

Report of Price Forecasting

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This project completes stock price forecaster.

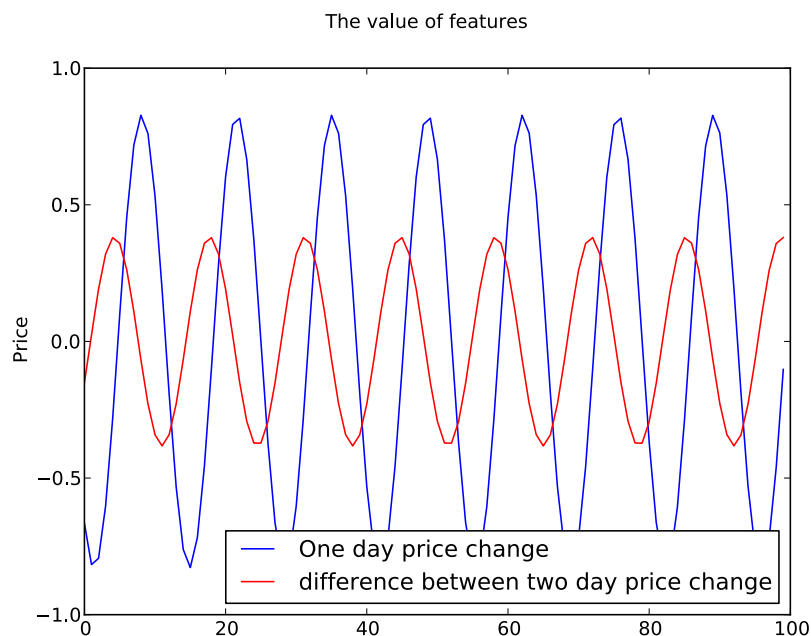
In this project, I use Linear Regression Learner to train my data and predict the price. As the result shown in the first project, to regress and predict the continuous data set, the Linear Regression learner take a large advantage than KNN. Considering the time cost, the Linear Regression Learner costs less time than the Random Forest learner. Thus, I choose Linear Regression learner to forecast the future 5 days' stock price.

I choose two features to forecast. One is one day' price change, which measures the price's reflection to one day's information and predict the direction of price's movement; another one is the difference between today's price change and yesterday's price change, which measures the amplitude of the price change. Use the two features, my forecaster can predict a short-term price movement.

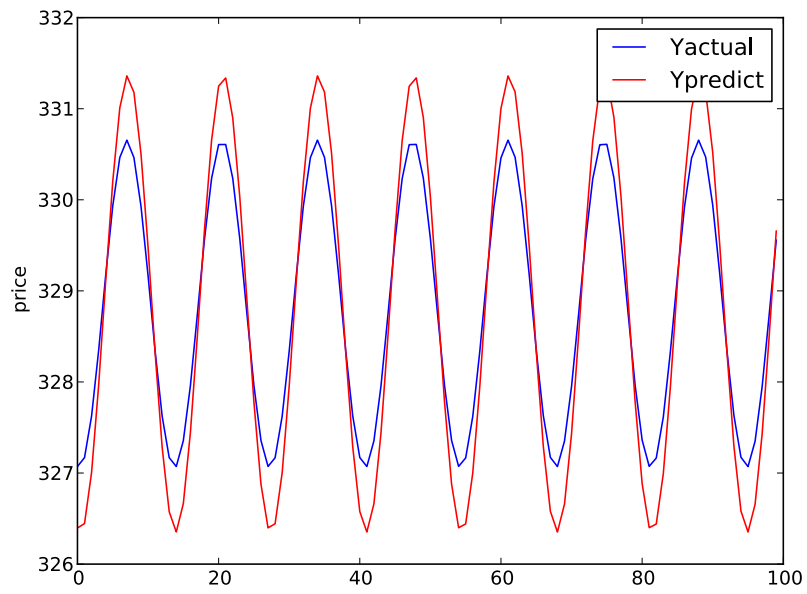
1. ML4T-292.csv

For data set ML4T-292.csv, the RMS Error is 0.5156.

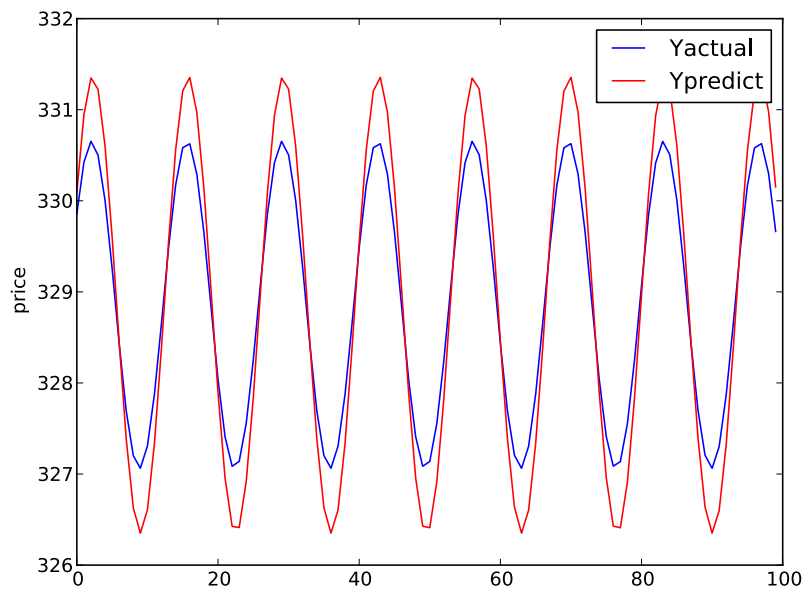
The figures below show the results of forecasting.

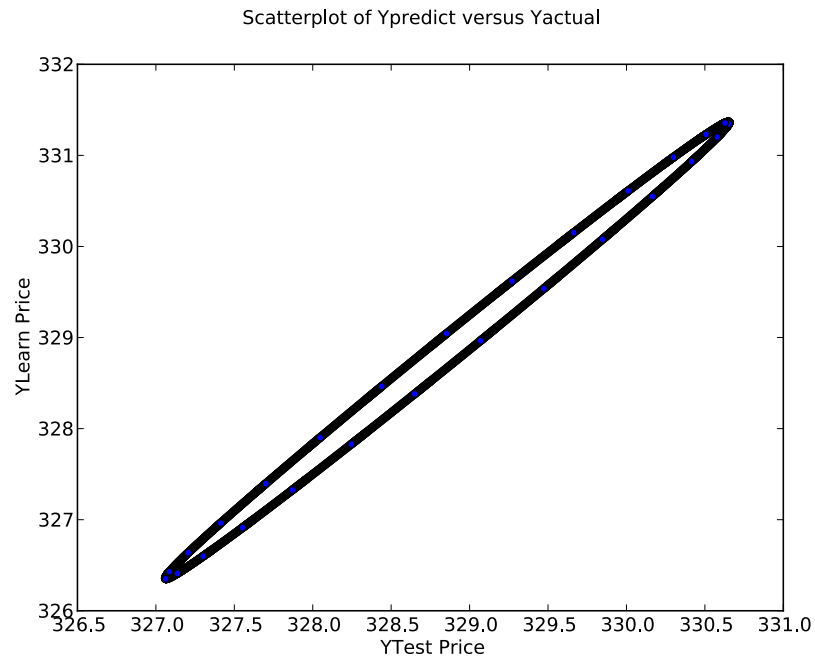


The first 100 days of Yactual and Ypredict



The last 100 days of Yactual and Ypredict

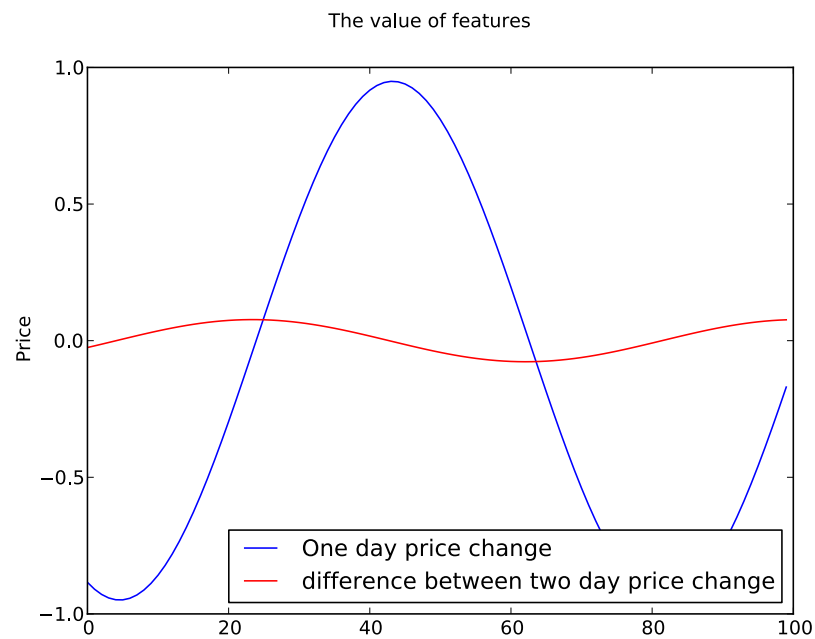




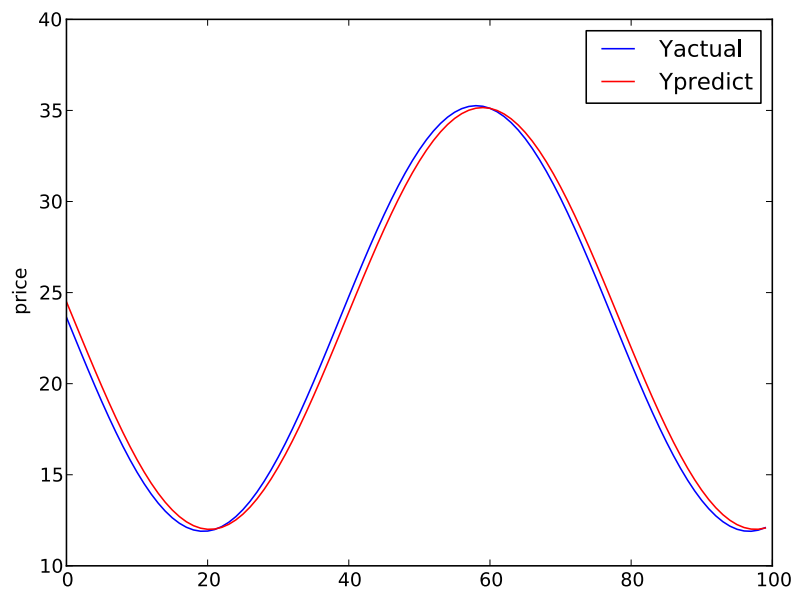
2. ML4T-137.csv

For data set ML4T-137.csv, the RMS Error is 0.6090.

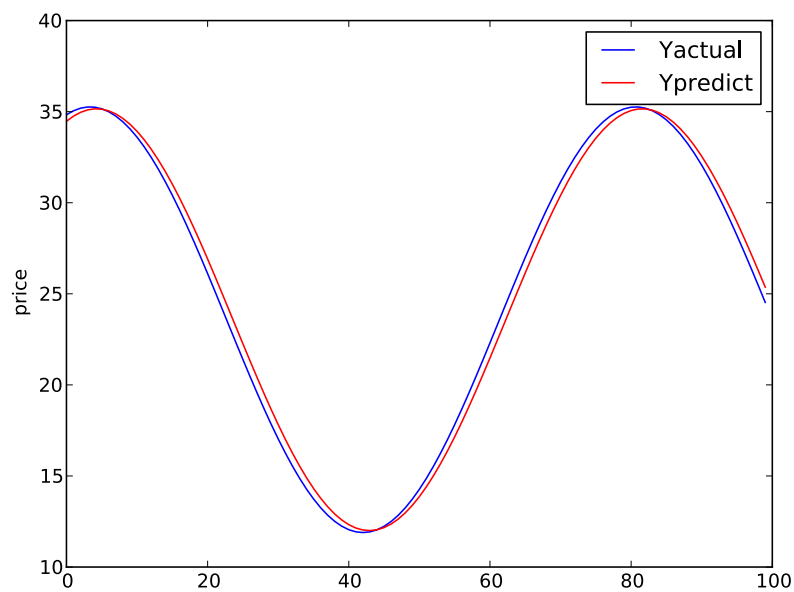
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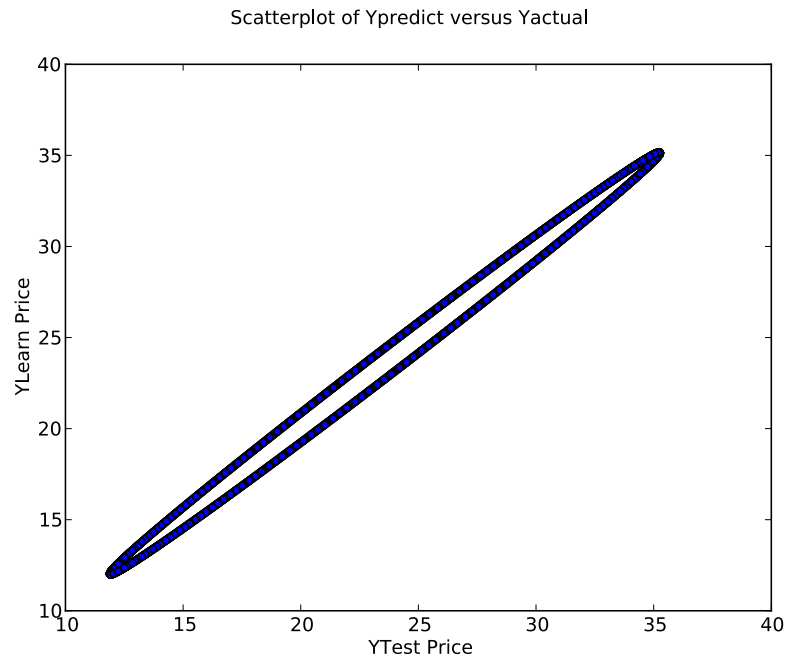


The first 100 days of Yactual and Ypredict



The last 100 days of Yactual and Ypredict





3. Evaluation for the forecaster

I think my forecaster is efficient, especially for lower frequency function. As the index to evaluate my forecaster, RMS Error is below 0.7 for both data sets. As the result shown in figures, for data set 137, the predicted value is almost same for the low frequency. For data set 292, the predicted value is synchronous to the actual value.

But there are some problems: as the frequency becomes higher, the predicted value's amplitude becomes larger than actual value. For low frequency data set, the predicted value is a little asynchronous to the actual value.