Experiment Number	Model	Parameters					Results		
		No. of Frames	Image Size (a X a)	Batch Size	Epochs	Trainable Parameters	Training Accuracy (%)	Validation Accuracy (%)	Explanation & Next Decision
1	Conv3D	13	80	64	20	1,732,677	85	28	Overfitting.
									Decided to reduce the batch size to 32.
2	Model 1	13	80	32	20	1,732,677	98	72	Still overfitting, although val accuracy has increased.
									Increased the image size to 100 X 100.
3		13	13 100	32	20	2,453,573	89	48	Increasing the image size did not reduce overfitting.
									Decided to use ADAM optimizer instead of SGD.
4		13	13 100	32	20	2,453,573	98	73	 Using Adam increased overfitting, as in experiment 2.
									 Decided to use SGD for further experiments. Increased the no. of frames to 20, with image size 80 X 80.
5		20	20 80	32	20	3,371,077	89	39	Increasing the no. of frames also leading to overfitting.
									Reduced the no. of frames to 13, batch size to 20 with 25 epochs.
6		13	13 80 20 25 13 80 10 10 10 10 10 10 10 10 10 10 10 10 10	1,732,677	80	80	 Best results till now. Highest accuracies achieved at 23rd epoch. Training acc. – 80%, Val acc. – 82%. 		
									Tried a different Conv3D model by adding one more convolutional layer.

7	Conv3D Model 2	13	80	20	25	1,745,253	86	76	Good results obtained with this model.
									Tried a Conv + GRU model.
8	Conv + GRU Model 1	13	80	20	25	5,016,197	85	65	Validation accuracy is on a lower side.
									Tried same model with increased image size of 100 x 100.
9		13	100	20	25	7,178,885	88	63	 With increased image size, validation accuracy is still on a lower side. Best model obtained at epoch 24. Training acc. – 88%, Val acc. – 79%.
									 Tried a different Conv + GRU model by adding one convolutional layer, keeping image size 80 X 80.
10	Conv + GRU Model	13	80	20	25	2,690,437	84	72	➤ Good results obtained with this model.
	2								

FINAL MODEL:

Model obtained through Experiment 6

The best accuracy was obtained at epoch 23:

model_init_2023-04-1610_05_15.639980/model-00023-0.51795-0.80882-0.60836-0.82000.h5

This model uses the least number of parameters too.