# CNNPred for Indian Stock Index

For this task of using CNNpred to predict Indian Stock Index, NIFTY50 Index was chosen. Open, High, Low, Close, Adjusted Close and Volume Data for the period between 2007-9-18 and 2022-7-27 was collected from NSE website.

Apart from 6 original features, 6 other were engineered based on popular technical indicators, namely ‘3 Days Moving Average’, ‘5 Days Moving Average’, ‘15 Days Moving Average’, ‘30 Days Moving Average’, Daily Trading Volume Difference and Weekly Difference in Closing Values.

Following hyperparameters were varied to find the optimal model-

1. Loss Function (mae, binary\_focal\_crossentropy, binary\_crossentropy, hinge)
2. Optimizer (SGD, Adam, Adagrad, Adamax),
3. Epochs (10, 20, 25, 30),
4. Batch Size (128, 64, 32, 16),
5. Dropout Rate (0.05, 0.1, 0.15, 0.2),

Training the model takes

Currently the model is being trained

References:

<https://www1.nseindia.com/products/content/equities/indices/historical_index_data.htm>

Github Link to Notebook:

<https://github.com/mandalnilabja/soc2022/blob/main/Week10Assignment.ipynb>