Close Volume Prediction with AutoML

21 February 2019

Contents

Model 1: Daily Data

Data

- Pick an index - UKX for example
- Date Range = 2010-01-01 ... 2019-04-11
- Daily data with the with the predictors: Stock, Date, Day's Volume, Special Day Type
- Outcome: Close Volume for each date
- The Special Day Type could be one of the following: {Regular, Special Day 1, Special Day 2, Special Day 3...}
  - Special Day 1 example: last Friday of the quarter
  - Special Day 2 example: last working day of the month
  - We can give you this list
- We can add variables like Daily Volume Moving average, Close Volume Moving Average, values 1 day, 2 days, 3 days etc... that we calculate using the predictors above.

Prediction model

Raw Values

We would like to predict the Day's close from previous days Total Volume and previous days Close volume and the input knowledge of the special day. Let i be today's time, the model is

$$CloseVolume_i \sim f(TotalVolume_{j=1...i-1}, CloseVolume_{j=1...i-1}, SpecialDayType_i)$$

Percent Values

Another thing we can look at is the prediction of the percentage of the close volume relative to that of the day. Similarly, let i be today's time, the model is

$$PctCloseVolume_i \sim f(TotalVolume_{j=1...i-1}, CloseVolume_{j=1...i-1}, SpecialDayType_i)$$

Prediction metrics

Examples:

For $x = (x_i)_i$ and $y = (y_i)_i$, $i = 1 \dots n$, the metrics are:

- Mean Squared Error
- Mean Absolute Error