

WEEK-4 REPORT : SAGNIK CHATTERJEE

Date: Feb 8,2021

This is the weekly report for my project work under Pooja Prabhu maam on the topic:-"Identification of Epileptic Abnormalities".

Overview:

In this week I tweaked the model of the previous week model and tried to concentrate on these areas for improvement:

1. Using the model and changed the activation function for the optimizer for the given optimizer .

Given our problem of binary classification ,the adam classifier is used in most of the cases because of its generalised nature for finding the optimum local minima finding.

2. In the previous model the LSTM model was not covered and was not working which have been covered in this model.

The LSTM model performs significantly better than the relu or the sigmoid based model for low epoch size also.

3. In the previous model the data was not cleaned before use , which has been done now .

Work Completed:

1. I was able to obtain the results of the model for the 3types of the model types:

- I. Using multiple layer relu based model and the graph of its loss and accuracy

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- lii. Completed the LSTM model with its loss function and value loss funcion graph.

2. Used a shuffled based model in this to decrease the bias of the learning algorithm and also used multi epochs and small batch sizes for faster learning and more learning.

However increasing the epoch size also runs the risk of overfitting , so that exact number of epochs that should be used is not covered.

Observations:

The sigmoid based learning approach produced the worst accuracy model of nearly 0.28-0.3 at max while for relu based model the accuracy was increasing for 10 epochs but then after it also started decreasing .

The formula for the the fit function used was the normalized value of the value given in the dataset for both x_train and y_train

The loss function for LSTM based model showed a much better output for the 5 epochs that were tested on them as the loss function decreased rapidly for them.

Work to Be Completed:

1_The A Novel Independent RNN Approach to Classification of Seizures against Non-seizures uses a custom IndRNN based model that uses a variety of the techniques combined together to decrease the loss function better than in a LSTM based model.

The idea will be to implement the system and try and train on the Bonn Dataset and try to improve upon our own implementation of the LSTM based model.

2. Model has been trained in the Bonn dataset on the Z subdirectory data. Now have to try and predict on the other subdirectories dataset to check whether it is working properly on it.