Write up experiment SankrityaVH\_MallibabuB

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| **Experiment Number** | **Model** | **Hyperparameter** | **Result** | **Decision + Explanation** |
| **1** | **Conv3D** | **Batchsize = 35**  **Epoch= 15**  **Dimension= 100x100**  **LR = 0.01**  **Drop out = Yes**  **Trainable Parameters = 689,397** | **Validation loss reduces with each epoch. Same with accuracy. 0.43 is max** | **Further hyperparamter tuning + dense layer in next trial** |
| **2** | **Conv3D** | **Batchsize = 35**  **Epoch= 15**  **Dimension= 160x160**  **LR = 0.001**  **Drop out = Yes**  **Trainable Parameters =** **1,737,973** | **Overfitting issue with less validation loss** | **Try with increased batch size** |
| **3** | **Conv3D** | **Batchsize = 60**  **Epoch= 15**  **Dimension= 160x160**  **LR = 0.001**  **Drop out = Yes**  **Trainable Parameters =** **1,737,973** | **Out of memory error** | **Sticking to batch size around 40** |
| **4** | **Conv3D** | **Batchsize = 15**  **Epoch= 15**  **Dimension= 120x120**  **LR = 0.01**  **Drop out = Yes**  **Trainable Parameters =** **11,115,053** | **Validation loss goes down with each epoch. Accuracy does not improve** | **No conclusive evidence of Conv3D working out** |
| **5** | **ConvLSTM** | **Batchsize = 15**  **Epoch= 15**  **Dimension= 120x120**  **LR = 0.001**  **Drop out = No**  **Trainable Parameters =** **13,589** | **Same as above** | **Slight increase of batch size in next trial (not big increase else it will throw memory error again like last time). This time try Conv2D+GRU architecture** |
| **6** | **Conv2d+ GRU** | **Batchsize = 20**  **Epoch= 25**  **Dimension= 120x120**  **LR = 0.001**  **Drop out = Yes**  **Trainable Parameters =** **99,269** | **Validation loss goes down slightly with each epoch with overfitting issues** | **The accuracy improves to around .53. We may go back to Conv3D by maintaining same batch size – This is just a trial. Not so confident of the result.** |
| **7** | **Conv3D** | **Batchsize = 20**  **Epoch= 20**  **Dimension= 120x120**  **LR = 0.002**  **Drop out = Yes**  **Trainable Parameters =** **503,973** | **Validation loss does not decrease with no improvement in accuracy.** | **If accuracy >.53 we can take it as good model henceforth. Now .5 only** |
| **8** | **Conv3D** | **Batchsize = 20**  **Epoch= 20**  **Dimension= 160x160**  **LR = 0.002**  **Drop out = Yes**  **Trainable Parameters =** **921,765** | **Validation loss same as above** | **The accuracy improves. So I am confident that by having more Epochs we will get better accuracy** |
| **9** | **Transfer Learning** | **Weights= imagenet**  **Model = GRU**  **Dropout = Yes**  **LR=0.002**  **Dimension = 128x128**  **Trainable parameters = 2,387,813** | **The Validation loss decreasing and matches the training loss** | **The accuracy increases with each epoch and max is 0.88. No overfitting. We can take this as best model till now** |