

### Problem Statement:

We need to develop a cool feature in the smart-TV that can recognise five different gestures performed by the user which will help users control the TV without using a remote.

The following table consists of the experiments done to build a model to predict the gestures from the given data set.

Experiment Number	Model	Result	Decision + Explanation
1.	Conv3D	Result at epoch: 46, Loss: 0.08752, Categorical Accuracy: 0.97024, Val_Loss: 0.57697, Val_Categorical_accuracy: 0.82812	The model is wonderful and the training and validation scores are good. The model has 710,533 trainable parameters. As plot shows it has huge oscillations in validation accuracy.
2.	TimeDistributed Conv2D + Dense	Result at epoch:27, Loss: 0.36284, Categorical Accuracy: 0.85119, Val_Loss: 0.47315, Val_Categorical_accuracy: 0.85156	This is not best but good model with comparable training and validation accuracies with number of params 128,517.
3.	TimeDistributed + ConvLSTM2D	Result at epoch:18, Loss: 0.55363, Categorical Accuracy: 0.76935, Val_Loss: 0.59938, Val_Categorical_accuracy: 0.74219	This is good model with comparable training and validation accuracies with large number of params 336,005. As plot shows it has huge oscillations in validation accuracy.
<b>Final Model</b>	TimeDistributed Conv2D + Dense	Result at epoch:27, Loss: 0.36284, Categorical Accuracy: 0.85119, Val_Loss: 0.47315, Val_Categorical_accuracy: 0.85156	This is not best but good model with comparable training and validation accuracies with number of params 128,517.