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## Module 4

### Trade Call Prediction using Classification

In this module, we'd be covering the concept of classification and utilize our skills to solve the following queries – (Stock Price = Close Price)

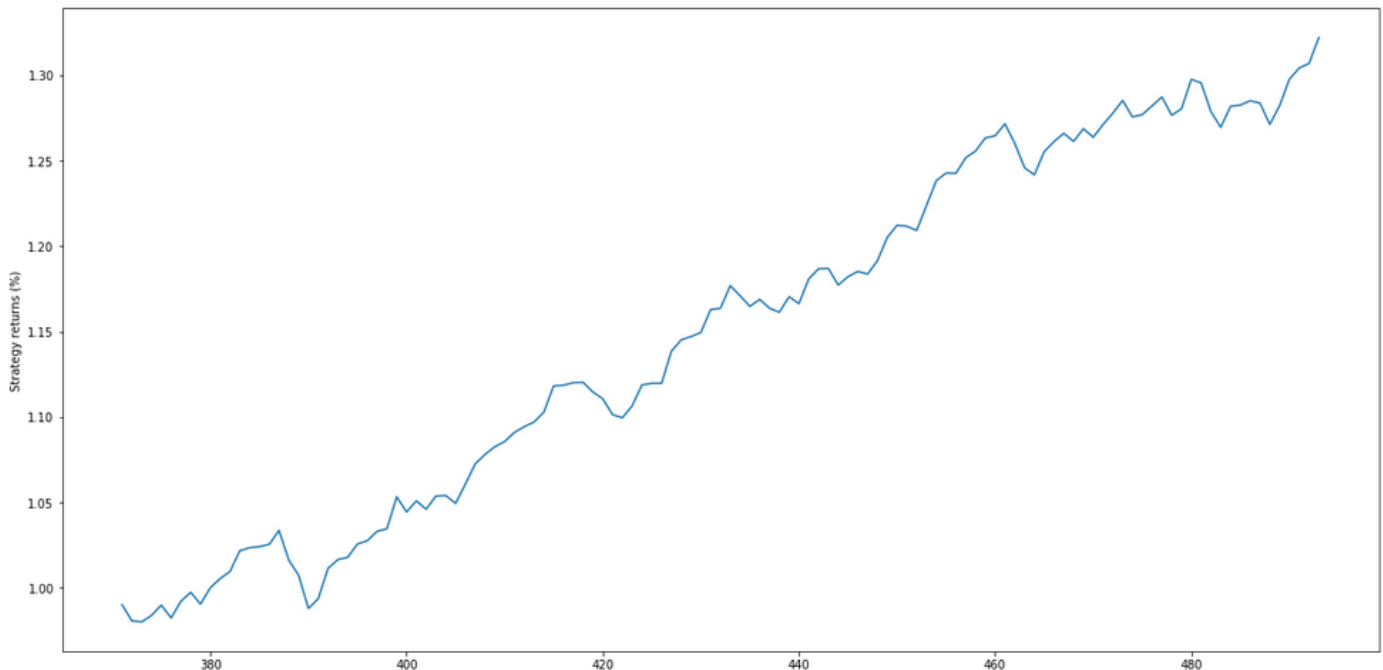
### Problem Statements

4.1 Import the csv file of the stock which contained the Bollinger columns as well.

- ✓ Create a new column 'Call' , whose entries are -
  - 'Buy' if the stock price is below the lower Bollinger band
  - 'Hold Buy/ Liquidate Short' if the stock price is between the lower and middle Bollinger band
  - 'Hold Short/ Liquidate Buy' if the stock price is between the middle and upper Bollinger band
  - 'Short' if the stock price is above the upper Bollinger band
- ✓ Now train a classification model with the 3 bollinger columns and the stock price as inputs and 'Calls' as output. Check the accuracy on a test set. (There are many classifier models to choose from, try each one out and compare the accuracy for each)
- ✓ Import another stock data and create the bollinger columns. Using the already defined model, predict the daily calls for this new stock.

4.2 Now, we'll again utilize classification to make a trade call, and measure the efficiency of our trading algorithm over the past two years. For this assignment , we will use RandomForest classifier.

- ✓ Import the stock data file of your choice
- ✓ Define 4 new columns , whose values are:
  - % change between Open and Close price for the day
  - % change between Low and High price for the day
  - 5 day rolling mean of the day to day % change in Close Price
  - 5 day rolling std of the day to day % change in Close Price
- ✓ Create a new column 'Action' whose values are:
  - 1 if next day's price(Close) is greater than present day's.
  - (-1) if next day's price(Close) is less than present day's.
  - i.e. Action [ i ] = 1 if Close[ i+1 ] > Close[ i ]
  - i.e. Action [ i ] = (-1) if Close[ i+1 ] < Close[ i ]
- ✓ Construct a classification model with the 4 new inputs and 'Action' as target
- ✓ Check the accuracy of this model , also , plot the net cumulative returns (in %) if we were to follow this algorithmic model



Getting stuck and need a little guidance? Don't fret cause help is on the way! Take a look at our [guidance video ► \(\)](#) on the topic.

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