



# DOUBLE BOTTOM BABY

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# executive summary

- we wanted to be able to define our own events- not some pre-defined baseline identifiers out there
- we want to know exactly what it meant to be able to identify a price event- a black box calculation just won't do
- after identifying the event, we want to predict where the price will go- up or down



# DATA COLLECTION AND PREPARATION PART 1:

## BRAIN STORMING

*trading signals/events we were considering*

- double bottoms
  - easiest to accomplish in 2 weeks
- head and shoulders
- double top
- inverse head and shoulders

*visual and daxta references*

- trading view
  - easily visually identify events
- yahoo finance
  - good starting point
- binance
  - collect large dataset easily
- coinbase

WE NEED  
TWO MODELS:

FIRST- IDENTIFY  
AN EVENT

SECOND- PREDICT  
PRICE MOVEMENT

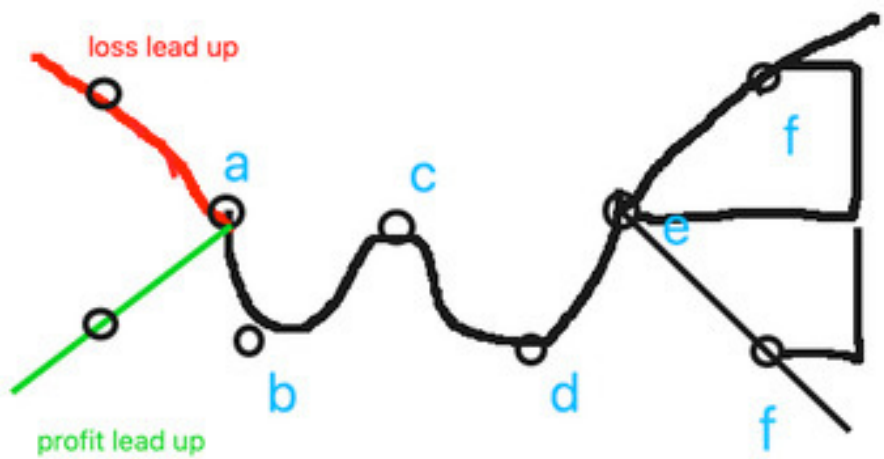
Bitcoin / U.S. Dollar, 1h, COINBASE O48463.63 H48492.92 L47733.31 C48151.85 -298.73 (-0.62%)  
MA (15, close, 0) 48181.35  
MA (100, close, 0) 46001.08  
DEMA (9, close) 48513.20

The double bottom turnaround is established after a candle touches the range previously created. At that point, the previous local max is made the midpoint.

Here is the creation of a local min. The value is stored and the algo iterates over next candles to find strat

At the close of this candle, we enter a call option since the candle closed above the range of the midpoint.

This candle closes in the range and makes the right portion of the double bottom. This is now the midpoint.



capture profit

profit double bottom

	event_number	leadup	a	b	c	d	e	f
train	e1	x	x	x	x	x	x	y
	e2	x	x	x	x	x	x	y
	e3	x	x	x	x	x	x	y
	e4	x	x	x	x	x	x	y
	e5	x	x	x	x	x	x	y
	e6	x	x	x	x	x	x	y
test	e5	x	x	x	x	x	x	y
	e6	x	x	x	x	x	x	y

**DATA  
COLLECTION  
AND  
PREPARATION  
PART 2: ETL**

*step 1*

what data points make up an event

*step 2*

how do we define each point with code logic

*step 3*

can we automate this for multiple events

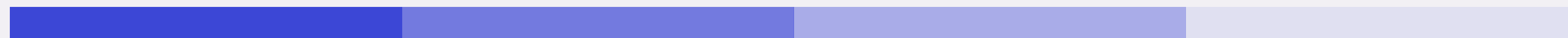
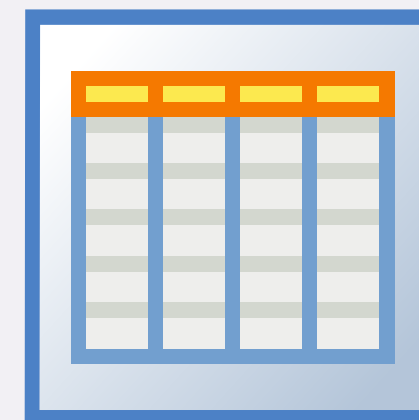
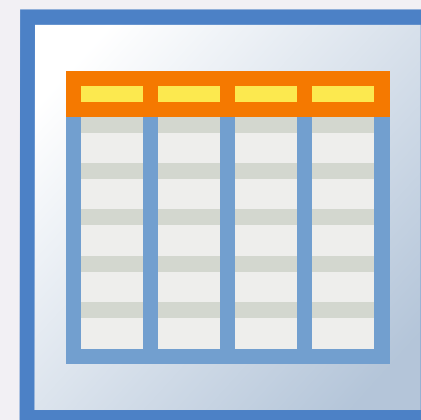
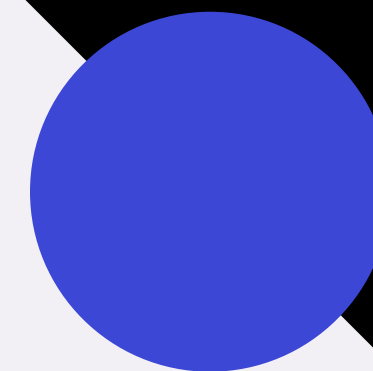




		Date	Open	Low	High	Close	Volume	Max	Min	A	B	C	D
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## APPROACH



*concept: event*

*actual: event*

*concept: NN  
dataframe*

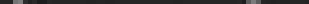
*actual: NN  
datafram*

## double bottom dataframe

Start date	o	c	h	l	a	b	c	d	e	f	Is this a double bottom?	leadup	what event point	leadup-a	a-b	b-c	c-d	d-e
xxxx/xx/xx	x	x	x	x									leadup					
xxxx/xx/xx	x	x	x	x	x								a					
xxxx/xx/xx	x	x	x	x	x	x							b					
xxxx/xx/xx	x	x	x	x	x	x	x						c					
xxxx/xx/xx	x	x	x	x	x	x	x	x					d					
xxxx/xx/xx	x	x	x	x	x	x	x	x	x				e					
												= point a minus one day						
xxxx/xx/xx	x	x	x	x	x	x	x	x	x	x	yes!	day	f	x	x	x	x	x

**Possible Data Loss** Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an Excel file format.

Save As...

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[illegible]





# RESULTS/CONCLUSIONS

## PART 1: ML RESULTS FOR IDENTIFYING DOUBLE BOTTOM EVENTS




*identifying events visually*



*defining events in code*



*automating event identification*

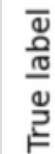


## **RESULTS/ CONCLUSION PART 2:**

### **NEURAL NET FOR PREDICTING PRICE MOVEMENTS FOR TRADING ENTRY AND EXIT**



-0.0500 ± 0.2000	AB_Vert
-0.0500 ± 0.2000	CD_Vert
-0.0500 ± 0.2000	DE_avg_change_per_day
-0.1500 ± 0.2449	CD_avg_change_per_day
-0.2000 ± 0.2000	event_number



```
y_test.tolist()
```

```
['0', '1', '1', '1', '0']
```

```
y_pred_103 = pipeline103.predict(X_test)|
y_pred_103
```

```
array(['0', '0', '0', '0', '1'], dtype=object)
```

- the lower the number of days, the more likely there is price increase, buy at e sell at f

- the lower the number of days, the more likely price will decrease- sell at e and buy at f



loss lead up

## BUY LOW SELL HIGH

bs\_1\_or\_sb\_0

- 0.0
- 1.0





**NEXT STEPS; WHAT  
DID WE LEARN:**

**WHAT DO WE WISH  
WE COULD HAVE  
DONE:**

**WHAT COULD HAVE  
DONE BETTER**

**GITHUB:**

***<https://github.com/bitcoin-candlestick-ML>***

**TEAM MEMBERS:**

***Babajide Ademola***

***David Ingraham***

***Shannon Li***

***Joshua Maddox (JP)***

**APPENDIX AND  
CREDITS**