



Analysis of US Dollar Index

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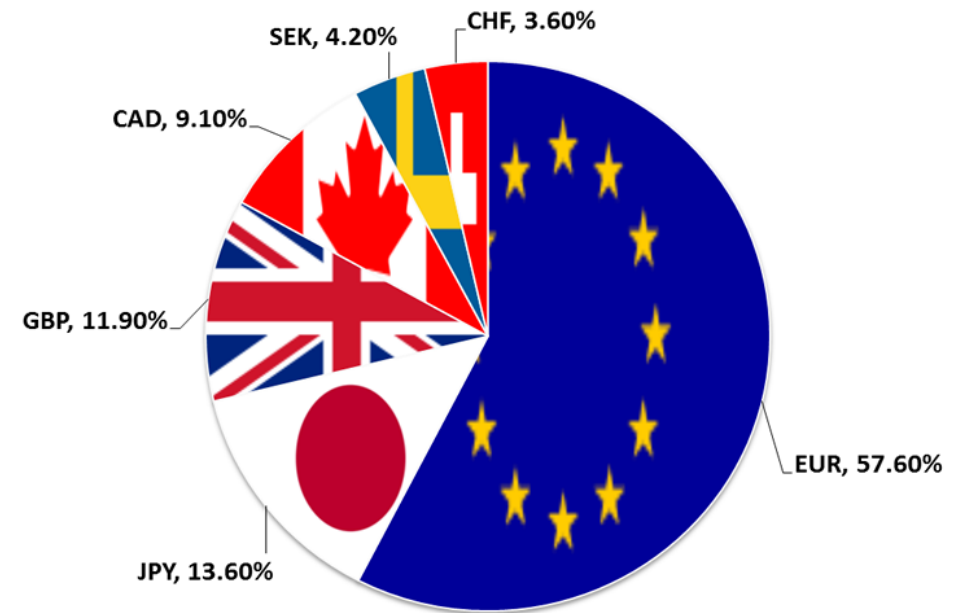
Features from Financial Market

❖ Features: S&P 500 Index(SP500), Gold Price (Gold), Crude Oil WTI(WTI), US 10-Year Bond Yield(US10Y), the German Stock Index(DAX), the UK Stock Index(FTSE), the Japan Stock Index(Nikkei), the China Stock Index(Shanghai) and the price of USD to HKD currency(USD_HKD)

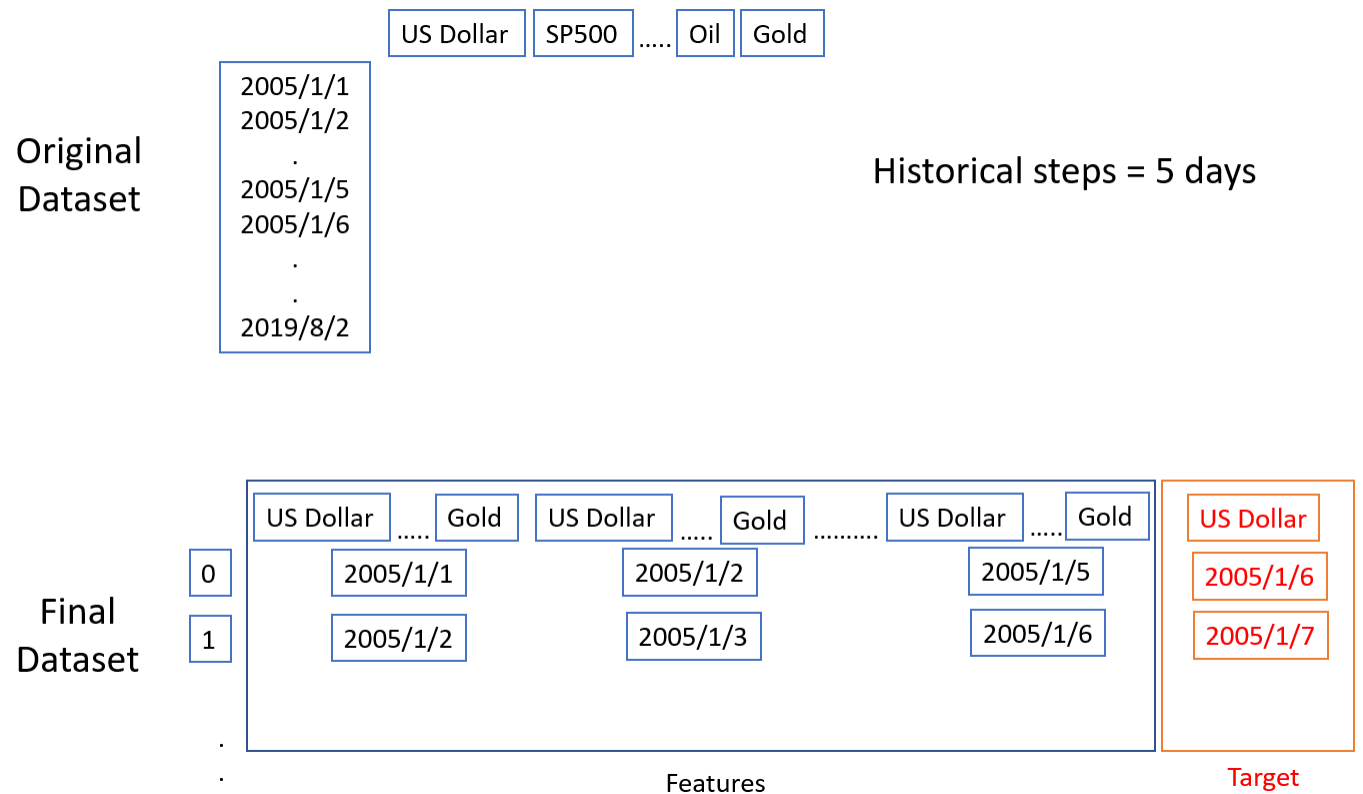
❖ Data: 01/01/2005 to 08/02/2019

❖ Each indicator contains closing , open, high, and low prices

❖ Use interpolation to replace missing values

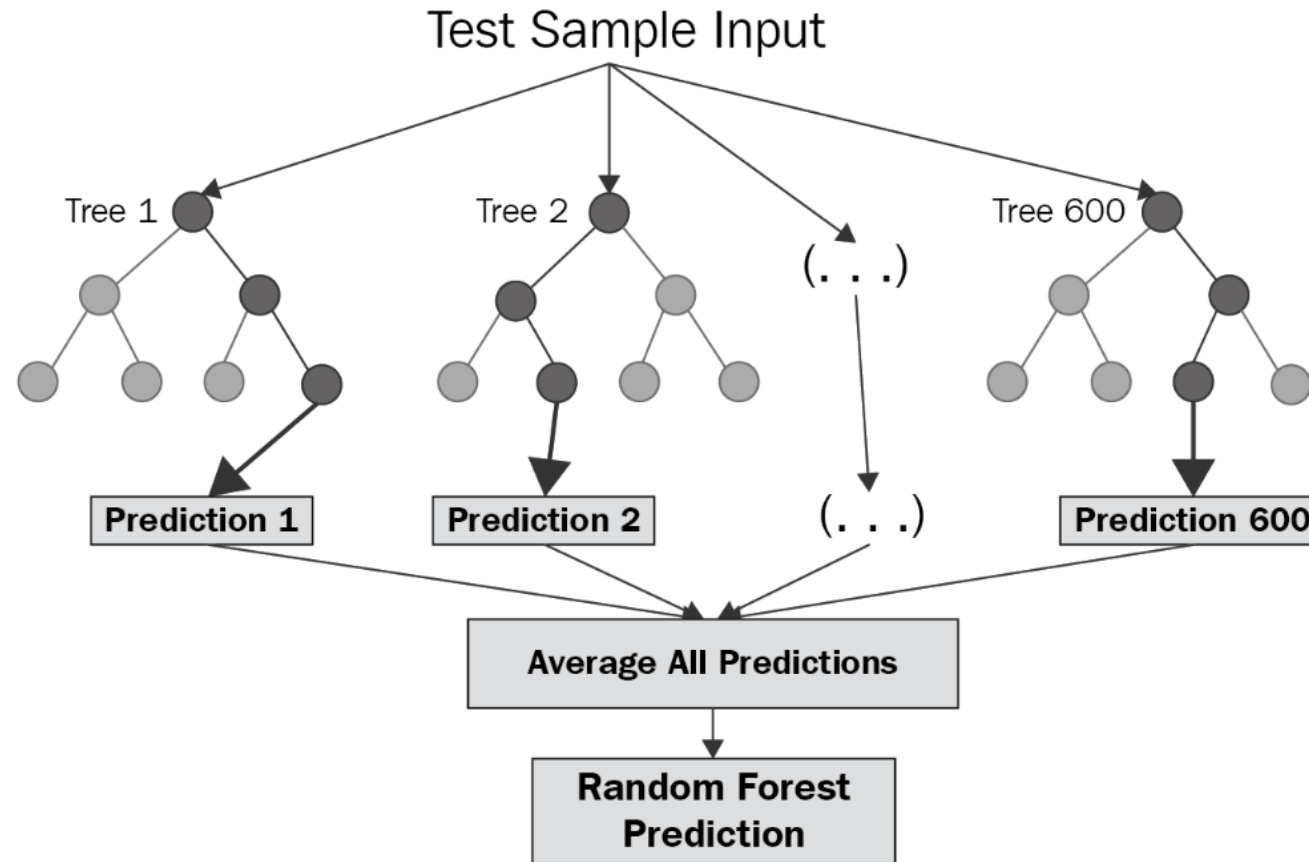


Reshape Data



Base on the concept of autoregression, I use the observations from previous 5 days as input to predict the value for next day.

Use Random Forest to Perform Prediction

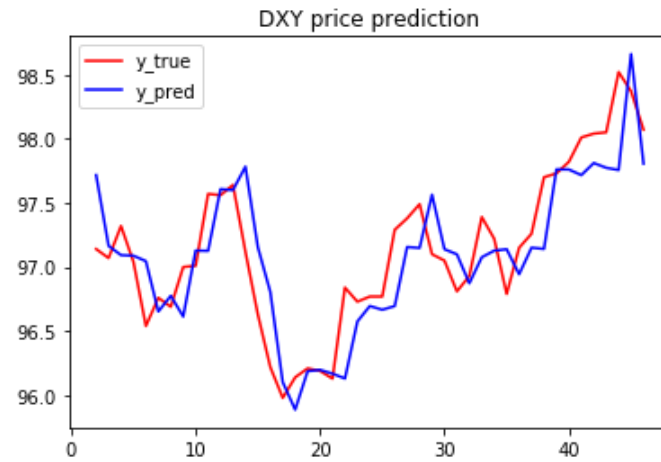


- ❖ Train many trees and average predictions as the final prediction
- ❖ Small number of samples and get pretty good results
- ❖ Calculate feature importance automatically

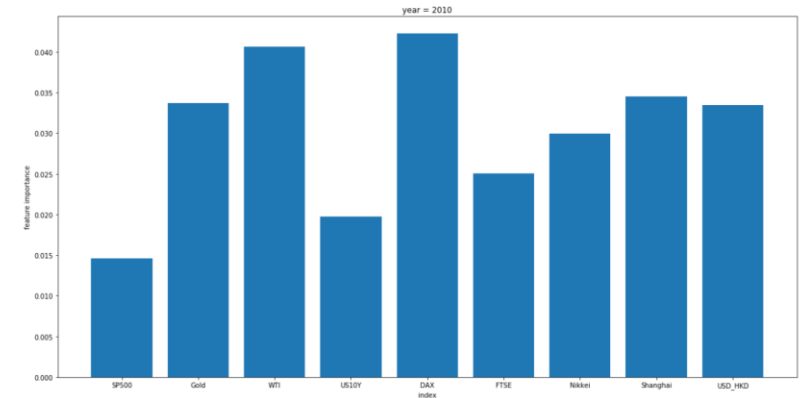
Some Results

❖mse root: 0.337

❖r2_score: 0.69



2010



2005

