proposal

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1 Domain Background

Investment firms, hedge funds and even individuals have been using financial models to better understand market behavior and make profitable investments and trades. A wealth of information is available in the form of historical stock prices and company performance data, suitable for machine learning algorithms to process.

2 Problem Statement

Build stock price predictor which will use historical data to predict stock price for given date.

3 Solution Statement

To solve this problem different techical inicators will be used.

Technical indicators:

- Exponential moving average (EMA)
- Moving Average Convergence Divergence (MACD)
- Bollinger band
- Momentum
- Trading volume

Use technial indicators and market data to prepare features. Price prediction is regression problem, hence for this task ML regression will be used.

4 Datasets and Inputs

There are several open sources for historical stock price data which you are free to use:

- Yahoo Finance API Specification
- Polygon Financial Market Data Platform
- TradingView
- Quandl.

Data contains follwoing information:

- Open
- High
- Low

- Close
- Adjusted Close
- Volume

5 Benchmark Model

Model bencmark will be done against real stock data by mesuring error from real stock value and predicted value.

6 Evaluation Metrics

As evaluation metric Mean Squared Error will be used.

7 Project Design

SageMaker will be used this project. For model development on of the SageMaker buil-in algorithms will be used.

Project stages:

- Feature engenering
- Training model
- Deploy endpoint