

Model to predict Stock market behavior using Machine Learning

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Abstract

Worldwide, number of retail investors entering stock market are increasing enormously day by day. The financial data of the companies are also available publicly on Yahoo finance. This represents fertile ground for all fields of data science that seek to build predictive models using such data. This thesis focuses on predicting the trend of a company stock in the Stock Exchange while taking into consideration that the stock market of a country is no more completely localized as global issues have been showing impact on Stock exchanges of different countries. I collected 8 years of financial data from Yahoo finance, daily news of Reliance Industries from Google news and top daily global news articles from The Guardian.com. This paper explores the different models that are used in the prediction modelling from traditional machine learning by conducting extensive tests on them with feature engineering and found that my proposed approach with XGBClassifier outperforms achieving approximately 84.2% accuracy. This paper adds to the stock analysis research community in both the financial and technological areas by providing extensive design and evaluation of prediction term lengths, feature engineering, and data pre-processing approaches. This work contributes to the normal public and also stock analysis research community with the prediction model.

Keywords

Machine learning, predictive models, Stock Market, Classification