The Search for El Dorado

Can a Day Trader Beat the Market?

Business Problem

"Can a day trader do better than buy-and-hold or random-buy-and-sell?"

Combating the Efficient Market Hypothesis is challenging

Day trading == Lottery tickets
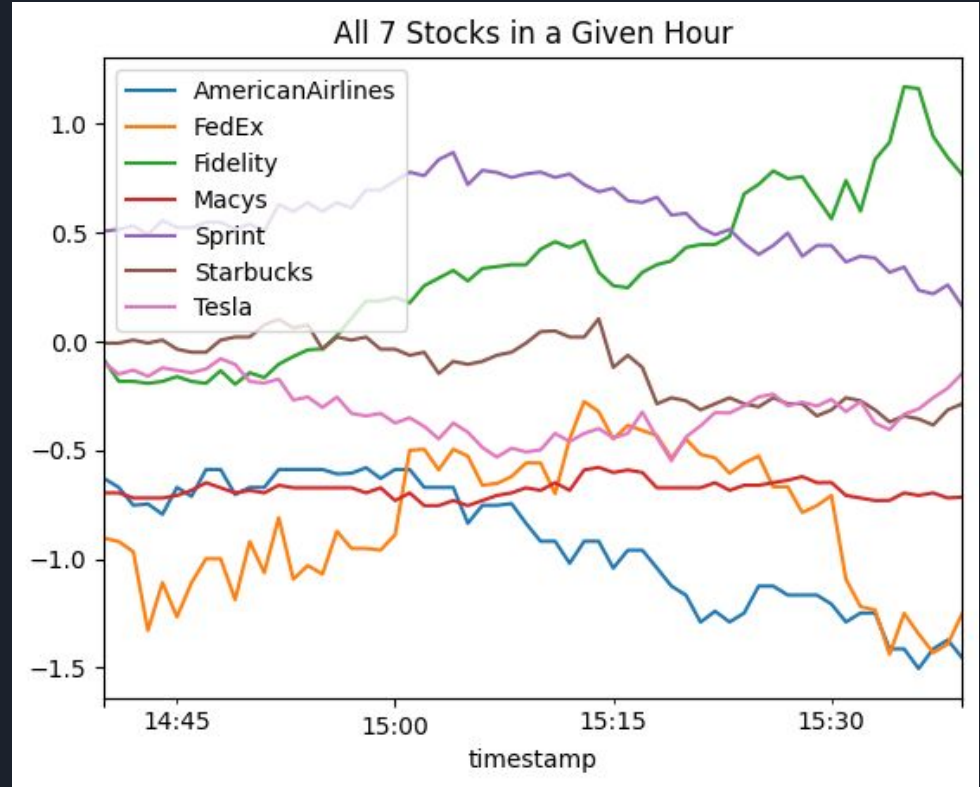
The Plan

Step 1) Humans need not apply

Step 2) Test the assumptions of the Efficient Market Hypothesis

The Data

Seven stocks were analyzed

Minute-to-minute data
(As seen to the right)

32,000 minutes total

Methods

Machine Learning with a Neural Network

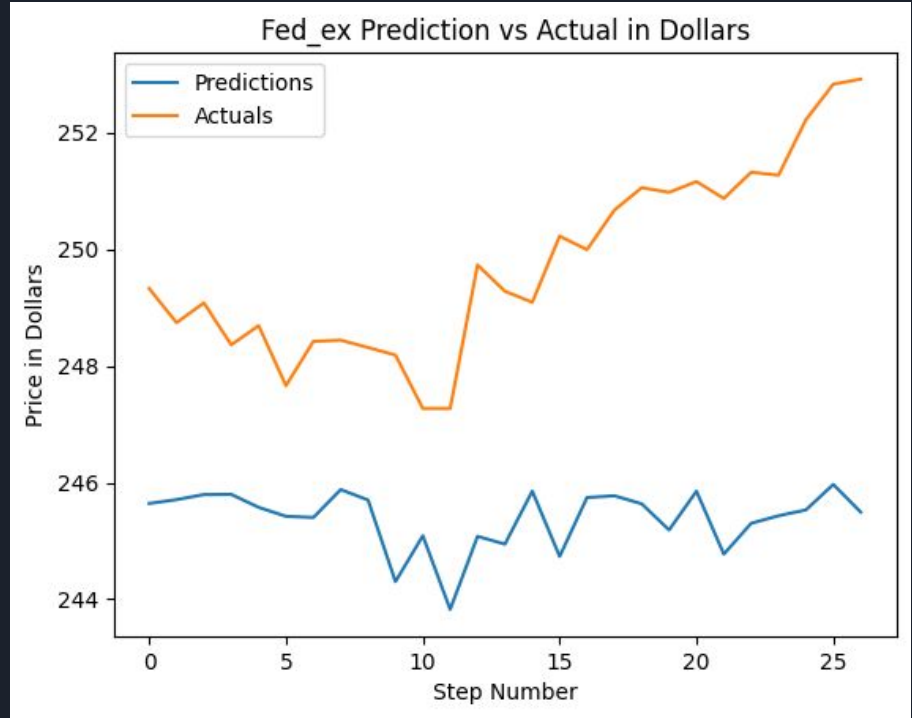Removed all overnight and weekend trading from the data

16 different models were created

Results

The results were disheartening.

The most performant model had a RMSE of 4.28 on *standardized* data

On right: the final model predicting near-record lows when a price was near-record highs!

Fed_ex Prediction vs Actual in Dollars

Recommendations

Build off of my most performant model:

- Try many different hidden layers (mine had 2)
- Reduce learning rate (0.01 was too high, test the thousandths place)
- Use short times per step (my shortest was best, at 25 mins)

Next steps?

I only had 11 days worth of data, 7 stocks, and 16 models. Square or even cube those numbers.

Seek out sentiment analysis! Tweets are a treasure trove if you know how to process them.

Thank you

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