited using meaningful investment on it.

Objectives

- Financial marketplace is a complicated one and have various dependable factor so understand the financial market and identify its dependable factor via intensive literature review which has already been published in different publication media.
- Analyse the financial data and develop the AI model, examine the accuracy, and deploy the model for forecasting.
- Develop a desktop-based information system to view the forecasted price numerically as well as graphically.
- Testing the output of developed model to the real-world historic data to simulate the financial raise and fall scenario and determine variation.
- Use different machine learning (ML) technique and find out the correlation among the different result.
- Report the data processing, data analysis, feature engineering, exploratory data analysis, AI/ML model development, performance monitoring and interpretation.

Justification

With the advancement of technology, financial marketplace is being complicated too. Technological development reshapes today's marketplace differently than the past. finance is one of the biggest and impactful deployment of blockchain technology This project is helpful to make a good understanding form technological prospect, world financial aspect with all related dependency and employ one of the advance technologies in computer science called artificial intelligence (AI)and machine learning (ML) to predict the future cost and check correctness based on historical data. Find out the most discriminating factor by literature review which help to make understanding about blockchain technology, cryptocurrency, and financial forecasting. Consider these discriminating factors and develop as appropriate model to forecast the cryptos price.

Financial market scenario?

Market is directly corelated with stock price which will influence by Investor sentiment, Economic condition, Monetary policy, Geopolitics, Regulatory change, Development change. Financial assets prices are influenced by perceived value, supply, and demand just like other factor, goods, or services within a nation or economy

Stocks, commodities, securities, and other trading assets. Demand and supply are the factors that influence their price, which is based on how many people are interested in purchasing them and how many are really accessible. The cost is based on the connection between the two (

The ANN algorithm and LSTM are used in the proposed system to forecast the time series of financial values. We employ an ANN model with five different memory lengths to forecast the price of Bitcoin one day in the future. Both ANN and LSTM are appropriate for predicting the price time series of stocks since LSTM is specifically built to study internal memory flow and its influence on future prediction.

Forecast ability?

Variety of statistical, machine learning, and deep learning methods and techniques, including liner regression (LR), autoregressive integrated moving average (ARIMA), Linear discriminant analysis(LDA),Data transmission(DT), RF, XGBoost, Quantitative descriptive analysis(QDA),support vector machine(SVM), and long short term memory(LSTM), have been utilized by researchers all around the world to forecast price..

Project Perimetre

This project has only 8 weeks time frame As financial market is continuous and never ending, dynamic market .so the constraint time frame is a limitation for the project.

Project Planning for Execution

The major activities includes ,

- data overview
- Time Series
- Data pre-processing
- Build and train and test model(ML Modeling)
- Use the model to predict future stock price

Solution Outline

Developing a stock price prediction solution based on ML models and sentiment analysis of financial forums and channels. The model provides the prediction of 4 type of price: 'Open', 'High', 'Low', 'Close' for specific stock individually as per data feed..

The processes of price prediction model is recomputed constantly by AI Engine, potentially in a constant update loop. The model works in real time. The model accepts any number of input parameters (the network architecture allows you to add many technical market characteristics of a selected company or stocks), and gives a forecast at specified prices ('Open', 'High', 'Low', or 'Closed') at the output. The architecture also provides a simple way to add new parameters to the line of the forecast in the future.

At present, the models work with a time step of one day, and make forecasts for 7 days ahead (forecast interval is adjustable.

The solution was deployed in Python, Jupyter Notebook deployed for demo purposes. All documentation and the code was delivered to the concerned supervisor on time.

Main Challenges

Research and selection of the optimal model architecture for specific company stocks price prediction within this solution in changing market.

Accessability to the relevant data sets and unpredictable world economic senarion may not be included.