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| --- | --- | --- | --- | --- |
| **Model** | **Experiment Number** | **Result** | **Decision** | **Trainable Parameters** |
| **ConvLSTM (Without Transfer Learning)** | 1 | Training Accuracy: .98  Validation Accuracy: .80 | Overfitting, tried with GRU in next step | 1,004,549 |
| **ConvGRU (Without Transfer Learning)** | 2 | Training Accuracy: .99  Validation Accuracy: .71 | Highly Overfitting | 1,319,301 |
| **Conv3D** | 3 | Training Accuracy: .98  Validation Accuracy: .87 | Model looks better than ConvLSTM/ ConvGRU architecture, trying with another variation in below model for reducing the training parameters (changing the MaxPoolingSize) | 3,783,525 |
| **Conv3D** | 4 | Training Accuracy: .97  Validation Accuracy: .71 | Model performance went down on validation data. Tried variation in below model with addition of dropouts(0.25) | 1,945,765 |
| **Conv3D** | 5 | Training Accuracy: .97  Validation Accuracy: .30 | Model performance went further down on validation data. Not acceptable model. | 3,783,525 |
| **ConvLSTM (Resnet50, non-trainable weights)** | 6 | Training Accuracy: .99  Validation Accuracy: .96 | Tried without training the parameters and replacing the top layers of Resnet50 with custom CNN layers. Model performance is very good on both training and validation data set. Tried with training the weights in below model | 2,122,373 |
| **ConvLSTM (Resnet50, trainable weights)** | 7 | Training Accuracy: .94  Validation Accuracy: .84 | Model performance went down on both training and validation data set. | 25,656,965 |

**Final Model**: ConvLSTM (Resnet50) with non-trainable weights. The metrics of the model is as below:

Training Accuracy: .99

Validation Accuracy: .96

Trainable Parameters: 2,122,373