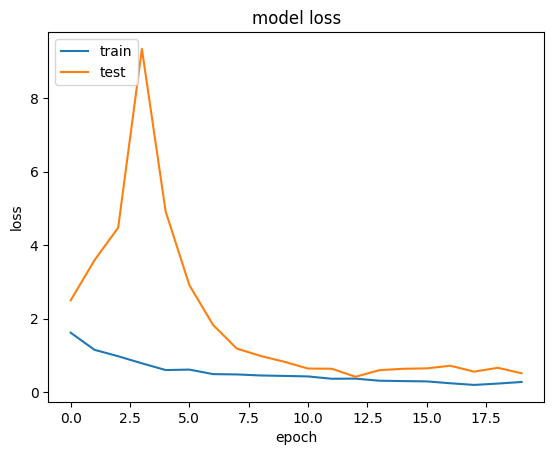
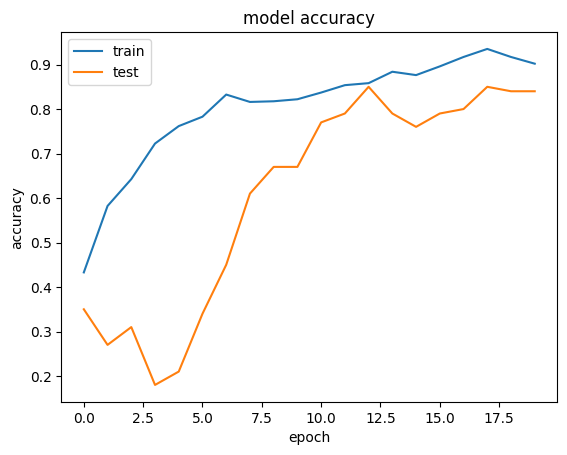
In the Gesture Recognition assignment, I tried the below approaches

1. Conv3D
2. Conv2D + Relu - LSTM

Given below table contains the inferences of the experiments made.

|  |  |  |  |
| --- | --- | --- | --- |
| **Model No** | **Model** | **Result** | **Decision + Explanation** |
| 1 | - Conv3D  - Batch size: 10  - No of epochs: 20  - No of frames: 20  - Size: 120X120 | Training   * Accuracy: 0.95 * Loss: 0.16   Validation   * Accuracy: 0.79 * Loss: 0.62 | High accuracy and low loss in training whereas there is considerable loss in validation. |
| 2 | - Conv3D  - No of epochs: 10  - Batch size: 40  - No of frames: 20  - Size: 120X120 | Training   * Accuracy: 0.98 * Loss: 0.10   Validation   * Accuracy: 0.28 * Loss: 5.85 | The model seems to be overfitting because there is a vast difference in training and validation metrics.  Model complexity can be reduced. |
| 3 | - Conv2D + Relu (LSTM Model)  - No of epochs: 10  - Batch size: 10  - No of frames: 30  - Image size: 120X120 | Training   * Accuracy: 0.73 * Loss: 0.79   Validation   * Accuracy: 0.65 * Loss: 0.86 | Though the accuracies of train and validation are good, but the validation loss is considerably high which may lead to underfitting. |
| 4 | **Final Model**  - Conv2D + Relu (LSTM Model)  - No of epochs: 20  - Batch size: 10  - No of frames: 30  - Image size: 160X160 | Training   * Accuracy: 0.86 * Loss: 0.37   Validation   * Accuracy: 0.85 * Loss: 0.42 | Low loss and high accuracy. There is a comparable match between training and validation datasets. |

**Final Model Accuracy & Loss Graph**

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