

Stock Price Forecasting

with a Novel Stacking Algorithm on React Based Web-Application

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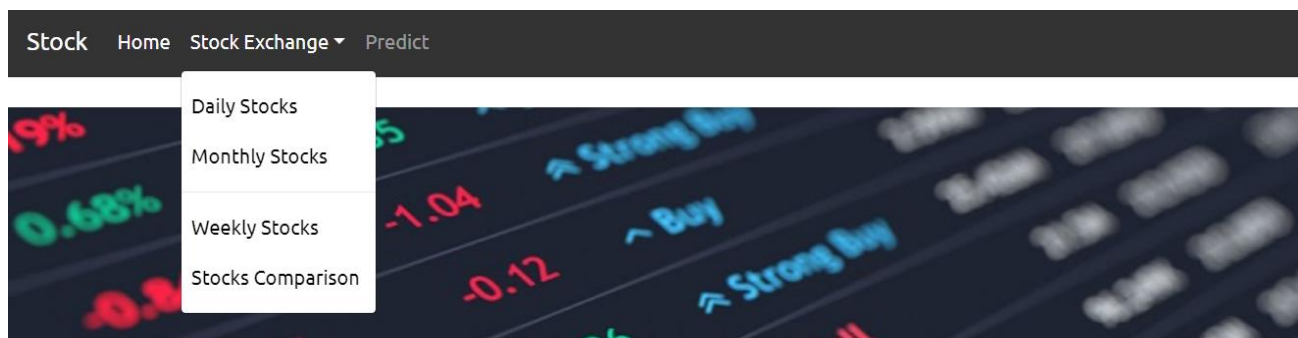
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Introduction

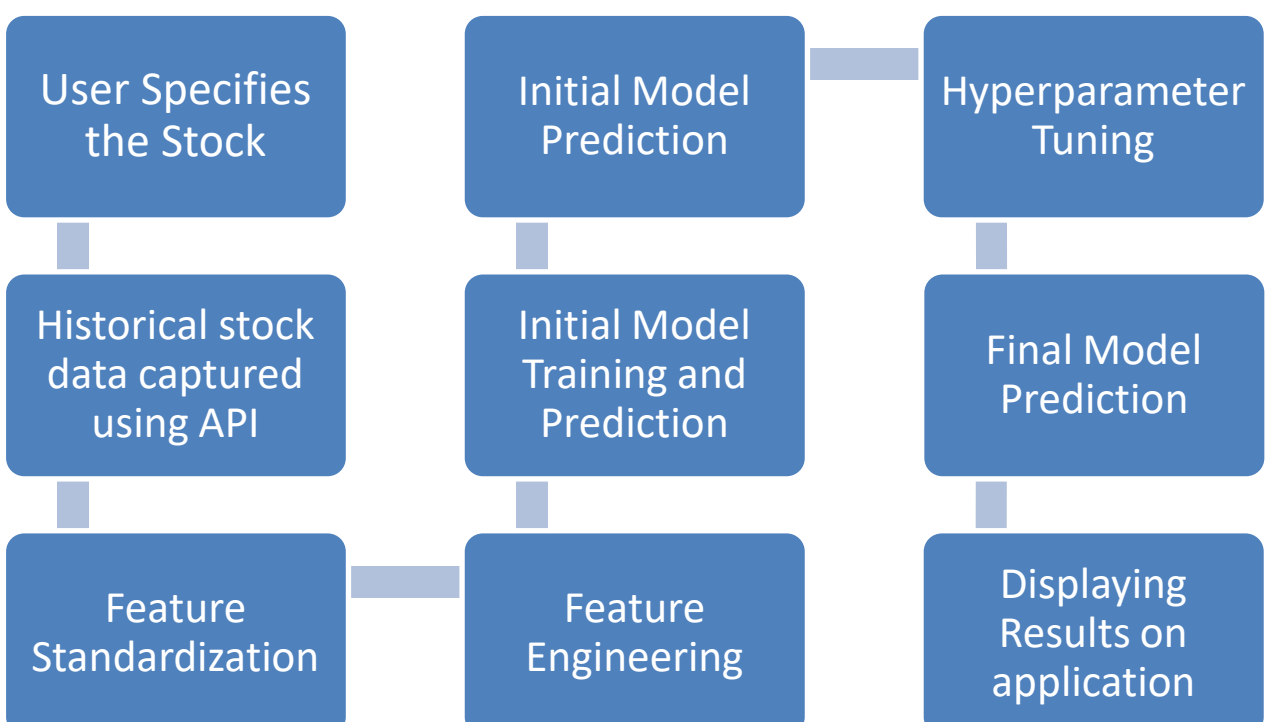
Accurately predicting the stock market could help traders incur significant profits. However, intrinsic volatility in the stock market, coupled with its nonlinear and dynamic nature makes the task of stock price forecasting challenging. Predicting trends in stock market prices has thus been an area of interest for researchers for many years.

Project Objectives

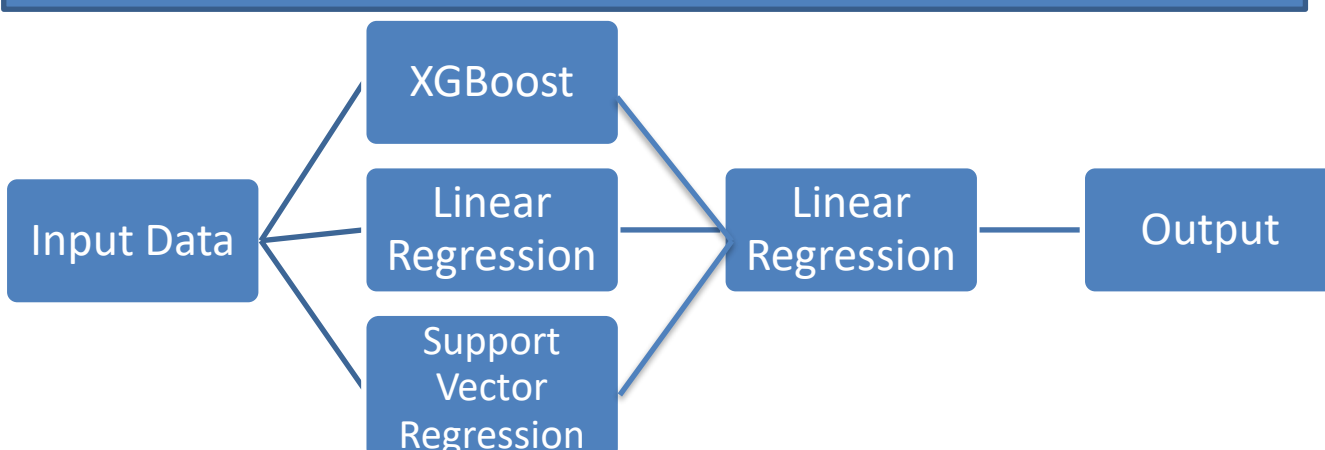
- Building an XgBoost model by finding the optimal data features and hyperparameters required for the task of stock price forecasting.
- Designing a React based web-application and its integration with the final model using Flask.



Methodology

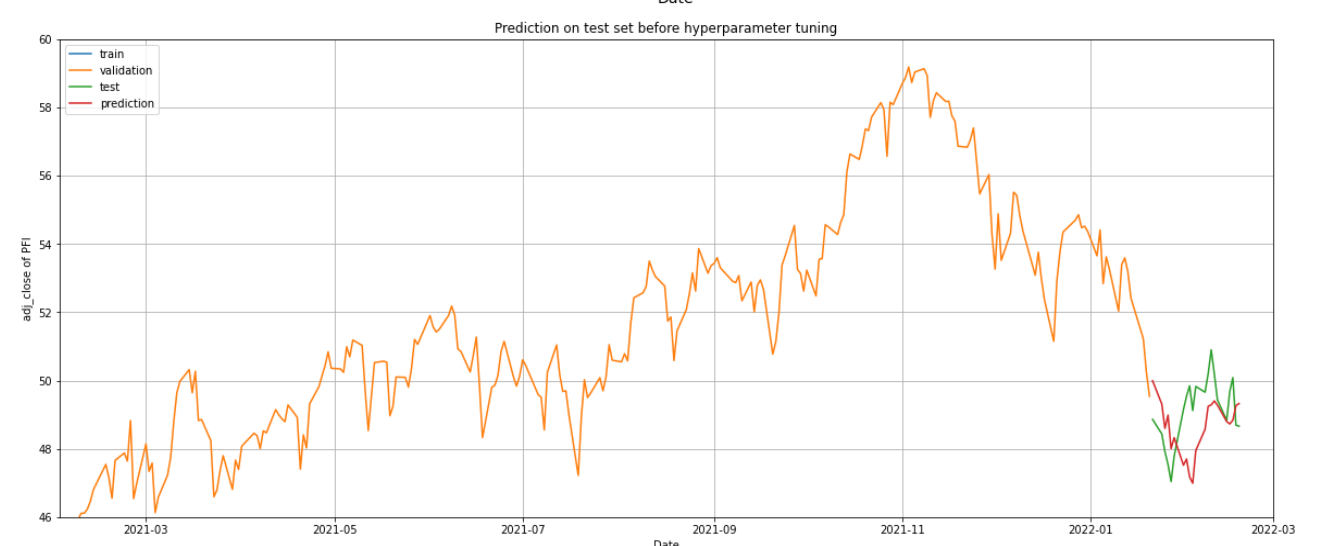
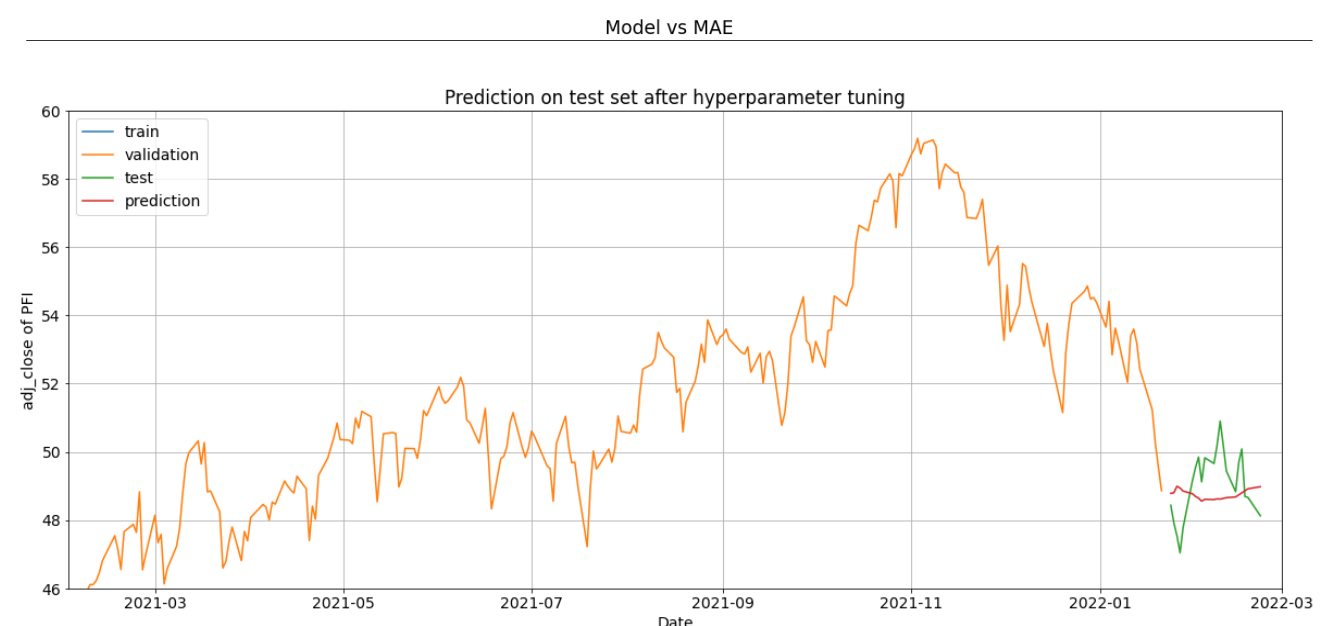
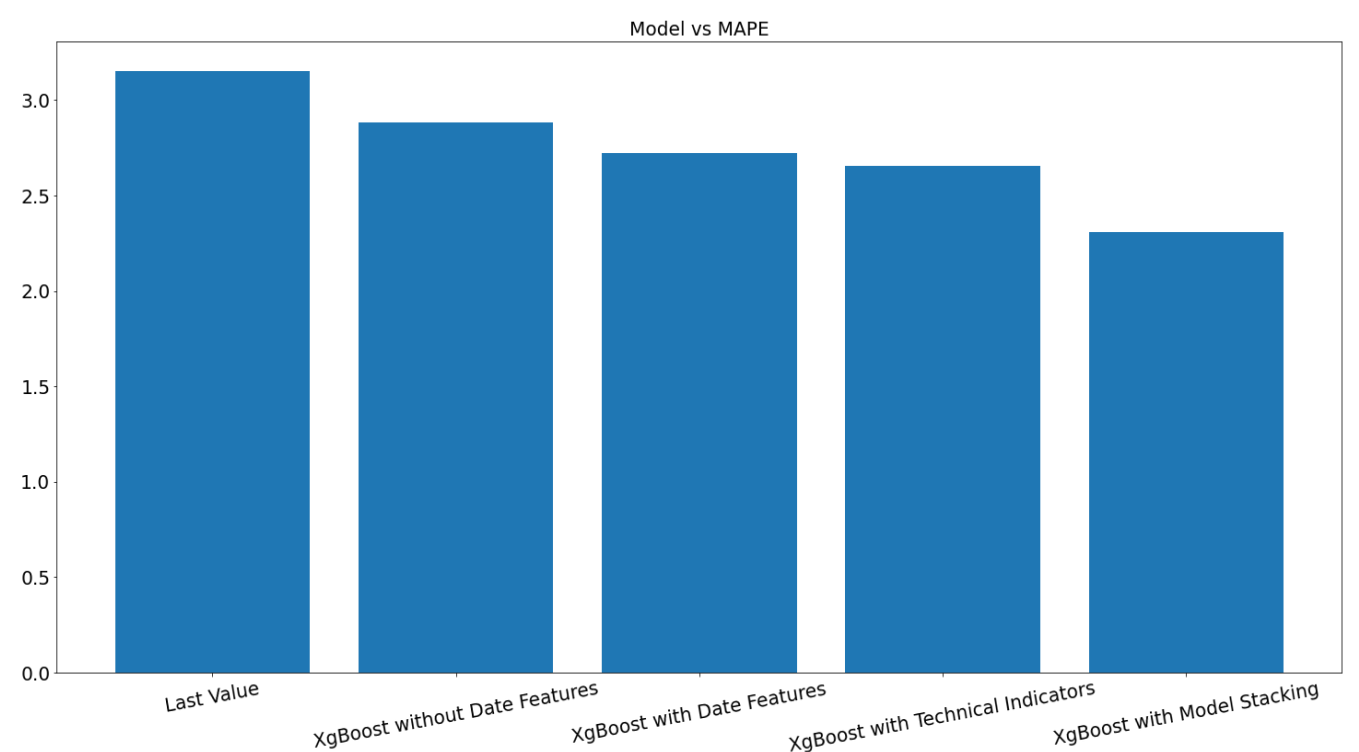


Final Model



Results

The Stacked XgBoost model made the most accurate predictions and thus had the lowest overall evaluation metrics.



Conclusions

- Models with feature engineering based on seasonality and technical indicators made better forecasts.
- Hyperparameter tuning had a significant effect on the model performance. It made the models more stable by stopping overshooting and decreased the errors considerably.
- Finally, the stacked model provided the most robust and accurate model. It followed the trend-line closely and delivered a low error rate.