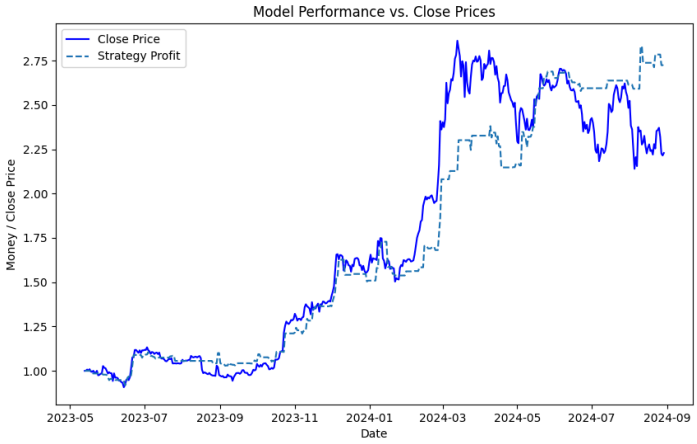
Denny Cheong
Transformer Report
14/9/2024

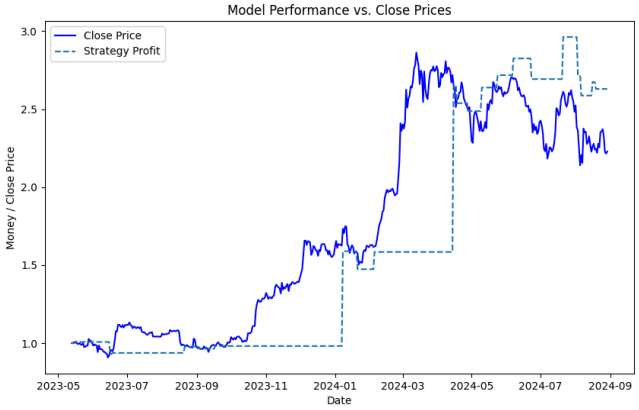
For this assignment, I decided to split the image into 25 different patches because the image size was 65,65,1. I originally wanted to divide it into 9, but unfortunately, I had to split it up into 25 different patches. The embedding aspect of this assignment was the difficult part and everything else apart from that, it was pretty similar to the actual transformer so it was pretty simple to implement afterwards. I received a lot of help in the embedding part as well as the final implementation of the Vision Transformer. Furthermore, it was quite difficult to understand that the MLP head inside the block was referring to the same MLP head outside of the block so that was a misunderstanding that I had to clear up. The vision transformer results weren't as good as I was hoping for as well.
It was an interesting assignment to say the least.
CNN 결과:

```
(base) Dennyui-MacBookPro:ViT_for_finance dennycheong$ python eval.py
Model: /Users/dennycheong/YBIGTA/GitHub/24-2_DS_assignment/Week_01/ViT_for_finance/model_save/CNN.pt
{'USD': 27119.679215719552, 'KRW-BTC': 0, 'v_USD': 27119.679215719552, 'v_KRW-BTC': 0.0003366019091178934, 'buy_count': 54, 'hold_count': 173, 'sell_co
unt': 54}
Profit percentage: 0.4279919803929888
Cumulative return: 1.7119679215719583
Volatility: 0.3590891182991866
Sharpe ratio: 4.767529380117772
```



ViT 결과:

```
(base) Dennyui-MacBookPro:ViT_for_finance dennycheong$ python eval.py
Model: /Users/dennycheong/YBIGTA/GitHub/24-2_DS_assignment/Week_01/ViT_for_finance/model_save/ViT.pt
{'USD': 0, 'KRW-BTC': 0.0003218933854971967 3, 'v_USD': 26292.25172741103, 'v_KRW-BTC': 0.0003218933854971967 3, 'buy_count': 22, 'hold_count': 0, 'sell_
count': 21}
Profit percentage: 0.40730629318527567
Cumulative return: 1.6294881215532584
Volatility: 0.9414680638534182
Sharpe ratio: 1.730794898006186
```


Model Performance vs. Close Prices
Close Price
Strategy Profit
Money / Close Price
3.0
2.5
2.0
1.5
1.0
2023-05
2023-07
2023-09
2023-11
2024-01
2024-03
2024-05
2024-07
2024-09
Date