**Solution Sheet**

1. Which model have you used for stock price prediction? Explain your model.

For this problem an ensemble of catboost regressor and tabnet-pytorch model was used.For catboost direct raw data was used with no feature engineering as such and for deeplearning based model like tabnet the string categories were converted to integer labels and the continuous data was normalised.

For catboost the missing data was filled with -999 while for tabnet it was filled with mean of the column.

1. Which model have you used for Put-Call ratio(pcr) Time series prediction? Explain your model.

For this problem a GRU(Gated Reccurent unit) was used. It was trained similar to 5 gram language modelling . That is given 10,11,12,13,14 aug data predict put call ratio on 15 august.

The output is a sigmoid layer of 1 unit and it is further multiplied by 2 to get the output in (0,2) range for Put call ratio.

For training the rows having missing values in 15 aug column were removed.

And the pcr for 16th was predicted by giving 11,12,13,14,15 aug pcr data.

Then the final output was predicted by replacing the pcr column in test data with the pcr predicted for 16 august and using the tabnet trained for task1.