

Week -2 Report

This week after looking at various NN and ML models , I realized that the LSTM world is really good at predicting real time data .The reason I thought of using LSTM is because the prediction is done using mathematical operations and more memory cells . It has 3 memory blocks that is the historical information from which it learns and then the process of learning new information and then via the output gate can predict it . To see how well the model works I trained the model with a small dataset I took from Yahoo Finance from Oct 30th till 8th of november which is today .So first to build the model we require a few parameters and dependencies .I used tensorflow with keras. Tensorflow is open source library for running ML tasks and Keras is for NN but its a library run above tensorflow.Then I basically created a CSV file this csv file contains all the necessary information needed , closing price in USD which is what I will consider. Now I plot the data and will visualize it . So we have the x axis and the y axis which have the time and the price.We can see how fluctuating the bitcoin data is and clear patterns . To prevent these fluctuations we need to normalize the data.We will now introduce the shapes and the shaping of the above bitcoin.csv file .This shaping will rearrange the data points and make the distance between them lower and more of a readable version.Now we will build the LSTM model but before that we will have to think of a few

important parameters. Then we need the sequential layer. The NN have built-in sequential layers that help with optimization and with different hyperparameters. The model is LSTM but by default it will have 32 layers with a setting dropout rate of 0.2 for regularizing the data to prevent overfitting. Now finally we come to the the final output layer which is called the dense layer. This basically merges all the layer so that it would be easy for prediction. Then we run the model and then for loss we use mean-square error and for the improving accuracy using weights we use an Adam optimizer. After this i trained the model .