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| **Experiment Number** | **Model** | **Result (Issue)** | **Decision + Explanation** |
| **1** | **Conv3D** | **Generator error** | **Streamline the images. All images need to be resized to the same size. Else the generator error. So all images resized to 110\*110** |
| **2** | **Conv3D** | **Kernel out of memory (OOM error)** | **The hidden layer size has been reduced from [32,64,128] to [16,32,64] as the total number of parameters is causing the kernel to error out.** |
| **3** | **Conv3D** | **Accuracy: 0.26** | **Appended an additional layer. 4 layers were used [8, 16, 32, 64]. This increased the accuracy. Since a high dimensional layer is causing memory error, opted for a lower dimensional layer.** |
| **4** | **Conv3D** | **Accuracy: 0.39** | **Included Dense Layers of size [256,5]. Including a Dense layer has increased the accuracy.** |
| **5** | **Conv3D** | **Accuracy: 0.51** | **Included another dense Layers of size [256, 128, 5]. This increased accuracy further.** |
| **6** | **Conv3D** | **Accuracy: 0.62** | **Increase the batch size, number of images used. Batch size was made 80 making more images to be processed in a batch. 100% of images were used. This increased accuracy significantly.** |
| **7** | **Conv3D** | **Accuracy: 0.8952** | **Final Model** |
| **8** | **Conv2D + LSTM** | **Accuracy: 0.35** | **Increase the hidden layers to increase accuracy. Used 3 hidden layers of size [16, 16, 32]. Any higher dimensional layer resulted in a OOM error.** |
| **9** | **Conv2D + LSTM** | **Accuracy: 0.48** | **Include Dropouts. Every layer was appended with a dropout. This increased the overall accuracy.** |
| **10** | **Conv2D + LSTM** | **Accuracy: 0.54** | **Include a Dense Layer of 256 along with a dropout after LSTM layer. This improved the accuracy further to 0.6844. Any further modifications did not show a better result.** |
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| **Final Model** | **Conv3D** | **Train Accuracy: 0.8952**  **Validation Accuracy: 0.8300**  **H5 file size: 8.2 MB** | **Hyper Parameters: 4 hidden Layers [8,16,32,64]**  **2 Dense Layer [256,128] 2 Drop Out Layers 1 Output Dense Layer [5]**  **Batch Size: 80 No. of Images: 30** |