Experiment Number	Model	Result	Decision + Explanation
1	Conv3D	Training Accuracy: 0.98% Validation Accuracy: 0.16%	• Val_loss did not improve from 2.30181 so early stopping stopped the training process. • No improvement in the val_loss & val_accuracy. • Going to add dropout layers
2	Conv3D	Training Accuracy: 0.86% Validation Accuracy: 0.31%	• Added drop layer. • No improvement in val_loss so early stopping stopped the training process - epoch 11/25
3	Conv3D	Training Accuracy: 0.90% Validation Accuracy: 0.24%	• Reducing the filter size-(2,2,2), image resolution- 120 x 120 because in the previous model there is no improvement in the validation accuracy. • No improvement in this model. Early stopping has stopped the model at epoch 11/25 because there is no improvement in the val_loss it keeps increasing every epoch.
4	Conv3D	Training Accuracy: 0.86% Validation Accuracy: 0.21%	• Added an additional layer to the model. • Even with the additional layer there is no improvement in the val_accuracy and val_loss. • Early stopping has stopped the training model because of the above reason.
5	Conv3D	Training Accuracy: 0.87% Validation Accuracy: 0.30%	• Testing the model with adding the dropout layer to it. • Early stopping has stopped the training model because there is no improvement in the val_loss. • No improvement after adding the dropout layers.
6	Conv3D	Training Accuracy: 0.76% Validation Accuracy: 0.26%	• Reducing parameters • Early stopping has stopped the training model as there is no improvement in the val_loss.
7	Conv3D	Training Accuracy: 0.80% Validation Accuracy: 0.33%	• Reducing the parameters again. • The training accuracy is good and val_accuracy is increased compared to the last model. • Val_loss has decreased compared to the previous model.

8	**CNN-LSTM**	**Training Accuracy: 0.90%** **Validation Accuracy: 0.35%**	• **Switching to the CNN_LSTM model.** • **Training accuracy and val_accuracy is improved a little bit** • **Val_loss has decreased more.**
9	**Conv3D**	**Training Accuracy: 0.84%** **Validation Accuracy: 0.74%**	• **Implementing Augmentation** • **This has given good results but the val_loss is increasing at the beginning and decreasing slowly.**
10	**Conv3D**	**Training Accuracy: 0.72%** **Validation Accuracy: 0.40%**	• **Changing the filter size to (2,2,2)** • **Image resolution to 120x120** • **With Augmentation** • **The val_accuracy has decreased, which is not a good sign.**
11	**Conv3D**	**Training Accuracy: 0.75%** **Validation Accuracy: 0.82%**	• **Adding extra layers with Augmentation technique.** • **Val_loss didn't decrease continuously.**
12	**Conv3D**	**Training Accuracy: 0.62%** **Validation Accuracy: 0.20%**	• **Adding dropout layers with augmentation.** • **Very low performance**
13	**Conv3D**	**Training Accuracy: 0.78%** **Validation Accuracy: 0.73%**	• **Reducing the network parameters and utilizing data augmentation.** • **Model performed well but still val_loss is not good.**
14	**Conv3D**	**Training Accuracy: 0.82%** **Validation Accuracy: 0.79%**	• **Further reducing the network parameters, combined with the data augmentation.** • **Model performance is quite good.**
15	**CNN LSTM with GRU**	**Training Accuracy: 0.93%** **Validation Accuracy: 0.68%**	• **Increase in training accuracy but validation accuracy has decreased which is not good.**
16	**Transfer Learning**	**Training Accuracy: 0.98%** **Validation Accuracy: 0.90%**	• **Achieved a good training and validation accuracy.**

Final Model Selection:

Models 9,13 & 14 have performed well but the validation loss started increasing from the beginning and after certain epochs it started decreasing.
MODEL 16 with transfer learning we have achieved good training and validation accuracy and also the validation loss started decreasing from the beginning.