Model	Options	Result	Parameters	Observations/Notes
1. Conv3D	img size = 160x160 frames = 16 batch_size = 20 epochs = 4	Training accuracy = 0.69 Validation accuracy = 0.37	1,735,429	Huge gap in training and validation accuracies, with high validation loss.
2. Conv3D	Reduced img size To 120x120	Training accuracy = 0.54 Validation accuracy = 0.39	899,845	Reduced image size, means less number of paramters. So less training time.
3. Conv3D	batch_size = 10 Increased epochs = 10	Training accuracy = 0.65 Validation accuracy = 0.50	899,845	- Number of epochs too low to comment on overfitting. - The accuracies and losses seem to merge as expected in this experiment. - Batch size didn't seem to affect the training time.
4. Conv3D	Increased frames = 30 Total epochs = 18	Training accuracy = 0.77 Validation accuracy = 0.62	899,845	- Increasing number of frames increased training time as expected. - The validation loss doesn't not seem to go down after a certain value compared to the training loss. - Also the training accuracy keeps on increasing, but validation accuracy keeps hovering around 60%. - This means that the model may be overfitting.
5. CNN+LSTM	Frames = 16 Epochs = 10 img_size = 120x120	Training accuracy = 0.65 Validation accuracy = 0.60	1,005,541	- Since we're not using a Conv3D model, but a time distributed Conv2D one now, the training time has reduced drasitcally. - We've achieved decent accuracies with 10 epochs so far. - Training this model for even more epochs would help us understand if any overfitting is present.
6. CNN+GRU	same as above	Training accuracy = 0.76 Validation accuracy = 0.59	1,005,541	- Definitely faster than previous LSTM based model. - Validation accuracy is poor compared to previous model. - Overfitting is suspected, training for more number of epochs would confirm that.
7. CNN+LSTM	Augmentation = True Frames = 16 Epochs = 20 img_size = 120x120	Training accuracy = 0.88 Validation accuracy = 0.81	1,005,541	- The training and validation accuracies seems to be going in the right direction. - Training this model for even more epochs would tell us how much accuracies improve further and if there's any overfitting present in the model.
8. CNN+GRU	same as above	Training accuracy = 0.78 Validation accuracy = 0.67	1,005,541	- The training and validation accuracies seems to be going in the right direction. - Training this model for even more epochs would tell us how much accuracies improve further and if there's any overfitting present in the model. - Since this is GRU based model, its training time is definitely less than LSTM based one.
9. VGG16 Transfer Learning	Augmentation = true VGG16 layer	Training accuracy = 0.94 Validation accuracy = 0.62	14,832,197	- There's a clear evidence of model overfitting here. - Within 10 epochs, the training accuracy shot up to 94%, but the validation accuracy is hovering around 70%. - This is with data augmentation, I doubt it'd improve without data augmentation as well.
10. MobileNet Transfer Learning	Augmentation = true MobileNet layer	Training accuracy = 0.95 Validation accuracy = 0.75	3,446,725	- There's a clear evidence of model overfitting here. - Within 10 epochs, the training accuracy shot up to 95%, but the validation accuracy is hovering around 75%. - This is with data augmentation, I doubt it'd improve without data augmentation as well.
Final Model	**Model 7. CNN+LSTM**	**Training accuracy = 0.92** **Validation accuracy = 0.79**	**1,005,541**	**Total size: 3.84 MB**