ASSIGNMENT 3 REPORT

Hello seniors!!  
First of all, very sorry for the delay. A lot of things came up, assignments, quizzes and endsems are approaching too, that’s why I was not able to complete it on time. Though I was not able to give it time, my mind was constantly stuck in the assignment.

I wanted to learn more and more.

I found Neural Networks and CNN’s absolutely amazing. They are very interesting and I cant wait to practise it more and more, dive deeper and build more models.

In the Neural Network Classifier I got an accuracy of 45.83% and in the CNN Classifier I got an accuracy of 68.75%. Clearly indicating that CNN classifier is better at classying images than a normal neural network.

I had to refer to many manyyy resources to get this assignment done.

Learning new things from every resource!!

I came across a lott of problems while executing the model.

The first thing which came up was how do I use the data which is stored in a folder to create a neural network. This took some time for me to get used to the data and how to work with it.

Then were a few issues with the datatypes, which didn’t take much time and got resolved.

Overall, I just enjoyed the crazy amount of information which I had to gather, jot it down, and understand it. Then understanding the codes, how to implement the models, and actually building one!!

I also understood the concept of tuning the hyperparameters and how big of a difference they make!!

I tuned my model many times, trying to get the best model.

CNN’s are better at classifying images than a standard neural network because a standard neural network fails to capture complex relationsships and features in an image as the input is 1 Dimensional.

Whereas in a CNN, the spacial structure of an image is preserved. CNN uses numerous filters on the image to find different features like edges, textures, shapes etc.

It achieves this by passing a filter(kernel) over the original image and performing a convolution!!

The maxpooling layer is then used to reduce the dimensionality of the image while retaining the most important information. It helps in improving computational efficiency and reducing overfitting.

Then after all this, it is passed to fully connected layers as 1 dimension.

It creates a deeper understanding of the image, layer by layer.