Stock Market Prediction Using Machine Learning

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Abstract: *Predicting how the stock market will perform is one of the most difficult things to do. There are so many factors involved in the prediction – physical factors vs. psychological, rational and irrational behavior, etc. All these aspects combine to make share prices volatile and very difficult to predict with a high degree of accuracy. Accurate prediction of stock market returns is a very challenging task due to volatile and non-linear nature of the financial stock markets. With the introduction of artificial intelligence and increased computational capabilities, programmed methods of prediction have proved to be more efficient in predicting stock prices. In this work, Artificial Neural Network and Random Forest techniques have been utilized for predicting the next day closing price for five companies belonging to different sectors of operation. The financial data: Open, High, Low and Close prices of stock are used for creating new variables which are used as inputs to the model. The models are evaluated using standard strategic indicators.*

Keywords: Stock market, machine learning, python, random forest, etc.

REFERENCES

[1]. Masoud, Najeb MH. () "The impact of stock market performance upon economic growth." International Journal of Economics and Financial Issues 3 (4) : 788–798.

[2]. Murkute, Amod, and Tanuja Sarode. () "Forecasting market price of stock using artificial neural network." International Journal of Computer Applications 124 (12) : 11-15.

[3]. Hur, Jung, Manoj Raj, and Yohanes E. Riyanto. () "Finance and trade: A cross-country empirical analysis on the impact of financial development and asset tangibility on international trade." World Development 34 (10) : 1728-1741.

[4]. Li, Lei, Yabin Wu, Yihang Ou, Qi Li, Yanquan Zhou, and Daoxin Chen. (2017) "Research on machine learning algorithms and feature extraction for time series." IEEE 28th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC): 1- 5

[5]. Seber, George AF and Lee, Alan J. () "Linear regression analysis." John Wiley & Sons 329

[6]. Reichek, Nathaniel, and Richard B. Devereux. () "Reliable estimation of peak left ventricular systolic pressure by M-mode echo graphic determined end diastolic relative wall thickness: identification of severe valvular aortic stenosis in adult patients." American heart journal 103 (2) : 202-209.

[7]. Chong, Terence Tai-Leung, and Wing-Kam Ng. () "Technical analysis and the London stock exchange: testing the MACD and RSI rules using the FT30." Applied Economics Letters 15 (14) : 1111-1114.

[8]. Zhang, G. Peter. (2003) "Time series forecasting using a hybrid ARIMA and neural network mode." Neuro computing 50 : 159-175.

[9]. Suykens, Johan AK, and Joos Vandewalle. () "Least squares support vector machine classifiers." Neural processing letters 9 (3) : 293-300.

[10]. Liaw, Andy, and Matthew Wiener. () "Classification and regression by Ran- dom Forest." R news 2 (3) : 18-22.