

Stock price prediction uses data analysis and statistical models to predict future stock prices. Stock market forecasting assists traders and investors in making more educated choices on the purchase, sale, or holding of stocks. We will use the following dataset from Yahoo Finance with the following link: <https://finance.yahoo.com>. This website provides historical and real-time financial data for stocks, bonds, ETFs, and other financial instruments.

The motivation for this project is that many people do not invest in the stock market because they fear losing money. That also causes them to lose money because interest rates make your money worth less yearly. We want to help those people by creating an easy way for them to understand the stock they are considering buying and how it has behaved over time. Stock price prediction using machine learning is a rapidly expanding research field. Some of the researched topics are related to machine learning, such as text mining, machine vision, voice classification, etc.

One of the common approaches to our solution for the problem is to use time series analysis. The goal is to use past data and trends to predict future prices. ARIMA is a popular time series analysis algorithm used to predict stock prices. (Ariyo et al., 2014). As the stock price trends aren't linear, techniques such as SVM can also be equipped. We plan to do both SVM and ARIMA for our project.

When discussing the potential results of a machine learning project, it's important to consider the specific quantitative metrics that will be used to evaluate the model's performance.

One commonly used metric for evaluating machine learning models is a mean squared error (MSE). This metric measures the average squared difference between the predicted and actual stock prices, with lower values indicating a better-performing model. Another metric that can be used is mean absolute error (MAE), which measures the average absolute difference between the predicted and actual prices.

Other metrics that can be useful for evaluating the performance of a stock price prediction model include root mean squared error (RMSE), which is the square root of MSE, and R-squared (R^2), which measures the proportion of the variance in the stock prices that the model can explain.

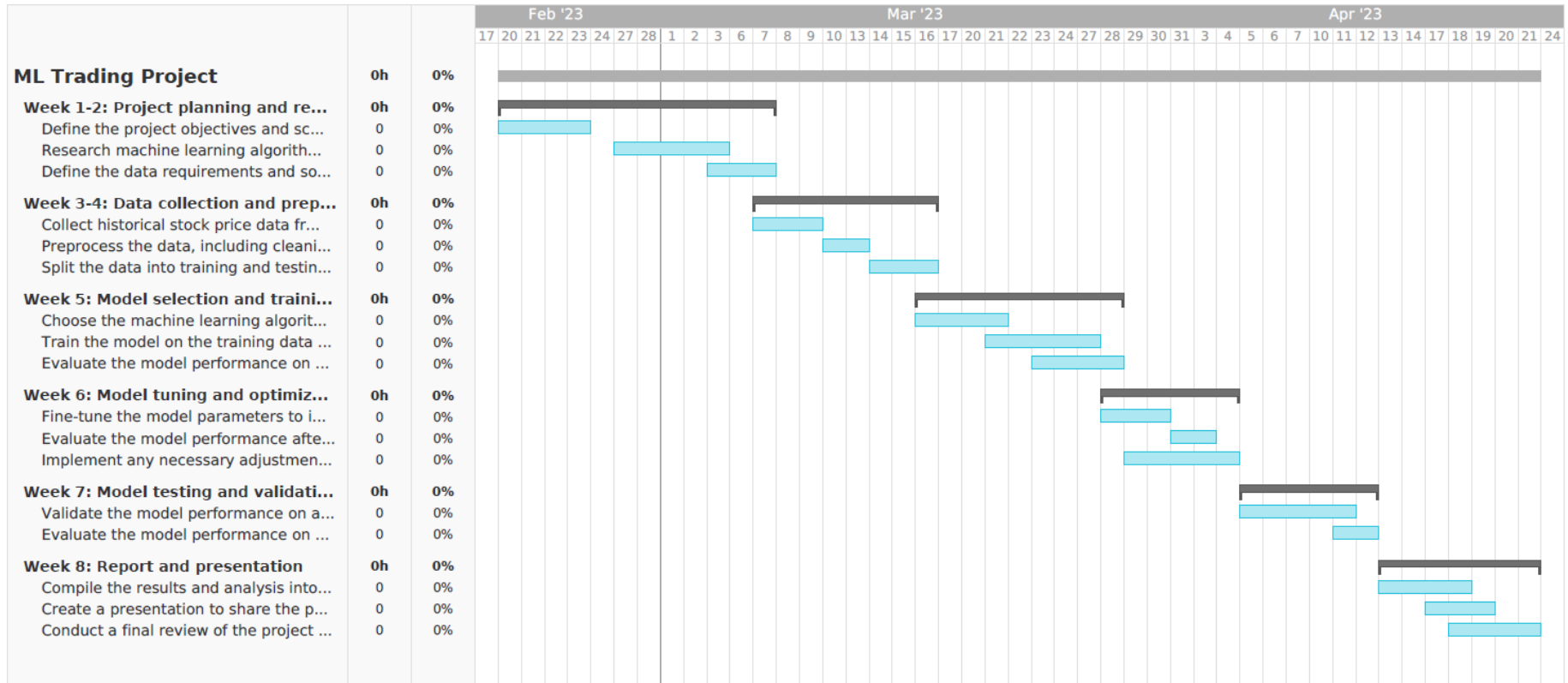
Using the quantitative metrics mentioned above, we will get important insights about a specific stock, such as its volatility, the predicted price x days from today, and the expected growth compared to other stocks.

The following table shows everyone's responsibilities:

Isaac	In charge of implementing SVM analysis on the data.
David	In charge of implementing SVM analysis on the data.
Luis	Will be in charge of getting the data from the dataset and structuring it in python.
Hari	In charge of implementing ARIMA analysis on the data.
Manit	In charge of implementing ARIMA analysis on the data.

We will have a checkpoint on March 30 to see if we are working on a proper machine learning-related project.

ML Team



References

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