ZELTA-LABS

CRYPTO TRADING

BTC STATS

- Very volatile asset
- 2018-2019 slightly bearish
- 2019-2020 volatile
- 2020-2021 bull run after which it went extremely bullish
- Sharpe ratio(2018-22) : 0.1216
- Annualized Volatility = 0.138
- High scope of short-term profit

next →


70000
60000
50000
40000
30000
20000
10000
0
2018-01
2018-07
2019-01
2019-07
2020-01
2020-07
2021-01
2021-07
2022-01

next →

WORKING PLAN

- Calculating various technical indicators and modifying data
- Labelling data based on hourly returns
- Training a Random forest classifier to predict labels on hidden dataset
- Since it is a volatile asset, focusing on volatility indicators
- Using w%r and macd for the ultimate Back testing stratergy

INDICATORS

RSI

RSI measures the speed and magnitude of a security's recent price changes to evaluate overvalued or undervalued conditions in the price of that security

RSI=100−100/(1+RS)

RS=Avg up/Avg down

%K

A stochastic oscillator is a momentum indicator comparing a particular closing price of a security to a range of its prices over a certain period of time.

%K = (C - L14)/(H14 - L14)*100

W%R

Williams %R is a momentum indicator whose values oscillate between 0 to -100. This indicator is most similar to the Stochastic Oscillator but differs in its calculation

EMA

Exponential moving average is a type of moving average(MA) which places more weight and significance to latest data points.

MACD

Difference between fast EMA and slow EMA

EMA12-EMA26

MACD SIGNAL

It is the Exponential moving average of MACD over a period of time which is generally 9 days.

BOLLINGER BANDS

Bollinger bands, which are composed of three lines, quantify price volatility through the width of its upper and lower standard deviation bands, standard deviation represents how far prices deviate from the average price.

$$Upper = SMA + k * \sigma$$
$$Lower = SMA - k * \sigma$$

ATR

ATR works in a way similar to Bollinger bands and consists of a line measuring the volatility level. Simply put, a stock experiencing a high level of volatility has a higher ATR, and a lower ATR indicates lower volatility for the period evaluated

$$ATR = (1/n) \Sigma TR$$

$$TR = max(|H-L| , |L-C| , |H-C|)$$

STRATERGY

- We go LONG if the previous W%R reading is above -50, the current Williams %R reading is below -50, and the MACD line is greater than the Signal line.

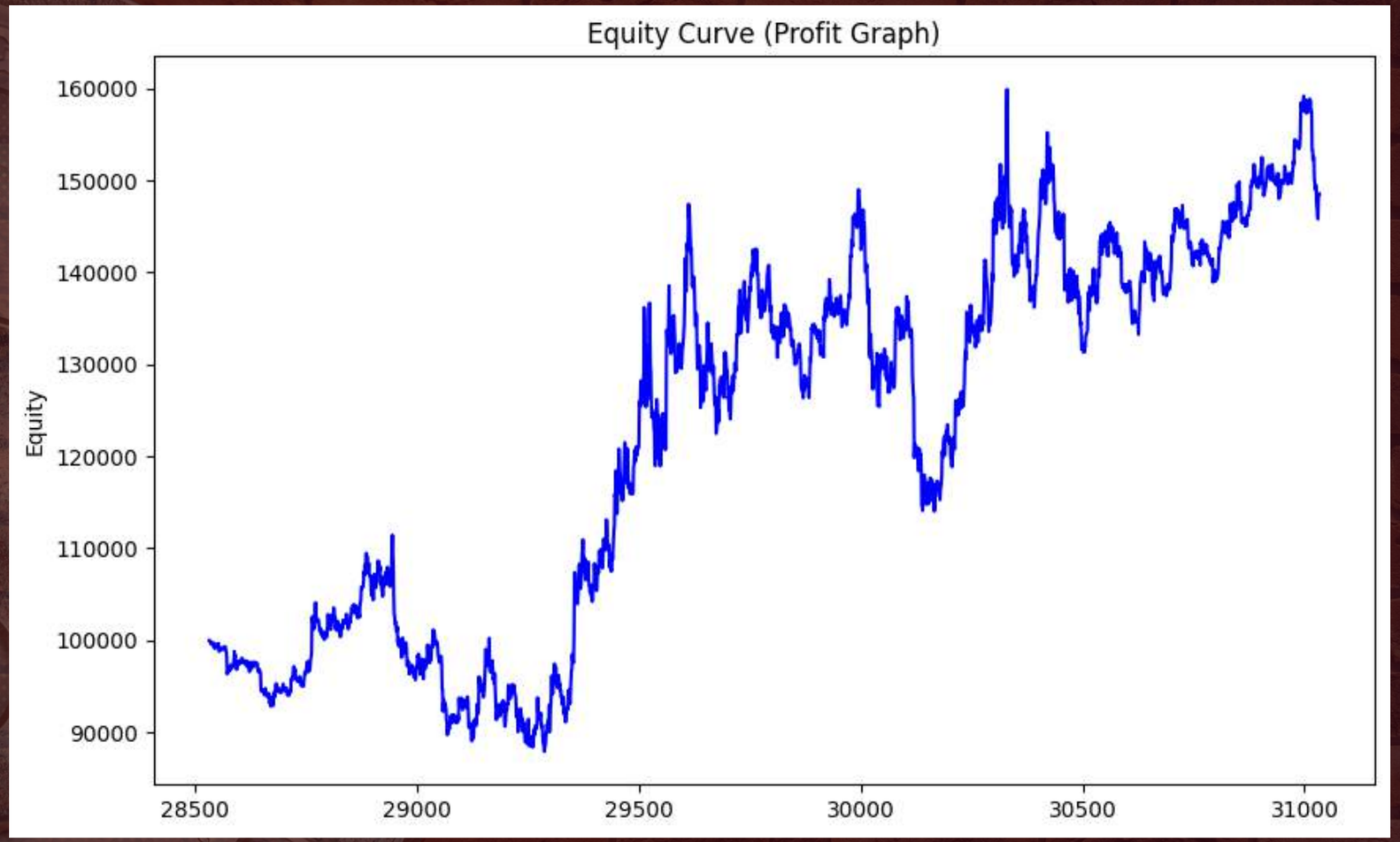
PREV.WR > -50 AND CUR.WR < -50 AND MACD.L > SIGNAL.L ==> BUY SIGNAL

- Similarly, we go SHORT if the previous W%R reading is below -50, the current Williams %R reading is above -50, and the MACD line is lesser than the Signal line

PREV.WR < -50 AND CUR.WR > -50 AND MACD.L < SIGNAL.L ==> SELL SIGNAL

A small catch though ;)

- We will use the predicted target class as a compulsory condition to buy or sell along with the strategy
  - Stop Loss= Price - ATR
  - Take Profit = Price + 2 * ATR



- Initial Capital : 100,00
- Commission=0.0005
- Final Equity = 148535.30
- Equity Peak = 159880.59
- **Return% = 48.53**
- Max Drawdown% = 23.47
- Profit Factor = 16.59

THANK YOU!