Benchmark = 12.6

5m data set from april 2k19

1 layer LSTM after 1 epoch on 0.8 validation, 0.7 test split = 630

2 layer LSTM after 1 epoch on 0.8 validation, 0.7 test split = 45

2 layer LSTM after 1 epoch on 0.8 validation, 0.7 test split = 113

##### chose 2 layer lstm on 0.8 validation, 0.7 test split

Result after 20 epochs = 16

After 25 epochs = 32

### 3 layer lstm

~~Stops improving on validation set after like 5 epochs~~ it does a little bit

After 10 = 14

After 15 = 152

######### AFTER ADDING VOLUME

2 layer lstm 20 epochs = 11.7 – saved as model 2

3 layer lstm 10 epochs = 14.2 – saved as model 3

### 1h bars

Using transfer learning from Model2

0 to 5 - 93 - saved as model4v1

5 to 10 - 89 - saved as model4v2

15 - 85 - 7510 - model4v3

20 - 83 7276 model4v4

25 - 80 7080

30 - 79 6940

35 - 78 6820

40 - 76 6720

45 - 75

50 - 323 28403

0 to 40 - 144

0 to 15 - 73- my best model so far

0 to 10 - 388

### without transfer learning 1h 2k17

40 - 205 18k

######### 3 layer transfer

10 - like 400

15- 113

20 -134

### new 2 layer model with batch normalization   
5 - 2524

model\_batch\_norm\_v2\_v2 = 350 after 10+10

model\_batch\_norm\_v2\_v3 = 350 after 20+10

+10 = 200  
+10 = 210

+1 = 320

At 10x learning rate

10 + 40 = 550

10 + 20 = 316

New process

10 + 22 = 278 at 10x

+11 at x1 = 151

+10 at x1 = 162 worse = model\_batch\_norm\_v2\_v4

#################################### Full data 1h

Model with 2 lstm layers and batch norm lr at x1:

10 - ???

+10 = 1800

+10 = 1000

+10 = 1111

Model with 2 lstm layers with NO batch norm:

5 - 330

10 - 285

15 - 185

20 - 135

25 - 120

30 - 110

40 - 105

60 - 160