| **Model Name** | **Model Type** | **Number of Parameters** | **Augment Data** | **Highest Validation Accuracy** | **Corresponding Training Accuracy** | **Observation** |
| --- | --- | --- | --- | --- | --- | --- |
| conv\_3d1\_model | Conv3D | 1,117,061 | Yes | 25% | 99% | Model is over-fitting. Augment data using cropping |
| conv\_3d2\_model | Conv3D | 3,638,981 | Yes | 78% | 78% | Model is not over-fitting. Next we will try to reduce the parameter size. Moreover since we see minor oscillations in loss, let's try lowering the learning rate to 0.0002 |
| conv\_3d3\_model | Conv3D | 1,762,613 | Yes | 61% | 67.5% | Model has stable results .But the training and validation accuracy is low. Let's trying adding more layers at the same level of abstractions |
| conv\_3d4\_model | Conv3D | 2,556,533 | Yes | 76% | 76% | Stable model with less variance between training and validation accuracy. Let's try adding dropouts at the convolution layers |
| conv\_3d5\_model | Conv3D | 2,556,533 | Yes | 44% | 85% | Adding dropouts has further reduced validation accuracy and the model is over fitting |
| conv\_3d6\_model | Conv3D | 696,645 | Yes | 73% | 76% | Reducing the number of network parameters by reducing image resolution/ filter size and dense layer neurons. Comparably good validation accuracy |
| conv\_3d7\_model | Conv3D | 504,709 | Yes | 74% | 77.5% | Stable results with not much difference between training and validation accuracy |
| conv\_3d8\_model | Conv3D | 230,949 | Yes | 63% | 64% | Low values of training and validation accuracy |
| conv\_3d9\_model | CNN-LSTM | 1,657,445 | Yes | 77% | 93.5% | Model is over-fitting. Let’s try reducing the number of layers in next iteration |
| conv\_3d10\_model | Conv3D | 3,638,981 | Yes | 86% | 78% | This is the best model as validation accuracy is better than the training accuracy. Also, the loss is uniformly shaped by steadily dropping on the validation |
| conv\_3d11\_model | Conv3D | 1,762,613 | Yes | 58% | 65% | Low accuracy on both validation and Training |
| conv\_3d12\_model | Conv3D | 2,556,533 | Yes | 71% | 74% | Better accuracy in both training and validation than the previous model |
| conv\_3d13\_model | Conv3D | 2,556,533 | Yes | 33% | 68% | Model is overfitting. Also, the training accuracy is very low. |
| conv\_3d14\_model | Conv3D | 696,645 | Yes | 77% | 82.5% | Decent model. Still there is substantial gap between training and validation accuracy |
| conv\_3d15\_model | Conv3D | 504,709 | Yes | 80% | 74% | Deccent model. Validation accuracy is better than Training accuracy. However this is not a better model than conv\_3d10\_model |
| conv\_3d16\_model | Conv3D | 230,949 | Yes | 75% | 64% | Not the best model |
| rnn\_cnn2\_model | CNN-LTSM | 1,346,021 | Yes | 74% | 91% | Model is overfitting |