I used RTX 3080 GPU for model training with 32GB RAM. In all the models I chooses 128X128 as image width and height. I Chooses 30 frames for all the models. I reduced batch size depending on model parameters to accommodate batch data into memory as it throws Resource Exhausted/Out of memory (OOM) errors.

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| --- | --- | --- | --- |
| **Experiment Number** | **Model** | **Result** | **Decision + Explanation** |
| **1** | **Conv3D** | **Overfitting** | **I haven’t used cropping, image augment in generator function** |
| **2** | **Conv3D** | **Train accuracy:0.91**  **Validation accuracy:0.93** | **Reduced the batch size as I increased the number of neurons in Dense layers it gave out of memory error during initial run and used augment=True which uses cropping in generator function, increased dropout rate from 0.25 to 0.50 in second dense layer to prevent overfitting** |
| **3** | **CNN\_RNN** | **Train Accuracy: 0.85**  **Val Accuracy:**  **0.88** | **Used GRU layer with dropout rate 0.50.** |
| **4** | **CNN\_RNN with Transfer learning** | **Train Accuracy:0.96**  **Validation Accuracy:**  **0.93** | **Used Inception model to train the weights from scratch with GRU. The model validation scores are same as Conv3D model-2 which is 0.93 but only training accuracy got improved.** |
| **5** | **CNN\_RNN with Transfer learning** | **Train Accuracy:0.96**  **Validation Accuracy: 0.96** | **Added new dense layer with 256 units and dropout rate 0.50. To see if there will be improvement in validation accuracy.** |