



# Transformer Based Fuzzy System

## with Applications in Portfolio Management

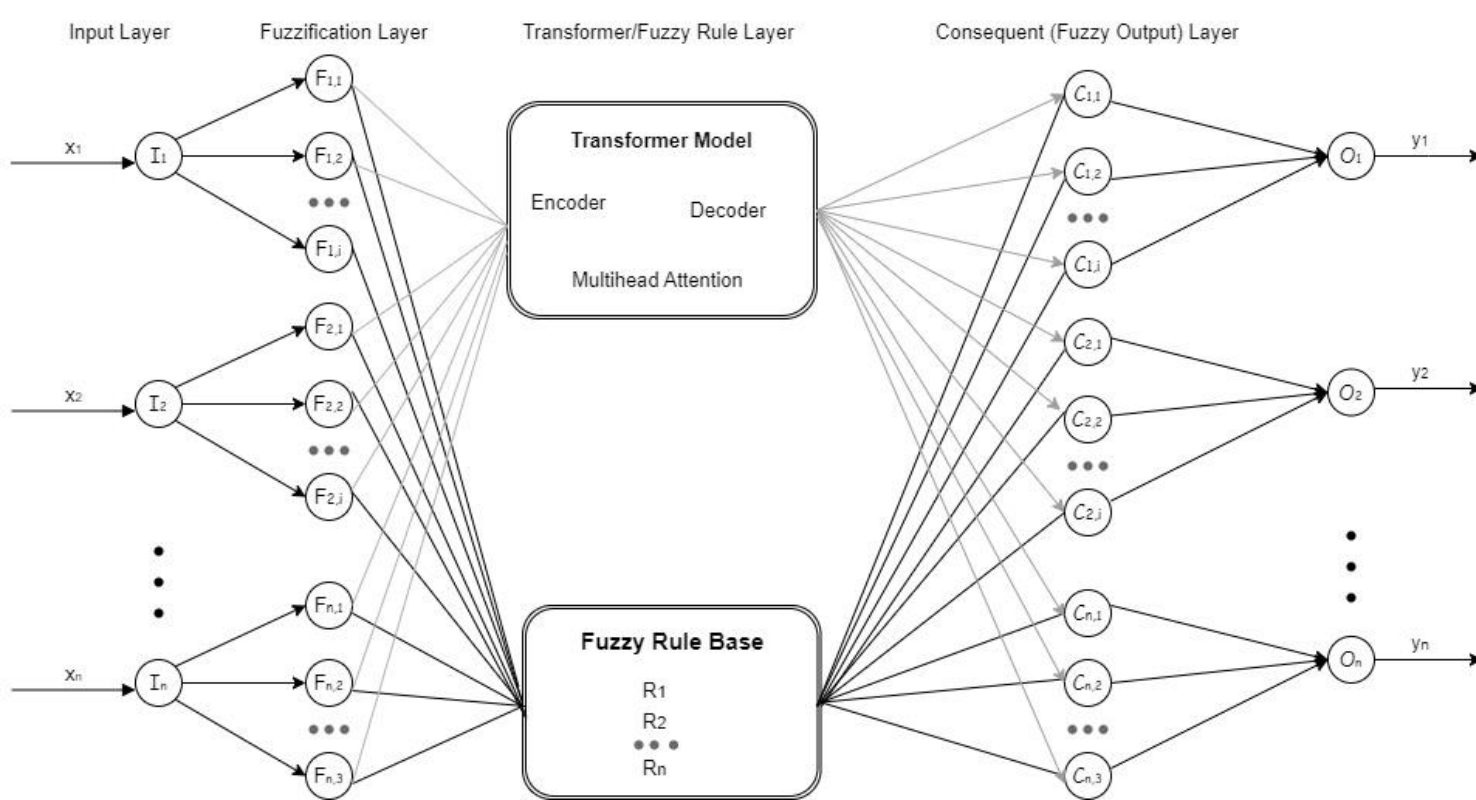
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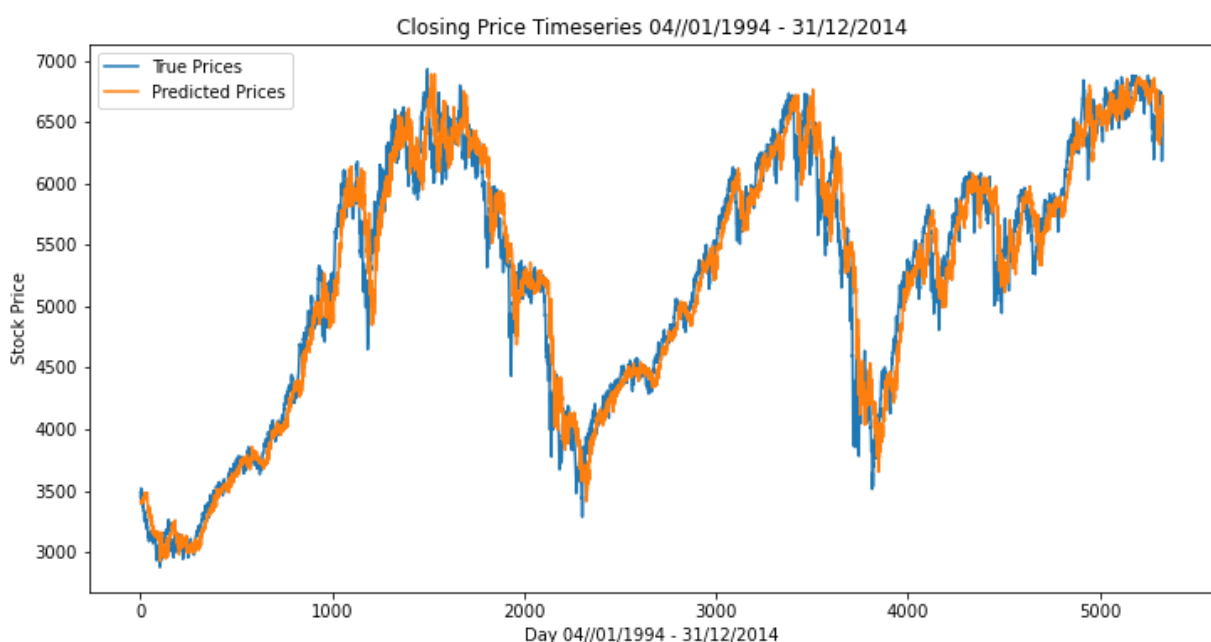
### MOTIVATION

- To increase the interpretability of neural networks due to their black box like nature by incorporating Fuzzy systems.
- To detect trend reversals by using a custom forecasted MACD indicator based on lookahead results.

### DESIGN & ARCHITECTURE



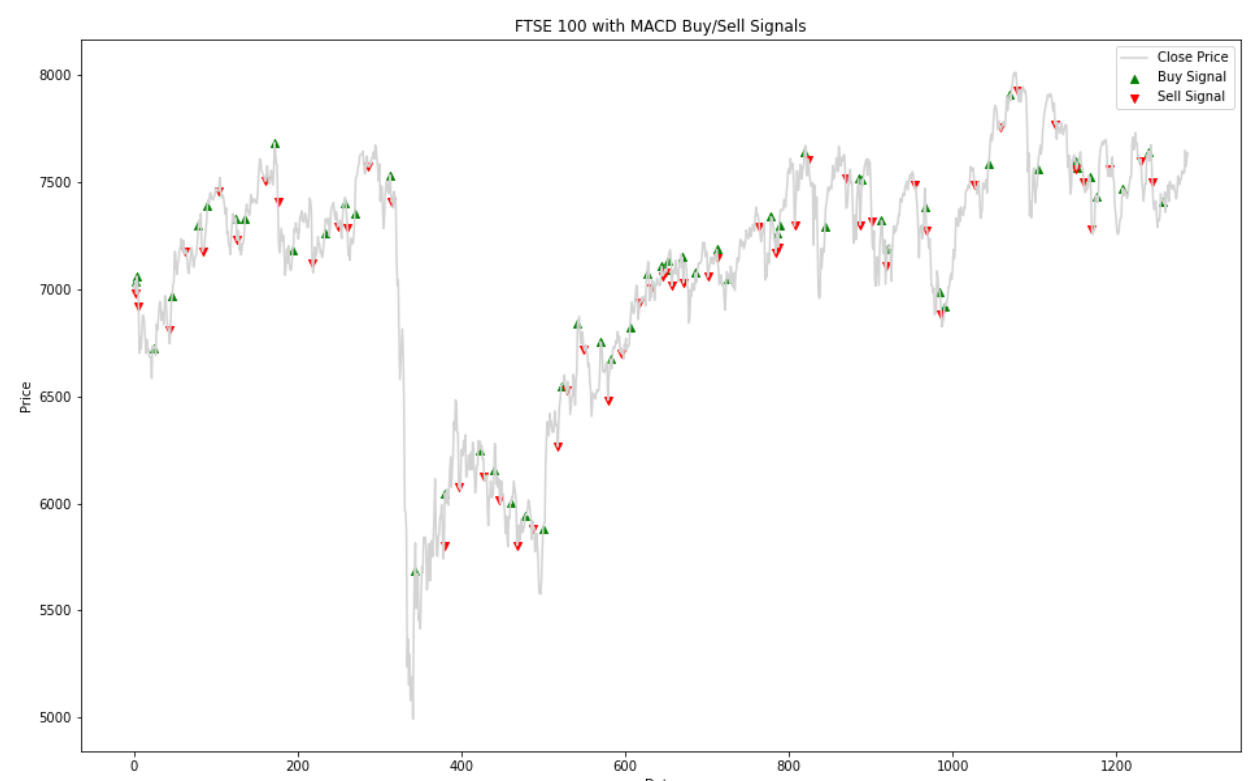
### CHARTS



### TECHNICAL RESULTS

Model	R <sup>2</sup>
t+1	0.9915
t+2	0.9889
t+3	0.9886
t+4	0.9872
t+5	0.9852
t+6	0.9820
t+7	0.9804
t+8	0.9799
t+9	0.9790
t+10	0.9752
t+11	0.9747
t+12	0.9717
t+13	0.9695

The results in the table above are for the Hang Seng Index (HSI). The R<sup>2</sup> values are quite high and showcases our model's accuracy and capability.



MACD Buy and Sell Signals generated