|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Experiment Number** | **Model Name** | **Model** | **No of Parameters** | **Result** | | **Decision + Explanation** | |
| **Highest Validation Accuracy** | **Corresponding Training Accuracy** |
| **1** | **Model** | **Conv3D** | **822,149** | **0.9600** | **0.9706** | **Model seems to be performing well with our Base Model, let us try to change filter size to (2,2,2) to reduce number of parameters**  model-00030-0.46513-0.97059-0.21154-0.96000.h5 | |
| **2** | **Model1** | **Conv3D** | **616,949** | **0.9300** | **0.9485** | **Model performance has gone down by a bit by changing filter size. Let us keep the filter size to (3,3,3) and add dropouts at each layer to reduce number of parameters.** | |
| **3** | **Model2** | **Conv3D** | **822,149** | **0.6800** | **0.8250** | **Model is not performing well after adding dropouts. Let us try reducing parameters further to check its performance** | |
| **4** | **Model3** | **Conv3D** | **341,029** | **0.4800** | **0.74853** | **Reducing parameters has further reduced validation accuracy as its not to be able to learn generalizable features and its further over-fitting.** | |
| **5** | **cnn\_rnn\_model** | **CNN-LSTM** | **3,392,869** | **0.8800** | **0.88971** | **Model is performing well, let us use GRU instead of LSTM to reduce parameters.** |
| **6** | **cnn\_rnn\_model1** | **CNN\_LSTM with GRU** | **2,573,925** | **0.9000** | **0.92647** | **Model performance is better with GRU. We will use Transfer learning now for our model** | |
| **7** | **cnn\_rnn\_tl** | **CNN\_LSTM Transfer Learning** | **3,840,453** | **0.9300** | **0.90147** | **For this experiment, Mobilenet layer weights are not trained. Validation accuracy is very poor. So, let us train mobilenet layer’s weights as well** | |
| **8** | **cnn\_rnn\_tl1** | **Transfer Learning with GRU and training all weights** | **3,840,453** | **0.9900** | **0.90735** | **We get a better accuracy on training mobilenet layer’s weights as well.** | |