Applied CNN on NEU Dataset

Parameter Constant:

1. No. of splitting images: 236x32x32

2. Batch size: 32

3. Data Augmentation: rotation range=180, width shift range=0.2 and height shift range=0.2

4. Model Parameters: 2,05,46,470

5. Kernel size: 3x3

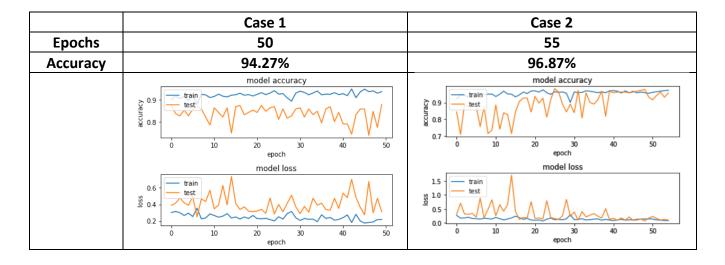
6. Learning Rate: 0.001

7. **Architecture:** "4 convolution layer 2 max pooling layer 3 dropout layer 2 dense layer 1 flatten layer activation = Relu and sigmoid (output)"

8. Optimizer: Adam

9. Train and validation generator batch size: 16 and 16 images respectively

Parameter Tunned:



Parameter Constant:

1. No. of splitting images: 236x32x32

2. Batch size: 32

3. **Data Augmentation:** rotation range=180, width_shift_range=0.2 and height_shift_range=0.2

4. Model Parameters: 2,05,46,470

5. **Kernel size:** 3x3

6. Learning Rate: 0.005

7. **Architecture:** "4 convolution layer 2 max pooling layer 3 dropout layer 2 dense layer 1 flatten layer activation = Relu and sigmoid (output)"

8. **Optimizer:** Adam

9. Train and validation generator batch size: 16 and 16 images respectively

	Case 1	Case 2
Epochs	50	55
Accuracy	96.35%	94.79%
	model accuracy train test 0 10 20 30 40 50 epoch model loss	model accuracy train test 0.9 0.9 0.10 20 30 40 50 epoch model loss
	0.75 train test 0.25 0.25 0.20 30 40 50	0.75 train test 0.50 epoch

Parameter Constant:

1. No. of splitting images: 236x32x32

2. Batch size: 32

3. **Data Augmentation:** rotation range=180, width_shift_range=0.2 and height_shift_range=0.2

4. Epochs: 555. Kernel size: 3x36. Learning Rate: 0.003

7. **Optimizer:** RMSProp

8. Train and validation generator batch size: 16 and 16 images respectively

	Case 1	Case 2
Architecture	4 convolution layer 2 max pooling layer 3 dropout layer 2 dense layer 1 flatten layer activation = Relu and sigmoid (output)	6 convolution layer 2 max pooling layer 3 dropout layer 2 dense layer 1 flatten layer activation = Relu and sigmoid (output)
#Parameters	2,05,46,470	2,05,92,646
Accuracy	92.70%	85.41%
	model accuracy train test 0 10 20 30 40 50 epoch	0.9 0.8 train test test 0.7 0 10 20 30 40 50
	0.75 train test 0.25 0.50 10 20 30 40 50	0.75 train test 0.25 0.20 30 40 50