

Problem Identification: Stock Prediction for SRG

Problem Statement Formation

The primary aim of this project is to develop a prediction model for the stock prices of SRG (Seritage Growth Properties) based on historical data, financial indicators, and potentially sentiment analysis from news and social media. The goal is to provide an actionable tool for investors to anticipate the future direction of SRG's stock price and make informed investment decisions.

Context

In the financial markets, predicting stock prices accurately remains a challenging problem due to the myriad of factors influencing stock price movements. For a REIT like SRG, investors need to consider numerous factors, from the company's financial performance and the general health of the real estate market to broader economic indicators. Additionally, more and more investors are starting to use sentiment analysis, realizing that news and social media can impact stock price movements.

Criteria for Success

Success will be evaluated on the model's ability to predict SRG's stock price accurately in the future. The project would be considered successful if it can outperform a naive benchmark model like a random walk model or a simple linear regression model.

Scope of Solution Space

The solution will involve creating a time-series forecasting model, possibly supplemented with sentiment analysis if we decide to use data from news and social media. Various machine learning algorithms, from linear regression and decision trees to more advanced techniques such as Long Short-Term Memory (LSTM) networks, can be tested.

Constraints

Constraints include the potential limited availability of certain types of data, like sentiment data from news or social media, and the inherent unpredictability of the stock market. Time constraints may limit the complexity of the model we can develop.

Stakeholders

The primary stakeholders for this project would be investors in SRG, which could range from individual retail investors to institutional investors. The finance department of SRG would also be a stakeholder, as they might use the model for future financial planning.

Data Sources

The data for this project will come from several sources. The historical SRG stock price data can be sourced from finance APIs such as Alpha Vantage or Yahoo Finance. Financial indicators of SRG can be obtained from financial reports and databases like Bloomberg Terminal or FactSet. Macroeconomic data can be obtained from sources like the Federal Reserve Economic Data (FRED). For sentiment data, we can use APIs like GDELT for news media and tweepy for social media.

Questions to Consider:

- The problem we want to solve is predicting future stock prices for SRG.
- The clients are investors who want to make informed decisions about buying, holding, or selling SRG stocks.
- We are using historical stock price data, financial indicators, potentially macroeconomic data and sentiment data from news and social media. The data will be acquired using various APIs and financial databases.
- We will solve the problem by developing a machine learning model that uses the available data to predict future stock prices.
- The deliverables for the project will include the prediction model (in the form of Python code), a final report detailing our methodology and findings, and possibly a presentation slide deck for stakeholders.