BIG DATA Project

Final Presentation

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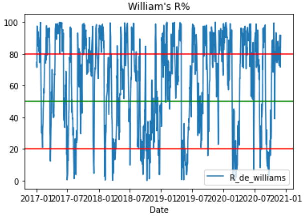
Insights - Part 1

1. William's R%

$$\%R = [\frac{PHn - Close}{PHn - PLn}] \times 100$$

PHn: Highest price of the past n days

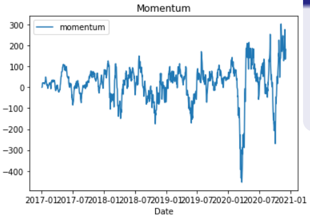
PLn: Lowest price of the past n days



2. Momentum

$$M = Close - Close_n$$

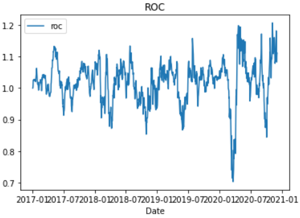
$Close_n$: Closing price from n days ago



3. ROC

$$ROC = \frac{Close}{Close_n}$$

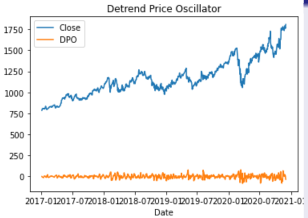
$Close_n$: Closing price from n days ago



Insights - Part 2

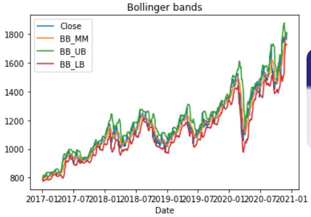
4. Detrend Price Oscillator

$DPO =$
$Close_{\frac{-n}{2}-1} - MM_{-n}$
MM_{-n} : Moving average of Close for n days



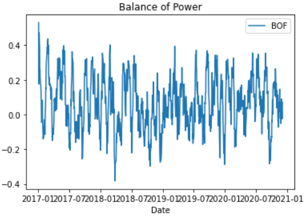
5. Bollinger bands

MM : Moving average of Close
STD : Standard deviation of Close
$UB = MM + 2 \times STD$
$LB = MM - 2 \times STD$



6. Balance of Power

$$BOF = \frac{Close - Open}{High - Low}$$



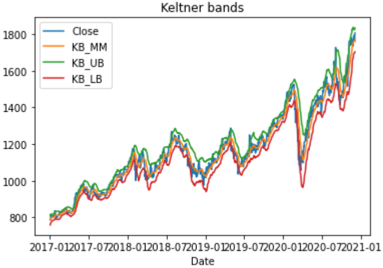
7. Commodity Chanel Index

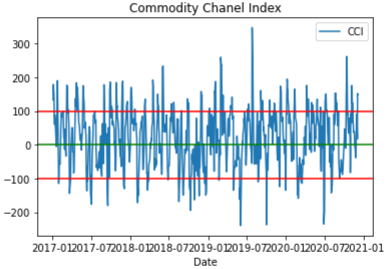
$$CCI = \frac{C_M - CMM}{DM \times 0.015}$$

$$C_M = \frac{High + Low + Close}{3}$$

CMM : Moving average of C_M

DM : Mean deviation of $C_M - CMM$





8. Keltner bands

MM : Moving average of Close

ATR : Moving average of $max(High - Low, High - Low_{-1}, Low - Low_{-1})$

$UB = MM + 2 \times ATR$

$LB = MM - 2 \times ATR$

Machine Learning - Part 1

1. Linear Regression

2. Indicators: RMSE, Normalised RMSE

Are our results actually any good ? YES. Our predictions are relevant.

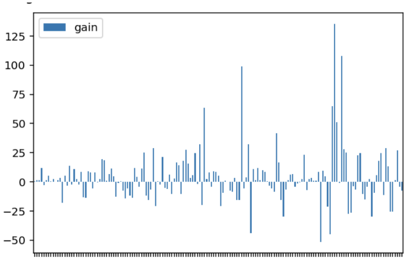
```
Metric name: rmse
Label Column: next_Close
Prediction column: pred_next_Close
RMSE value: 21.124714521573537
```

```
Max Value: 1807.1199951171875
Min Value: 786.1400146484375
Normalised RMSE : 0.020690625600587004
```

Machine Learning – Part 2

3. What should we predict?

We chose to simulate a "Real life situation". What would happen if we wanted to either buy or sell before close based on our predict



4. The Simulation

We bought one stock: Selling it when we thought the price went down buying before the price went up every day. We watched what happened

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With an initial buy at 806.1500244140625$ we won 636.5150146484375$
```

Conclusion

The Takeaways

Did we earn ? YES.

Did we beat the system : NO.

approx(1800 - 800) $\approx 1000 \rightarrow$ *we only earned* ~ 600

Thank you for listening to us!

If you have any questions please feel free to ask them now.