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| **Experiment Number** | **Model** | **Result** | **Decision + Explanation** | **Parameters** |
| 1 | Conv3D batch Size =8 | Out of memory error | Reduced the batch size to 6 it crashes, therefore started with min batch size of 8 and onwards | - |
| 2 | Conv3D | Training Accuracy: 0.41 Validation Accuracy: 0.18 | Changing the batch size from 8 to 16 and epoch# to 10 | Total params: 1736869 (66.2 MB) Trainable params: 1732535 (66.0 MB) Non-trainable params: 8564 (3.38 KB) |
| 3 | Conv3D | Training Accuracy: 0.8763 Validation Accuracy: 0.44 | Adding dropout and changing Batch Size to 32 and increasing No. of Epochs = 20 | Total params: 1117016 (4.26 MB) Trainable params: 1116325 (4.26 MB) Non-trainable params: 7568 (2.98 KB) |
| 4 | Conv3D | Training Accuracy: 0.93 Validation Accuracy: 0.28 | Optimizer used Adam with Learning rate =0.0002 Reduce filter size to (2,2,2) and image res to 120 x 120, - Batch Size = 30 and No. of Epochs = 25. Overfitting as validation accuracy is low | Total params: 1762613 (6.72 MB) Trainable params: 1761036 (6.72 MB) Non-trainable params: 5105 (3.88 KB) |
| 5 | Conv3D | Training Accuracy: 0.8318 Validation Accuracy: 0.4100 | Adding more layers - Batch Size = 20 and optimizer is Adam without learning rate. Validation accuracy marginally improved but overfitting case | Total params: 2556533 (9.75 MB) Trainable params: 2554519 (9.74 MB) Non-trainable params: 1994 (1.75 KB) |
| 6 | Conv3D | Training Accuracy: 0.2036 Validation Accuracy: 0.15 | Changing Optimizer from Adam to AdaDelta. Adding dropout at convolution layers. Accuracy reduced for both training and validation. | Total params: 2556533 (9.75 MB) Trainable params: 2554519 (9.74 MB) Non-trainable params: 1994 (1.75 KB) |
| 7 | Conv3D | Training Accuracy: 0.8424 Validation Accuracy: 0.2800 | Reducing the number of parameters, image size, and layers reduced | Total params: 965468 MB Trainable params: 9653 (2.65 MB) |
| 8 | Conv3D | Training Accuracy: 0.8424 Validation Accuracy: 0.2800 | Reducing the number of parameters, image size, and layers reduced. Accuracy reduced for both training and validation. | Total params: 69664 (2.66 MB) Trainable params: 69563 (2.65 MB) Non-trainable params: 992 (3.88 KB) |
| 9 | Conv3D | Training Accuracy: 0.8017 Validation Accuracy: 0.2400 | Overfitting. Batch Normalization, Changing Batch size to 64. | Total params: 504709 (1.93 MB) Trainable params: 503973 (1.92 MB) Non-trainable params: 736 (2.88 KB) |
| 10 | LSTM Model | Training Accuracy: 0.935 Validation Accuracy: 0.79 | For CNN - LSTM model we got the best validation accuracy of 94% and validation loss went down to .20. | Total params: 12648 (5.48 MB) Trainable params: 1263741 (4.82 MB) Non-trainable params: 1024 (4.00 KB) |
| 11 | Conv3D with Augmentation | Training Accuracy: 0.8590 Validation Accuracy: 0.3000 | (3,3,3) Filter & 160x160 Image resolution. Overfitting still with augmentation, however, validation accuracy improved marginally. | Total params: 3638981 (13.88 MB) Trainable params: 3637477 (13.88 MB) Non-trainable params: 1504 (5.88 KB) |
| 12 | Conv3D with Augmentation | Training Accuracy: 0.7142 Validation Accuracy: 0.5600 | (2,2,2) Filter & 120x120 Image resolution. Validation accuracy increased. | Total params: 1762613 (6.72 MB) Trainable params: 1761036 (6.72 MB) Non-trainable params: 1504 (5.88 KB) |
| 13 | Conv3D with Augmentation with additional layers | Training Accuracy: 0.7700 Validation Accuracy: 0.7900 | Additional layers added along with Augmentation resulted in improved validation accuracy. Approx. equivalent to LSTM Model. | Total params: 2556533 (9.75 MB) Trainable params: 2554519 (9.74 MB) Non-trainable params: 1984 (7.75 KB) |