**Gesture Recognition**

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

The five gestures are as follows:

* Thumbs up: Increase the volume
* Thumbs down: Decrease the volume
* Left swipe: 'Jump' backwards 10 seconds
* Right swipe: 'Jump' forward 10 seconds
* Stop: Pause the movie

The below table shows following experiments performed to develop a predictive model:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Exp. Number** | **Model** | **Final Training Accuracy** | **Final Validation Accuracy** | **Training Loss** | **Validation Loss** | **Result** |
| 1 | Conv3D | 83.71% | 81.00% | 0.4248 | 0.7677 |  |
| 2 | Tranfer Learning (VGG16) + RNN (GRU) | 92.01% | 73.00% | 0.2937 | 0.5892 | This model performed well in terms of validation accuracy and loss function is also less. |
| 3 | CNN + RNN (GRU) | 79.03% | 62.00% | 0.6674 | 1.0356 |  |

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