

# School of Computing & Information Sciences Fall 2019 Senior Design Project



CashBullExpert Class Diagram

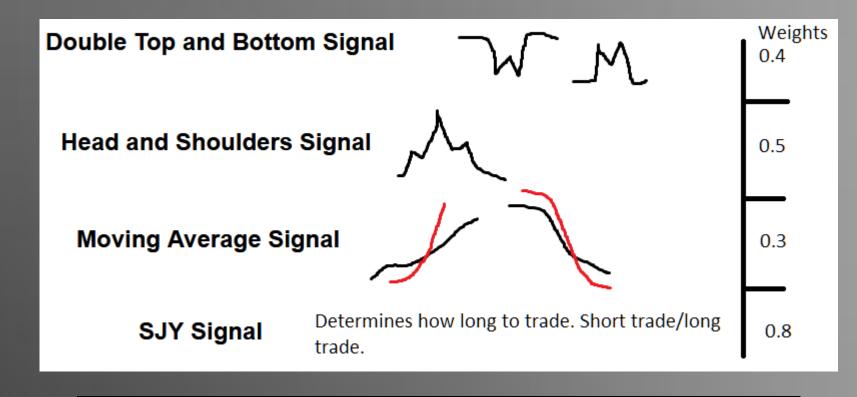
## **Empowered Forex Traders Trend Trading**

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#### **Overview**

Previously we had a Foreign Exchange trend trading expert advisor called BigDaddyRubberBandExpert. I identified a way to increase sales by 1601.75% by improving the trend prediction accuracy which is the driving force for pattern prediction. If we improve the trend prediction accuracy then, we can improve the pattern prediction accuracy(and therefore increase sales). The moving average signal is what it relied on for a trend prediction, this is a very simple trend predictor.

#### Old BigDaddyRubberBandExpert



#### MA Bullish/Bearish Cross Signal

A bullish cross happens when a faster-moving average crosses a slower moving average.

When the faster moving average moves above the slower moving average, it can often give us an early signal of a potential new bullish uptrend. The opposite direction would be bearish.



#### **DLC Bullish Cross**

If we supplement the moving average signal with a bullish + bearish MA cross we would further increase our trend prediction accuracy. We call this combined signal the DLC Bullish Cross and added it to the old BigDaddyRubberBandExpert, resulting in fewer but more profitable trades.

#### CashBullExper

We merged the DLC Bullish Cross w/ the previous BigDaddyRubberBand signals, resulting in fewer but more profitable trades. We call this new expert advisor the CashBullExpert. It increased profit by 1601.75%!

Moving Average -

**Architecture Diagram** 

BigBoiExpert = initialized

BigBoiExpert =deleted

Top and Bottom Signal – Predicts and identifies W and M shapes on the graph.

Head and Shoulders Signal – Predicts and identifies mountain-like shape like shown above. It shows a minor peak, then a minor peak, then a major drop.

Weight - 0.3

Weight - 0.3

SJY

Weight - 0.8

Head and Shoulders

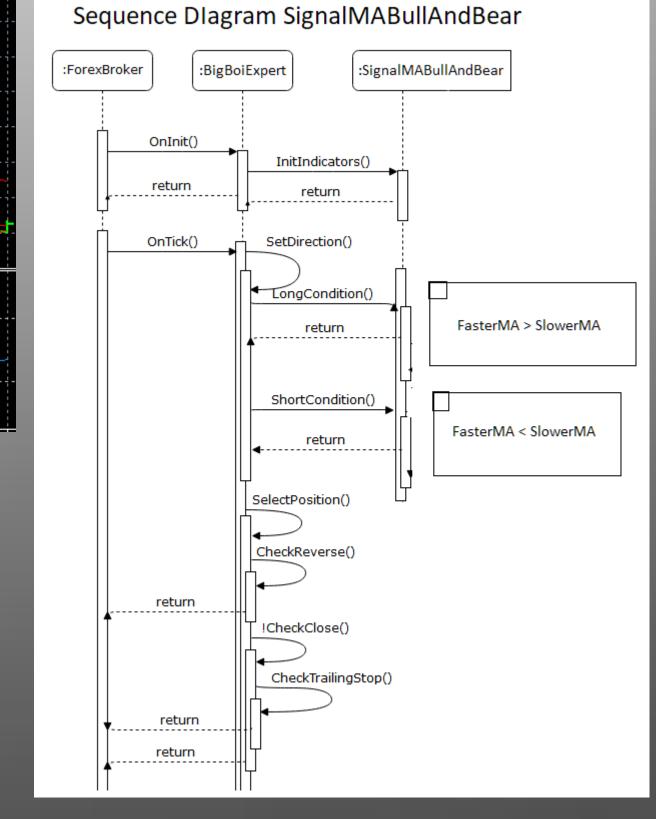
Weight - 0.5

Double Top and Bottom

Weight - 0.4

### SignalMABullAndBear Sequence Diagram

+ Create(string, int, int, int, ENUM\_TIMEFRAMES): void MaxHistory(int): void



Trend trading is a trading style that attempts to capture gains through analysis of an asset's momentum in a particular direction.

+ Initinalcators(Cindicators LongCondition(void): int + ShortCondition(void): int + InitiM4(Cindicators): bool + M4(int): double + DiffM4(int): double + DiffM6(int): double + DiffLighM4(int): double + DiffCloseM4(int): double + DiffCloseM4(int): double

Moving Average Signal – Checks if the given moving average is above the current sell price.

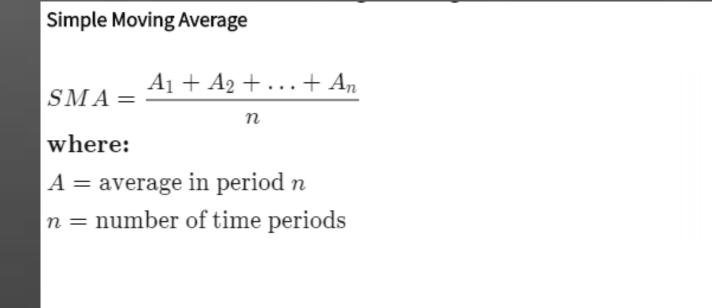
#### Results

+ InitIndicators(CIndicat + Pattern\_0(int): void + Pattern\_1(int): void + Pattern\_2(int): void + Pattern\_3(int): void + Pattern\_4(int): void

+ Create(CZIgZag, double): virtual bool + IsHigh( s\_Extremum): virtual bool + Total(void) : virtual int + Symbol(void): virtual string + Timeframe(void): ENUM\_TIMEFRAMES

Expert Advisor Year Profit	
Profit	
\$20.52	
\$234.49	
\$841.94	
\$242.80	
\$349.00	

#### Background



Long Condition: Vote to purchase Short Condition: Vote to sell

number (n) of time periods, A.

The simple moving average calculates the arithmetic mean of a security over a