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Requirements Page: Machine Learning Algorithm on Investments

# Description

Machine learning will be used on the output of our iterative time series algorithm and our sentiment analysis to build a predictive model for stock prices.

# Service Needed

Since stock prices cannot be entirely accurately predicted with either social sentiment or mathematical modeling, we need a way to combine both variables into a single predictive output.

# **Requirements**

# User Requirements

* This process does not have any user interaction as work is done in the backend of the program.

# System Requirements

**Functional:**

1. Reads input from time series algorithm and sentiment data of the same stock and outputs a price prediction of that stock.
2. Must perform a few hundred tests on past datapoints of a given stock to adjust algorithm’s weights.
3. Generates an accurate predictive model for stock prices.
4. Must perform algorithm every time a new data is processed from the sentiment analysis and time series model.

**Non-Functional:**

1. Runtime must be fast enough to process batches of data consecutively.
2. Should be a robust autonomous process.